

Search history

Search 1: FT=(HARVEST~ AND MOWER~) (Results 4226)

Search 2: FT=(HARVEST~ AND MOWER~ AND BLADE~ AND TOOL) (Results 336)

Search 3: FT=(HARVEST~ AND MOWER~ AND BLADE~ AND TOOL~ AND LAWN) AND IC=(A01D) (Results 53)

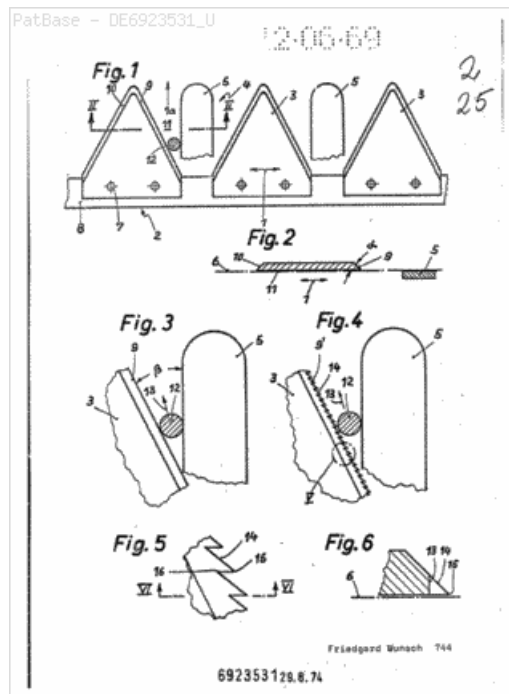
Title: SCHNEIDWERK, INSBESONDERE ZUM MAEHEN VON GRAESERN ALLER ART CUTTING UNIT, ESPECIALLY FOR MOWING OF ANY KIND GRAESER (Machine translation)

Abstract: Source: DE6923531U [DE] (Claim 1) 1. Schneidwerk, insbesondere zum Maehen von Graesern aller Art, das in zwei parallelen Ebenen uebereinander ein bewegtes Messer mit scharenden Messerblaetter und ein dem gegen- ueber feststehendes oder ebenfalls bewegtes, kammartig mit Fingern versehenes Gegenmesser aufweist, wobei die Messerblaetter und/oder die Finger sich in Fahrtrichtung des Schneidwerks verjuengen, d a d u r c h g e k e n n z e i c h n e t, dass die Schneidraender der Messerblaetter (3) und/oder der Finger (5) in ihren aufeinander zu weisenden Bereichen mindestens einen Abschnitt haben, in dem der zwischen den Schneidraendern liegende Scherraum (11) sich nach hinten-entgegen der Fahrtrichtung (1a) des Schneidwerks-in seiner in Bewegungsrichtung (1; 35) der Messerblaetter (3) gemessenen Breite verbreitert.

Machine translation: (Claim 1) 1 Cutting, especially for the mowing of Graeser all kinds, the two parallel planes one above the other one moving **blade** with crowds that Messerblaetter and the against-about stationary or also moving, like a comb has their fingers marked counter-knife, with the Messerblaetter and / or fingers in rejuvenate the direction of the cutting mechanism dadurchgeken, eichnet nz that Schneidraender the Messerblaetter (3) and / or finger (5) in their pointing towards each other sectors have at least one section in which lies between the Schneidraendern shear chamber (11) backwards -the opposite direction (1a) of the cutting plant in its direction of motion (1, 35) broadened the Messerblaetter (3) the measured width.

Classifications:

International (IPC 1-7): A01D55/00



Family:

Publication number	Publication date	Application number	Application date
DE6923531 U	19740829	DE19690223531U	19690612

Priority:

DE19690023531U 19690612

Probable Assignee:

WUNSCH FRIEDGARD

Assignee(s): (std):

WUNSCH FRIEDGARD

Inventor(s): (std):

WUNSCH FRIEDGARD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE6923531 U	19740829	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: HIGH HARDNESS BORON STEEL ROTARY **BLADE**

Abstract: A rotary **blade** for a **mower** or cutter is formed from boron steel, such as 10B38 steel, and is heat treated to yield high hardnesses of 48 Rockwell C or above. The **blade** has increased hardness because of the heat treating, but due to the alloy composition, is still sufficiently tough to perform satisfactorily as a cutting **blade**, in particular to pass conventional impact tests. Furthermore, the low carbon content of the **blade** makes cold working of the part practical.

Classifications:

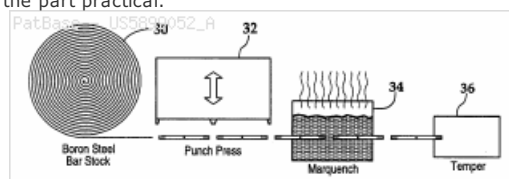
International (IPC 8-9): C21D9/18 C21D9/22 (Advanced/Invention);
C21D9/18 C21D9/22 (Core/Invention)

International (IPC 1-7): A01D34/82 C21D9/00

CPC: Y10S56/17 C21D9/22 C21D9/18 Y10T29/49995

European: C21D9/18 C21D9/22

US: 148/559 29/557 56/255 56/295 56/DIG.17 562/550



Family:

Publication number	Publication date	Application number	Application date
US5899052 A	19990504	US19970899198	19970723
US5899052 C1	20110322	US19970899198	19970723
US5916114 A	19990629	US19950532046	19950921
US5916114 C1	20110222	US19950532046	19950921

Priority:

US19950532046 19950921 US19970899198 19970723

Probable Assignee: FISHER BARTON BLADES INC

Assignee(s): (std): FISHER BARTON INC

Assignee(s): FISHER BARTON BLADES INC

Inventor(s): (std): TURNER DARREL L

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US5899052 A	19990504	LSGT	+	granted / extensions (spc, cpc, pte)	
US5899052 A	19980210	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FISHER-BARTON, INC., WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TURNER, DARREL L.; REEL/FRAME:008969/0698 EFFECTIVE DATE : 19950921
US5899052 A	19990429	LSGT	PAT1	Patented Case	
US5899052 A	19990429	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5899052 A	20021104	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5899052 A	20050413	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FISHER BARTON BLADES, INC., WISCONSIN OLDPARTY : CHANGE OF NAME; ASSIGNOR:FISHER-BARTON, INC.; REEL/FRAME:015896/0018 EFFECTIVE DATE : 20030120
US5899052 A	20061106	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5899052 A	20091229	LSRX	+RR	REQUEST FOR REEXAMINATION FILED	EFFECTIVE DATE : 20091002
US5899052 A	20101104	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5899052 A	20110322	LSRX	+B1	REEXAMINATION CERTIFICATE FIRST REEXAMINATION	TEXT : THE PATENTABILITY OF CLAIMS 1-3 IS CONFIRMED.
US5899052 A	20170723	PEXP		Calculated Patent Term Expiry	
US5916114 A	19990629	LSGT	+	granted /	

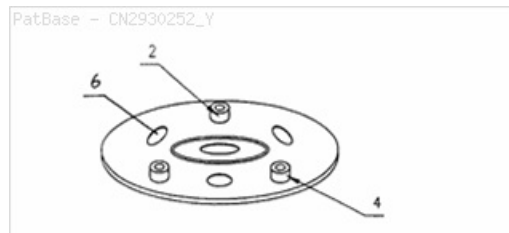
					extensions (spc, cpc, pte)
US5916114 A	19951103	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FISHER-BARTON, INC., WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:TURNER, DARREL L.; REEL/FRAME:007708/0773 EFFECTIVE DATE : 19950921
US5916114 A	19990617	LSGT	PAT1	Patented Case	
US5916114 A	19990617	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5916114 A	20021226	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5916114 A	20050413	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : FISHER BARTON BLADES, INC., WISCONSIN OLDPARTY : CHANGE OF NAME; ASSIGNOR:FISHER-BARTON, INC.; REEL/FRAME:015896/0018 EFFECTIVE DATE : 20030120
US5916114 A	20061229	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5916114 A	20091229	LSRX	+RR	REQUEST FOR REEXAMINATION FILED	EFFECTIVE DATE : 20091002
US5916114 A	20101229	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5916114 A	20110222	LSRX	+B1	REEXAMINATION CERTIFICATE FIRST REEXAMINATION	TEXT : THE PATENTABILITY OF CLAIMS 1-3 AND 11 IS CONFIRMED. CLAIMS 4-10 WERE NOT REEXAMINED.
US5916114 A	20150921	PEXP		Calculated Patent Term Expiry	

Title: Cutter head of grass **harvester**

Abstract: The utility model relates to a cutter head of mowing apparatus belonging to cutting mowing components of brush cutter or **lawn mower**. Two to four holes are distributed uniformly on the chassis, two to four **tool** pillars are fixed on the holes on the chassis separately; 2~4 screws are screws into **tool** pillars; a rope hole is arranged on each **tool** pillar, the balance holes which has the same number with the **tool** pillars are distributed uniformly in the same circle on the chassis. The utility has the advantages of a novel structure, simple cutter head structure, stable rotation due to the balance holes on the chassis, light weight, convenient and safe operation, non-vitiating during working, and the mowing rope or **blade** which is replaced by the other conveniently both can be used.

Classifications:

International (IPC 8-9): A01D34/63 (Advanced/Invention);
A01D34/63 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN2930252 Y	20070808	CN200620028605U	20060414

Priority:

CN200620028605U 20060414

Probable Assignee:

FANG XINZE

Assignee(s): (std):

FANG XINZE

Inventor(s): (std):

FANG XINZE

Inventor(s):

XINZE FANG

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN2930252 Y	20070808	LSGT	+	granted / extensions (spc, cpc, pte)	
CN2930252 Y	20070808	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2930252 Y	20110615	LSLE	-C17	CESSATION OF PATENT RIGHT	
CN2930252 Y	20160414	PEXP		Calculated Patent Term Expiry	

Title: CHOPPER

Abstract: Chopper for whose drive assembly and, if appropriate, also cutting equipment the appropriate components of a lawnmower are used. The cutting equipment of the chopper is connected to the shaft of the motor of a lawnmower and driven by the motor of the lawnmower.

Classifications:

International (IPC 8-9): A01D42/00 B02C18/08 B02C18/22

B02C18/24 (Advanced/Invention);

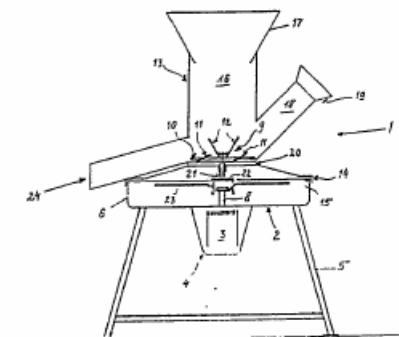
A01D42/00 B02C18/06 (Core/Invention)

International (IPC 1-7): A01D55/00 B02C18/12 B02C18/22

CPC: B02C18/24 A01D2101/00 A01G3/002 B02C18/08 B02C18/2291
B02C2201/066

European: A01D42/00M B02C18/08 B02C18/22F16 B02C18/24
K01D101/00 L02C201/06G

PatBase - DE3108045_A1



Family:

Publication number	Publication date	Application number	Application date
DE3108045 A1	19820916	DE19813108045	19810303

Priority:

DE19813108045 19810303

Probable Assignee:

MASCHKE UWE

Assignee(s): (std):

MASCHKE UWE

Inventor(s): (std):

MASCHKE UWE

Legal status (INPADOC)

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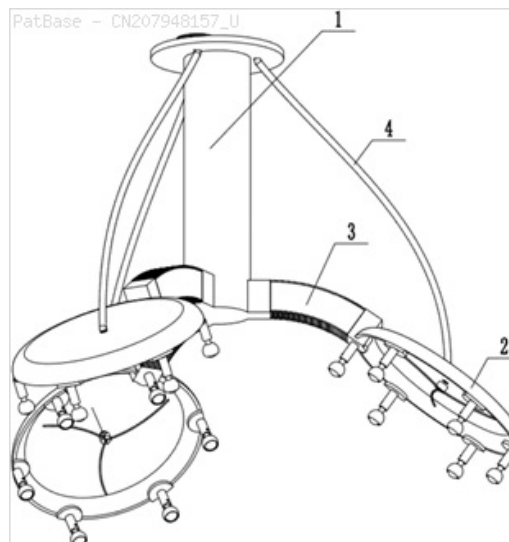
Patent	Date recorded	Event group	Code	Event	Details
DE3108045 A1	19820916	LSPB	+	published / reissued	
DE3108045 A1	19840412	LSLE	-8139	DISPOSAL/NON-PAYMENT OF THE ANNUAL FEE	

Title: SADDLE HORSE FORMULA **LAWN MOWER TOOL** BIT SUB -ASSEMBLY

Abstract: The utility model discloses a **lawn mower tool** bit sub -assembly relates to the **harvesting** machine field, including support piece, the **tool** bit assembly body, the spring beam, the flexible shaft, driving gear and driven gear, driven gear is connected through the **blade** drive shaft of the flexible shaft and the **tool** bit assembly body, the **tool** bit assembly body is through the **tool** bit mounting, the spring beam is connected with spring beam mounting on the support piece, on the **tool** bit just is connected to support piece through the spring beam like this, support piece is taking the **tool** bit to paste the earthward, the universal ball of adjusting good height contacts earlier ground, the spring beam warp, it pastes face tightly to make the **tool** bit area universal ball, the in -process topography change who is advancing, the spring beam changes is pressing the **tool** bit adjustment, paste ground always, it mows to make highly keeps unanimous. Can compare the accurate adaptation ground control height of mowing, again can the large tracts of land operation.

Classifications:

International (IPC 8-9): A01D34/73 A01D34/74
A01D34/82 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN207948157 U	20181012	CN201820361243U	20180316

Priority:

CN201820361243U 20180316

Probable Assignee:

HAN YUJIE

Assignee(s): (std):

HAN YUJIE

Assignee(s):

KOREA RAIN CLEANING

Inventor(s): (std):

HAN YUJIE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN207948157 U	20181012	LSGT	+	granted / extensions (spc, cpc, pte)	
CN207948157 U	20181012	LSGT	+GR01	PATENT GRANT	
CN207948157 U	20280316	PEXP		Calculated Patent Term Expiry	

Title: LASER CLAD KNIFE GUARD

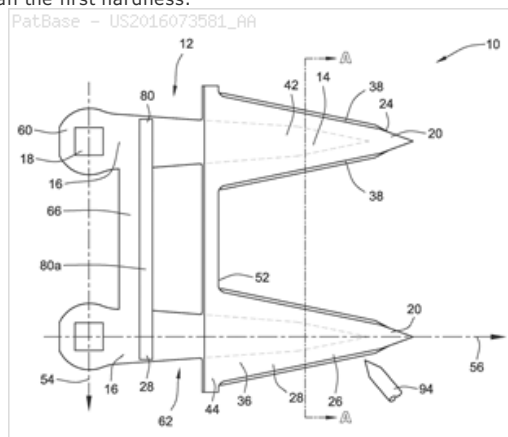
Abstract: A clad knife guard is provided. In one aspect, the invention provides for a knife guard that comprises a guard body that further comprises a base material. The base material includes a mounting bar that defines at least one bolt hole and at least one tine projecting forward from the mounting bar. The base material has a first hardness. A clad material is formed on the base material. The clad material comprises a second hardness greater than the first hardness.

Classifications:

International (IPC 8-9): A01D34/13 A01D34/14 A01D34/18 A01D34/73 A01D34/76 A01D34/82 B23K26/34 B32B3/10 (Advanced/Invention); B23K101/20 B23K103/00 (Advanced/Non-invention)

CPC: A01D34/18 B23K26/34 A01D34/14 A01D34/73 B23K2101/20 B23K2103/00

US: 219/76.1 219/77 56/295 56/298 56/308 56/309



Family:

Publication number	Publication date	Application number	Application date
CA2961153 AA	20170313	CA20152961153	20150227
CA2961153 C	20180814	CA20152961153	20150227
CA2961155 AA	20170313	CA20152961155	20150227
EP3193576 A1	20170726	EP20150843037	20150227
EP3193576 A4	20180502	EP20150843037	20150227
EP3193577 A1	20170726	EP20150843043	20150227
EP3193577 A4	20180606	EP20150843043	20150227
US2016073581 AA	20160317	US20150854851	20150915
US2016073582 AA	20160317	US20150855028	20150915
US9717176 BB	20170801	US20150855028	20150915
WO16043803 A1	20160324	WO2015US18010	20150227
WO16043804 A1	20160324	WO2015US18059	20150227

Priority:

US20140050687P 20140915 US20140050880P 20140916 WO2015US18059 20150227
 WO2015US18010 20150227 US20150854851 20150915 US20150855028 20150915

Probable Assignee: KONDEX CORP

Assignee(s): (std): BAEZ HEATHER ; JOHNSON KEITH A ; KONDEX CORP ; PLACEK CASEY ; STOFFEL NEAL J

Inventor(s): (std): STOFFEL NEAL J ; JOHNSON KEITH A ; BAEZ HEATHER ; PLACEK CASEY

Agent(s): BORDEN LADNER GERVAIS LLP; HOEGER STELLRECHT AND PARTNER PATENTANWALTE MBB; REINHART BOERNER VAN DEUREN PC; LAWLER ROBERT A; NAILL TIMOTHY P

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

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Patent	Date recorded	Event group	Code	Event	Details
CA2961153 AA	20170313	LSPB	+	published / reissued	
CA2961153 AA	20180320	LSES	+EEER	EXAMINATION REQUEST	EFFECTIVE DATE : 20180307
CA2961153 C	20180814	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2961153 C	20350227	PEXP		Calculated Patent Term Expiry	
CA2961155 AA	20170313	LSPB	+	published / reissued	
EP3193576 A1	20170726	LSPB	+	published / reissued	

EP3193576 A1	20170726	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20170404
EP3193576 A4	20180502	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20180406
EP3193576 A4	20180502	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01D 34/14 20060101ALI20180329BHEP
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EP3193576 A4	20180502	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01D 34/13 20060101AFI20180329BHEP
EP3193576 A4	20190515	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20181106
EP3193577 A1	20170726	LSPB	+	published / reissued	
EP3193577 A1	20170726	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20170404
EP3193577 A1	20180530	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23K 26/34 20140101ALI20180425BHEP
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EP3193577 A4	20190508	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20190404
US2016073581 AA	20160317	LSPB	+	published / reissued	
US2016073581 AA	20151002	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : KONDEX CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:STOFFEL, NEAL J.; REEL/FRAME:036717/0451 EFFECTIVE DATE : 20150916
US2016073581 AA	20170510	LSES	NFA1	Non Final Action Mailed	
US2016073581 AA	20171218	LSES	ADV1	Advisory Action Mailed	
US2016073581 AA	20180601	LSES	NFA1	Non Final Action Mailed	
US2016073581 AA	20180907	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : FINAL REJECTION MAILED

US2016073581 AA	20190404	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2016073582 AA	20160317	LSPB	+	published / reissued	
US2016073582 AA	20170320	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2016073582 AA	20170622	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2016073582 AA	20170623	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2016073582 AA	20170712	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9717176 BB	20170801	LSGT	+	granted / extensions (spc, cpc, pte)	
US9717176 BB	20151027	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : KONDEX CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:STOFFEL, NEAL J.; PLACEK, CASEY; JOHNSON, KEITH A.; AND OTHERS; REEL/FRAME:036895/0441 EFFECTIVE DATE : 20150916
US9717176 BB	20170712	LSGT	PAT1	Patented Case	
US9717176 BB	20171024	LSRE	CC	CERTIFICATE OF CORRECTION	
US9717176 BB	20360120	PEXP		Calculated Patent Term Expiry (PTA 127 days)	
WO16043803 A1	20160324	LSPB	+	published / reissued	
WO16043803 A1	20170313	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2961153 COUNTRY OF REF DOCUMENT : CA
WO16043803 A1	20170315	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO16043803 A1	20170404	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2015843043 COUNTRY OF REF DOCUMENT : EP
WO16043804 A1	20160324	LSPB	+	published / reissued	
WO16043804 A1	20170313	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2961155 COUNTRY OF REF DOCUMENT : CA
WO16043804 A1	20170315	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO16043804 A1	20170404	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2015843037 COUNTRY OF REF DOCUMENT : EP

Title: MODULAR GRAIN **HARVESTER**

Abstract: Source: PL222679B [PL] [Source: Claim 1] 1. Modułowy kombajn do zbioru zbóż zbudowany jest z nosnika (rys. 1,2)1 dolaczanego zespołu separacyjnego (9 rys. 1 i 3 rys. 2) oraz dolaczanego zbiornika zboża (1 rys. 2) i z rotacyjnym zestawem scinającym (11) rys. 1, znanym jest tym, że posiada pneumatyczny kanał ssący złożony z dwóch cylindrycznych przewodów połączonych ze sobą teleskopowo (10 rys. 12 fig. 1) przy czym górna część zamocowana jest do obudowy (12 rys. 12 fig. 2) a dolna przesuwana zamocowana jest przegubowo poprzez łączniki (18 rys. 12 fig. 1) do równoległoboków przegubowych mocujących koła- siarki (6), ponadto wewnątrz kanału ssącego znajduje się zespół rozdrabniający (3) oraz wentylator ssący (2) poniżej przenośnik perforowany (7) lub siatkowy. **Machine translation:** [Source: Claim 1] 1. Modułowy combine to a crop is made up of the media (Fig. 1.2)1 dolaczanego teams- lu isolation (9, figure 1 and 3 in figure 2) and tank dolaczanego bends (1 in figure 2) and with rotary sport tourer- wem scinającym (11), fig. 1, salient is the pneumatic has a channel ssacy composed of two round cable surfaces together OOS (10 fig. 12 fig. 1) the upper part is mounted to the chassis (12 fig. 12 fig. 2) and the lower sliding is mounted an IDL by connectors (18 fig. 12 fig. 1) The articulated rownoleglobokow fastening ko- sulfur content (6), also inside ssacego channel is independent rozdrabniający (3) and ventilation fan ssacy (2) below the perforated przenośnik (7) or screen.

Classifications:

International (IPC 8-9): A01D41/00 (Advanced/Invention)

PatBase - PL222679_B1

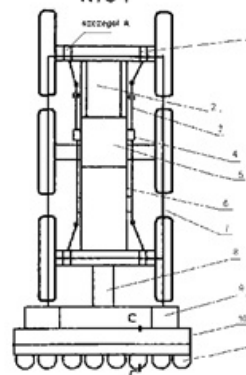
PL 222 679 B1

(5. 17) do belki środkowej (16 rys. 1) zamocowane są ramiona (12) do których zamocowane przegubowo są cięgi (14, 16) a do ramienia (12) zamocowane są sznurki (19) które przegubowo mogą być łączyć (12) z belką A (16). W tym stanie, natomiast belka środkowa (16 rys. 7 fig. 1) zamocowana jest przegubowo do korpusu (7) i jednej strony przegubowo przez pręgi (16).

3. Modułowy kombajn do zbioru zbóż składa się z: 1) podłoża (1) posiadającego na wierzchu koła z mechanicznymi przegubami (6) na jednej stronie; 2) ramienia (12) przegubowo zamocowanego do podłoża (1) oraz hydraulicznego mechanizmu (4) działającego na ramieniu (12) dającego zdolność przesuwania wzdłuż osi o promieniu równym promieniu koła (16). **znaleziony jest tym, że posiada siłownię (16) (rys. 1) która przemieszcza cięgi (14) kołowe (16) przemieszczając je na ramionach (12) oraz poprzez przegub (19) zmienia kierunek obrotu (2 rys. 5) poprzez na zawieszaniu w obu kierunkach o dowolny kąt. Zasilaczem może być silnik (16) (rys. 1).**

Rysunki

RYS 1



Family:

Publication number	Publication date	Application number	Application date
PL222679 B1	20160831	PL20100391775	20100707
PL391775 A1	20120116	PL20100391775	20100707

Priority:

PL20100391775 20100707

Probable Assignee:

WATRAK HENRYK JERZY

Assignee(s): (std):

WATRAK HENRYK JERZY

Inventor(s): (std):

WATRAK HENRYK JERZY

Legal status (INPADOC)

View legal status timeline

Patent	Date recorded	Event group	Code	Event	Details
PL222679 B1	20160831	LSGT	+	granted / extensions (spc, cpc, pte)	
PL391775 A1	20120116	LSPB	+	published / reissued	

Title: MODULAR LANDSCAPER

Abstract: A modular landscaper uses oversized wheels to generate torque for turning one or more of several interchangeable modular landscape maintenance attachments. The landscaper provides a handle configured in relationship to the landscaper frame to allow an adult to normally walk behind the landscaper while applying a forward force by pushing on the handle that results in the wheels of the landscaper rolling along a landscape maintenance surface and generating torque that is transferred through a drive train to the one or more attached landscaping maintenance attachments. A drive train uses the rotational energy of the wheels to increase the operator pushing force to operate the maintenance attachment. Interchangeable attachments facilitate using the landscaper for a wide variety of landscaping maintenance tasks.

Classifications:

International (IPC 8-9): A01B76/00 A01D34/00 A01D34/42 A01D34/52 A01D34/53 A01D34/54 A01D42/06 A01D75/30 A01G1/00

E01H5/00 (Advanced/Invention);

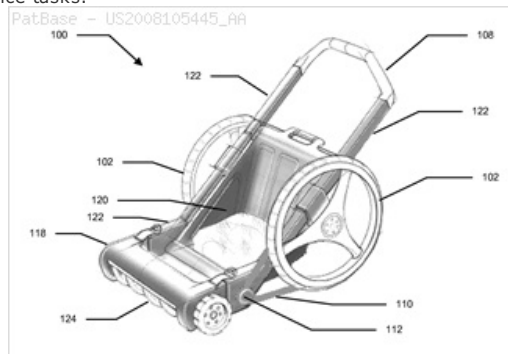
A01B76/00 A01D34/00 A01D34/412 A01D42/00 A01D75/00 A01G1/00

E01H5/00 (Core/Invention)

CPC: A01G20/30 A01D42/00 A01B45/02 A01C7/02 A01C15/02

European: A01B45/02 A01C15/02 A01C7/02 A01D42/00 A01G1/12

US: 172/105 172/13 37/196 56/253 56/289



Family:

Publication number	Publication date	Application number	Application date
US2008105445 AA	20080508	US20070838799	20070814
WO08022163 A2	20080221	WO2007US75945	20070815
WO08022163 A3	20081120	WO2007US75945	20070815

Priority:

US20060838099P 20060815 US20070838799 20070814

Probable Assignee: UMAGINATION LABS LP

Assignee(s): (std): DAYTON DOUGLAS ; DAYTON DOUGLAS C ; PARK SUNG ; UMAGINATION LABS ; UMAGINATION LABS L P ; UMAGINATION LABS LP

Inventor(s): (std): DAYTON DOUGLAS ; DAYTON DOUGLAS C ; PARK SUNG

Agent(s): STRATEGIC PATENTS PC; NORTRUP JOHN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2008105445 AA	20080508	LSPB	+	published / reissued	
US2008105445 AA	20080226	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : UMAGINATION LABS, MASSACHUSETTS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:DAYTON, DOUGLAS C.; PARK, SUNG; SIGNING DATES FROM 20080110 TO 20080111; REEL/FRAME:020561/0539
US2008105445 AA	20080226	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : UMAGINATION LABS, MASSACHUSETTS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:DAYTON, DOUGLAS C.; PARK, SUNG; REEL/FRAME:020561/0539; SIGNING DATES FROM 20080110 TO 20080111
US2008105445 AA	20081105	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : UMAGINATION LABS, L.P., MASSACHUSETTS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:UMAGINATION LABS; REEL/FRAME:021789/0253

US2008105445 AA	20140615	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2008105445 AA	20140615	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
WO08022163 A2	20080221	LSPB	+	published / reissued	
WO08022163 A3	20090217	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO08022163 A3	20090315	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : RU
WO08022163 A3	20090909	LSNE	-122	EP: PCT APPLICATION NON- ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 07814090 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :

Title: LASER CLAD CUTTING EDGE FOR AGRICULTURAL CUTTING COMPONENTS

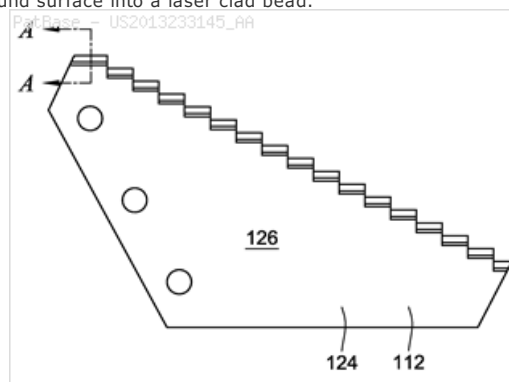
Abstract: An agricultural cutting **blade** has top and bottom surfaces and mounting apertures extending through top and bottom surfaces. A cutting edge support surface (e.g. that may be a flat, pointed or rounded) is formed on the cutting **blade** body with the cutting edge support extending along a side of the cutting **blade** body transversely between the top and bottom surfaces. A clad material deposited upon the cutting edge support such as by laser cladding process. The clad material can be built up, that is layered in partial or full overlapping relation to provide at least 2 and often more than 4 layers of clad material at one or more locations. A cutting edge provided by the clad material that may be a ground surface into a laser clad bead.

Classifications:

International (IPC 8-9): A01D34/73 A01F29/00 A01F29/09 B01F7/00 B21K11/00 B23B27/14 B23K26/00 B23K26/34 B23K26/342 B23P15/28 B23P15/40 B26D1/00 B26D1/12 C21D9/00 (Advanced/Invention)

CPC: B21K11/00 B26D1/0006 B26D2001/002 A01D34/73 A01F29/09 Y10T83/9319 B26D2001/006 B01F7/00616 B01F7/245 B23P15/40 B23K26/34 B23K31/025 B26D1/12 B26D2001/0053 C21D9/22 B23K26/0006 B23K26/342 B23P15/28 C21D9/0068 B23K2101/20 B23K2103/04 B23K2103/166

US: 148/525 219/76.1 366/343 56/255 76/112 83/835



Family:

Publication number	Publication date	Application number	Application date
BR112014022116 A2	20170620	BR20141122116	20130306
BR112014022116 A8	20170718	BR20141122116	20130306
CA2866594 AA	20140905	CA20132866594	20130306
CA2957234 AA	20170812	CA20172957234	20170207
EP2822727 A1	20150114	EP20130757894	20130306
EP2822727 A4	20151021	EP20130757894	20130306
EP3205464 A1	20170816	EP20170155185	20170208
US2013233145 AA	20130912	US20130787122	20130306
US2016157423 AA	20160609	US20160043185	20160212
WO13134397 A1	20130912	WO2013US29390	20130306

Priority:

US20120607220P 20120306 US20130787122 20130306 WO2013US29390 20130306
US20160043185 20160212

Probable Assignee: KONDEX CORP

Assignee(s): (std): BECHLER MICHAEL A ; JOHNSON KEITH A ; KONDEX CORP ; STOFFEL NEAL J ; SOTELO JUAN G

Assignee(s): KONDEX CORP1500 TECHNOLOGY DRIVELOMIRAWI53048US

Inventor(s): (std): JOHNSON KEITH A ; STOFFEL NEAL J ; SOTELO JUAN G ; BECHLER MICHAEL A

Inventor(s): JOHNSON KEITH AUS ; BECHLER MICHAEL AUS ; STOFFEL NEAL JUS ; SOTELO JUAN GUS ; JUAN G SOTELO ; NEAL J STOFFEL ; KEITH A JOHNSON ; MICHAEL A BECHLER

Agent(s): BORDEN LADNER GERVAIS LLP; HOEGER STELLRECHT AND PARTNER PATENTANWALTE; HOEGER STELLRECHT AND PARTNER PATENTANWALTE MBB; HEINISCH ANDREW J

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT HW HN HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CA2866594 AA	20140905	LSPB	+	published / reissued	
CA2866594 AA	20170420	LSLE	-FZDE	DEAD	EFFECTIVE DATE : 20170307
CA2957234 AA	20170812	LSPB	+	published / reissued	
CA2957234 AA	20180220	LSES	+EEER	EXAMINATION REQUEST	EFFECTIVE DATE : 20180213
EP2822727 A1	20150114	LSPB	+	published / reissued	
EP2822727 A1	20150114	LSES	+17P	REQUEST FOR EXAMINATION	EFFECTIVE DATE : 20140917

				FILED	
EP2822727 A4	20151021	LSSES	+RA4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED (CORRECTED)	EFFECTIVE DATE : 20150923
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B01F 7/00 20060101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23B 27/14 20060101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23K 26/00 20140101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01F 29/09 20100101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23P 15/40 20060101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23K 26/34 20140101AFI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01D 34/73 20060101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B26D 1/00 20060101ALI20150917BHEP
EP2822727 A4	20151021	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B23P 15/28 20060101ALI20150917BHEP
EP2822727 A4	20161019	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20160420
EP3205464 A1	20170816	LSPB	+	published / reissued	
EP3205464 A1	20180328	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20180214
US2013233145 AA	20130912	LSPB	+	published / reissued	
US2013233145 AA	20130416	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : KONDEX CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:SOTELO, JUAN G.; STOFFEL, NEAL J.; JOHNSON, KEITH A.; AND OTHERS; REEL/FRAME:030226/0187 EFFECTIVE DATE : 20130313
US2013233145 AA	20160627	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2013233145 AA	20160627	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2016157423 AA	20160609	LSPB	+	published / reissued	
US2016157423 AA	20160512	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : KONDEX CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:STOFFEL, NEAL J.; SOTELO, JUAN G.; JOHNSON, KEITH A.; AND OTHERS; REEL/FRAME:038569/0359 EFFECTIVE DATE : 20160216

US2016157423 AA	20180226	LSES	NFA1	Non Final Action Mailed	
US2016157423 AA	20180713	LSES	NFA1	Non Final Action Mailed	
US2016157423 AA	20190326	LSES	NFA1	Non Final Action Mailed	
WO13134397 A1	20130912	LSPB	+	published / reissued	
WO13134397 A1	20140905	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2866594 COUNTRY OF REF DOCUMENT : CA
WO13134397 A1	20140908	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO13134397 A1	20140917	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2013757894 COUNTRY OF REF DOCUMENT : EP
WO13134397 A1	20170620	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 112014022116 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20140905

Title: LOW ENERGY SICKLE **MOWER** AND SYSTEM USING CONTROLLED GAP THIN **BLADE** SHEAR PROCESS AND TORQUE MANAGEMENT

Abstract: Low energy non-interference unbiased shear process employing a thin dull **blade** laterally moving between upper and lower stators. **Blades** and stators are not biased or pressed together while cutting, as is done with a pair of scissors. Instead, the dull cutting **blade** is guidingly supported by said upper and lower stators, and the upper and lower stators are sized and formed such that a thickness of a cutting zone (M) formed therebetween exceeds the thickness of a **blade** zone (VZ) formed by the dull cutting **blade**, by a total controlled gap (Z) of preferably between 1 and 5 mils (0.0254-0.127 mm). The cutting **blade** is preferably thin in relation to grass cross section, preferably 10 to 50 mils (0.254 mm-1.27 mm). This arrangement provides two true shearing sites for grass at upper and lower leading edges of the **blade**. Adequate **blade** swipe frequency is provided, with gentle C-shape **blade** profiles yielding self-cleaning **blades** with lower running friction. Tensile failure of the grass is avoided. A torque management system performs motor load monitoring and modulation of **blade** position. To reject obstructions and clean the **blade**, the **blade** can be made to reverse direction, jitter, or reciprocate. Instead of attempting to slice or slam through obstructions using a high energy, high torque prime mover, a low energy low torque prime mover is utilized in conjunction with an intelligent reversing, obstruction clearing, and **blade** cleaning system that saves energy, reduces noise, frees and rejects obstructions, avoids high power surges and prevents **blade** damage or operator injury.

Classifications:

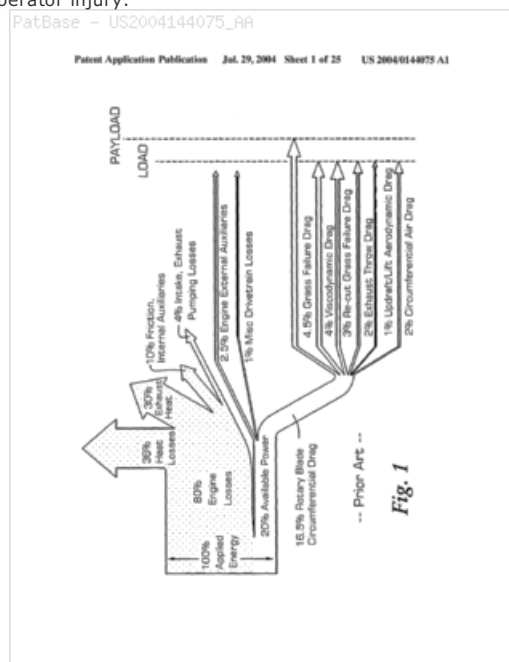
International (IPC 8-9): A01D34/13 (Advanced/Invention);
A01D34/02 (Core/Invention)

International (IPC 1-7): A01D34/00 A01D34/02 A01D34/13

CPC: A01D34/13

European: A01D34/13

US: 56/10.21 56/10.2B 56/246 56/257 56/296 56/298 562/980



Family:

Publication number	Publication date	Application number	Application date
US2004144075 AA	20040729	US20030351020	20030125
US2005188666 AA	20050901	US20050108478	20050418
US6886317 BB	20050503	US20030351020	20030125
US7543434 BB	20090609	US20050108478	20050418

Priority:

US20030351020 20030125 US20050108478 20050418

Probable Assignee: GLOBAL NEIGHBOR INC

Assignee(s): (std): GLOBAL NEIGHBOR INC ; JACKSON JONATHAN A ; KROFFT KORDON E

Inventor(s): (std): JACKSON JONATHAN A : KROFFT KORDON E

Inventor(s): JACKSON JONATHAN : KROFFT KORDON

Agent(s): JONATHAN A JACKSON GLOBAL NEIGHBOR INC; ELTING PATENTS AND TECHNOLOGY LLC; ELTING MARK J;
MARK J

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2004144075 AA	20040729	LSPB	+	published / reissued	
US2004144075 AA	20050126	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GLOBAL NEIGHBOR INCORPORATED, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:JACKSON, JONATHAN A.; KROFFT, KORDON E.; REEL/FRAME:016180/0905 EFFECTIVE DATE : 20040901

US2004144075 AA	20050413	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2005188666 AA	20050901	LSPB	+	published / reissued	
US6886317 BB	20050503	LSGT	+	granted / extensions (spc, cpc, pte)	
US6886317 BB	20050413	LSGT	PAT1	Patented Case	
US6886317 BB	20081006	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6886317 BB	20130426	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6886317 BB	20160505	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6886317 BB	20230125	PEXP		Calculated Patent Term Expiry	
US7543434 BB	20090609	LSGT	+	granted / extensions (spc, cpc, pte)	
US7543434 BB	20130609	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US7543434 BB	20130708	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7543434 BB	20130708	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7543434 BB	20130730	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20130609
US7543434 BB	20260608	PEXP		Calculated Patent Term Expiry (PTA 416 days and a terminal disclaimer has been filed)	

Title: WORK DEVICE

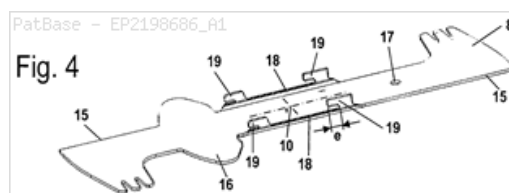
Abstract: The device has a drive motor, and a component i.e. **blade** (8), driven about a rotational axis (10) in a rotatable manner, and extending in a region of the rotational axis. The component is removably retained at a retaining device based on centrifugal force during operation, and is secured in a locking position by a spring. The retaining device includes a retaining bolt exhibiting a wall running at an angle to a longitudinal center axis, where the wall rests behind another wall in a mounted condition of the component.

Classifications:

International (IPC 8-9): A01D34/73 A01F29/09 (Advanced/Invention);
A01D34/73 A01F29/00 (Core/Invention)

CPC: A01D34/733

European: A01D34/73A A01F29/09B



Family:

Publication number	Publication date	Application number	Application date
AT494769 E	20110115	AT20090014925T	20091202
DE102008064068 A1	20100701	DE200810064068	20081219
DE502009000290 D1	20110224	DE200950000290T	20091202
EP2198686 A1	20100623	EP20090014925	20091202
EP2198686 B1	20110112	EP20090014925	20091202

Priority:

DE200810064068 20081219

Probable Assignee: STIHL AND CO ANDREAS AG KG

Assignee(s): (std): STIHL AG AND CO KG ANDREAS ; STIHL AND CO ANDREAS AG KG

Assignee(s): ANDREAS STIHL AG AND CO KG ; ANDREAS STIHL AND CO AG KG

Inventor(s): (std): HANAK RICHARD ; SATTLER AEGYDIUS ; BUCHAUER SIEGFRIED ; DUREGGER GEORG ; ASCHABER HARALD ; HANFLAND DENNIS ; PENDL STEFAN ; ZIMMERMANN SVEN ; ELFNER JOERG

Agent(s): WASMUTH ROLF

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT494769 E	20110115	LSGT	+	granted / extensions (spc, cpc, pte)	
AT494769 E	20291202	PEXP		Calculated Patent Term Expiry	
DE102008064068 A1	20100701	LSPB	+	published / reissued	
DE102008064068 A1	20131010	LSDW	-R119	APPLICATION DEEMED WITHDRAWN, OR IP RIGHT LAPSED, DUE TO NON-PAYMENT OF RENEWAL FEE	EFFECTIVE DATE : 20130702
EP2198686 A1	20100623	LSPB	+	published / reissued	
EP2198686 A1	20100818	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20100702
EP2198686 A1	20100908	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01D 34/73 20060101AFI20100804BHEP
EP2198686 A1	20100908	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : A01F 29/09 20100101ALI20100804BHEP
EP2198686 A1	20130329	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112

EP2198686 A1	20160129	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20151230 YEAR OF FEE PAYMENT : 7
EP2198686 A1	20160229	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20151229 YEAR OF FEE PAYMENT : 7
EP2198686 A1	20160229	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20151228 YEAR OF FEE PAYMENT : 7
EP2198686 A1	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160302 YEAR OF FEE PAYMENT : 7
EP2198686 A1	20160429	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20151221 YEAR OF FEE PAYMENT : 7
EP2198686 A1	20160531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20151224 YEAR OF FEE PAYMENT : 7
EP2198686 B1	20110112	LSGT	+	granted / extensions (spc, cpc, pte)	
EP2198686 B1	20110112	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D TEXT : NOT ENGLISH
EP2198686 B1	20110114	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2198686 B1	20110216	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D TEXT : LANGUAGE OF EP DOCUMENT: GERMAN
EP2198686 B1	20110224	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 502009000290 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20110224
EP2198686 B1	20110525	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : NL REF LEGAL EVENT CODE : VDEP EFFECTIVE DATE : 20110112
EP2198686 B1	20110627	LSRV	-LTIE	LT: INVALIDATION OF EUROPEAN PATENT OR PATENT EXTENSION	REF COUNTRY CODE : EP EFFECTIVE DATE : 20110112
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110413
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT

EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	LAPSED DATE : 20110423 COUNTRY OF REF DOCUMENT : NO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110412
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110512
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110512
EP2198686 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LV NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110803	LSWD	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FD4D
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BG NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110412
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CY NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE

				EPO]	FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CZ NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20111221	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20111013
EP2198686 B1	20120209	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 502009000290 COUNTRY OF REF DOCUMENT : DE

EFFECTIVE DATE : 20111013					
EP2198686 B1	20120731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20111231
EP2198686 B1	20130228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20130228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20130430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SM NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20130531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20111202
EP2198686 B1	20130930	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : TR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20131031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20110112
EP2198686 B1	20140731	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP2198686 B1	20141031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20131231
EP2198686 B1	20141031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20131231
EP2198686 B1	20151229	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 7

EP2198686 B1	20160215	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MM01 REF DOCUMENT NUMBER : 494769 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20141202
EP2198686 B1	20160531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20141202
EP2198686 B1	20161229	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170131	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20161228 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20161222 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20161229 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20161223 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170428	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170228 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20170630	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20161223 YEAR OF FEE PAYMENT : 8
EP2198686 B1	20171226	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180131	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20171226 YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20171228 YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 20171221 YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180228	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20171229 YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180228 YEAR OF FEE PAYMENT : 9
EP2198686 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20171220 YEAR OF FEE PAYMENT : 9

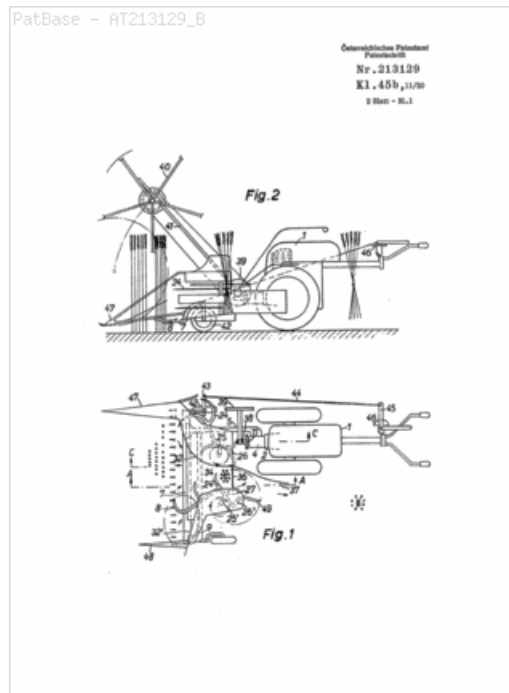
EP2198686 B1	20190430	LSFE	+PGFP	EPO] ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20190228 YEAR OF FEE PAYMENT : 10
EP2198686 B1	20291202	PEXP		Calculated Patent Term Expiry	

Title: FRONTBINDEMAEHER ALS EINACHSSCHLEPPERZUSATZGERAET FRONT TIE **MOWER** AS SINGLE AXLE TRACTOR UNIT
(Machine translation)

Abstract: Source: AT213129B [DE] [Source: Claim 1] 2. Frontbindemaeher nach Anspruch 1, dadurch gekennzeichnet, dass an den Auswerfer (49) nach hinten in die Auswurfrichtung ragende Fuehrungen (37) fuer die Garben anschliessen. **Machine translation:** [Source: claim 1] 2. front binding **mower** according to claim 1, characterised in that connect (49) excellent backwards in the direction of discharge tours (37) for the sheaves to the ejector.

Classifications:

International (IPC 1-7): A01D37/04



Family:

Publication number	Publication date	Application number	Application date
AT213129 B	19610125	AT19560002415	19560421

Priority:

19550820

Probable Assignee:

RAPID MOTORMAEHER A G

Assignee(s): (std):

RAPID MOTORMAEHER A G

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT213129 B	19610125	LSGT	+	granted / extensions (spc, cpc, pte)	
AT213129 B	19760421	PEXP		Calculated Patent Term Expiry	

Title: **Lawn** rake and rake head

Abstract: An array of tines are connected to and extend out from a rake head support bar at right angles thereto and are connected thereto in two sets with shank portions of a first set of tines disposed in a first plane and shank portions of a second set of tines disposed in a second plane parallel to said first plane. Action ends of the first set of tines are disposed in a first row which is parallel to and spaced further from said rake head support bar than action ends of the second set of tines which are disposed in a second row. A coil spring is formed from the material of the shank portion of each of the tines so as to unwind if a force is applied to the tine as in effecting a raking action. An alternate embodiment includes a third set of tines similar to the first and second set but with its shank portions in a third plane parallel to the first and second planes and with its tine ends in a third row parallel to the first and second rows. Another alternate forms the tines as substantially "U" shaped members each with a pair of spaced legs each such leg having a shank portion, coil spring and action end and with threaded members connecting a connecting portion of each tine to the rake head. Another embodiment includes wheels carried by the rake head.

Classifications:

International (IPC 8-9): A01D7/06 (Advanced/Invention)

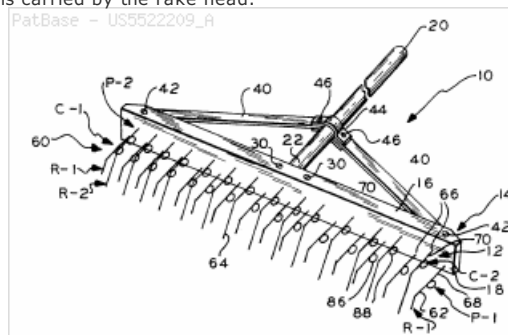
International (IPC 1-7): A01D7/02 A01D7/06

CPC: A01D7/06

European: A01D7/06

US: 56/400.16 56/400.17 56/400.21

PatBase - US5522209_R



Family:

Publication number	Publication date	Application number	Application date
US5522209 A	19960604	US19950423973	19950418

Priority:

US19940018738 19940214 US19940333714 19941103 US19950423973 19950418

Probable Assignee: PETRUZZELLI ROCCO

Assignee(s): (std): PETRUZZELLI ROCCO

Inventor(s): (std): PETRUZZELLI ROCCO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US5522209 A	19960604	LSGT	+	granted / extensions (spc, cpc, pte)	
US5522209 A	19960509	LSGT	PAT1	Patented Case	
US5522209 A	19960509	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE GRANT
US5522209 A	19990721	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5522209 A	20030926	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5522209 A	20071109	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5522209 A	20150418	PEXP		Calculated Patent Term Expiry	

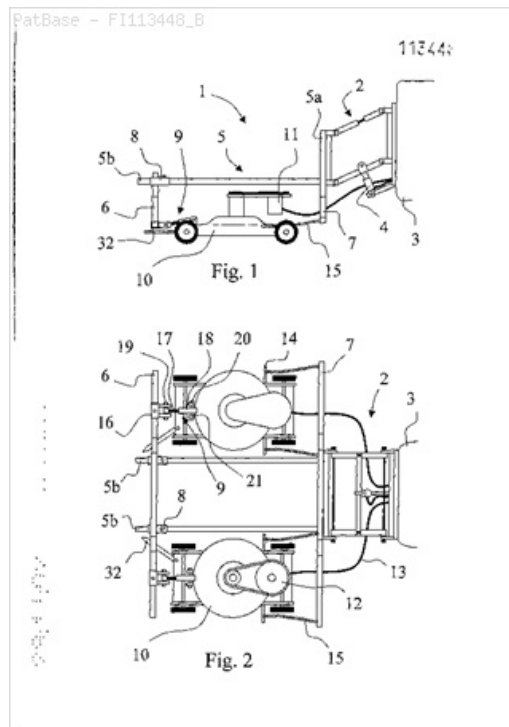
Title: Menetelmaa ja laitteisto kasvimaan rivivaelien leikkaamiseksi Foerfarande och anordning foer klippning av mellanradsomradena i ett traedgardsland

Abstract: Source: FI113448B [FI] Keksinnöen kohteena on menetelmaa ja laitteisto kasvimaan rivivaelien (31) leikkaamiseksi. Menetelmaessaa rivivaelit leikataan moottorikaeyttoiseen tyokoneeseen (3) kytketyn, pyoerillaa varustetun leikkuulaitteen (1) avulla. Keksinnöen mukaisesti leikkuulaitteen (1) kumpaakin leikkuria (10) kuljetetaan leikkuuvaiheessa eteenpäin vetaamaellaa. Leikkurit (10) on saatettu kulkemaan leikkauksen yhteydessaa vapaasti maan pintaa seuraten leikkureiden etuosaan kytketyn vetoelimenaa (9) toimivan nivelmekanismin avulla. [SV] Uppfinningen gaeller ett foerfarande och en anordning foer rensning av gangarna (31) i ett groensaksland. I foerfarande rensas gangarna med en hjulfoersedd, till en motordriven arbetsmaskin (3) kopplad klippanordning (1). I utfoerandet enligt uppfinningen foerflyttas klippanordningens (1) vardera klippare (10) under klippfasen genom att dras framat. Under klippningen bringas klipparna (10) att fritt foelja markytan med hjalp av en till klipparnas framre del kopplad ledmekanism, vilken fungerar som dragorgan (9). **Machine translation:** Keksinnöen object is menetelmaa and apparatus for cutting a vegetable garden rivivaelien (31). Menetelmaessaa rivivaelit cut moottorikaeyttoiseen tyokoneeseen (3) connected, pyoerillaa with the cutting device (1). Keksinnöen in accordance with the cutting device (1) of each cutter (10) transported to the cutting step eteenpäin vetaamaellaa. Cutters (10) are placed to pass surgery CONTEXT freely to the surface, following the cutters connected to the front vetoelimenaa (9) functioning as pivot mechanism.

Classifications:

International (IPC 8-9): A01D34/66 (Advanced/Invention);
A01D (Subclass/Invention)

International (IPC 1-7): A01D A01D34/66



Family:

Publication number	Publication date	Application number	Application date
FI113448 B	20040430	FI20020002081	20021122
FI20022081 A0	20021122	FI20020002081	20021122

Priority:

FI20020002081 20021122

Probable Assignee:

KARI OLAVI

Assignee(s): (std):

KARI OLAVI

Inventor(s): (std):

KARI OLAVI

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FI113448 B	20040430	LSPB	+	published / reissued	
FI113448 B	20090531	LSLE	-MA	PATENT EXPIRED	
FI113448 B	20221122	PEXP		Calculated Patent Term Expiry	

Title: METHOD OF GENERATING A THREE-DIMENSIONAL MAP OF A **LAWN** AND ITS USE TO IMPROVE MOWING EFFICIENCY

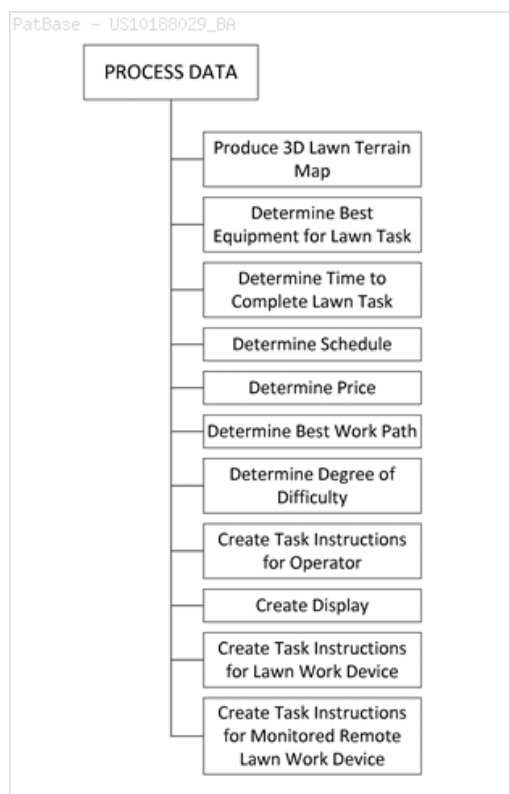
Abstract: A method is provided for generating a three-dimensional geographical map of a **lawn** using a **mower** equipped with sensors for monitoring geographic location, pitch and roll, comprising the steps of: periodically acquiring position, pitch and roll data as the **lawn** is mowed; transmitting the geographic location, pitch and roll data to a computer processor; and processing the geographic location, pitch and roll data to generate the map. The method is useful for enhancing mowing efficiency and managing the activities of a fleet of **mower** units.

Classifications:

International (IPC 8-9): A01D34/00 G01C21/00

G05D1/00 (Advanced/Invention)

CPC: A01D34/008 G05D1/0027 G05D1/0088 A01D34/006



Family:

Publication number	Publication date	Application number	Application date
US10188029 BA	20190129	US20150918455	20151020

Priority:

US20140066211P 20141020 US20150918455 20151020

Probable Assignee: HYDRO GEAR LP

Assignee(s): (std): HYDRO GEAR LP

Assignee(s): HYDRO GEAR PARTNERSHIP LTD

Inventor(s): (std): BROWN ALYN G ; DUNTEN DAVID H

Agent(s): NEAL GERBER AND EISENBERG LLP

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US10188029 BA	20190129	LSGT	+	granted / extensions (spc, cpc, pte)	
US10188029 BA	20190109	LSGT	PAT1	Patented Case	
US10188029 BA	20190109	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US10188029 BA	20351204	PEXP		Calculated Patent Term Expiry (PTA 45 days)	

Title: COMBINATION BLOWER, TRIMMER AND EDGER FOR TENDING VEGETATION

Abstract: A **lawn** care apparatus includes an impeller seated in a plenum connected to duct work for blowing, and a string trimmer head, both connected to a gasoline engine or an electric motor, either corded or battery operated, through a drive shaft for simultaneous rotation in the same direction. An adjustable handle allows the operator to move the handle into a variety of different positions that allow the operator to use the apparatus with the rotating string of the string trimmer rotating either a horizontal or vertical plane without changing his posture or position. The adjustable handle also allows adjustment of the handle so that the apparatus to be used by either right-handed or left-handed operator using the same posture.

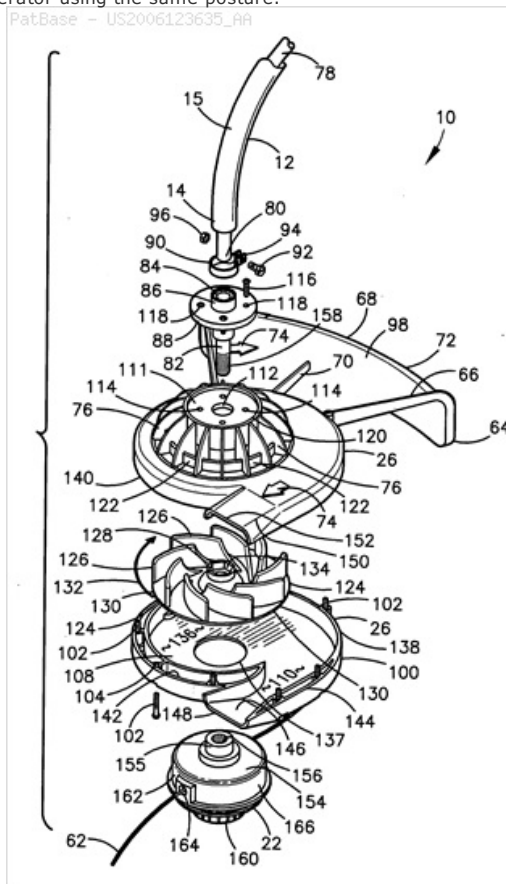
Classifications:

International (IPC 8-9): A01D34/00 A01D34/416 A01D34/62 A01D34/82 A01D9/00 B23P11/00 B26B7/00 B68B5/00 (Advanced/Invention); A01D34/00 A01D34/412 A01D34/63 A01D9/00 B23P11/00 B26B7/00 B68B5/00 (Core/Invention)

CPC: Y10T24/4002 Y10T29/49826 Y10T83/04 A01D34/4163 A01D34/902 A01D34/416

European: A01D34/416 A01D34/416B2 A01D34/90 A01D34/90A

US: 24/164 24/164P 29/428 29/428S 30/276 30/276P 30/277.4 30/277.400S 30/286 30/286P 30/288 30/288S 56/12.7 56/12.700S 83/13 83/13S



Family:

Publication number	Publication date	Application number	Application date
US2006123635 AA	20060615	US20040008037	20041209
US2008134522 AA	20080612	US20080006420	20080102
US2008141541 AA	20080619	US20080009483	20080119
US2008172844 AA	20080724	US20080079025	20080324
US2008189958 AA	20080814	US20080082529	20080411
US2008271325 AA	20081106	US20080217917	20080710
WO06062727 A2	20060615	WO2005US42039	20051121
WO06062727 A3	20070329	WO2005US42039	20051121

Priority:

US20040008037 20041209	US20080006420 20080102	US20080009483 20080119
US20080079025 20080324	US20080082529 20080411	US20080217917 20080710

Probable Assignee: HEOW INC

Assignee(s): (std): HEOW INC ; HURLEY EDWARD ; HURLEY EDWARD P ; HURLEY EDWARD PATRICK ; KOCH DRAKE

Inventor(s): (std): HURLEY EDWARD ; KOCH DRAKE ; HURLEY EDWARD PATRICK ; KOCH DRAKE L ; HURLEY EDWARD P

Agent(s): KENNETH W ILES LAW OFFICES OF KENNETH W ILES; EDWARD P HURLEY

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Legal status (INPADOC)

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Patent Date recorded Event group Code Event Details

US2006123635 AA	20060615	LSPB	+	published / reissued	
US2006123635 AA	20041209	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HEOW, INC., KANSAS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HURLEY, EDWARD P.; KOCH, DRAKE L.; REEL/FRAME:016076/0972 EFFECTIVE DATE : 20041208
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US2008189958 AA	20100730	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
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WO06062727 A3	20080910	LSNE	-122	EP: PCT APPLICATION NON- ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 05824749 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) :

Title: DISC AND KNIFE CUTTER ASSEMBLY FOR MOWING

Abstract: A cutting assembly for a mowing machine has a disk (12) and a knife member assembly. The disk (12) has a surface portion (14) of which at least a peripheral portion is planar. At least three knife members (18), which have a cutting edge (50), a beveled surface portion (48) which extends from the cutting edge (50) and a body surface portion (60) which extends from the beveled surface (48), are mounted to the disk (12) at positions so that the knife members (18) are displaced substantially equidistantly one from another and so that upon rotation of the disk (12) in a plane about a central disk axis, the cutting edge (50) of the knife members (18) extends away from the disk (12), and the body surface (60) is, with respect to the disk planar surface, inclined at an angle.

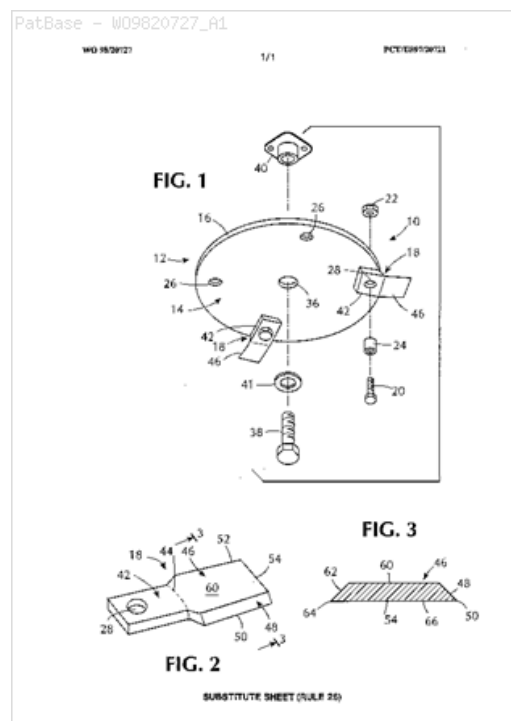
Classifications:

International (IPC 8-9): A01D34/73 (Advanced/Invention);
A01D34/73 (Core/Invention)

International (IPC 1-7): A01D34/73

CPC: A01D34/736

European: A01D34/73 A01D34/73B



Family:

Publication number	Publication date	Application number	Application date
CA2271966 AA	19990514	CA19972271966	19971114
WO9820727 A1	19980522	WO1997US20721	19971114

Priority:

US19960030970P 19961115 WO1997US20721 19971114

Probable Assignee: MEGLI ROY D

Assignee(s): (std): MEGLI ROY D

Inventor(s): (std): MEGLI ROY D

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: AT BE CA CH DE DK ES FI FR GB GR IE IT LU MC MX NL PT SE US

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CA2271966 AA	19990514	LSPB	+	published / reissued	
CA2271966 AA	19990707	LSSES	+EEER	EXAMINATION REQUEST	
CA2271966 AA	20030815	LSLE	-FZDE	DEAD	
WO9820727 A1	19980522	LSPB	+	published / reissued	
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WO9820727 A1	19990514	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2271966 COUNTRY OF REF DOCUMENT : CA

Title: DYNAMIC DRIVE AND BRAKE SYSTEM

Abstract: A dynamic drive and brake system is provided. To accelerate the **mower** in a forward direction, the operator depresses the acceleration pedal, overcoming the biasing force of the acceleration spring. This causes the double idler pulley system to pivot from an inoperative or de-clutched condition to an operative condition. The farther the accelerator pedal is depressed, the more the double idler pulley system pivots and, correspondingly, the more tension is applied to the first belt. The increased tension in the first belt causes the middle pulley member to move in a downward direction and therefore decreases the diameter of the first belt about the double pulley shaft. The movement of the middle pulley member simultaneously increases the diameter of the second belt about the double pulley shaft. This increases the tension in the second belt which tension is absorbed by the idler spring that permits the idler pulley to pivot in a clockwise direction as seen in FIGS. 2-3. The particular diameters of the first and second belts about the double pulley provide increased rotational speed to the transmission input pulley. This increased rotational speed is then transferred to the transmission and on to the back drive axle and back wheels for corresponding acceleration of the **mower**.

Classifications:

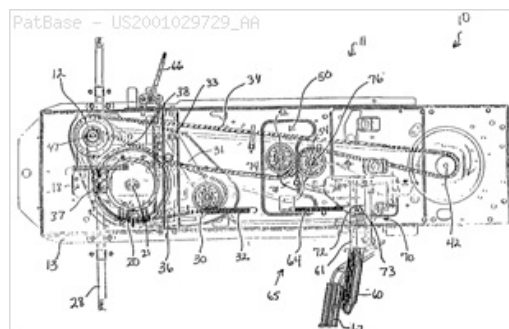
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International (IPC 1-7): A01D34/64 A01D34/68 A01D34/76 A01D69/00 A01D69/08 B60K31/00 B60K41/26 B65G23/44 F16H7/12

CPC: Y10S180/90 A01D34/6806 A01D34/64 A01D2101/00 B60Y2200/223 Y10T74/20528 Y10T74/2063

European: A01D34/64 A01D34/68B K01D101/00 L60Y200/223

US: 180/170 180/315 180/336 180/900 56/10.8 56/11.6 56/11.600P 74/512 74/526



Family:

Publication number	Publication date	Application number	Application date
AU199943354 A1	19991220	AU19990043354	19990604
AU199943355 A1	19991220	AU19990043355	19990604
AU199944235 A1	19991220	AU19990044235	19990604
AU760661 B2	20030522	AU19990044235	19990604
BRPI9910940 A	20011023	BR1999PI10940	19990604
CN1307445 A	20010808	CN1998007974	19990604
DE69903429 D1	20021114	DE19996003429	19990604
DE69903429 D1	20021114	DE19996003429T	19990604
DE69903429 T2	20030612	DE19996003429T	19990604
DE69913691 D1	20040129	DE19996013691	19990604
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DE69913691 T2	20041007	DE19996013691T	19990604
EP1083783 A1	20010321	EP19990927292	19990604
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EP1094698 A1	20010502	EP19990939822	19990604
EP1094698 B1	20021009	EP19990939822	19990604
EP1094699 A1	20010502	EP19990955192	19990604
EP1472927 A2	20041103	EP20040009674	19990604
EP1472927 A3	20050914	EP20040009674	19990604
US2001029729 AA	20011018	US20010825680	20010404
US6141947 A	20001107	US19990326060	19990604
US6202779 BA	20010320	US19990326242	19990604
US6220006 BA	20010424	US20000626816	20000727
US6484482 BB	20021126	US20010825680	20010404
WO9962320 A1	19991209	WO1999US12678	19990604
WO9962322 A1	19991209	WO1999US12676	19990604
WO9962323 A1	19991209	WO1999US12679	19990604

Priority:

US19980088315P 19980605	EP19990955192 19990604	US19990326060 19990604
US19990326242 19990604	WO1999US12676 19990604	WO1999US12678 19990604
WO1999US12679 19990604	US20000626816 20000727	US20010825680 20010404

Probable Assignee: MTD PRODUCTS INC

Assignee(s): (std): BORLING AL ; KRUEGER ERIK ; MTD PRODUCTS INC ; MTO PRODUCTS INC ; MUSAT CARL

Assignee(s): MTD PRODUCTS INC CLEVELAND ; MTD PRODUCTS INC VALLEY CITY

Inventor(s): (std): AL BORLING ; BORLING AL ; CARL MUSAT ; ERIK KRUEGER ; KRUEGER ERIK ; MUSAT CARL

Agent(s): PATENT ATTORNEY SERVICES

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZA ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
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AU199944235 A1	19991220	LSPB	+	published / reissued	
AU760661 B2	20030522	LSGT	+	granted / extensions (spc, cpc, pte)	
AU760661 B2	20030918	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU760661 B2	20190604	PEXP		Calculated Patent Term Expiry	
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BRPI9910940 A	20060328	LSFE	-B08F	APPLICATION FEES: DISMISSAL - ARTICLE 86 OF INDUSTRIAL PROPERTY LAW	TEXT : REFERENTE A 5A , 6A E 7A ANUIDADES.
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CN1307445 A	20010808	LSPB	+	published / reissued	
CN1307445 A	20010808	LSPB	+C06	PUBLICATION	
CN1307445 A	20050713	LSDW	-C02	DEEMED WITHDRAWAL OF PATENT APPLICATION AFTER PUBLICATION (PATENT LAW 2001)	
DE69903429 D1	20031106	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
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EP1083783 A1	20010321	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20001228
EP1083783 A1	20021218	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : MTD PRODUCTS, INC.
EP1083783 B1	20031217	LSGT	+	granted / extensions (spc, cpc, pte)	

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EP1083783 B1	20090630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080604
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EP1472927 A3	20070321	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : B65G 23/44 20060101ALI20070209BHEP
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EP1472927 A3	20070321	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : F16H 7/12 20060101ALI20070209BHEP
EP1472927 A3	20080625	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20080103
US2001029729 AA	20011018	LSPB	+	published / reissued	
US2001029729 AA	20021107	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6141947 A	20001107	LSGT	+	granted / extensions (spc, cpc, pte)	
US6141947 A	20010315	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MTD PRODUCTS INC., OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR: BORLING, AL; REEL/FRA: 011643/0832 EFFECTIVE DATE : 20010221
US6141947 A	20031111	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6141947 A	20081107	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6141947 A	20081208	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6141947 A	20081208	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6141947 A	20081230	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20081107

US6141947 A	20190604	PEXP		Calculated Patent Term Expiry	
US6202779 BA	20010320	LSGT	+	granted / extensions (spc, cpc, pte)	
US6202779 BA	20010521	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MTD PRODUCTS INC., OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MUSAT, CARL; REEL/FRAME:011821/0715 EFFECTIVE DATE : 20010510
US6202779 BA	20040719	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6202779 BA	20090320	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
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US6202779 BA	20090420	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6202779 BA	20090512	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20090320
US6202779 BA	20190604	PEXP		Calculated Patent Term Expiry	
US6220006 BA	20010424	LSGT	+	granted / extensions (spc, cpc, pte)	
US6220006 BA	20010405	LSGT	PAT1	Patented Case	
US6220006 BA	20010405	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6220006 BA	20040809	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6220006 BA	20080915	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6220006 BA	20121024	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
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US6484482 BB	20021126	LSGT	+	granted / extensions (spc, cpc, pte)	
US6484482 BB	20021107	LSGT	PAT1	Patented Case	
US6484482 BB	20060410	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6484482 BB	20100429	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6484482 BB	20140526	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6484482 BB	20210404	PEXP		Calculated Patent Term Expiry	
WO9962320 A1	19991209	LSPB	+	published / reissued	
WO9962320 A1	20001223	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1999939822 COUNTRY OF REF DOCUMENT : EP
WO9962320 A1	20010405	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9962320 A1	20010502	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999939822 COUNTRY OF REF DOCUMENT : EP
WO9962320 A1	20021009	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999939822 COUNTRY OF REF DOCUMENT : EP
WO9962322 A1	19991209	LSPB	+	published / reissued	

WO9962322 A1	19990604	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 99807974.X COUNTRY OF REF DOCUMENT : CN
WO9962322 A1	20001227	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1999927292 COUNTRY OF REF DOCUMENT : EP
WO9962322 A1	20010104	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 44235/99 COUNTRY OF REF DOCUMENT : AU
WO9962322 A1	20010321	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999927292 COUNTRY OF REF DOCUMENT : EP
WO9962322 A1	20010405	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9962322 A1	20030904	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 44235/99 COUNTRY OF REF DOCUMENT : AU
WO9962322 A1	20031217	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999927292 COUNTRY OF REF DOCUMENT : EP
WO9962323 A1	19991209	LSPB	+	published / reissued	
WO9962323 A1	20001227	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1999955192 COUNTRY OF REF DOCUMENT : EP
WO9962323 A1	20010405	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9962323 A1	20010502	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999955192 COUNTRY OF REF DOCUMENT : EP
WO9962323 A1	20040428	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999955192 COUNTRY OF REF DOCUMENT : EP

Title: SELF-PROPELLED **LAWN MOWER**

Abstract: Provided is a self-propelled **lawn mower** allowing the housing to be kept compact. This self-propelled **lawn mower** has a main **lawn mower** body (200) propelled due to torque from a running motor (230) being transmitted to a left drive wheel (283) and a right drive wheel, the self-propelled **lawn mower** being provided with a housing (205) provided with the running motor (230), a rotating **blade** motor (240) provided below the housing (205), and a rotating **blade** (244) for cutting grass by rotating under power from the rotating **blade** motor (240). In a bottom view of the main **lawn mower** body (200), at least a portion of where the running motor (230) is disposed overlaps at least a portion of where the rotating **blade** motor (240) is disposed.

Classifications:

International (IPC 8-9): A01D34/00 A01D34/64 A01D34/68 A01D34/69 A01D34/76 A01D34/78 B60K1/02 B60L5/20 (Advanced/Invention)

CPC: A01D34/008 A01D34/74 A01D34/78 A01D34/81 A01D34/84 Y02T10/7275 B60L2200/40 B60L2220/42 B60L2240/421 B60L2250/16 Y02T10/646 Y02T10/7005 Y02T10/7044 Y02T10/705 B60L50/50 B60L58/12

PatBase - WO15040987_A1

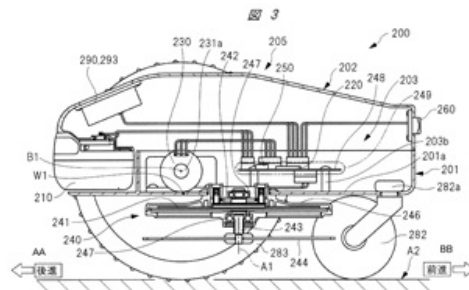


FIG. 3:
AA Reverse
BB Forward

Family:

Publication number	Publication date	Application number	Application date
■ CN205922034 U	20170208	CN201490001067U	20140813
■ DE212014000186 U1	20160602	DE201421000186U	20140813
■ JP2016195544 A2	20161124	JP20130194688	20130919
■ JP2016195545 A2	20161124	JP20130202191	20130927
■ JP2016195546 A2	20161124	JP20130204994	20130930
■ WO15040987 A1	20150326	WO2014JP71401	20140813

Priority:

JP20130194688 20130919 JP20130202191 20130927 JP20130204994 20130930
WO2014JP71401 20140813

Probable Assignee: HITACHI KOKI KK

Assignee(s): (std): HITACHI KOKI KK

Assignee(s): HITACHI KOKI CO ; HITACHI KOKI CO LTD

Inventor(s): (std): HARADA MUTSUO ; ITO TATSUYA ; NISHIKAWA TOMOMASA ; TAKANO NOBUHIRO ; YAHAGI AKIHISA ; YAHAGI AKIYUKI ; YAHAGI AKINO ; SAIKA TOMOMASA ; HARADA MUKENKO

Agent(s): TSUTSUI YAMATO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN205922034 U	20170208	LSGT	+	granted / extensions (spc, cpc, pte)	
CN205922034 U	20170208	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN205922034 U	20180824	LSAS	CP01	CHANGE IN THE NAME OR TITLE OF A PATENT HOLDER	
CN205922034 U	20240813	PEXP		Calculated Patent Term Expiry	
DE212014000186 U1	20160602	LSGT	+	granted / extensions (spc, cpc, pte)	
DE212014000186 U1	20160602	LSGT	R207	UTILITY MODEL SPECIFICATION	
DE212014000186 U1	20170816	LSGT	+R150	TERM OF PROTECTION EXTENDED TO 6 YEARS	

DE212014000186 U1	20180717	LSAS	R081	CHANGE OF APPLICANT/PATENTEE	PARTYTYPE : OWNER OWNER : KOKI HOLDINGS CO., LTD., JP OLDPARTY : FORMER OWNER: HITACHI KOKI CO., LTD., TOKYO, JP
DE212014000186 U1	20240813	PEXP		Calculated Patent Term Expiry	
JP2016195544 A2	20161124	LSPB	+	published / reissued	
JP2016195545 A2	20161124	LSPB	+	published / reissued	
JP2016195546 A2	20161124	LSPB	+	published / reissued	
WO15040987 A1	20150326	LSPB	+	published / reissued	
WO15040987 A1	20160321	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 212014000186 COUNTRY OF REF DOCUMENT : DE
WO15040987 A1	20160321	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2120140001862 COUNTRY OF REF DOCUMENT : DE
WO15040987 A1	20161012	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 14846428 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A1 DESIGNATED STATE(S) :
WO15040987 A1	20161018	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : JP

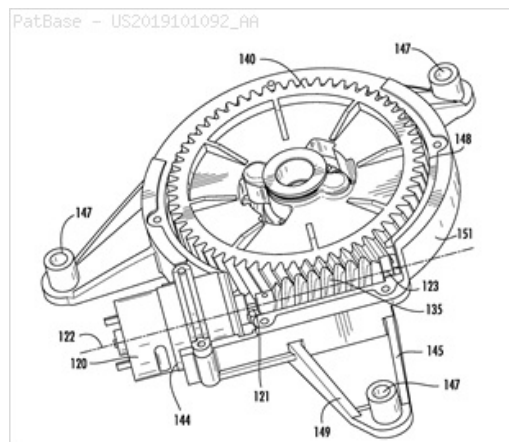
Title: INTERNAL COMBUSTION ENGINE WITH ELECTRIC STARTING SYSTEM

Abstract: An internal combustion engine includes an engine block, an electric motor, a worm coupled to and rotated by the electric motor, a worm gear coupled to and configured to be rotated by the worm, a crankshaft configured to rotate about a crankshaft axis, a flywheel including a flywheel cup having flywheel protrusions, a clutch driven by the worm gear and configured to engage the one or more flywheel protrusions such that the crankshaft is rotated, and an energy storage device electrically coupled to the electric motor. The clutch is configured to disengage from the flywheel protrusions when the rotational speed of the crankshaft exceeds the rotational speed of the worm gear. When the electric motor is activated, the electric motor rotates the worm rotating the worm gear, which causes the clutch to engage the flywheel protrusions, transferring worm gear rotation to the flywheel and the crankshaft to rotate the engine for starting.

Classifications:

International (IPC 8-9): A01D101/00 A01D34/78 A01D34/82 F02N11/00 F02N15/00 F02N15/02 F02N5/00 (Advanced/Invention); A01D101/00 (Advanced/Non-invention)

CPC: F02N5/00 F02N15/023 F02N15/006 A01D34/6818 F02N11/00 F02N15/00



Family:

Publication number	Publication date	Application number	Application date
US2019101092 AA	20190404	US20170097044	20170427
WO17189912 A1	20171102	WO2017US29946	20170427

Priority:

US20160328985P 20160428 US20170097044 20170427 WO2017US29946 20170427

Probable Assignee: BRIGGS AND STRATTON CORP

Assignee(s): (std): BRIGGS AND STRATTON CORP

Inventor(s): (std): BUSSE JAMES MICHAEL ; MEYER MARK ; PROCKNOW DAVID W

Agent(s): GUNDERSEN JEFFREY S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
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US2019101092 AA	20190515	LSSES	NFA1	Non Final Action Mailed	
WO17189912 A1	20171102	LSPB	+	published / reissued	
WO17189912 A1	20181030	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO17189912 A1	20190522	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 17790468 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A1 DESIGNATED STATE(S) :

Title: Cutting unit cover

Abstract: A plastic cover for a rotary deck. A preferred cover (54a) is connected to a wing deck (28a) by magnetic latches and mechanical securing means. The magnetic latches preferably include magnets (69) connected to the deck and magnetic plates (66) fixed to the underside of the deck cover (54a). The mechanical securing means preferably includes a pair of pins (70) extending upwardly from the deck proximate magnets (69), wherein the deck cover (54a) forms a pair of apertures (72) for receiving pins (70). Pins (70) and apertures (72) prevent horizontal or shearing motion of deck cover (54a) relative to deck (28a), whereas the magnetic latches prevent vertical movement of cover (54a) relative to deck (28a). Hooks (64) or a flange (73) can be used to secure one of the edges of cover (54a), as well.

Classifications:

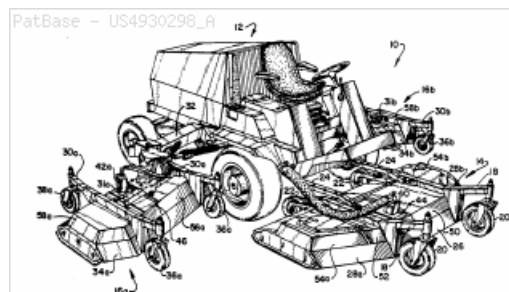
International (IPC 8-9): A01D34/81 (Advanced/Invention)

International (IPC 1-7): A01D67/00

CPC: A01D34/81 A01D2101/00

European: A01D34/81 K01D101/00

US: 56/17.4 56/320.1



Family:

Publication number	Publication date	Application number	Application date
US4930298 A	19900605	US19890324120	19890316

Priority:

US19890324120 19890316

Probable Assignee: TORO CO

Assignee(s): (std): TORO CO

Assignee(s): TORO CO A DE CORP ; THE TORO COMPANY

Inventor(s): (std): ZENNER MICHAEL N

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US4930298 A	19900605	LSGT	+	granted / extensions (spc, cpc, pte)	
US4930298 A	19890316	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TORO COMPANY, THE, A DE CORP., MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNOR:ZENNER, MICHAEL N.; REEL/FRAME:005055/0148 EFFECTIVE DATE : 19890313
US4930298 A	19931117	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US4930298 A	19971120	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US4930298 A	20020605	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4930298 A	20020702	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4930298 A	20020702	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US4930298 A	20020730	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20020605
US4930298 A	20090316	PEXP		Calculated Patent Term Expiry	

Title: MULCHING DEVICE FOR PROCESSING PLANT STUMPS ON A FIELD WITH ADJUSTABLE POSITION AND/OR GROUND PRESSURE FORCE APPAREIL DE PAILLAGE DESTINE AU TRAITEMENT DE SOUCHES DEBOUT DANS UN CHAMP AYANT UNE POSITION ET/OU FORCE D'APPUI AU SOL REGLABLE

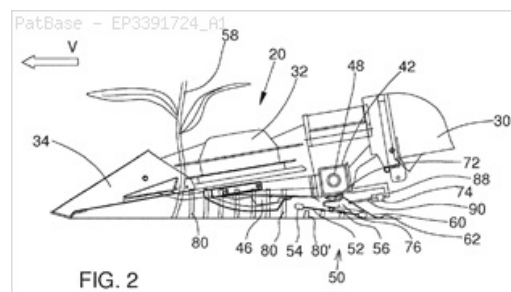
Abstract: Source: EP3391724A1 [DE] Ein Mulchgeraet (50) zur Anbringung an einem Erntevorsatz (20) ist mit einem Bearbeitungswerkzeug (54) zur Zerkleinerung von Pflanzenstumpfen (80), einer positionsverstellbar am Erntevorsatz (20) angebrachten Halterung des Bearbeitungswerkzeugs (54) und Mitteln zur Kontrolle der Position und/oder Bodenandruckkraft der Halterung waehrend des Erntebetriebs versehen, welche einen fremdkraftbetaetigten Aktor (74) umfassen, der mit einer Steuerung (92) verbunden ist.

Classifications:

International (IPC 8-9): A01B39/08 A01D34/835

A01D41/12 (Advanced/Invention)

CPC: A01D34/8355 A01B39/085 A01D43/081 A01D45/021 A01D41/12



Family:

Publication number	Publication date	Application number	Application date
■ CN108718661 A	20181102	CN201810218168	20180316
■ DE102017222587 A1	20181025	DE201710222587	20171213
■ EP3391724 A1	20181024	EP20180165890	20180405

Priority:

DE201710003739 20170419 DE201710222587 20171213

Probable Assignee: DEERE AND CO

Assignee(s): (std): DEERE AND CO

Inventor(s): (std): WEITENBERG CLEMENS ; EFFSING JUERGEN ; AWATER KLAUS ; SCHLAMANN MICHAEL ; MESSING MARCO ; HUNGERHOFF BERND CLINT ; EFFSING JURGEN

Agent(s): HOLST SOENKE

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CN108718661 A	20181102	LSPB	+	published / reissued	
CN108718661 A	20181102	LSPB	PB01	PUBLICATION	
DE102017222587 A1	20181025	LSPB	+	published / reissued	
EP3391724 A1	20181024	LSPB	+	published / reissued	

Title: Apparatus for the comminution of garden wastes by means of a lawnmower

Abstract: The apparatus for the comminution of garden wastes consists of a frame, to which there can be connected a normal (unadapted) lawnmower which has a revolving **blade** whose axis is vertical during mowing. A channel for the feed of the material to be chopped is connected to the frame, and faces from below onto the region of the cutting edge of the **blade**.

Classifications:

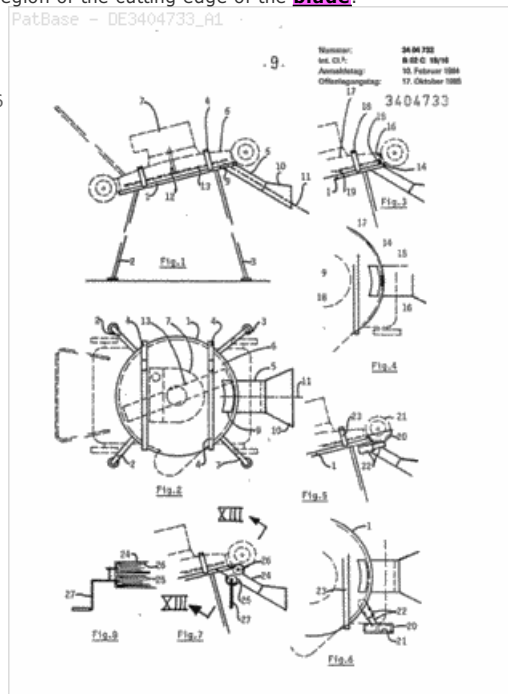
International (IPC 8-9): A01D42/00 B02C18/06

B02C18/22 (Advanced/Invention)

International (IPC 1-7): A01D43/08 B02C18/16 B02C18/22

CPC: A01D42/005 A01D2101/00 B02C18/06 B02C18/2291 B02C2201/066

European: A01D42/00M B02C18/06 B02C18/22F16 K01D101/00
L02C201/06G



Family:

Publication number	Publication date	Application number	Application date
DE3404733 A1	19851017	DE19843404733	19840210

Priority:

DE19843404733 19840210

Probable Assignee:

MICHEL HERMANN

Assignee(s): (std):

MICHEL HERMANN

Inventor(s): (std):

MICHEL HERMANN

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE3404733 A1	19851017	LSPB	+	published / reissued	
DE3404733 A1	19870219	LSLE	-8139	DISPOSAL/NON-PAYMENT OF THE ANNUAL FEE	

Title: VENTED ROTARY **LAWN MOWER**

Abstract: A vented rotary **lawn mower** having wheels for ground supporting the **mower** and having a handle for guiding the **mower**. The **mower** has a deck or housing which encloses a cutter **blade**, and the deck or housing has a plurality of air vents which permit air to enter the top of the deck or housing and to pass downwardly to the location of the cutter **blade**, and thereby introduce air into the housing and assist in the flow of air through the housing and out the exhaust. The **mower** is shown to be power propelled, and it has a drive which is under the control of the operator for driving the ground wheels. Also, the **mower** handle is pivoted on the **mower** housing in a manner and at a point to effect easy and efficient guiding of the **mower** through the handle.

Classifications:

International (IPC 8-9): A01D43/077 (Advanced/Invention);

A01D34/63 (Advanced/Non-invention);

A01D43/00 (Core/Invention);

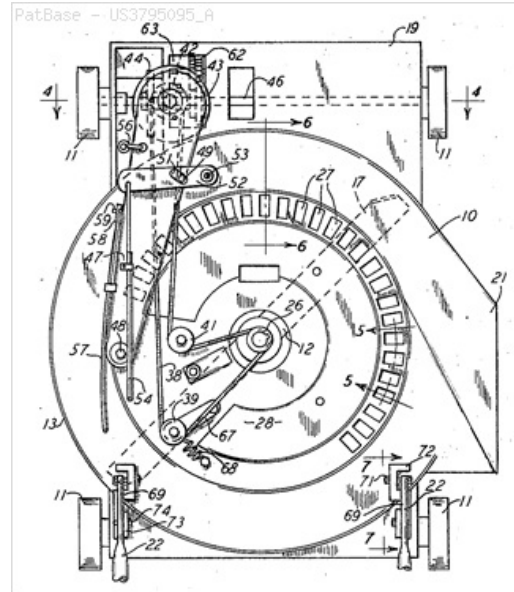
A01D34/63 (Core/Non-invention)

International (IPC 1-7): A01D35/26 A01D35/262 A01D55/18

CPC: A01D34/63 A01D43/077 A01D2101/00

European: A01D43/077 K01D101/00 K01D34/63

US: 56/320.2



Family:

Publication number	Publication date	Application number	Application date
CA976367 A1	19751021	CA19730186109	19731119
DE2400227 A1	19740815	DE19742400227	19740103
GB1420249 A	19760107	GB19730056235	19731204
US3795095 A	19740305	US19730324298	19730117

Priority:

US19730324298 19730117

Probable Assignee: JACOBSEN MFG CO

Assignee(s): (std): JACOBSEN MFG CO

Assignee(s): JACOBSEN MFG CO N D GES D STAATES DELAW ; JACOBSEN MFG CO US ; KAUFMAN VERNON R ; ERICKSON DONALD G ; JACOBSEN MANUFACTURING CO N D GES D STAATES DELAWARE RACINE WIS V ST A ; JACOBSEN MANUFACTURING COMPANY

Inventor(s): (std): ERICKSON D ; ERICKSON DONALD G ; KAUFMAN V ; KAUFMAN VERNON R

Inventor(s): KAUFMAN V US ; ERICKSON D US

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE2400227 A1	19740815	LSPB	+	published / reissued	
GB1420249 A	19760107	LSGT	+	granted / extensions (spc, cpc, pte)	
GB1420249 A	19760519	LSGT	+PS	PATENT SEALED	
GB1420249 A	19780712	LSLE	-PCNP	PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	
GB1420249 A	19931204	PEXP		Calculated Patent Term Expiry	
US3795095 A	19740305	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: HILFSEINRICHTUNG AN MAEHMASCHINEN ZUR AUFNAHME VON KURZEM MAEHGUT. AUXILIARY DEVICE FOR RECEIVING AN **mowers** RECENTLY crop. (Machine translation)

Abstract: Source: CH252309A [DE] (Claim 1) 1. Hilfsvorrichtung nach Patentanspruch, dadurch gekennzeichnet, dass die Gleitschienen an der Unterseite des Behälterbodens einerseits zur Bildung eines zwischen ihnen und dem Behälterboden liegenden Zwischenraumes zum Zwecke der Aufnahme des Rueckens des Messerbalkens abgesetzt sind.

Machine translation: (claim 1) 1 Auxiliary device according to claim, characterized in that the slide rails on the underside of Behälterbodens one end to form a lying between them and the Behälterboden intermediate space for the purpose of receiving the back of the cutter bar are discontinued.

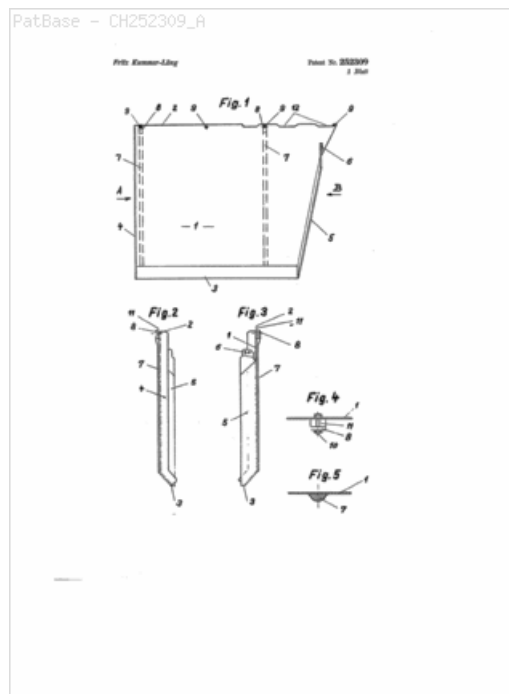
Classifications:

International (IPC 8-9): A01D57/18 (Advanced/Invention);
A01D57/00 (Core/Invention)

International (IPC 1-7): A01D57/18

CPC: A01D57/18

European: A01D57/18



Family:

Publication number	Publication date	Application number	Application date
CH252309 A	19471231		19461227

Priority:

19461227

Probable Assignee:

KUMMER LAENG FRITZ

Assignee(s): (std):

KUMMER LAENG FRITZ

Inventor(s): (std):

FRITZ KUMMER LAENG

Inventor(s):

KUMMER LAENG FRITZ

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
CH252309 A	19471231	LSGT	+	granted / extensions (spc, cpc, pte)	
CH252309 A	19661227	PEXP		Calculated Patent Term Expiry	

Title: POWER **HARVESTING** SYSTEM FOR BATTERY OPERATED APPLIANCES

Abstract: A system of **harvesting** electrical power for use within a battery operated device includes a battery and a motor driven by the battery to impart rotational energy to a first shaft. The first shaft drives a multi-phase generator and produces output voltage signals with respectively untimed phase responses. A rectification circuit combines the voltage signals into a combined DC voltage output, and an inverter connected to the rectification circuit converts the DC voltage output to an AC voltage output. A battery charger connected to the inverter receives the AC voltage output for charging the battery. The **harvested** power includes power from voltage sources with unregulated, or untimed, phase responses.

Classifications:

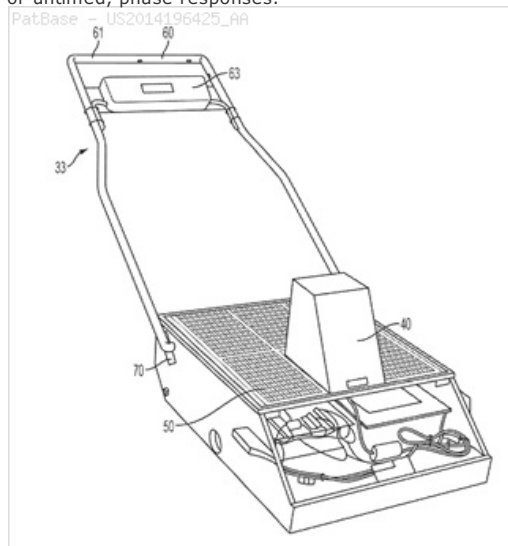
International (IPC 8-9): A01D34/68 A01D34/78 A01D43/00

H02J7/00 (Advanced/Invention);

H02J7/35 (Advanced/Non-invention)

CPC: A01D34/78 H02J7/0068 H02J7/0055 H02J7/35 H02J2007/0059
Y02P60/12

US: 1/1 290/50 56/16.7



Family:

Publication number	Publication date	Application number	Application date
■ US2014196425 AA	20140717	US20130054809	20131015
■ US9083195 BB	20150714	US20130054809	20131015

Priority:

US20120713692P 20121015 US20130789677P 20130315 US20130054809 20131015

Probable Assignee:

LEWIS RAYMOND J

Assignee(s): (std):

LEWIS RAYMOND J

Inventor(s): (std):

LEWIS RAYMOND J

Agent(s):

DORITY AND MANNING PA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
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US2014196425 AA	20150624	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9083195 BB	20150714	LSGT	+	granted / extensions (spc, cpc, pte)	
US9083195 BB	20150624	LSGT	PAT1	Patented Case	
US9083195 BB	20181214	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US9083195 BB	20340307	PEXP		Calculated Patent Term Expiry (PTA 143 days)	

Title: DISC AND KNIFE CUTTER ASSEMBLY FOR MOWING

Abstract: A cutting assembly for a mowing machine has a disk (12) and a knife member assembly. The disk (12) has a surface portion (14) of which at least a peripheral portion is planar. At least three knife members (18), which have a cutting edge (50), a beveled surface portion (48) which extends from the cutting edge (50) and a body surface portion (60) which extends from the beveled surface (48), are mounted to the disk (12) at positions so that the knife members (18) are displaced substantially equidistantly one from another and so that upon rotation of the disk (12) in a plane about a central disk axis, the cutting edge (50) of the knife members (18) extends away from the disk (12), and the body surface (60) is, with respect to the disk planar surface, inclined at an angle.

Classifications:

International (IPC 8-9): A01D34/73 (Advanced/Invention);

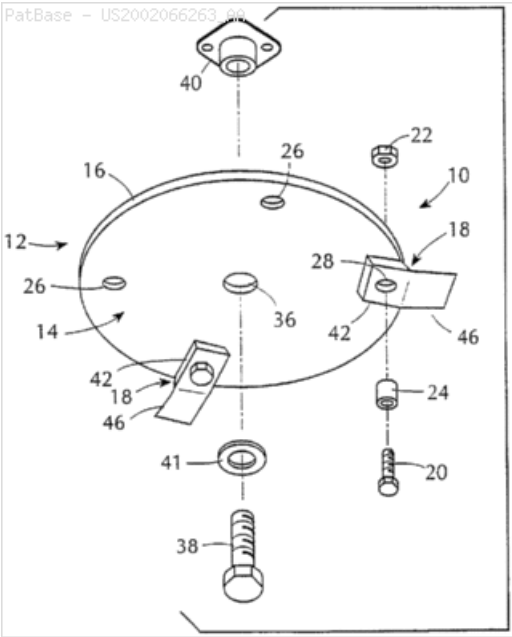
A01D34/73 (Core/Invention)

International (IPC 1-7): A01D34/73

CPC: A01D34/736

European: A01D34/73 A01D34/73B

US: 56/295 56/295P



Family:

Publication number	Publication date	Application number	Application date
US2002066263 AA	20020606	US19990308204	19990513

Priority:

US19990308204 19990513

Probable Assignee:

MEGLI ROY D

Assignee(s): (std):

MEGLI ROY D

Inventor(s): (std):

MEGLI ROY D

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US2002066263 AA	20020606	LSPB	+	published / reissued	
US2002066263 AA	20020807	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
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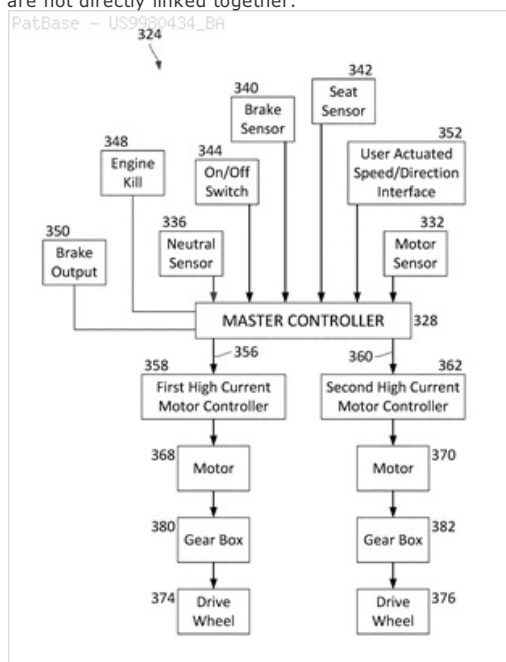
Title: NETWORK FOR PLACING A PLURALITY OF LAWNMOWER COMPONENTS IN OPERATIVE COMMUNICATION

Abstract: A network system is disclosed for use on a utility vehicle to connect multiple electronic components, such as input devices such as joysticks or similar mechanisms, motor controllers, sensors, switches, gauges and the like. The network system provides flexibility in the manner and order in which each of the components are connected while permitting each component to communicate with certain other components even when such components are not directly linked together.

Classifications:

International (IPC 8-9): A01D34/00 A01D69/02 B60R16/023 G06F13/00 G06F13/38 G06F13/40 (Advanced/Invention); A01D101/00 (Advanced/Non-invention)

CPC: B60R16/0231 B60Y2200/221 A01D69/025 G06F13/38 A01D34/006 A01D69/02 A01D2101/00 B60K17/00 A01D34/66 B60K7/0007 B60K7/0015 B60K17/14 B60K17/356 B60Y2200/223 B60Y2400/30



Family:

Publication number	Publication date	Application number	Application date
US9980434 BA	20180529	US20160056839	20160229
US10058031 BA	20180828	US20170640300	20170630

Priority:

US20150126569P 20150228 US20160056839 20160229 US20160357758P 20160701
 US20160360109P 20160708 US20170640300 20170630

Probable Assignee: HYDRO GEAR LP

Assignee(s): (std): HYDRO GEAR LP

Assignee(s): HYDRO GEAR PARTNERSHIP LTD

Inventor(s): (std): BROWN ALYN G ; MCCOY K MIKE ; MOEBS GREGORY BARTON ; ARENDS GREGORY E ; HOYDA DAMON J ; PROBST JESSE L ; HAMILTON JOSEPH

Agent(s): NEAL GERBER AND EISENBERG LLP

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US10058031 BA	20180828	LSGT	+	granted / extensions (spc, cpc, pte)	
US10058031 BA	20180808	LSGT	PAT1	Patented Case	
US10058031 BA	20180808	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US10058031 BA	20370630	PEXP		Calculated Patent Term Expiry	
US9980434 BA	20180529	LSGT	+	granted / extensions (spc, cpc, pte)	
US9980434 BA	20160517	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HYDRO-GEAR LIMITED PARTNERSHIP, ILLINOIS OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:BROWN, ALYN G.; REEL/FRAME:038622/0234

US9980434 BA	20180509	LSGT	PAT1	Patented Case	
US9980434 BA	20180509	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9980434 BA	20360527	PEXP		Calculated Patent Term Expiry (PTA 88 days)	

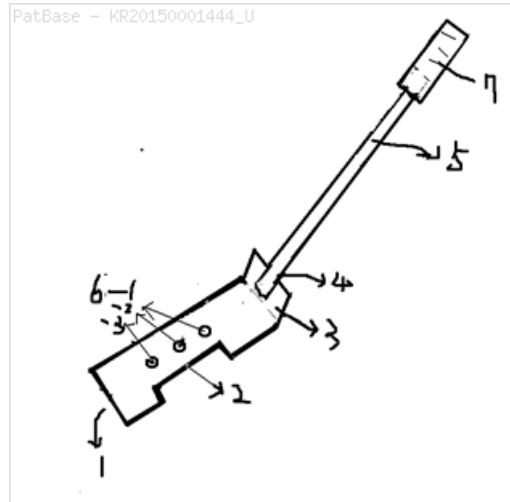
Title: A GOLF-CLUB STYLE SCYTHE

Abstract: Source: KR20150001444U **Machine translation:** The subject innovation relates to a hand-operated scythe or **lawn mower**, such as the field of grass shears. Beolcho and gardens of oxygen, lotta still an example of using a scythe in to remove such weeds grow and nongro sickle geotyeioseo focused on the **harvest** of grain, jjuguri sit this way and then holding a full general, weed removal, The danger is not easy even for a beginner, especially in this job tired and inefficient. This devise is a shape similar to the iron golf club, and the goal is to make you stand just by wielding mow lightly with one hand, as its solution, the **blade** is to use something like a small, lightweight and disposable **blade** or scraper Carter, the Create a **blade** mounting bracket for mounting the **blade**, place the **blade** and through the three screw holes on the bracket, and tighten it with the screws and nuts and bolts fixing the upper **blade** and the rest, who can stand working with an oblique angle to the handle shaft Weigh in place long length [a representative], right hand holding the handle with one hand, if the swing beat down toward the weeds in the land as a golf swing from right to left, by the **blade** of a circular movement speed yeriseong and the weeds The truncated to go, and the pool is as tough and long grass, swinging toward the ground by using the ground as aphids, Thomas, and be beyond the ground, and to ensure pecking cutters cut to form the vegetables in the kitchen with a knife. Such as sickle **blades** or grass shears, often becomes dull, because some drawbacks that need to transfer them to hone in, in the present designed in circulation in even better discount compared to polishing, using a high-strength, such as disposable **blade** scraper **blade** If the Saints are convenient **tools** to manage busy on the job.

Classifications:

International (IPC 8-9): A01D1/00 A01D1/02 (Advanced/Invention)

CPC: A01D1/02



Family:

Publication number	Publication date	Application number	Application date
KR20150001444 U	20150415	KR20130008211U	20131005

Priority:

KR20130008211U 20131005

Probable Assignee:

BAKSANGSEON

Assignee(s):

BAKSANGSEON

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Patent	Date recorded	Event group	Code	Event	Details
KR20150001444 U	20150415	LSPB	+	published / reissued	
KR20150001444 U	20131005	LSSES	A201	REQUEST FOR EXAMINATION	
KR20150001444 U	20141222	LSSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20150001444 U	20150623	LSRV	-E601	DECISION TO REFUSE APPLICATION	

Title: STARTER SYSTEM FOR AN ENGINE

Abstract: A **lawn mower** includes an internal combustion engine, an electric motor configured to start the internal combustion engine, and a **blade** driven by the internal combustion engine. The **lawn mower** further includes an assembly for stopping at least one of the **blade** and the internal combustion engine. The assembly includes a brake mechanism, a release mechanism, a linkage between the brake mechanism and the release mechanism. The assembly further includes an interlock configured to prevent the release mechanism from releasing the brake mechanism, and an interface allowing an operator to release the interlock. The electric motor is coupled to the assembly such that release of the brake mechanism automatically engages the electric motor to start the internal combustion engine.

Classifications:

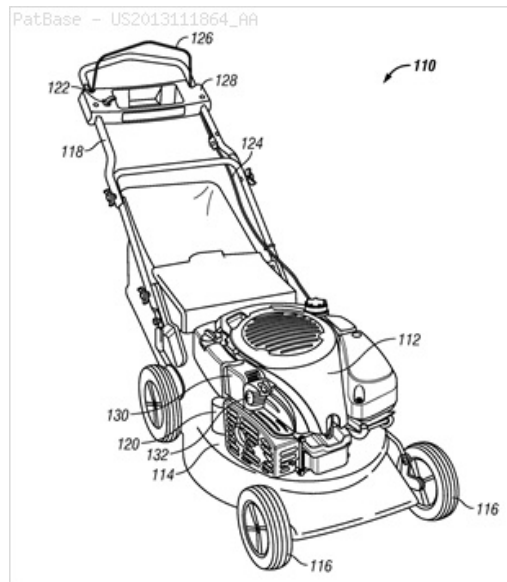
International (IPC 8-9): A01D101/00 A01D34/00 A01D34/30 A01D34/68 A01D34/76 A01D34/78 A01D34/82 A01D69/00 B08B3/02 B60T7/04 B60T7/14 F02B63/02 F02M35/10 F02N11/00 F02N11/08 F02N11/10 F02N11/12 F02N11/14 F02N15/00 F02P9/00 F04B17/05 F04B17/06 F04B49/02 H01M10/02 H01M10/052 H01M10/0525

H01M2/10 (Advanced/Invention);

A01D101/00 A01D34/67 B60T7/12 F02N11/08 F02N11/10 F02N11/14 F02N15/00 F04B49/02 (Advanced/Non-invention)

CPC: A01D34/006 F02D2400/06 A01D34/008 F02M35/10013 F02M35/10249 F02B63/02 A01D34/828 A01D34/76 A01D34/824 F02N11/00 F04B17/05 F04B49/02 A01D34/78 B60T7/042 B60T7/14 F02P9/005 F02N11/0851 F02N2200/022 F04B17/06 H01M2/1016 H01M10/052 H01M2220/20 H01M2220/30 H01M10/0525 A01D34/001 F02N11/0822 F02N11/0848 F02N11/14 F02N11/12 H01M10/02 B08B3/026 A01D34/67 H02J7/0027 H02J7/0045 B60T7/12 F02N11/0862 Y02E60/122 F02N11/08 F02N11/087 H01M2/1072 A01D34/6818 F02N2200/02 F02N2300/2011 F02N11/0803 F02N11/101 F02N15/003 F02N15/006 Y02P60/142

US: 1/1 123/179.1 123/179.25 123/179.26 123/179.28 123/179.3 123/179.4 290/38R 417/10 56/10.5 56/10.8 56/11.3

**Family:**

Publication number	Publication date	Application number	Application date
AU2013249650 AA	20131024	AU20130249650	20130408
AU2013249650 BB	20171116	AU20130249650	20130408
AU2014281335 AA	20160128	AU20140281335	20140619
AU2014281335 BB	20161215	AU20140281335	20140619
AU2018201061 AA	20180308	AU20180201061	20180213
CN104582468 A	20150429	CN201380029403	20130408
CN104582468 B	20190222	CN201380029403	20130408
CN105593514 A	20160518	CN201480043094	20140619
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CN109113910 A	20190101	CN201810948195	20130408
DE202013012739 U1	20190221	DE201320012739U	20130408
DE602013027449 D1	20171116	DE201360027449T	20130408
DE602014001734 D1	20160602	DE201460001734T	20140619
DK2844865 T3	20160815	DK20140736591T	20140619
EP2838336 A1	20150225	EP20130718014	20130408
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EP2844865 A1	20150311	EP20140736591	20140619
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EP3085948 A1	20161026	EP20160166271	20140619
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RU2616717 C1	20170418	RU20160100392	20140619
RU2659640 C1	20180703	RU20170111483	20140619
US2013111864 AA	20130509	US20110289613	20111104
US2013111865 AA	20130509	US20120692739	20121203
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US2014299089 AA	20141009	US20140309602	20140619
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US2016312755 AA	20161027	US20160199682	20160630
US2017298892 AA	20171019	US20170583753	20170501
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US9127658 BB	20150908	US20140309602	20140619
US9220192 BB	20151229	US20140260206	20140423
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US9828966 BB	20171128	US20150976656	20151221
US9890755 BB	20180213	US20170583753	20170501
US10024292 BB	20180717	US20180859852	20180102
WO13158397 A1	20131024	WO2013US35623	20130408
WO14205247 A1	20141224	WO2014US43232	20140619

Priority:

US20110289613	20111104	US20120625437P	20120417	US20120657607P	20120608
US20120692739	20121203	AU20130249650	20130408	EP20130718014	20130408
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US20160199682	20160630	EP20170157019	20170220	US20170583753	20170501
US20180859852	20180102	AU20180201061	20180213	US20180016172	20180622

Probable Assignee: BRIGGS AND STRATTON CORP

Assignee(s): (std):	BRIGGS AND STRATION CORP ; BRIGGS AND STRATTON CORP ; PROCKNOW DAVID W ; LAVENDER STEPHEN J ; KOENEN ROBERT ; ELVERS JASON D ; HANSEN JASON A ; MIRISSAGE RAMIDU ; NOMMENSEN JAMES
Assignee(s):	BRIGGS AND STRATTON CORP WAUWATOSA ; BRIGGS AND STRATTON WAUWATOSA CORP
Inventor(s): (std):	ELVERS JASON D ; FUNKE SCOTT A ; HANSEN JASON A ; KOENEN ROBERT ; LAVENDER STEPHEN J ; MARKOWSKI MATTHEW ; MEYER MICHAEL ; MIRISSAGE RAMIDU ; NOMMENSEN JAMES ; PROCKNOW DAVID W ; ELVERS JASON
Inventor(s):	PROCKNOW DAVID W ELM GROVE ; NOMMENSEN JAMES OAK CREEK ; MIRISSAGE RAMIDU BROOKFIELD ; MEYER MICHAEL SUSSEX ; MARKOWSKI MATTHEW WAUWATOSA ; LAVENDER STEPHEN J CALEDONIA ; KOENEN ROBERT PEWAUKEE ; HANSEN JASON A ELKHORN ; ELVERS JASON D HORICON
Agent(s):	DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; DEHMEL AND BETTENHAUSEN PATENTANWAELTE PARTMBB; LAWRENCE JOHN; BARKER BRETTELL LLP; OOO INEVRIKA; FOLEY AND LARDNER LLP; FOLEY AND LARNDER LLP; GUNDERSEN JEFFREY S ET AL
Designated states:	AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

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Patent	Date recorded	Event group	Code	Event	Details
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AU2013249650 BB	20171116	LSGT	+	granted / extensions (spc, cpc, pte)	
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AU2013249650 BB	20330408	PEXP		Calculated Patent Term Expiry	
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				reissued	
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CN104582468 B	20190222	LSGT	+	granted / extensions (spc, cpc, pte)	
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DE202013012739 U1	20190205	LSGT	+R150	TERM OF PROTECTION EXTENDED TO 6 YEARS	
DE202013012739 U1	20190205	LSGT	+R151	TERM OF PROTECTION EXTENDED TO 8 YEARS	
DE202013012739 U1	20190221	LSGT	R207	UTILITY MODEL SPECIFICATION	
DE202013012739 U1	20230408	PEXP		Calculated Patent Term Expiry	
DK2844865 T3	20160815	LSGT	+	granted / extensions (spc, cpc, pte)	
DK2844865 T3	20340619	PEXP		Calculated Patent Term Expiry	
EP2838336 A1	20150225	LSPB	+	published / reissued	
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EP2838336 A1	20170802	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20170703
EP2838336 B1	20171004	LSGT	+	granted / extensions (spc, cpc, pte)	
EP2838336 B1	20171004	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D

EP2838336 B1	20171013	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2838336 B1	20171015	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 933131 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20171015
EP2838336 B1	20171101	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP2838336 B1	20171116	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602013027449 COUNTRY OF REF DOCUMENT : DE
EP2838336 B1	20180226	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP2838336 B1	20180315	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180315	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MK05 REF DOCUMENT NUMBER : 933131 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20171004
EP2838336 B1	20180330	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20180104
EP2838336 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180329 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL	COUNTRY OF REF DOCUMENT : BG NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20180104

				OFFICE TO EPO]	
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LV NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20180204
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20180105
EP2838336 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL PAYMENT DATE : 20180130 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180315 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180705	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602013027449 COUNTRY OF REF DOCUMENT : DE
EP2838336 B1	20180731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CZ NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT

EP2838336 B1	20180731	LSLE	-PG25	FROM NATIONAL OFFICE TO EPO] LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	LAPSED DATE : 20171004 COUNTRY OF REF DOCUMENT : DK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180327 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SM NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20180831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180420 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20180912	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20180705
EP2838336 B1	20180928	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20180411 YEAR OF FEE PAYMENT : 6
EP2838336 B1	20181130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20181130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20171004
EP2838336 B1	20181130	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP2838336 B1	20190123	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
EP2838336 B1	20190131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180408
EP2838336 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180430
EP2838336 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

				POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	LAPSED DATE : 20180430
EP2838336 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180430
EP2838336 B1	20190430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180408
EP2838336 B1	20330408	PEXP		Calculated Patent Term Expiry	
EP2844865 A1	20150311	LSPB	+	published / reissued	
EP2844865 A1	20150311	LSSE	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20141205
EP2844865 A1	20150527	LSSE	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20150429
EP2844865 A1	20151209	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20151109
EP2844865 A1	20160831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 20160630 YEAR OF FEE PAYMENT : 3
EP2844865 A1	20160831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20160629 YEAR OF FEE PAYMENT : 3
EP2844865 A1	20161031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20160630 YEAR OF FEE PAYMENT : 3
EP2844865 A1	20161130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20160630 YEAR OF FEE PAYMENT : 3
EP2844865 B1	20160427	LSGT	+	granted / extensions (spc, cpc, pte)	
EP2844865 B1	20160427	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP2844865 B1	20160429	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2844865 B1	20160515	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 795106 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20160515
EP2844865 B1	20160518	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP2844865 B1	20160602	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602014001734 COUNTRY OF REF DOCUMENT : DE

EP2844865 B1	20160629	LSFE	REG	REFERENCE TO A NATIONAL CODE	COUNTRY OF REF DOCUMENT : FR REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 3
EP2844865 B1	20160825	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP2844865 B1	20161031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160727
EP2844865 B1	20161031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160728
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LV NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160829
EP2844865 B1	20161130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RS NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20161230	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170130	LSRE	REG	REFERENCE TO A	REF COUNTRY CODE : DE

				NATIONAL CODE	REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602014001734 COUNTRY OF REF DOCUMENT : DE
EP2844865 B1	20170131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CZ NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SM NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170322	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
EP2844865 B1	20170405	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20170130
EP2844865 B1	20170511	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20160619
EP2844865 B1	20170531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20170511 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20170613 YEAR OF FEE PAYMENT : 4

EP2844865 B1	20170731	LSFE	+PGFP	FROM NATIONAL OFFICE TO EPO] ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 20170612 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20170613 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 20170614 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL PAYMENT DATE : 20170419 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20170831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20170630 YEAR OF FEE PAYMENT : 4
EP2844865 B1	20180131	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP2844865 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20170630
EP2844865 B1	20180430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20170630
EP2844865 B1	20180511	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 5
EP2844865 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : HU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT; INVALID AB INITIO LAPSED DATE : 20140619
EP2844865 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CY NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20160630
EP2844865 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MK NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427

EP2844865 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20160619
EP2844865 B1	20180629	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IS NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20180731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BG NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20180731	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20180605 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20180831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180511 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20180831	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PL PAYMENT DATE : 20180424 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20180915	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : UEP REF DOCUMENT NUMBER : 795106 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20160427
EP2844865 B1	20180928	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20180612 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20181031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AL NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20181031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : TR NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20160427
EP2844865 B1	20181031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20180625 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20181031	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20180613 YEAR OF FEE PAYMENT : 5
EP2844865 B1	20190121	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DK REF LEGAL EVENT CODE : EBP EFFECTIVE DATE : 20180630

EP2844865 B1	20190329	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180701
EP2844865 B1	20340619	PEXP		Calculated Patent Term Expiry	
EP3085948 A1	20161026	LSPB	+	published / reissued	
EP3085948 A1	20170531	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20170425
EP3085948 A1	20170607	LSES	+R17P	REQUEST FOR EXAMINATION FILED (CORRECTED)	EFFECTIVE DATE : 20170425
EP3085948 A1	20180808	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20180706
EP3211213 A1	20170830	LSPB	+	published / reissued	
EP3211213 A1	20171213	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20171107
EP3211213 A1	20181017	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20180917
EP3421776 A1	20190102	LSPB	+	published / reissued	
PL2838336 T3	20180228	LSGT	+	granted / extensions (spc, cpc, pte)	
PL2844865 T3	20161130	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2616717 C1	20170418	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2616717 C1	20340619	PEXP		Calculated Patent Term Expiry	
RU2659640 C1	20180703	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2659640 C1	20340619	PEXP		Calculated Patent Term Expiry	
US10024292 BB	20180717	LSGT	+	granted / extensions (spc, cpc, pte)	
US10024292 BB	20180627	LSGT	PAT1	Patented Case	
US10024292 BB	20380102	PEXP		Calculated Patent Term Expiry	
US2013111864 AA	20130509	LSPB	+	published / reissued	
US2013111864 AA	20140507	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2013111865 AA	20130509	LSPB	+	published / reissued	
US2013111865 AA	20140924	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2013343906 AA	20131226	LSPB	+	published / reissued	
US2013343906 AA	20141001	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS: HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20130819 TO 20141001;

US2013343906 AA	20150902	LSES	NFA1	Non Final Action Mailed	
US2013343906 AA	20171003	LSES	ADV1	Advisory Action Mailed	
US2013343906 AA	20171205	LSAL	NAF1	Notice of Appeal Filed	
US2013343906 AA	20180313	LSAL	ABE1	Appeal Brief (or Supplemental Brief) Entered and Forwarded to Examiner	
US2013343906 AA	20181026	LSES	NFA1	Non Final Action Mailed	
US2014230393 AA	20140821	LSPB	+	published / reissued	
US2014230393 AA	20151209	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2014299089 AA	20141009	LSPB	+	published / reissued	
US2014299089 AA	20150819	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2015053164 AA	20150226	LSPB	+	published / reissued	
US2015053164 AA	20160203	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2015345459 AA	20151203	LSPB	+	published / reissued	
US2015345459 AA	20151216	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016108881 AA	20160421	LSPB	+	published / reissued	
US2016108881 AA	20170315	LSES	NFA1	Non Final Action Mailed	
US2016108881 AA	20170911	LSES	+NAM1	Notice of Allowance Mailed - - Application Received in Office of Publications	
US2016108881 AA	20171024	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2016108881 AA	20171025	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2016108881 AA	20171108	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016115933 AA	20160428	LSPB	+	published / reissued	
US2016115933 AA	20160713	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016146174 AA	20160526	LSPB	+	published / reissued	
US2016146174 AA	20170510	LSES	+NAM1	Notice of Allowance Mailed - - Application Received in Office of Publications	
US2016146174 AA	20170802	LSFE	-AWA4	Awaiting TC Resp., Issue Fee Not Paid	
US2016146174 AA	20170802	LSES	+NAM1	Notice of Allowance Mailed - - Application Received in Office of Publications	
US2016146174 AA	20170810	LSFE	+PPR1	Publications -- Issue Fee	

US2016146174 AA	20170811	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	Payment Received
US2016146174 AA	20170823	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2016312755 AA	20161027	LSPB	+	published / reissued	
US2016312755 AA	20170419	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2017298892 AA	20171019	LSPB	+	published / reissued	
US2017298892 AA	20170929	LSES	+NAM1	Notice of Allowance Mailed - - Application Received in Office of Publications	
US2017298892 AA	20180102	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2017298892 AA	20180124	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2018119664 AA	20180503	LSPB	+	published / reissued	
US2018119664 AA	20180612	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2018119664 AA	20180613	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2018119664 AA	20180615	LSFE	+AWA3	Awaiting TC Resp, Issue Fee Payment Verified	
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US2018119664 AA	20180627	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2018298868 AA	20181018	LSPB	+	published / reissued	
US2018298868 AA	20190409	LSES	+NAM1	Notice of Allowance Mailed - - Application Received in Office of Publications	
US8733072 BB	20140527	LSGT	+	granted / extensions (spc, cpc, pte)	
US8733072 BB	20120113	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20111205 TO 20111208; REEL/FRAME:027534/0541
US8733072 BB	20140507	LSGT	PAT1	Patented Case	
US8733072 BB	20171116	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8733072 BB	20321115	PEXP		Calculated Patent Term Expiry (PTA 377 days)	
US8857138 BB	20141014	LSGT	+	granted / extensions (spc, cpc, pte)	
US8857138 BB	20121205	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN

					OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20111205 TO 20111208; REEL/FRAME:029413/0551
US8857138 BB	20140924	LSGT	PAT1	Patented Case	
US8857138 BB	20180403	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8857138 BB	20330308	PEXP		Calculated Patent Term Expiry (PTA 95 days)	
US9127658 BB	20150908	LSGT	+	granted / extensions (spc, cpc, pte)	
US9127658 BB	20140710	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:KOENEN, ROBERT; MARKOWSKI, MATTHEW; MEYER, MICHAEL; AND OTHERS; REEL/FRAME:033289/0865 EFFECTIVE DATE : 20140618
US9127658 BB	20150819	LSGT	PAT1	Patented Case	
US9127658 BB	20190312	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : SURCHARGE FOR LATE PAYMENT, LARGE ENTITY (ORIGINAL EVENT CODE: M1554); ENTITY STATUS OF PATENT OWNER: LARGE ENTITY
US9127658 BB	20190312	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US9127658 BB	20340619	PEXP		Calculated Patent Term Expiry	
US9220192 BB	20151229	LSGT	+	granted / extensions (spc, cpc, pte)	
US9220192 BB	20140425	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20111205 TO 20111208; REEL/FRAME:032754/0828
US9220192 BB	20151121	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US9220192 BB	20151209	LSGT	PAT1	Patented Case	
US9220192 BB	20340423	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US9228556 BB	20160105	LSGT	+	granted / extensions (spc, cpc, pte)	
US9228556 BB	20150825	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:KOENEN, ROBERT; MARKOWSKI, MATTHEW; MEYER, MICHAEL; AND OTHERS; REEL/FRAME:036412/0342 EFFECTIVE DATE : 20140618
US9228556 BB	20151207	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US9228556 BB	20151216	LSGT	PAT1	Patented Case	
US9228556 BB	20350810	PEXP		Calculated Patent	

Term Expiry					
US9267482 BB	20160223	LSGT	+	granted / extensions (spc, cpc, pte)	
US9267482 BB	20141006	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20111205 TO 20111208; REEL/FRA:033894/0405
US9267482 BB	20160203	LSGT	PAT1	Patented Case	
US9267482 BB	20341006	PEXP		Calculated Patent Term Expiry	
US9404465 BB	20160802	LSGT	+	granted / extensions (spc, cpc, pte)	
US9404465 BB	20160713	LSGT	PAT1	Patented Case	
US9404465 BB	20351231	PEXP		Calculated Patent Term Expiry	
US9644595 BB	20170509	LSGT	+	granted / extensions (spc, cpc, pte)	
US9644595 BB	20170419	LSGT	PAT1	Patented Case	
US9644595 BB	20360630	PEXP		Calculated Patent Term Expiry	
US9759175 BB	20170912	LSGT	+	granted / extensions (spc, cpc, pte)	
US9759175 BB	20160201	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON CORPORATION, WISCONSIN OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HANSEN, JASON A.; KOENEN, ROBERT; PROCKNOW, DAVID W.; AND OTHERS; SIGNING DATES FROM 20111205 TO 20111208; REEL/FRA:037629/0902
US9759175 BB	20170823	LSGT	PAT1	Patented Case	
US9759175 BB	20360305	PEXP		Calculated Patent Term Expiry (PTA 36 days)	
US9828966 BB	20171128	LSGT	+	granted / extensions (spc, cpc, pte)	
US9828966 BB	20171108	LSGT	PAT1	Patented Case	
US9828966 BB	20351221	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US9890755 BB	20180213	LSGT	+	granted / extensions (spc, cpc, pte)	
US9890755 BB	20180124	LSGT	PAT1	Patented Case	
US9890755 BB	20370501	PEXP		Calculated Patent Term Expiry	
WO13158397 A1	20131024	LSPB	+	published / reissued	
WO13158397 A1	20141017	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO13158397 A1	20141029	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2013718014 COUNTRY OF REF DOCUMENT : EP
WO13158397 A1	20141120	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2013249650 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20130408

KIND CODE OF REF DOCUMENT : A
DESIGNATED STATE(S) :

WO14205247 A1	20141224	LSPB	+	published / reissued	
WO14205247 A1	20141205	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2014736591 COUNTRY OF REF DOCUMENT : EP
WO14205247 A1	20151221	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO14205247 A1	20160120	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2016100392 COUNTRY OF REF DOCUMENT : RU KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO14205247 A1	20160128	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2014281335 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20140619 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :

Title: Grass collecting/utility cart for riding **lawn mower**

Abstract: An improved cart to be towed behind a riding **lawn mower** for collecting grass clippings, etc. therefrom and also which can be used for strict utility purposes. The cart has a tub-like open-top bed to which is secured a forward upward-extending wall having attached thereto a retractable canopy engagable with the rim of the bed to cover the same and which wall and canopy are readily detachable from the bed. The bed is pivotally mounted on a wheeled chassis for backward tilting for dumping its contents and return to normal position under the control of the operator of the **mower** while seated on the **mower** seat. The cart has a pair of ground engaging castor wheels and is detachably hitched to the **mower** by a construction which permits limited pivotal movement relative to the **mower** about a horizontal transverse axis and limited pivotal movement about a horizontal axis extending in the fore and aft direction but which prevents pivotal movement about a vertical axis.

Classifications:

International (IPC 8-9): A01D43/07 (Advanced/Invention);

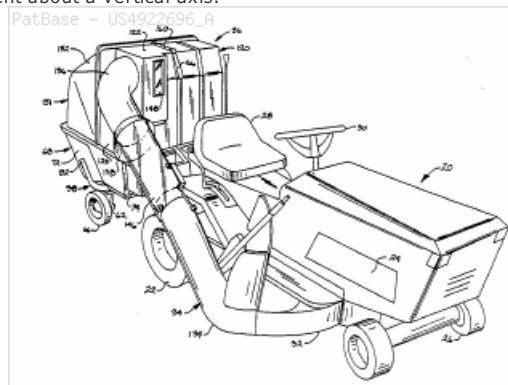
A01D34/63 (Advanced/Non-invention)

International (IPC 1-7): A01D34/70

CPC: A01D34/63 A01D43/07 A01D2101/00

European: A01D43/07 K01D101/00 K01D34/63

US: 298/10 298/6 56/202 56/203 56/205



Family:

Publication number	Publication date	Application number	Application date
US4922696 A	19900508	US19890298974	19890119

Priority:

US19890298974 19890119

Probable Assignee: BRIGGS AND STRATTON POWER PRODUCTS GROUP LLC

Assignee(s): (std): MURRAY OHIO MANUFACTURING COMP ; MURRAY OHIO MFG COMP

Assignee(s): THE MURRAY OHIO MANUFACTURING COMPANY ; MURRAY OHIO MFG ; MURRAY OHIO MFG CO A CORP OHIO ; BRIGGS AND STRATTON POWER PRODUCTS GROUP LLC ; GENERAL ELECTRIC CAPITAL AGENT AS CORP ; GENERAL ELECTRIC CAPITAL CORP ; MURRAY INC

Inventor(s): (std): BOESCH TIMOTHY J ; BOONE JACK M ; BURNS STEPHEN R ; COOK STUART A ; CURTIS JACK M ; RAO MATTHEW D

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
US4922696 A	19900508	LSGT	+	granted / extensions (spc, cpc, pte)	
US4922696 A	19890119	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MURRAY OHIO MANUFACTURING COMPANY, THE, A CORP. O OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:BURNS, STEPHEN R.; BOESCH, TIMOTHY J.; RAO, MATTHEW D.; AND OTHERS; REEL/FRAME:005022/0876; SIGNING DATES FROM 19890103 TO 19890105
US4922696 A	19900306	LSGT	PAT1	Patented Case	
US4922696 A	19900306	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US4922696 A	19930930	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US4922696 A	19951023	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MURRAY, INC., TENNESSEE OLDPARTY : MERGER AND CHANGE OF NAME; ASSIGNORS:NOMA INDUSTRIES; NOMA OUTDOOR PRODUCTS, INC.; WESTERN INTERNATIONAL INCORPORATED; AND OTHERS; REEL/FRAME:007666/0694 EFFECTIVE DATE : 19870908

US4922696 A	19970723	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US4922696 A	20001120	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GENERAL ELECTRIC CAPITAL CORPORATION, AS AGENT, IL OLDPARTY : SECURITY AGREEMENT; ASSIGNOR:MURRAY, INC.; REEL/FRAME:011333/0036 EFFECTIVE DATE : 20001005
US4922696 A	20010517	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US4922696 A	20050406	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BRIGGS & STRATTON POWER PRODUCTS GROUP, LLC, WISCO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MURRAY, INC.; REEL/FRAME:016016/0600 EFFECTIVE DATE : 20050211
US4922696 A	20090119	PEXP		Calculated Patent Term Expiry	

Title: ENERGY **HARVESTING** WIRELESS SENSOR NETWORK

Abstract: A **lawn** care device (10) may include a mobility assembly (42,44) configured to facilitate movement of the **lawn** care device over ground, a cutting deck (40) housing at least one **blade**, an engine (50) operably coupled to the at least one **blade** via a rotatable shaft to enable the at least one **blade** to cut vegetation responsive to rotation of the at least one **blade**, a control unit (110) configured to be in communication with at least one functional unit of the **lawn** care device, at least one sensor (142) disposed to monitor the at least one functional unit, a transmitter (144) operably coupled to the sensor to wirelessly transmit a signal from the sensor to the control unit based on operation of the at least one functional unit, and an energy **harvester** (146) configured to convert energy from a source of origin into electrical energy, the electrical energy being employed for powering the at least one sensor and the transmitter.

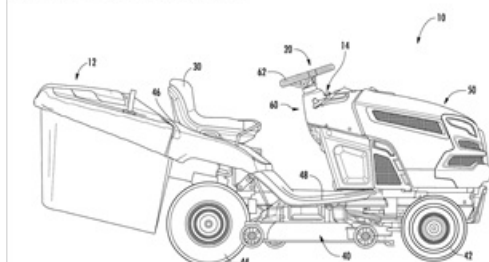
Classifications:

International (IPC 8-9): A01D34/00 A01D34/64 A01D34/68 B60R16/03 G06F1/26 (Advanced/Invention)

CPC: B60R16/0307 A01D34/64 A01D34/68 A01D34/006

US: 307/9.1 340/657 56/10.2R

PatBase - US2016007525_AA



Family:

Publication number	Publication date	Application number	Application date
AU2014224600 AA	20150924	AU20140224600	20140305
AU2014224600 BB	20170112	AU20140224600	20140305
DE602014009035 D1	20170601	DE201460009035T	20140305
EP2964009 A1	20160113	EP20140708251	20140305
EP2964009 B1	20170426	EP20140708251	20140305
US2016007525 AA	20160114	US20140771889	20140305
US9615507 BB	20170411	US20140771889	20140305
WO14135603 A1	20140912	WO2014EP54289	20140305

Priority:

US20130772649P 20130305 EP20140708251 20140305 WO2014EP54289 20140305
US20140771889 20140305

Probable Assignee: HUSQVARNA AB

Assignee(s): (std): HUSQVARNA AB

Inventor(s): (std): ALBINGER MATTHEW ; DREW BERNARD

Inventor(s): DREW BERNARD SAVANNAH ; ALBINGER MATTHEW SHELBY

Agent(s): PIZZEYS PATENT AND TRADE MARK ATTORNEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; MEISSNER BOLTE PATENTANWALTE RECHTSANWALTE PARTNERSCHAFT MBB; SCHROEER GERNOT H; NELSON MULLINS RILEY AND SCARBOROUGH LLP; FINKELE ROLF

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2014224600 AA	20150924	LSPB	+	published / reissued	
AU2014224600 AA	20170511	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU2014224600 BB	20170112	LSGT	+	granted / extensions (spc, cpc, pte)	
AU2014224600 BB	20340305	PEXP		Calculated Patent Term Expiry	
EP2964009 A1	20160113	LSPB	+	published / reissued	
EP2964009 A1	20160113	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20150908
EP2964009 A1	20161228	LSGT	+INTG	INTENTION TO GRANT ANNOUNCED	EFFECTIVE DATE : 20161130
EP2964009 B1	20170426	LSGT	+	granted / extensions (spc, cpc, pte)	

EP2964009 B1	20170426	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP2964009 B1	20170428	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP2964009 B1	20170515	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : REF REF DOCUMENT NUMBER : 887069 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20170515
EP2964009 B1	20170517	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP2964009 B1	20170601	LSPB	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R096 REF DOCUMENT NUMBER : 602014009035 COUNTRY OF REF DOCUMENT : DE
EP2964009 B1	20170911	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : LT REF LEGAL EVENT CODE : MG4D
EP2964009 B1	20170915	LSRV	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : AT REF LEGAL EVENT CODE : MK05 REF DOCUMENT NUMBER : 887069 COUNTRY OF REF DOCUMENT : AT KIND CODE OF REF DOCUMENT : T DESIGNATED STATE(S) : EFFECTIVE DATE : 20170426
EP2964009 B1	20170929	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
EP2964009 B1	20171031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
EP2964009 B1	20171031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
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EP2964009 B1	20171031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170727
EP2964009 B1	20171031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NO NOTIFICATION OF LAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170726

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EP2964009 B1	20171130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LV NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
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EP2964009 B1	20171130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BG NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170726
EP2964009 B1	20171130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180129	LSRE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R097 REF DOCUMENT NUMBER : 602014009035 COUNTRY OF REF DOCUMENT : DE
EP2964009 B1	20180131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : EE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM	COUNTRY OF REF DOCUMENT : SK NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE

				NATIONAL OFFICE TO EPO]	WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426
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EP2964009 B1	20180131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : RO NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SM NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180306	LSFE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : PLFP YEAR OF FEE PAYMENT : 5
EP2964009 B1	20180404	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20180129
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EP2964009 B1	20180531	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SI NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426
EP2964009 B1	20180531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20180306 YEAR OF FEE PAYMENT : 5
EP2964009 B1	20181121	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20180305
EP2964009 B1	20181130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20170426

EP2964009 B1	20181226	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
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EP2964009 B1	20190131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180305
EP2964009 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180331
EP2964009 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180331
EP2964009 B1	20190228	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20180331
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US2016007525 AA	20160114	LSPB	+	published / reissued	
US2016007525 AA	20170322	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US9615507 BB	20170411	LSGT	+	granted / extensions (spc, cpc, pte)	
US9615507 BB	20150901	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HUSQVARNA AB, SWEDEN OLDPARTY : ASSIGNMENT OF ASSIGNNORS INTEREST; ASSIGNNORS:DREW, BERNARD; ALBINGER, MATTHEW; REEL/FRAME:036470/0310 EFFECTIVE DATE : 20130305
US9615507 BB	20170322	LSGT	PAT1	Patented Case	
US9615507 BB	20340329	PEXP		Calculated Patent Term Expiry (PTA 24 days)	
WO14135603 A1	20140912	LSPB	+	published / reissued	
WO14135603 A1	20150901	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 14771889 COUNTRY OF REF DOCUMENT : US
WO14135603 A1	20150907	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
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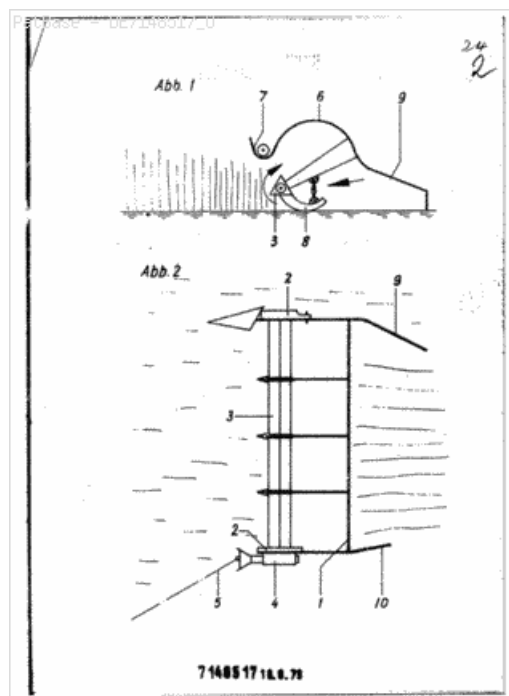
WO14135603 A1	20150924	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2014224600 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20140305 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
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Abstract: Source: DE7148517U [DE] (Claim 1) 1. Schneidvorrichtung an Maschinen zum Ernten von halm-, blatt- oder stengelartigem Erntegut mit einer zumindest teilweise durch eine Haube abgedeckten, quer zur Fahrtrichtung gelagerten und entgegen der Umlaufrichtung der Laufrolle der in Vorwärtsrichtung fahrenden Maschine schnell umlaufenden Schneidwelle, dadurch gekennzeichnet, dass die Schneidwelle (3) ein Dreikantprofil aufweist, aus Teilabschnitten bestehend, gelenkig aufgebaut ist und an den als Kupplung der einzelnen Wellenabschnitte dienenden Gelenkstellen Zwischenlager vorgesehen sind.

Machine translation: (Claim 1) 1 Cutter on machines for **harvesting blade**-leaf or stengelartigem crop with an at least partially by a hood covered, transverse to the direction stored charge and opposite to the direction of circulation is running wheels of moving into Vorwärtsrichtung machine quickly circu-cutting shaft, characterized in that the cutting-wave (3) has a triangular profile is built up consisting of sections and articulated as to the clutch shaft sections of each serving joints interim storage facilities are provided.

Classifications:

International (IPC 1-7): A01D55/18



Family:

Publication number	Publication date	Application number	Application date
DE7148517 U	19730816	DE19710448517U	19711223

Probable Assignee: BAYERISCHE PFLUGFABRIK GMBH

Assignee(s): BAYERISCHE PFLUGFABRIK GMBH

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE7148517 U	19730816	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: GEZOGENE MAEHMASCHINE

Abstract: Source: DE9414597U1 [DE] (Claim 1) 1. Gezogene Maehmaschine mit einem quer zur Fahrtrichtung angeordneten Fahrgestell und seitlich nach unten gerichteten Stuetzkonsolen, auf denen sich Stuetzraeder sowie eine Hubvorrichtung zum Anheben bzw. Herablassen einer Maehrichtung befinden, sowie mit einem Quertraeger, unter dem Schneidelemente angebracht sind, in deren unteren Bereich Schneidmesser vorgesehen sind, wobei unmittelbar hinter diesen mittels entsprechenden Traegern eine durchgehend im wesentlichen zweiteilige Kneteinrichtung 7, 7' befestigt ist, dadurch gekennzeichnet, dass der Antrieb der Maehtrommel (4) sowie der Knetinrichtung (7, 7') ueber ein klappbares Gehaeuse (14), ein im inneren Bereich eines Quertraegers (1) angeordnetes Zentralgetriebe (16) und weiter ueber ein Getriebe (22) erfolgt, das sich in einer Linie mit dem Zentralgetriebe (16) befindet und koaxial zu der Hauptwelle (23) bzw. zwischen den beiden Einheiten der Kneteinrichtung (7, 7') liegt, und dass das Stuetzrad (6, 6') an demselben Traeger (36) wie die von der Seite gesehen in Form eines Parallelogrammes ausgefuehrte Hubvorrichtung (30) befestigt ist.

Machine translation: (Claim 1) 1 Drawn **mower** with a transversely mounted to the direction arranged chassis and laterally downward-facing Stuetzkonsolen on which are Stuetzraeder and a lifting device for raising or lowering a cutting height direction, and with a Quertraeger, under the cutting elements lower in the area cutting **blades** are provided, and right behind those using corresponding supports a continuous essentially two-piece kneading devices 7, 7' befestigt, characterized in that the drive of Maehtrommel formula (4) and the Knetinrichtung (7, 7') over a folding - Cash enclosures (14), one in the inner area of a cross member-ers (1) disposed central gear (16) and continue over a transmission (22) takes place, which is in line with the central gear (16) and coaxially with the main shaft (23) or between the two units of kneading devices (7, 7') is, and that the jockey wheel (6, 6') on the same carrier (36) as the side-view of the GE-All done in the form of a parallelogram lifting device (30) is attached.

Classifications:

International (IPC 8-9): A01D34/66 A01D67/00 (Advanced/Invention);
A01D34/63 A01D67/00 (Core/Invention)

International (IPC 1-7): A01B63/111 A01B71/06 A01D34/64 A01D34/66
A01D34/76 A01D34/82 A01D43/10 A01D55/00

CPC: A01D34/661 A01D67/005

European: A01D34/66A A01D67/00B

PatBase - DE9414597_U1

03.09.94

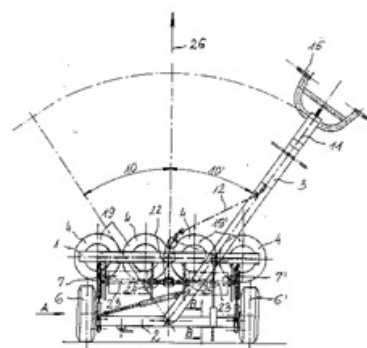


FIG. 1

9414597

Family:

Publication number	Publication date	Application number	Application date
DE9414597 U1	19950202	DE19940014597U	19940908
SI9400069 A2	19951031	SI19940000069	19940211

Priority:

SI19940000069 19940211

Probable Assignee: SIP STROJNA IND D O O

Assignee(s): (std): SIP STROJNA IND D O O ; SIP STROJNA INDUSTRIJA D O O

Assignee(s): SIP STROJNA INDUSTRIJA D O O SEMPETER V SAVINJSKI ; SIP STROJNA INDUSTRIJA D O O SEMPETER V SAVINJSKI DOLINI SI ; SIP STROJNA INDUSTRIJA DOO

Inventor(s): (std): GOLAVSEK SAMO

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
DE9414597 U1	19950202	LSGT	+	granted / extensions (spc, cpc, pte)	
DE9414597 U1	20040908	PEXP		Calculated Patent Term Expiry	
SI9400069 A2	19951031	LSGT	+	granted / extensions (spc, cpc, pte)	
SI9400069 A2	20040211	PEXP		Calculated Patent Term Expiry	

Title: ROTARY SHREDDING **BLADE**

Abstract: A brush cutter **blade** for shredding of grasses, weeds, vines and brush and also for saw cutting of saplings and tree branches, comprising a circular saw **blade** member with auxiliary cutting elements projecting from the underside of the **blade**. Several preferred embodiments include semielliptic and rectangular structures and serrated and non-serrated cutting edges for the auxiliary cutting elements. All embodiments share outwardly sloped, substantially flat structures, circularly and symmetrically disposed, with centrally inclined base lines. This combination of structural features is enacted upon by centrifugal forces during rotation, to create an effective self-cleaning mechanism, whereby cutting debris is urged upward, outward and away from the auxiliary cutting elements.

Classifications:

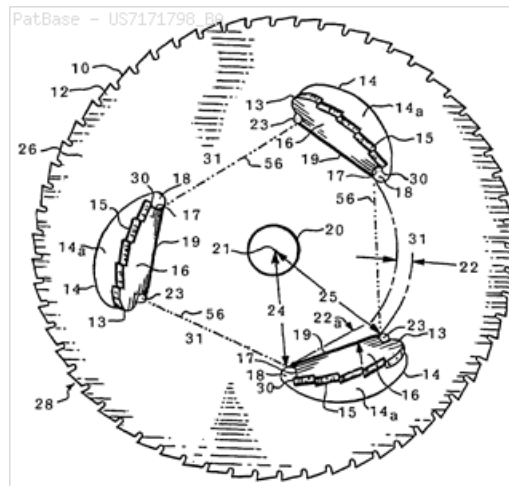
International (IPC 8-9): A01D34/52 (Advanced/Invention);

A01D34/41 A01D34/412 (Core/Invention)

CPC: A01D34/73

European: A01D34/73

US: 56/255 56/295 56/2950



Family:

Publication number	Publication date	Application number	Application date
US7171798 BA	20070206	US19980035936	19980302

Priority:

US19980035936 19980302

Probable Assignee:

BERNARDY ECKHARD

Assignee(s): (std):

BERNARDY ECKHARD

Inventor(s): (std):

BERNARDY ECKHARD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US7171798 BA	20070206	LSGT	+	granted / extensions (spc, cpc, pte)	
US7171798 BA	20070117	LSGT	PAT1	Patented Case	
US7171798 BA	20070117	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US7171798 BA	20100513	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7171798 BA	20150101	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7171798 BA	20180807	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US7171798 BA	20180302	PEXP		Calculated Patent Term Expiry	

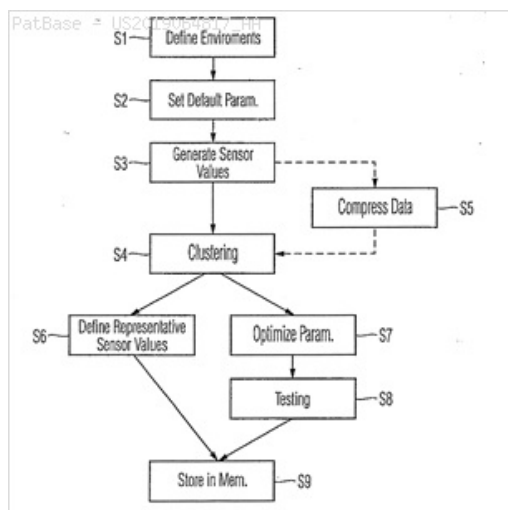
Title: METHOD FOR SETTING PARAMETERS IN AN AUTONOMOUS WORKING DEVICE AND AN AUTONOMOUS WORKING DEVICE

Abstract: A system and method are provided for setting parameters in an autonomous working device. The autonomous working device can be controlled based on a plurality of parameters. For each of a plurality of different working environments a set of sensor values is generated. The plurality of sets is partitioned into categories, each category corresponding to a prototypical working environment. The parameters for each category are optimized to find an optimized parameter set for each prototypical working environment. For an individual working environment, an individual set of sensor values that the sensors of the autonomous working device produce is generated. Based at least on the individual set of sensor values, the prototypical working environment showing highest similarity to the individual environment is determined, and the parameters in the autonomous working device are set according to the optimized parameter set corresponding to the determined prototypical working environment.

Classifications:

International (IPC 8-9): A01C21/00 A01D34/00 A01D41/127 A47L9/28 G05B13/02 G05D1/00 G06N3/12 (Advanced/Invention)

CPC: G05D1/0088 G06N3/126 A47L9/2852 A01D34/008 A01D41/127 A01D2101/00 G05D2201/0208 G05D2201/0201 G05D2201/0215 A47L2201/04 A01C21/005 G05B13/024



Family:

Publication number	Publication date	Application number	Application date
EP3451084 A1	20190306	EP20170188406	20170829
US2019064817 AA	20190228	US20180115755	20180829

Priority:

EP20170188406 20170829

Probable Assignee: HONDA RESEARCH INST EUROPE GMBH

Assignee(s): (std): HONDA RES INST EUROPE GMBH

Assignee(s): HONDA RESEARCH INST EUROPE GMBH

Inventor(s): (std): SCHMITT SEBASTIAN ; OLHOFFER MARKUS ; SHIMAMURA HIDEAKI ; MATSUI YUKI

Agent(s): BEDER JENS

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
EP3451084 A1	20190306	LSPB	+	published / reissued	
US2019064817 AA	20190228	LSPB	+	published / reissued	
US2019064817 AA	20180829	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HONDA RESEARCH INSTITUTE EUROPE GMBH, GERMANY OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS: SCHMITT, SEBASTIAN; OLHOFFER, MARKUS; SHIMAMURA, HIDEAKI; AND OTHERS; REEL/FRAME: 046735/0519 EFFECTIVE DATE : 20180821

Title: Drum-cutter mining machine

Abstract: A drum-cutter mining machine for longwall mining operations which is adaptable for use upon longwall conveyor systems having rack structures positioned on either, or both, sides thereof. Drive motors are removably supported in a capstan housing of the mining machine, and positioned such that rotating shafts thereof extend toward either or both sides of the mining machine. Drive wheels coupled to the rotating shafts through reduction gears engage with the rack structures to allow translation of the machine therealong. When the mining machine is to be utilized on a longwall conveyor system having an alternate rack structure position, the drive motors may be removed, reoriented, reinserted into the capstan housing, and the drive wheels may be repositioned to allow operation of the mining machine.

Classifications:

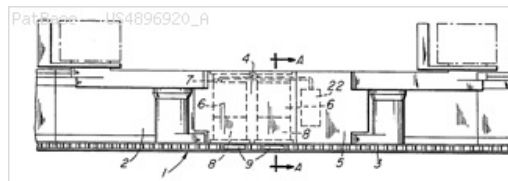
International (IPC 8-9): A01D23/06 A01D33/06 A01D34/53 A01D34/54 A01D34/56 A01D75/08 A01F29/12 E21C29/02 (Advanced/Invention); A01D23/00 A01D33/00 A01D34/412 A01D75/00 A01F29/00 E21C29/00 (Core/Invention)

International (IPC 1-7): A01D23/02 A01D33/06 A01D34/42 A01D34/48 A01D34/53 A01D34/54 A01D34/56 A01D34/58 A01D34/62 A01D43/08 A01D75/18 A01D75/20 A01D90/04 A01F29/12 A01F29/22

CPC: A01D23/06 A01D34/53 A01D75/08 A01F29/12 E21C29/02

European: A01D23/06 A01D34/53 A01D75/08 A01F29/12 E21C29/02

US: 299/42 299/43 310/54 56/249 56/294



Family:

Publication number	Publication date	Application number	Application date
AT139077 E	19960615	AT19870115517T	19871022
CA1297303 A1	19920317	CA19870549999	19871022
DE3635925 A1	19880428	DE19863635925	19861022
DE3701668 A1	19880804	DE19873701668	19870122
DE3751831 D1	19960718	DE19873751831	19871022
DK173790 B1	20011029	DK19880003390	19880621
DK339088 A	19880621	DK19880003390	19880621
DK339088 A0	19880621	DK19880003390	19880621
EP0271672 A2	19880622	EP19870115517	19871022
EP0271672 A3	19880928	EP19870115517	19871022
EP0271672 B1	19960612	EP19870115517	19871022
FI882955 A	19880621	FI19880002955	19880621
FI882955 A0	19880621	FI19880002955	19880621
US4896920 A	19900130	US19880193773	19880513
US4920737 A	19900501	US19880221255	19880622
WO8802983 A2	19880505	WO1987DE00480	19871022
WO8802983 A3	19880714	WO1987DE00480	19871022

Priority:

DE19863635925 19861022 DE19873701668 19870122 CA19870549999 19871022
WO1987DE00480 19871022 DE19873751831 19871022

Probable Assignee: MASCHF BERMATINGEN GMBH AND CO

Assignee(s): (std): BERMATINGEN GMBH AND CO MASCHF ; EICKHOFF GEB ; WIENEKE FRANZ ; MUENICH STEINMANN SCHILLER

Assignee(s): MASCHF BERMATINGEN GMBH ; MASCHF BERMATINGEN GMBH AND CO ; MASCHINENFABRIK BERMATINGEN GMBH AND CO ; WIENEKE FRANZ PROF DR ING 37120 BOVENDEN DE ; EICKHOFF MASCH GEB ; EICKHOFF MASCHF U EISENGIEBEREI MBH HUNSCHEIDTSTRA ; GEBR EICKHOFF MASCHINENFABRIK U EISENGIEBEREI MGH ; WIENEKE FRANZ PROF DR ING

Inventor(s): (std): WIENEKE FRANZ PROF DR ING ; WIENEKE FRANZ ; WEBER KARL HEINZ ; REIKE SIEGFRIED

Inventor(s): WIENEKE FRANZ PROF DR ING 37120 BOVENDEN DE

Agent(s): KIRBY EADES GALE BAKER

Designated states: AT BE CH DE DK ES FI FR GB GR IT LI LU NL SE US

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT139077 E	19960615	LSGT	+	granted / extensions (spc, cpc, pte)	
AT139077 E	20050715	LSLE	-REN	CEASED DUE TO NON-PAYMENT OF THE ANNUAL FEE	
AT139077 E	20071022	PEXP		Calculated Patent Term Expiry	
CA1297303 A1	19920317	LSGT	+	granted / extensions (spc, cpc, pte)	
CA1297303 A1	19940917	LSLE	-MKLA	LAPSED	
CA1297303 A1	20090317	PEXP		Calculated Patent Term Expiry	

DE3635925 A1	19880428	LSPB	+	published / reissued	
DE3635925 A1	19880915	LSSES	+8110	REQUEST FOR EXAMINATION PARAGRAPH 44	
DE3635925 A1	19910314	LSRV	-8131	REJECTION	
DE3701668 A1	19880804	LSPB	+	published / reissued	
DE3701668 A1	19880929	LSSES	+8110	REQUEST FOR EXAMINATION PARAGRAPH 44	
DE3701668 A1	19891019	LSWD	-8176	PROCEEDINGS SUSPENDED BECAUSE OF APPLICATION NO:	REF DOCUMENT NUMBER : 3635925 COUNTRY OF REF DOCUMENT : DE
DE3701668 A1	19910314	LSRE	+8178	SUSPENSION CANCELLED	
DE3701668 A1	19910801	LSRV	-8131	REJECTION	
DE3751831 D1	19970710	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE3751831 D1	20010118	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : MASCHINENFABRIK BERMATINGEN GMBH & CO, 88697 BERMA
DE3751831 D1	20060817	LSLE	-8339	CEASED/NON-PAYMENT OF THE ANNUAL FEE	
DK173790 B1	20011029	LSGT	+	granted / extensions (spc, cpc, pte)	
DK173790 B1	20050606	LSLE	-PBP	PATENT LAPSED	TEXT : DK
DK173790 B1	20080621	PEXP		Calculated Patent Term Expiry	
DK339088 A	19880621	LSPB	+	published / reissued	
EP0271672 A2	19880622	LSPB	+	published / reissued	
EP0271672 A3	19890301	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19881229
EP0271672 A3	19900530	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 19900417
EP0271672 B1	19960612	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0271672 B1	19960612	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 19960612
EP0271672 B1	19960912	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE LAPSED DATE : 19960912
EP0271672 B1	19960923	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 19960923
EP0271672 B1	19961031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 19961031
EP0271672 B1	19961031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH LAPSED DATE : 19961031

EP0271672 B1	19961031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI LAPSED DATE : 19961031
EP0271672 B1	19961031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE LAPSED DATE : 19961031
EP0271672 B1	19970604	LSGT	+26N	NO OPPOSITION FILED	
EP0271672 B1	19970613	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP0271672 B1	20001002	LSAS	NLS	NL: ASSIGNMENTS OF EP-PATENTS	PARTYTYPE : OWNER REF COUNTRY CODE : EP OWNER : MASCHINENFABRIK BERMATINGEN GMBH & CO.
EP0271672 B1	20010907	LSAS	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : TP
EP0271672 B1	20031020	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 20031020 YEAR OF FEE PAYMENT : 17
EP0271672 B1	20031024	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT PAYMENT DATE : 20031024 YEAR OF FEE PAYMENT : 17
EP0271672 B1	20041008	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20041008 YEAR OF FEE PAYMENT : 18
EP0271672 B1	20041019	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20041019 YEAR OF FEE PAYMENT : 18
EP0271672 B1	20041022	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20041022
EP0271672 B1	20041202	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20041202 YEAR OF FEE PAYMENT : 18
EP0271672 B1	20050501	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20050501
EP0271672 B1	20050701	LSLE	-NLV4	NL: LAPSED OR ANULLED DUE TO NON-PAYMENT OF THE ANNUAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20050501
EP0271672 B1	20051022	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20051022
EP0271672 B1	20051022	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20051022
EP0271672 B1	20060503	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE

EP0271672 B1	20060628	LSLE	-GBPC	POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	FEES LAPSED DATE : 20060503
				GB: EUROPEAN PATENT CEASED THROUGH NON- PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20051022
EP0271672 B1	20060630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20060630
EP0271672 B1	20061020	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20060630
EP0271672 B1	20071022	PEXP		Calculated Patent Term Expiry	
FI882955 A	19880621	LSPB	+	published / reissued	
FI882955 A	20040831	LSLE	-FD	APPLICATION LAPSED	PARTYTYPE : OWNER OWNER : WIENEKE, FRANZ
US4896920 A	19900130	LSGT	+	granted / extensions (spc, cpc, pte)	
US4896920 A	19891002	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : GEBR. EICKHOFF MASCHINENFABRIK U. EISENGIEBEREI MB OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:WEBER, KARL-HEINZ; REIKE, SIEGFRIED; REEL/FRAME:005149/0671; SIGNING DATES FROM
US4896920 A	19891124	LSGT	PAT1	Patented Case	
US4896920 A	19930624	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US4896920 A	19980201	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US4896920 A	19980414	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19980204
US4896920 A	20180130	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US4896920 A	20180130	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US4896920 A	20080513	PEXP		Calculated Patent Term Expiry	
US4920737 A	19900501	LSGT	+	granted / extensions (spc, cpc, pte)	
US4920737 A	19900228	LSGT	PAT1	Patented Case	
US4920737 A	19900228	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US4920737 A	19920602	LSRE	CC	CERTIFICATE OF CORRECTION	
US4920737 A	19931101	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US4920737 A	19970918	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US4920737 A	20000712	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MASCHINENFABRIK BERMATINGEN GMBH & CO., GERMANY OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:WIENEKE, FRANZ; REEL/FRAME:010977/0048 EFFECTIVE DATE : 20000630
US4920737 A	20010925	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12

US4920737 A	20080622	PEXP		Calculated Patent Term Expiry	
WO8802983 A2	19880505	LSPB	+	published / reissued	
WO8802983 A2	19880621	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 882955 COUNTRY OF REF DOCUMENT : FI

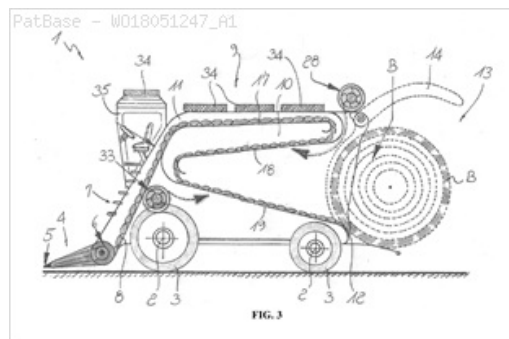
Title: DRYING AND **HARVESTING** UNIT FOR **LAWN** CLIPPINGS AND AGRICULTURAL VEHICLE COMPRISING THE UNIT

Abstract: An agricultural vehicle for collecting and drying **lawn** clippings comprises means (4) for mowing fresh grass, loading means (7) for the fresh **lawn** clippings provided with a moving surface (8), a drying unit (9) having a drying conduit (10) with an inlet (11) for the **lawn** clippings operatively connected to the moving surface (8) and an outlet (12) for the dried **lawn** clippings, heating means (16) adapted to produce a heating fluid and having a pipe (24) for the passage of the hot flow in fluid communication with the drying conduit (10) to transmit the heat of the flow therein, a forming station (13) of a hay bale (B) positioned downstream of the outlet (12) of the drying conduit (10), wherein the drying unit (9) further comprises means (15) for the controlled forwarding of grass from the inlet (11) to the outlet (12).

Classifications:

International (IPC 8-9): A01D43/00 (Advanced/Invention)

CPC: A01D43/003 A01D43/006



Family:

Publication number	Publication date	Application number	Application date
IT201600091858 A1	20180313	IT201610000091858	20160913
WO18051247 A1	20180322	WO2017IB55533	20170913

Priority:

IT201610000091858 20160913

Probable Assignee: TORREGGIANI SANDRO

Assignee(s): (std): TORREGGIANI SANDRO

Inventor(s): (std): TORREGGIANI SANDRO

Agent(s): MARINO RANIERI

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT HW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
IT201600091858 A1	20180313	LSPB	+	published / reissued	
WO18051247 A1	20180322	LSPB	+	published / reissued	
WO18051247 A1	20190314	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO18051247 A1	20190503	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2017822009 COUNTRY OF REF DOCUMENT : EP EFFECTIVE DATE : 20190415

Title: RASENMAEHMASCHINE Lawnmower (Machine translation)

Abstract: Source: DE1482214A1 [DE] (Claim 1) 1. Rasenmaehmaschine mit aehnlich wie bei Ernte-undKraut-schneidemaschinen angeordnetenVentilatorfluegeln und an diesen angelenkten flegelartigenSohneidgliedern, die von einemsylindrinchen, an eine Aufwaertsrutscheangeschloesse- non Luftfuehrungsgehaeuseumaohloaaen sind, dadurch gekenn zeichnet,da8 auf einer Welle (14) ein Rotorkoerper (42) mit bis nahezu umschliessenden Gehaeuse reichenden Ventilator fluegeln(44) angeordnet ist, an deren UmfangSohneidwerk- sauge in Gestalt kleiner, den Zwischenraum zwischen Ven tilatorfluegeln und Gehaeuseaufuellender Platten (41) unmit telbar sit Hilfejeweil eines hohlen zylindrischen Zapfens (46), durch welchen ein Stift (45) hindurchtritt, angelenkt sind, die an ihremAuBenende eine aus der Platte (41) her auagebogene Schneidkants (47) tragen.

Machine translation: (Claim 1) 1 Lawnmower with similar **harvest** undKraut-cutting machines angeordnetenVentilatorfluegeln and rowdy like son Federally incorporate in these hinged, which are of einemsylindrinchen, a Aufwaertsrutscheangeschloesse-non Luftfuehrungsgehaeuseumaohloaaen, records marked by DA8 to a shaft (14) a Rotorkoerper (42) enclosing up nahezu enclosures reaching fan **blades** (44) is arranged at the UmfangSohneidwerk suck-less in shape, tilatorfluegeln the space between the valve and Gehaeuseaufuellender platten (41) UNMIT directly applicable sit Hilfejeweil a hollow cylindrical pin (46), through which a pin (45) passes, articulated are those who at one ihremAuBenende from the plate (41) Cutting ago auagebogene Kant (47).

Classifications:

International (IPC 8-9): A01D43/06 A01D43/077 (Advanced/Invention); A01D34/42 (Advanced/Non-invention);

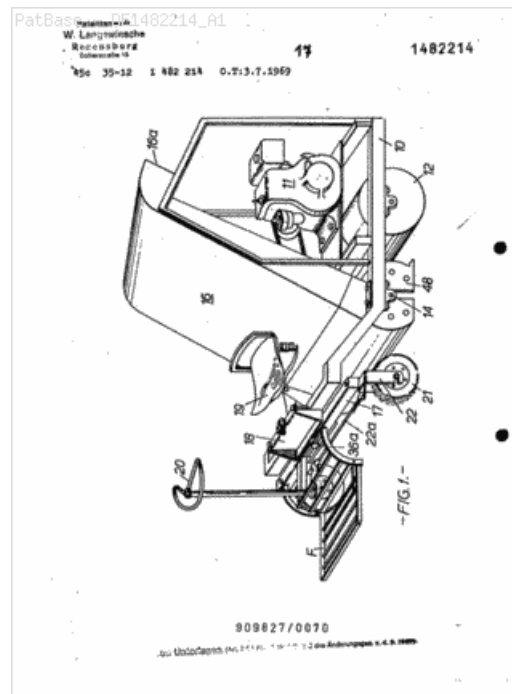
A01D43/00 (Core/Invention);

A01D34/412 (Core/Non-invention)

International (IPC 1-7): A01D35/12

CPC: A01D34/42 A01D43/06 A01D43/077 A01D2101/00

European: A01D43/06 A01D43/077 K01D101/00 K01D34/42



Family:

Publication number	Publication date	Application number	Application date
DE1482214 A1	19690703	DE19641482214	19641015

Priority:

DE1964T027204 19641015

Probable Assignee: EWARD THOMAS AND CO OSWESTRY LTD

Assignee(s): (std): EWARD THOMAS AND CO OSWESTRY LTD

Inventor(s): (std): BERNHARD THOMAS EDWARD

Legal status (INPADOC)

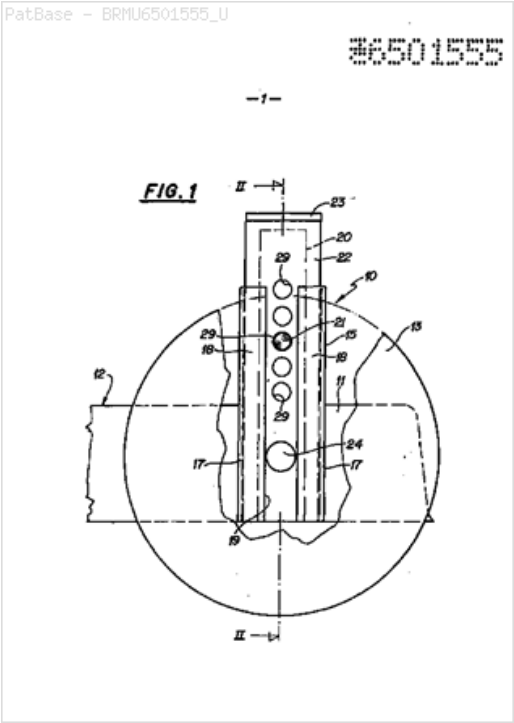
[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
DE1482214 A1	19690703	LSPB	+	published / reissued	

Title: DISPOSICAO CONSTRUTIVA EM CEIFADEIRA DE GRAMA CONSTRUCTIVE DISPOSITION IN **LAWN MOWER** (Machine translation)

Abstract: Source: BRMU6501555U [PT] {..... MIIMM i! ». ». ss... ss *** **ss ...} IHss RESUMO Patente de Modelo de Utilidade de "DISPO- SigAO CONSTRUTIVA EM CBIFADEIRA DE GRAMA". Descreve-se um dispositivo de regulagem 5 de altura de roda (10), adequado para regular a altura de corte de uma ceifadeira de grama (12), o qual com- preende uma gaveta (15) alongada verticalmente, com a seccao em forma de "C" achatado, no qual e ajustada de forma regulavel uma peca movel (22), provida de uma 10 pluralidade de orificios (29) alinhados verticalmente, uma ponta de eixo (24) solidaria a parte inferior da peca movel (22) e uma mola de lamina (20) provida de um pino (21) que fica presa entre a parede traseira da gaveta (15) e a carcaca (11) da ceifadeira. **Machine translation:** ... MIIMM i! ». ». ss ... ss ss ss ss ss ss • ss • • • "IH ss SUMMARY of utility model Patent" Strip Take CONSTRUCTIVE in GRASS "CBIFADEIRA. Describes a device 5 height adjustment wheel (10), suitable for adjusting the cutting height of a grass **mower** (12), which includes a drawer-based (15) elongated vertically, with the section "C"-shaped flat, in which and adjusted so adjustable a mobile (22), with 1 10 plurality of holes (29) aligned vertically, a solidarity axle (24) the bottom of the peca mobile (22) and a spring **Blade** (20) with a PIN (21) that gets stuck between the rear wall of the drawer (15) and skeleton (11) of the Combine **harvester**.

Classifications:
International (IPC 1-7): A01D53/08



Family:

Publication number	Publication date	Application number	Application date
BRMU6501555 U	19870519	BR1985MU01555U	19851009

Priority:

BR1985MU01555U 19851009

Probable Assignee:	JOAO ALBERTO PRADI
Assignee(s): (std):	JOAO ALBERTO PRADI
Inventor(s): (std):	PRADI JOAO ALBERTO
Inventor(s):	JOAO ALBERTO PRADI

Legal status (INPADOC)

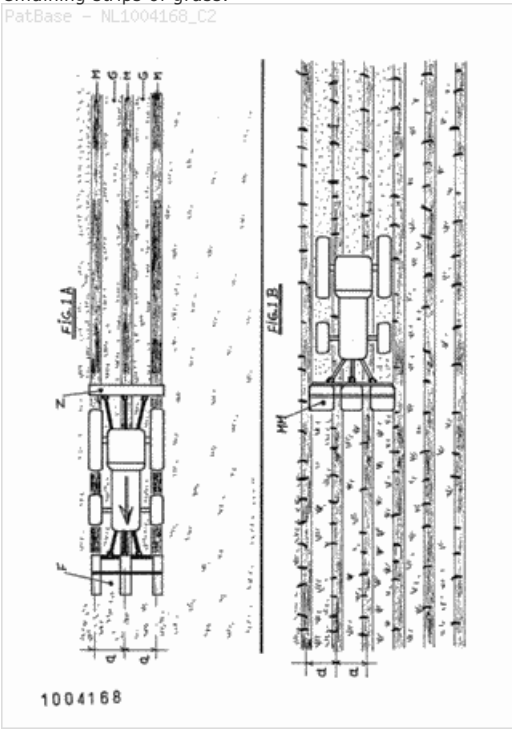
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Patent	Date recorded	Event group	Code	Event	Details
BRMU6501555 U	19870519	LSPB	+	published / reissued	

Title: Method and equipment used to cultivate crops

Abstract: The cultivating method consists of simultaneously growing a permanent crop and a temporary crop which are grown on narrow strips of ground. The permanent crop is e.g. grass, the temporary crop is e.g. maize. The land used is e.g. a plot of grass in which narrow parallel strips are dug over and cultivated using a multiple cultivator in which the diggers are spaced at regular distances and which is moved across the plot by a tractor. The cultivator is used at the same time to apply fertiliser to the dug-over strips. The cultivated strips are kept considerably narrower than the remaining strips of grass.

Classifications:
International (IPC 8-9): A01B39/08 A01B79/02 (Advanced/Invention); A01B39/00 A01B79/00 (Core/Invention)
International (IPC 1-7): A01B39/8 A01B79/2 A01C5/6 A01D34/66
CPC: A01B39/085 A01B79/02
European: A01B39/08D A01B79/02



Family:

Publication number	Publication date	Application number	Application date
 NL1004168 C2	19980402	NL19961004168	19961001

Priority:

NL19961004168 19961001

Probable Assignee:	HENDRIK POL
Assignee(s): (std):	HENDRIK POL
Inventor(s): (std):	POL HENDRIK
Inventor(s):	HENDRIK POL

Legal status (INPADOC)

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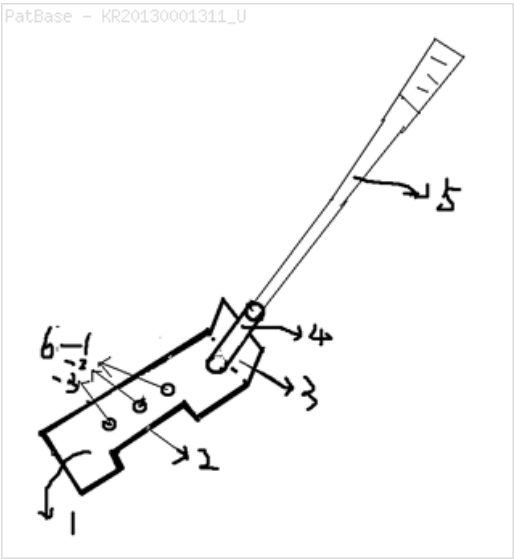
Patent	Date recorded	Event group	Code	Event	Details
NL1004168 C2	19980402	LSGT	+	granted / extensions (spc, cpc, pte)	
NL1004168 C2	19980602	LSSES	+PD2B	A SEARCH REPORT HAS BEEN DRAWN UP	
NL1004168 C2	20030701	LSLE	-VD1	LAPSED DUE TO NON-PAYMENT OF THE ANNUAL FEE	EFFECTIVE DATE : 20030501
NL1004168 C2	20161001	PEXP		Calculated Patent Term Expiry	

Title: A GOLF-CLUB STYLE SCYTHER

Abstract: Source: KR20130001311U

Machine translation: The present invention, the scythe or grass shears, manual **lawn mowers** on the field. Still a lot of examples to use the sickle to remove the oxygen of the **lawn mower** or garden, farm roads, and weeds in sickle focused on the **harvest** of grain, so that the way to grab the pool sit jjuguri he generally followed, remove the weeds the task is not easy for beginners, and dangerous, tiring and inefficient. Weeding to the stand with one hand and wielding only lightly to the present invention, similar shape as golf clubs and irons, and purpose, as a means to resolve the complaint, Carter or disposable **blade** and scraper **blade** is lightweight, compact and, an oblique angle to the handle shaft nut to tighten the screws and bolts, and adhere to the base of the **blade** and **blade** to **blade** mounted above the **blade**, making the mounting bracket screw holes on the bracket and three drilled, a person standing can hang to long in length, the [representatives], Grasp the handle with one hand, right hand, golf swing and hitting against the swing from right to left in the land of weeds, as weeds by the speed of the circular motion of the **blade** yeriseong to go, and as long grass and cut off tough pool, in the form of aphids on the ground, the swing towards the ground while stumbling block to Thomas and ground pecking chopping vegetables with a knife from the kitchen, the cut is to ensure Using a grindstone to grind them to write a sickle or a **blade** of grass shears, often dull and disadvantages, so the present invention as compared to the polishing of the sickle Cheapest distribution that is the disposable **blade** scraper **blade** and high-strength, management to discuss hustle if convenient working **tool** Saints.

Classifications:
International (IPC 8-9): A01D1/00 A01D1/06 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 KR20130001311 U	20130227	KR20110007463U	20110818

Priority:
KR20110007463U 20110818

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
KR20130001311 U	20130227	LSPB	+	published / reissued	
KR20130001311 U	20110818	LSSES	A201	REQUEST FOR EXAMINATION	
KR20130001311 U	20121225	LSRE	AMND	AMENDMENT	
KR20130001311 U	20130530	LSRV	-E601	DECISION TO REFUSE APPLICATION	
KR20130001311 U	20130702	LSRE	AMND	AMENDMENT	
KR20130001311 U	20130801	LSRV	-X601	DECISION OF REJECTION AFTER RE-EXAMINATION	

Title: CASTER WHEEL SUSPENSION AND SHAFT TENSIONING SYSTEM FOR TURF MAINTENANCE EQUIPMENT

Abstract: A rotary **mower** (22) having an improved castering wheel assembly (39, 92) so as to reduce rotation of the castering wheel (4) about its support shaft (6). In one embodiment, a torsion resistance mechanism (2) is interposed between the shaft (3) and **mower** frame (67), the torsion resistance mechanism (2) including a resilient material (46) rigidly bonded to a sleeve (77) in which the shaft (3) is retained. The resilient material (46) is press fit into a housing (11), the housing (11) being rigidly bonded to the **mower** frame (67). In another embodiment, a cap (98) housing a spring (102) is threadably attached to the castering wheel support shaft (81). Rotation of the cap (98) compresses spacers (85-90) mounted co-axially on the shaft (81) while urging the shaft (81) in an upward direction (111) so as to prevent axial rotation of the shaft (81) when the castering wheel loses contact with the ground.

Classifications:

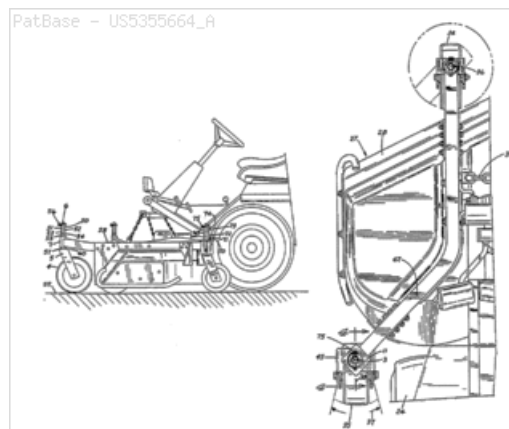
International (IPC 8-9): A01D34/82 B60B33/02 (Advanced/Invention); A01D34/63 B60B33/00 (Core/Invention)

International (IPC 1-7): A01D34/00 A01D67/00

CPC: A01D34/662 B60B33/0049 B60B33/0039 B60B33/0057 B60B33/0068 B60Y2200/223 Y10S56/03 Y10S56/10 A01D34/82 A01D2034/645 A01D2101/00 Y10T16/196

European: A01D34/64 A01D34/82 B60B33/02 K01D101/00 K01D34/64M

US: 16/35.00D 16/35D 56/15.8 56/DIG.1 56/DIG.10 56/DIG.3



Family:

Publication number	Publication date	Application number	Application date
US5355664 A	19941018	US19920994494	19921221

Priority:

US19920994494 19921221

Probable Assignee:

TORO CO

Assignee(s): (std):

TORO CO

Assignee(s):

THE TORO COMPANY

Inventor(s): (std):

ZENNER MICHAEL N

Legal status (INPADOC)

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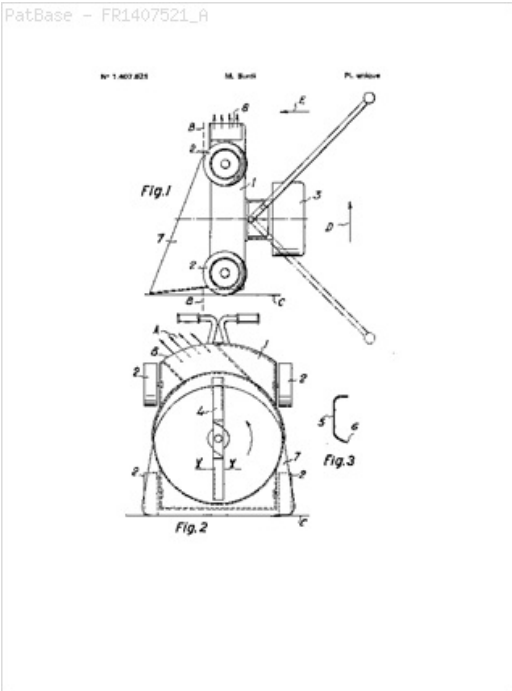
Patent	Date recorded	Event group	Code	Event	Details
US5355664 A	19941018	LSGT	+	granted / extensions (spc, cpc, pte)	
US5355664 A	19921221	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TORO COMPANY, THE, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNOR:ZENNER, MICHAEL NORBERT; REEL/FRAME:006368/0293 EFFECTIVE DATE : 19921218
US5355664 A	19941007	LSGT	PAT1	Patented Case	
US5355664 A	19941007	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5355664 A	19980406	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5355664 A	20020214	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5355664 A	20060406	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5355664 A	20121221	PEXP		Calculated Patent Term Expiry	

Title: TONDEUSE A MOTEUR POUR PELOUSES TRANSFORMABLE EN CHASSE-NEIGE MOTOR **MOWER LAWN** CONVERTIBLE SNOWPLOW (Machine translation)

Abstract: Source: FR1407521A [FR] (Claim 1) 1. Tondeuse a moteur pour pelouses, caracterisee par le fait qu'elle est transformable en chasseneige a moteur.

Machine translation: (Claim 1) 1. **Lawn mower** engine, characterized by the fact that it is transformed into a snow plow motor.

Classifications:
International (IPC 8-9): A01D42/08 (Advanced/Invention);
A01D42/00 (Core/Invention)
International (IPC 1-7): A01D35/26
CPC: A01D42/08 A01D2101/00
European: A01D42/08 K01D101/00



Family:

Publication number	Publication date	Application number	Application date
FR1407521 A	19650730	FR19640987829	19640911

Priority:

FR19640987829 19640911

Inventor(s): (std): SURDI GIUSEPPE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
FR1407521 A	19650730	LSGT	+	granted / extensions (spc, cpc, pte)	
FR1407521 A	19840911	PEXP		Calculated Patent Term Expiry	

Title: Single row or plant combine **harvesting** machine

Abstract: A single row or single plant **harvesting** machine which is particularly useful for **harvesting** test and developmental plots used by plant breeders of cereal grains. The **harvester** has a cutting head with cutter that severs the stalks of the grain plants and produces cuttings. The cuttings are threshed by an impeller to free the grain, seeds or other plant product. The impeller is also used to generate a vacuum which draws the cuttings into an intake port which feed the thresher. The impeller further conveys the threshed cuttings to a separator which separates the grain seeds from the straw and chaff which are discharged onto the ground. The **harvester** can be carried on a human operator or be rolled using a wheeled carriage. The **harvester** eliminates bundling and remote threshing while also speeding and simplifying the **harvesting** of small test and developmental plots.

Classifications:

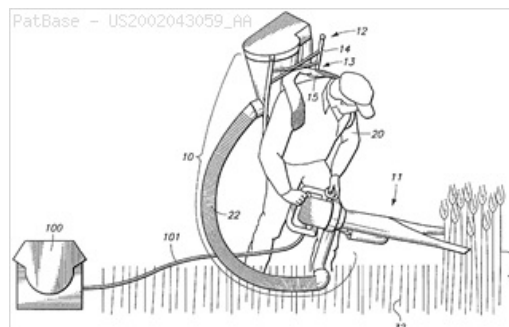
International (IPC 8-9): A01F12/00 (Advanced/Invention);
A01F12/00 (Core/Invention)

International (IPC 1-7): A01D34/02 A01F12/00

CPC: A01F12/00

European: A01F12/00

US: 56/12.8 56/128 56/16.5 56/165



Family:

Publication number	Publication date	Application number	Application date
AU199957759 A1	20000306	AU19990057759	19990812
AU199957759 A5	20000306	AU19990057759	19990812
CA2340426 AA	20010213	CA19992340426	19990812
EP1135016 A1	20010926	EP19990945066	19990812
US2002043059 AA	20020418	US20010941216	20010827
WO0008915 A1	20000224	WO1999US18586	19990812

Priority:

US19980134018 19980814 WO1999US18586 19990812 US20010941216 20010827

Probable Assignee: NORTHWEST PLANT BREEDING CO

Assignee(s): (std): DAVIS MICHAEL A ; KONZAK CALVIN F ; NORTHWEST PLANT BREEDING CO

Inventor(s): (std): DAVIS MICHAEL A ; KONZAK CALVIN F

Inventor(s): MICHAEL A DAVIS ; CALVIN F KONZAK

Agent(s): DAVIES COLLISION CAVE; DAVIES COLLISION CAVE PTY LTD; RICHES MCKENZIE AND HERBERT LLP

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZA ZW

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Patent	Date recorded	Event group	Code	Event	Details
AU199957759 A1	20000306	LSPB	+	published / reissued	
AU199957759 A1	20010510	LSLE	-MK6	APPLICATION LAPSED SECTION 142(2)(F)/REG. 8.3(3) - PCT APPLIC. NOT ENTERING NATIONAL PHASE	
CA2340426 AA	20010213	LSPB	+	published / reissued	
CA2340426 AA	20040812	LSLE	-FZDE	DEAD	
EP1135016 A1	20010926	LSPB	+	published / reissued	
EP1135016 A1	20010926	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20010627
EP1135016 A1	20040128	LSSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20031211
EP1135016 A1	20040908	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20040302
US2002043059 AA	20020418	LSPB	+	published / reissued	
US2002043059 AA	20030402	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	

US2002043059 AA	20030402	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
WO0008915 A1	20000224	LSPB	+	published / reissued	
WO0008915 A1	20010213	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2340426 COUNTRY OF REF DOCUMENT : CA KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO0008915 A1	20010213	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2340426 COUNTRY OF REF DOCUMENT : CA
WO0008915 A1	20010508	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 57759/99 COUNTRY OF REF DOCUMENT : AU
WO0008915 A1	20010613	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO0008915 A1	20010626	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1999945066 COUNTRY OF REF DOCUMENT : EP
WO0008915 A1	20010926	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999945066 COUNTRY OF REF DOCUMENT : EP
WO0008915 A1	20040302	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1999945066 COUNTRY OF REF DOCUMENT : EP

WO04018648 A2	20040304	WO2003US27086	20030826
WO04018648 A3	20050721	WO2003US27086	20030826

Priority:

US20010272206P	20010227	US20010281149P	20010402	US20010284555P	20010417
US20020087080	20020227	WO2002US06001	20020227	US20020229345	20020826
US20020406296P	20020827	US20020274177	20021018	US20030649591	20030826
US20030650112	20030826	WO2003US27085	20030826	WO2003US27086	20030826
US20050041788	20050121	US20050274634	20051114	US20060326753	20060106
US20090386176	20090413	US20120485519	20120531	US20130017511	20130904
US20130017740	20130904				

Probable Assignee: CASE WESTERN RESERVE UNIV

Assignee(s): (std): MACK DAVID H ; MARKOWITZ SANFORD D ; MARKOWITZ SANFORD DAVID ; UNIV CASE WESTERN RESERVE ; STENS CORP ; CASE WESTERN RESERVE UNIV ; EOS BIOTECHNOLOGY INC

Assignee(s): HOWARD HUGHES MEDICAL INST ; NATIONAL INST ; SANFORD D MARKOWITZ ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEA ; NATIONAL INSTITUTES OF HEALTH (NIH) US DEPT OF HEALTH AND HUMAN SERVICES (DHHS) US GOVERNMENT ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEALTH AND HUMAN SERVICES DHHS US GOVERNMENT

Inventor(s): (std): MARKOWITZ SANFORD D ; SANFORD D MARKOWITZ ; SANFORD DAVID MARKOWITZ ; MARKOWITZ SANFORD DAVID ; MACK DAVID H ; DITTMER JOHN ; DAVID H MACK

Inventor(s): MARKOWITZ SANFORD

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; OGILVY RENAULT LLP SENCRL SRL; BORDEN LADNER GERVAIS LLP; SHUSA ENDOH; FISH AND NEAVE IP GROUP, ROPES AND GRAY LLP; FISH AND NEAVE IP GROUP ROPES AND GRAY LLP; MCANDREWS HELD AND MALLOY LTD; ROPES AND GRAY LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU2002252144 AA	20020912	LSPB	+	published / reissued	
AU2002252144 AA	20040212	LSLE	-MK6	APPLICATION LAPSED SECTION 142(2) (F)/REG. 8.3(3) - PCT APPLIC. NOT ENTERING NATIONAL PHASE	
AU2003272246 AA	20040311	LSPB	+	published / reissued	
AU2003272246 AA	20100325	LSLE	-MK4	APPLICATION LAPSED SECTION 142(2)(D) - NO CONTINUATION FEE PAID FOR THE APPLICATION	
AU2003282785 AA	20040311	LSPB	+	published / reissued	
AU2003282785 AA	20100325	LSLE	-MK4	APPLICATION LAPSED SECTION 142(2)(D) - NO CONTINUATION FEE PAID FOR THE APPLICATION	
CA2477043 AA	20040827	LSPB	+	published / reissued	
CA2477043 AA	20070227	LSLE	-FZDE	DEAD	
CA2496781 AA	20050225	LSPB	+	published / reissued	
CA2496781 AA	20080826	LSES	+EEER	EXAMINATION REQUEST	
CA2496781 AA	20100826	LSLE	-FZDE	DEAD	
CA2497107 AA	20050225	LSPB	+	published / reissued	
CA2497107 AA	20080826	LSES	+EEER	EXAMINATION REQUEST	
CA2497107 AA	20100826	LSLE	-FZDE	DEAD	
EP1392861 A1	20040303	LSPB	+	published / reissued	
EP1392861 A1	20040303	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20030922
EP1392861 A1	20041124	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY
EP1392861 A1	20041124	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : PROTEIN DESIGN LABS, INC.

EP1392861 A1	20050629	LSWD	-18W	APPLICATION WITHDRAWN	EFFECTIVE DATE : 20050504
EP1575993 A2	20050921	LSPB	+	published / reissued	
EP1575993 A2	20050921	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20050324
EP1575993 A4	20070725	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20070625
EP1575993 A4	20080227	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20080124
EP1575993 A4	20100825	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20100302
EP1576109 A2	20050921	LSPB	+	published / reissued	
EP1576109 A2	20050921	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20050329
EP1576109 A2	20051228	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7G 01N 33/574 A
EP1576109 A2	20061108	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : C07K 1/00 20060101AFI20060929BHEP
EP1576109 A4	20070725	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20070627
EP1576109 A4	20080227	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20080124
EP1576109 A4	20100825	LSDW	-18D	APPLICATION DEEMED TO BE WITHDRAWN	EFFECTIVE DATE : 20100302
JP2004532622 T2	20041028	LSPB	+	published / reissued	
JP2006512565 T2	20060413	LSPB	+	published / reissued	
JP2006512565 T2	20061107	LSWD	-A300	WITHDRAWAL OF APPLICATION BECAUSE OF NO REQUEST FOR EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A300 EFFECTIVE DATE : 20061107
US2003235820 AA	20031225	LSPB	+	published / reissued	
US2003235820 AA	20050512	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2003235820 AA	20050512	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2004038220 AA	20040226	LSPB	+	published / reissued	
US2004038220 AA	20040311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:014421/0718 EFFECTIVE DATE : 20040205
US2004038220 AA	20040325	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNORS:HOWARD HUGHES MEDICAL INSTITUTE; MARKOWITZ, SANFORD D.; REEL/FRAME:014461/0688 EFFECTIVE DATE : 20040209
US2004038220 AA	20060201	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE;

					REEL/FRAME:017225/0970 EFFECTIVE DATE : 20060127
US2004038220 AA	20060705	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2004038225 AA	20040226	LSPB	+	published / reissued	
US2004038225 AA	20040311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:014421/0718 EFFECTIVE DATE : 20040205
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US2004110712 AA	20040311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:014421/0718 EFFECTIVE DATE : 20040205
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US2004110712 AA	20051130	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2004110712 AA	20051130	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2004110712 AA	20060201	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:017225/0970 EFFECTIVE DATE : 20060127
US2004110712 AA	20081003	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NATIONAL INSTITUTES OF HEALTH (NIH), U.S. DEPT. OF OLDPARTY : EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE; ASSIGNOR:CASE WESTERN RESERVE UNIVERSITY; REEL/FRAME:021633/0186 EFFECTIVE DATE : 20070112
US2005233353 AA	20051020	LSPB	+	published / reissued	

US2005233353 AA	20070917	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:019837/0887 EFFECTIVE DATE : 20060914
US2005233353 AA	20070917	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MARKOWITZ, SANFORD D., OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:019837/0918 EFFECTIVE DATE : 20060921
US2005233353 AA	20070917	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:019837/0902 EFFECTIVE DATE : 20070503
US2005233353 AA	20090526	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2005233353 AA	20090526	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2006035237 AA	20060216	LSPB	+	published / reissued	
US2006035237 AA	20040311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:014421/0718 EFFECTIVE DATE : 20040205
US2006035237 AA	20040325	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNORS:HOWARD HUGHES MEDICAL INSTITUTE; MARKOWITZ, SANFORD D.; REEL/FRAME:014461/0688 EFFECTIVE DATE : 20040209
US2006035237 AA	20060201	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:017225/0970 EFFECTIVE DATE : 20060127
US2006035237 AA	20081003	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NATIONAL INSTITUTES OF HEALTH (NIH), U.S. DEPT. OF OLDPARTY : CONFIRMATORY LICENSE; ASSIGNOR:CASE WESTERN RESERVE UNIVERSITY; REEL/FRAME:021632/0804 EFFECTIVE DATE : 20070112
US2006035237 AA	20090508	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2006035237 AA	20090508	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2006134668 AA	20060622	LSPB	+	published / reissued	
US2006134668 AA	20070122	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO

					OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:018795/0338 EFFECTIVE DATE : 20060203
US2006134668 AA	20070122	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:018795/0352 EFFECTIVE DATE : 20060310
US2006134668 AA	20070122	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SANFORD D. MARKOWITZ, OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNOR:HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:018796/0141 EFFECTIVE DATE : 20060213
US2006134668 AA	20091022	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2006134668 AA	20091022	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2006162310 AA	20060727	LSPB	+	published / reissued	
US2006162310 AA	20060106	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : STENS CORPORATION, INDIANA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:DITTMER, JOHN; REEL/FRAME:017431/0495 EFFECTIVE DATE : 20050121
US2006162310 AA	20070926	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2006162310 AA	20070926	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2009311726 AA	20091217	LSPB	+	published / reissued	
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE,OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:024405/0663 EFFECTIVE DATE : 20040205
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:024405/0720 EFFECTIVE DATE : 20060127
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNORS:HOWARD HUGHES MEDICAL INSTITUTE; MARKOWITZ, SANFORD D.; REEL/FRAME:024405/0697 EFFECTIVE DATE : 20040209
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST;

					ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:024405/0663 EFFECTIVE DATE : 20040205
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY,OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNORS:HOWARD HUGHES MEDICAL INSTITUTE; MARKOWITZ, SANFORD D.; REEL/FRAME:024405/0697 EFFECTIVE DATE : 20040209
US2009311726 AA	20100518	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY,OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:MARKOWITZ, SANFORD D.; HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:024405/0720 EFFECTIVE DATE : 20060127
US2009311726 AA	20120829	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2012329077 AA	20121227	LSPB	+	published / reissued	
US2012329077 AA	20140423	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2014220679 AA	20140807	LSPB	+	published / reissued	
US2014220679 AA	20140304	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:032342/0113 EFFECTIVE DATE : 20060127
US2014220679 AA	20140304	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, MARYLAND OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:032342/0091 EFFECTIVE DATE : 20040205
US2014220679 AA	20140304	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MARKOWITZ, SANFORD D., OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNOR:HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRAME:032383/0501 EFFECTIVE DATE : 20040209
US2014220679 AA	20150904	LSES	NFA1	Non Final Action Mailed	
US2014220679 AA	20160823	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2014220679 AA	20160823	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US2014221505 AA	20140807	LSPB	+	published / reissued	
US2014221505 AA	20140303	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:032339/0465 EFFECTIVE DATE : 20060127
US2014221505 AA	20140303	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MARKOWITZ, SANFORD D., OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNOR:HOWARD HUGHES

					MEDICAL INSTITUTE; REEL/FRAME:032382/0394 EFFECTIVE DATE : 20040209
US2014221505 AA	20140303	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, MARYLAND OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:032339/0434 EFFECTIVE DATE : 20040205
US2014221505 AA	20150928	LSES	NFA1	Non Final Action Mailed	
US2014221505 AA	20170418	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US2014221505 AA	20170418	LSWD	-STCB	INFORMATION ON STATUS: APPLICATION DISCONTINUATION	TEXT : ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION
US7081516 BB	20060725	LSGT	+	granted / extensions (spc, cpc, pte)	
US7081516 BB	20030103	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, MARYLAND OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRAME:013330/0233 EFFECTIVE DATE : 20021015
US7081516 BB	20060705	LSGT	PAT1	Patented Case	
US7081516 BB	20100125	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7081516 BB	20140127	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7081516 BB	20180201	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : 11.5 YR SURCHARGE- LATE PMT W/IN 6 MO, SMALL ENTITY (ORIGINAL EVENT CODE: M2556)
US7081516 BB	20180201	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US7081516 BB	20230307	PEXP		Calculated Patent Term Expiry (PTA 193 days)	
US7118912 BB	20061010	LSGT	+	granted / extensions (spc, cpc, pte)	
US7118912 BB	20060920	LSGT	PAT1	Patented Case	
US7118912 BB	20070313	LSRE	CC	CERTIFICATE OF CORRECTION	
US7118912 BB	20081003	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NATIONAL INSTITUTES OF HEALTH (NIH), U.S. DEPT. OF OLDPARTY : CONFIRMATORY LICENSE; ASSIGNOR:CASE WESTERN RESERVE UNIVERSITY; REEL/FRAME:021627/0259 EFFECTIVE DATE : 20070112
US7118912 BB	20081003	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : NATIONAL INSTITUTES OF HEALTH (NIH), U.S. DEPT. OF OLDPARTY : EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE; ASSIGNOR:CASE WESTERN RESERVE UNIVERSITY; REEL/FRAME:021617/0853 EFFECTIVE DATE : 20070112
US7118912 BB	20100412	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US7118912 BB	20140410	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US7118912 BB	20180521	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : MAINTENANCE FEE REMINDER MAILED (ORIGINAL EVENT CODE: REM.)
US7118912 BB	20181112	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE	TEXT : PATENT EXPIRED FOR FAILURE TO PAY MAINTENANCE FEES

				FEES	(ORIGINAL EVENT CODE: EXP.); ENTITY STATUS OF PATENT OWNER: SMALL ENTITY
US7118912 BB	20181112	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US7118912 BB	20181112	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US7118912 BB	20181204	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20181010
US7118912 BB	20230729	PEXP		Calculated Patent Term Expiry (PTA 284 days)	
US8268568 BB	20120918	LSGT	+	granted / extensions (spc, cpc, pte)	
US8268568 BB	20120829	LSGT	PAT1	Patented Case	
US8268568 BB	20160318	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8268568 BB	20290820	PEXP		Calculated Patent Term Expiry (PTA 129 days)	
US8722350 BB	20140513	LSGT	+	granted / extensions (spc, cpc, pte)	
US8722350 BB	20121004	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : SANFORD D. MARKOWITZ, OHIO OLDPARTY : APPOINTMENT OF INVESTIGATOR AS AGENT; ASSIGNOR:HOWARD HUGHES MEDICAL INSTITUTE; REEL/FRA:029087/0259 EFFECTIVE DATE : 20040209
US8722350 BB	20121004	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : HOWARD HUGHES MEDICAL INSTITUTE, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRA:029078/0946 EFFECTIVE DATE : 20040205
US8722350 BB	20121004	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : CASE WESTERN RESERVE UNIVERSITY, OHIO OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MARKOWITZ, SANFORD D.; REEL/FRA:029078/0909 EFFECTIVE DATE : 20060127
US8722350 BB	20140423	LSGT	PAT1	Patented Case	
US8722350 BB	20171116	LSFE	FEPP	FEE PAYMENT PROCEDURE	TEXT : SURCHARGE FOR LATE PAYMENT, SMALL ENTITY (ORIGINAL EVENT CODE: M2554)
US8722350 BB	20171116	LSFE	+MAFP	MAINTENANCE FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US8722350 BB	20320710	PEXP		Calculated Patent Term Expiry (PTA 40 days)	
WO02068677 A2	20020906	LSPB	+	published / reissued	
WO02068677 C1	20030827	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2002568771 COUNTRY OF REF DOCUMENT : JP
WO02068677 C1	20030827	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : PA/A/2003/007676 COUNTRY OF REF DOCUMENT : MX
WO02068677 C1	20030910	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2002721202 COUNTRY OF REF DOCUMENT : EP
WO02068677 C1	20031016	LSRE	CR1	CORRECTION OF	TEXT : IN PCT GAZETTE 36/2002

				ENTRY IN SECTION I	UNDER (22) REPLACE "14 JANUARY 2002 (14.01.2002)" BY "27 FEBRUARY 2002 (27.02.2002)"
WO02068677 C1	20031016	LSRE	CR1	CORRECTION OF ENTRY IN SECTION I	TEXT : IN PCT GAZETTE 36/2002 UNDER (22) REPLACE "14 JANUARY 2002 (14.01.2002)" BY "27 FEBRUARY 2002 (27.02.2002)"
WO02068677 C1	20040115	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO02068677 C1	20040303	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2002721202 COUNTRY OF REF DOCUMENT : EP
WO02068677 C1	20040827	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2477043 COUNTRY OF REF DOCUMENT : CA
WO02068677 C1	20050504	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2002721202 COUNTRY OF REF DOCUMENT : EP
WO04018647 A2	20040304	LSPB	+	published / reissued	
WO04018647 A2	20050225	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2497107 COUNTRY OF REF DOCUMENT : CA
WO04018647 A2	20050225	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2003272246 COUNTRY OF REF DOCUMENT : AU
WO04018647 A2	20050228	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2004531264 COUNTRY OF REF DOCUMENT : JP
WO04018647 A2	20050329	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2003754420 COUNTRY OF REF DOCUMENT : EP
WO04018647 A2	20050921	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2003754420 COUNTRY OF REF DOCUMENT : EP
WO04018648 A2	20040304	LSPB	+	published / reissued	
WO04018648 A2	20050225	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2496781 COUNTRY OF REF DOCUMENT : CA
WO04018648 A2	20050225	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2003282785 COUNTRY OF REF DOCUMENT : AU
WO04018648 A2	20050324	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2003774462 COUNTRY OF REF DOCUMENT : EP
WO04018648 A3	20050921	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 2003774462 COUNTRY OF REF DOCUMENT : EP
WO04018648 A3	20060727	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : JP
WO04018648 A3	20060727	LSWD	-WWW	WIPO INFORMATION: WITHDRAWN IN NATIONAL OFFICE	TEXT : JP

Title: Plant removing, mowing and trimming apparatus

Abstract: A helical coil assembly, consisting of spaced coil turns mounted on a shaft at right angles to the coil, is rotated by any suitable power source. Any plant growth stalks in the path of this rotating coil enter and are caught in the channel between the spaced coil turns, spun centripetally, clumped together, grasped and pulled by the coil so that the plant growth, whether crops or undesirable weeds, undergrowth, etc. is removed by its roots. The helical coil assembly may also include a cutting **blade** rotating parallelly and adjacent to the helical coil, for severing the clumped plant stalks held under tension by the coil, thus moving or trimming the plant growth. Multiple coil assemblies, arranged in various groupings, are combined for a wide range of mowing, trimming, **harvesting** or removing purposes.

Classifications:

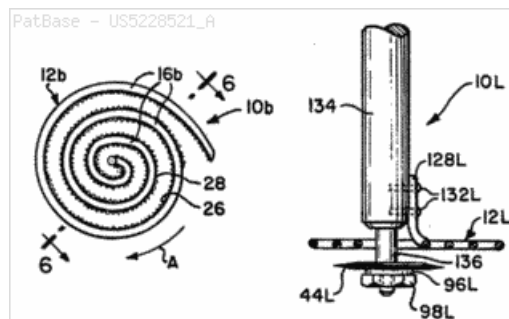
International (IPC 8-9): A01D34/412 (Advanced/Invention);
A01D34/412 (Core/Invention)

International (IPC 1-7): A01B33/06

CPC: A01D34/412

European: A01D34/412

US: 171/53 172/111 172/59



Family:

Publication number	Publication date	Application number	Application date
US5228521 A	19930720	US19910783258	19911028

Priority:

US19910783258 19911028

Probable Assignee:

SING PETER

Assignee(s): (std):

SING PETER

Inventor(s): (std):

SING PETER

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US5228521 A	19930720	LSGT	+	granted / extensions (spc, cpc, pte)	
US5228521 A	19930707	LSGT	PAT1	Patented Case	
US5228521 A	19970720	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US5228521 A	19970930	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 19970723
US5228521 A	20180127	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US5228521 A	20180127	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US5228521 A	20111028	PEXP		Calculated Patent Term Expiry	

Title: ELECTRONIC CONTROL FOR TURF MAINTENANCE VEHICLE

Abstract: The present invention provides for an automated clip control device for maintaining a predetermined clip at varying ground speeds, heights of cut, and other changed conditions. The reel speed of the **mower** 10 is controlled based upon a feedback control loop, using as input the ground speed of the **mower** 10, the actual speed of the reel 48, 50, and 52, the number of **blades** on the reel, and height of cut, among other factors. A microprocessor 102 uses control process equations to determine the duration of an output pulse width modulated signal which is provided to a valve 702, 706 controlling hydraulic fluid flow to the reel motor 71-75. The target value of the reel speed is determined by reading the desired height of cut value and the number of **blades** per reel, and then going to a look-up table which contains optimized "linear distance traveled per time grass is cut" values. Once the appropriate look-up table target value is found, the target reel speed is determined by finding the product of the number of **blades** on the reel times the target clip times the ground speed times a constant (to correct for units).

Classifications:

International (IPC 8-9): A01D34/44 A01D34/47 A01D41/127 G01M3/32 G06F11/32 (Advanced/Invention);

A01D34/412 A01D41/00 G06F11/32 (Core/Invention)

International (IPC 1-7): A01D34/44 A01D34/47 G01M3/26 G06F11/30 G08B29/00

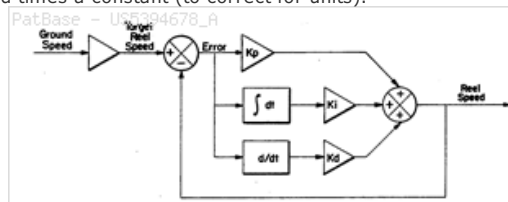
CPC: G01M3/3245 Y10S56/02 G06F11/321 A01D34/475 A01D41/1274

European: A01D34/47B A01D41/127B G01M3/32D2 G06F11/32D

US: 364/424.034 364/424.04 364/424.07 395/326 56/10.20H 56/10.2H

56/294 56/7 56/DIG.2 701/29 701/31.4 701/33 701/33.2 701/33.7

701/34.3 701/35 701/36 701/48 701/50 714/E11.182 715/700 73/40 73/49.2



Family:

Publication number	Publication date	Application number	Application date
AT149783 E	19970315	AT19920901218T	19921217
AU199333256 A1	19930728	AU19930033256	19921217
AU665396 B2	19960104	AU19930033256	19921217
CA2126868 AA	19940627	CA19922126868	19921217
CA2126868 C	19981222	CA19922126868	19921217
DE69218251 D1	19970417	DE19926018251	19921217
DE69218251 T2	19971009	DE19926018251T	19921217
EP0619699 A1	19941019	EP19930901218	19921217
EP0619699 B1	19970312	EP19930901218	19921217
JP7503842 T2	19950427	JP19930511751T	19921217
US5394678 A	19950307	US19940249098	19940523
US5657224 A	19970812	US19920998429	19921230
US5744701 A	19980428	US19950375760	19950120
US6230089 BA	20010508	US19960757397	19961127
WO9312641 A1	19930708	WO1992US10924	19921217

Priority:

US19920816816 19920103 WO1992US10924 19921217 US19920998429 19921230
 US19940249098 19940523 US19950375760 19950120 US19960757397 19961127

Probable Assignee: TORO CO

Assignee(s): (std): TORO CO ; THE TORO COMPANY

Assignee(s): TORO CO THE ; TORO COMPANY THE ; WUCHERPFENNIG FREDRICK D ; DUNFORD WILLIAM M ; LONN DANA R ; THE TORO CO ; THE TORO CO MINNEAPOLIS MINN US

Inventor(s): (std): DANA R LONN ; DUNFORD WILLIAM ; DUNFORD WILLIAM M ; FREDRICK D WUCHERPFENNIG ; GAEBEL JAMES ROBERT ; LONN DANA ; LONN DANA R ; METHENY ERIC ALLEN ; PETERSEN WALTER J ; PETERSON DANIEL E ; WILLIAM M DUNFORD ; WUCHERPFENNIG FREDRICK ; WUCHERPFENNIG FREDRICK D

Agent(s): ALLENS ARTHUR ROBINSON; ALLENS PATENT AND TRADE MARK ATTORNEYS; ROBCI

Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CS DE DK ES FI FR GA GB GN GR HU IE IT JP KP KR LI LK LU MC MG ML MN MR MW NL NO NZ PL PT RO RU SD SE SN TD TG UA

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT149783 E	19970315	LSGT	+	granted / extensions (spc, cpc, pte)	
AT149783 E	20121217	PEXP		Calculated Patent Term Expiry	
AU199333256 A1	19930728	LSPB	+	published / reissued	
AU665396 B2	19960104	LSGT	+	granted / extensions (spc, cpc, pte)	
AU665396 B2	20010719	LSLE	-MK14	PATENT CEASED SECTION 143(A) (ANNUAL FEES NOT PAID) OR EXPIRED	

AU665396 B2	20121217	PEXP		Calculated Patent Term Expiry	
CA2126868 AA	19940627	LSPB	+	published / reissued	
CA2126868 AA	19950329	LSES	+EEER	EXAMINATION REQUEST	
CA2126868 C	19981222	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2126868 C	20011217	LSLE	-MKLA	LAPSED	
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EP0619699 A1	19941019	LSPB	+	published / reissued	
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EP0619699 A1	19950607	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 19950424
EP0619699 B1	19970312	LSGT	+	granted / extensions (spc, cpc, pte)	
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EP0619699 B1	19970507	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D TEXT : 72703
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EP0619699 B1	20121217	PEXP		Calculated Patent Term Expiry	
JP7503842 T2	19950427	LSPB	+	published / reissued	
US5394678 A	19950307	LSGT	+	granted / extensions (spc, cpc, pte)	
US5394678 A	19950222	LSGT	PAT1	Patented Case	
US5394678 A	19950222	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5394678 A	19950711	LSRE	CC	CERTIFICATE OF CORRECTION	
US5394678 A	19980908	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5394678 A	20020904	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5394678 A	20060809	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US5394678 A	20140523	PEXP		Calculated Patent Term Expiry	
US5657224 A	19970812	LSGT	+	granted / extensions (spc, cpc, pte)	
US5657224 A	19930406	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TORO COMPANY, THE, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST.; ASSIGNORS:LONN, DANA R.; WUCHERPFENNIG, FREDERICK D.; DUNFORD, WILLIAM M.; REEL/FRAME:006498/0967 EFFECTIVE DATE : 19930330
US5657224 A	20000921	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5657224 A	20050113	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
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US5657224 A	20090907	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US5657224 A	20090907	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US5657224 A	20090929	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20090812

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US5744701 A	19950406	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TORO COMPANY, THE OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:PETERSON, DANIEL E.; LONN, DANA R.; PETERSEN, WALTER J.; REEL/FRAME:007421/0259 EFFECTIVE DATE : 19950331
US5744701 A	19980420	LSGT	PAT1	Patented Case	
US5744701 A	19980420	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US5744701 A	19990209	LSRE	CC	CERTIFICATE OF CORRECTION	
US5744701 A	20011030	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US5744701 A	20050902	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US5744701 A	20091008	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
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US6230089 BA	20010508	LSGT	+	granted / extensions (spc, cpc, pte)	
US6230089 BA	19970224	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TORO COMPANY, THE, MINNESOTA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:LONN, DANA R.; GAEBEL, JAMES ROBERT; METHENY, ERIC ALLEN; REEL/FRAME:008416/0358; SIGNING DATES FROM 19970131 TO 19970203
US6230089 BA	20040928	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6230089 BA	20081107	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6230089 BA	20121012	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6230089 BA	20130508	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6230089 BA	20130603	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6230089 BA	20130603	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6230089 BA	20130625	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20130508
US6230089 BA	20161127	PEXP		Calculated Patent Term Expiry	
WO9312641 A1	19930708	LSPB	+	published / reissued	
WO9312641 A1	19940627	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2126868 COUNTRY OF REF DOCUMENT : CA
WO9312641 A1	19940712	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1993901218 COUNTRY OF REF DOCUMENT : EP
WO9312641 A1	19941019	LSPB	+WWP	WIPO INFORMATION:	REF DOCUMENT NUMBER : 1993901218

				PUBLISHED IN NATIONAL OFFICE	COUNTRY OF REF DOCUMENT : EP
WO9312641 A1	19941027	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9312641 A1	19970312	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1993901218 COUNTRY OF REF DOCUMENT : EP

Title: APPARATUS AND METHOD FOR CUTTING AND TREATING VEGETATION

Abstract: PCT No. PCT/US96/13362 Sec. 371 Date Aug. 17, 1995 Sec. 102(e) Date Aug. 17, 1995 PCT Filed Aug. 16, 1996 PCT Pub. No. WO97/06664 PCT Pub. Date Feb. 27, 1997 An apparatus and a method for cutting vegetation and simultaneously treating the remaining stems of the cut vegetation with a treatment fluid. The apparatus includes a **mower**, a cutting **blade** drive rotatably mounted on the **mower**, a **blade** carrier secured to the rotatable drive, and at least one cutting **blade** assembly rotatably mounted on the **blade** carrier. The apparatus further includes a fluid container for containing the treatment fluid in a plurality of interconnected, stackable and removable fluid container cells, a pumping device for pumping the treatment fluid to the at least one cutting **blade** assembly, a flow control device for metering the amount of treatment fluid that is pumped to the at least one cutting **blade** assembly, and a fluid conduit device for delivering the treatment fluid from the fluid container to the cutting and treating device. The method includes the steps of cutting vegetation with at least one cutting **blade**, and delivering a treatment fluid to the underside of the at least one cutting **blade** in a continuous stream so that the treatment fluid is continuously available to the remaining stems of the cut vegetation.

Classifications:

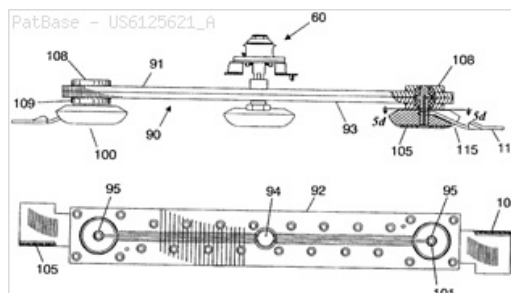
International (IPC 8-9): A01B41/04 A01B45/04 A01B49/00 A01C15/00 A01D34/00 A01D34/64 A01D34/82 A01D42/00 A01D43/14 A01G22/45 A01M7/00 A01M9/00 B65D21/02 (Advanced/Invention); A01B49/00 B65D21/02 (Advanced/Non-invention); A01B41/00 A01B45/00 A01B49/00 A01C15/00 A01D34/63 A01D42/00 A01D43/00 A01M7/00 A01M9/00 B65D21/02 (Core/Invention); A01G (Subclass/Invention)

International (IPC 1-7): A01B41/04 A01B45/04 A01B49/00 A01C15/00 A01D34/00 A01D34/63 A01D34/64 A01D34/695 A01D34/81 A01D34/82 A01D43/14 A01D45/16 A01G A01M21/04 B65D21/02

CPC: A01D43/14 A01D45/16 A01D2101/00

European: A01D43/14 K01D101/00

US: 56/16.4A 56/16.4R 56/16.8 56/27.5 56/275 56/295 D15/28 D23/208

**Family:**

Publication number	Publication date	Application number	Application date
AT398390 E	20080715	AT19960928915T	19960816
AT445998 E	20091115	AT19980960827T	19981209
AU199668494 A1	19970312	AU19960068494	19960816
AU199916332 A1	19990628	AU19990016332	19981209
AU719151 B2	20000504	AU19960068494	19960816
AU739872 B2	20011025	AU19990016332	19981209
BRPI0003981 A	20020723	BR2000PI03981	20000901
BRPI9609997 A	19990706	BR1996PI09997	19960816
CA2228601 AA	19970227	CA19962228601	19960816
CA2228601 C	20031223	CA19962228601	19960816
CA2316962 AA	20000607	CA19982316962	19981209
CA2316962 C	20040413	CA19982316962	19981209
CN1074893 C	20011121	CN19961097470	19960816
CN1198654 A	19981111	CN19961097470	19960816
CN1281110 C	20061025	CN19988013343	19981209
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EP1041871 A1	20001011	EP19980960827	19981209
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IL123277 A0	19980924	IL19960123277	19960816
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UA66389 C2	20020315	UA20011000356	20010116
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US6374586 BA	20020423	US20000587141	20000602
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Priority:

US19950002397	19950817	US19950002397P	19950817	US19950007633P	19951123
US19950007633	19951128	US19950007633P	19951128	US19950047770	19951212
US19950047770F	19951212	US19950047779F	19951212	US19950047779F	19951212
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UA19980020820	19960816	WO1996US13362	19960816	US19970069109P	19971209
US19980076101P	19980126	US19980011589	19980209	US19980076101P	19980226
US19980098696P	19980901	US19980208199	19981209	WO1998US26064	19981209
US19990388162	19990901	US20000587141	20000602	UA20010010356	20010116

Probable Assignee: ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL LLC

Assignee(s): (std): BURCH CO ; BURCH COMPANY ; BURCH THOMAS B ; BURCH THOMAS B ; THOMAS B BIRCH ; ENVIRONMENTALLY SENSITIVE VEGE ; ENVIROMENTALLY SENSITIVE VEGET ; THOMAS B BURCH ; THOMAS B BOKI

Assignee(s): AM CAPITAL LLC ; ENVIROMENTALLY SENSITIVE VEGETATION LLC ; MCMILLAN LEE Q ; ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL LLC ; ENVIRONMENTALLY SENSITIVE VEGETATION LLC

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Inventor(s): ARCH DOUGLAS WORSHAM

Agent(s): WRAYS; WRAYS PTY LTD; GOWLING LAFLEUR HENDERSON LLP; VON KREISLER SELTING WERNER; WOLFF BREGMAN AND GOLLER; ISSHIKI AND CO

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
AT398390 E	20080715	LSGT	+	granted / extensions (spc, cpc, pte)	
AT398390 E	20081215	LSLE	-RER	CEASED AS TO PARAGRAPH 5 LIT. 3 LAW INTRODUCING PATENT TREATIES	
AT398390 E	20160816	PEXP		Calculated Patent Term Expiry	
AT445998 E	20091115	LSGT	+	granted / extensions (spc, cpc, pte)	
AT445998 E	20100415	LSLE	-RER	CEASED AS TO PARAGRAPH 5 LIT. 3 LAW INTRODUCING PATENT TREATIES	
AT445998 E	20181209	PEXP		Calculated Patent Term Expiry	
AU199668494 A1	19970312	LSPB	+	published / reissued	
AU199916332 A1	19990628	LSPB	+	published / reissued	
AU719151 B2	20000504	LSGT	+	granted / extensions (spc, cpc, pte)	
AU719151 B2	20000831	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU719151 B2	20010510	LSAS	PC	ASSIGNMENT REGISTERED	PARTYTYPE : OWNER OWNER : BURCH COMPANY OLDPARTY : FORMER OWNER WAS: THOMAS B. BURCH
AU719151 B2	20160816	PEXP		Calculated Patent Term Expiry	
AU739872 B2	20011025	LSGT	+	granted / extensions (spc, cpc, pte)	
AU739872 B2	20010621	LSAS	PC1	ASSIGNMENT BEFORE GRANT (SECT. 113)	PARTYTYPE : OWNER OWNER : BURCH COMPANY OLDPARTY : THE FORMER OWNER WAS: THOMAS B. BURCH
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BRPI0003981 A	20080311	LSRV	-B11B	DISMISSAL ACC. ART. 36, PAR 1 OF IPL - NO REPLY WITHIN 90 DAYS TO FULLFIL THE NECESSARY REQUIREMENTS	
BRPI9609997 A	19990706	LSPB	+	published / reissued	
BRPI9609997 A	20001017	LSGT	+FF	DECISION: INTENTION TO GRANT	
BRPI9609997 A	20010206	LSGT	+FG9A	PATENT OR CERTIFICATE OF ADDITION GRANTED	
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BRPI9609997 A	20030916	LSAS	PC	TRANSFER	PARTYTYPE : OWNER OWNER : BURCH COMPANY (US)
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CA2316962 AA	20170121	LSLE	-MKLA	LAPSED	EFFECTIVE DATE : 20161209
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CA2316962 C	20181209	PEXP		Calculated Patent Term Expiry	
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CN1074893 C	20160816	PEXP		Calculated Patent Term Expiry	
CN1198654 A	19981111	LSPB	+	published / reissued	
CN1198654 A	19981111	LSPB	+C06	PUBLICATION	
CN1281110 C	20061025	LSGT	+	granted / extensions (spc, cpc, pte)	
CN1281110 C	20061025	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN1281110 C	20090204	LSLE	-C19	LAPSE OF PATENT RIGHT DUE TO NON-PAYMENT OF THE ANNUAL FEE	
CN1281110 C	20181209	PEXP		Calculated Patent Term Expiry	
CN1283957 A	20010214	LSPB	+	published / reissued	
CN1283957 A	20010214	LSPB	+C06	PUBLICATION	
CN1344487 A	20020417	LSPB	+	published / reissued	
CN1344487 A	20020417	LSPB	+C06	PUBLICATION	
CN1344487 A	20080430	LSDW	-C20	PATENT RIGHT OR	

				UTILITY MODEL DEEMED TO BE ABANDONED OR IS ABANDONED	
DE69637568 D1	20090430	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : BURCH CO., CHARLOTTE, N.C., US
DE69637568 D1	20090709	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE69637568 D1	20100325	LSAS	8327	CHANGE IN THE PERSON/NAME/ADDRESS OF THE PATENT OWNER	PARTYTYPE : OWNER OWNER : ENVIROMENTALLY SENSITIVE VEGETATION, LLC, JEFF, US
DE69841254 D1	20101021	LSLE	-8339	CEASED/NON-PAYMENT OF THE ANNUAL FEE	
EA002044 B1	20011224	LSGT	+	granted / extensions (spc, cpc, pte)	
EA002044 B1	20081030	LSLE	-MM4A	LAPSE OF A EURASIAN PATENT DUE TO NON-PAYMENT OF RENEWAL FEES WITHIN THE TIME LIMIT IN THE FOLLOWING DESIGNATED STATE(S)	COUNTRY OF REF DOCUMENT : AM COUNTRY OF REF DOCUMENT : AZ COUNTRY OF REF DOCUMENT : BY COUNTRY OF REF DOCUMENT : KG COUNTRY OF REF DOCUMENT : KZ COUNTRY OF REF DOCUMENT : MD COUNTRY OF REF DOCUMENT : RU COUNTRY OF REF DOCUMENT : TJ COUNTRY OF REF DOCUMENT : TM
EA002044 B1	20181209	PEXP		Calculated Patent Term Expiry	
EA200000619 A1	20001225	LSPB	+	published / reissued	
EP0957669 A1	19991124	LSPB	+	published / reissued	
EP0957669 A1	19991124	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19980217
EP0957669 A4	20030326	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20030211
EP0957669 A4	20030326	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7A 01D 34/64 A
EP0957669 A4	20030326	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7A 01D 43/14 B
EP0957669 A4	20030326	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : 7B 65D 21/02 B
EP0957669 A4	20050608	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20050426
EP0957669 A4	20061004	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20050426
EP0957669 B1	20080618	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0957669 B1	20080618	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP0957669 B1	20080731	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP0957669 B1	20080820	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP0957669 B1	20081031	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20080618

EP0957669 B1	20081126	LSAS	RAP2	RIGHTS OF A PATENT TRANSFERRED	PARTYTYPE : OWNER OWNER : BURCH COMPANY
EP0957669 B1	20081128	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20080618
EP0957669 B1	20081128	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20080618
EP0957669 B1	20090105	LSLE	-NLV1	NL: LAPSED OR ANNULLED DUE TO FAILURE TO FULFILL THE REQUIREMENTS OF ART. 29P AND 29M OF THE PATENTS ACT	REF COUNTRY CODE : EP
EP0957669 B1	20090130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20081118
EP0957669 B1	20090130	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20080929
EP0957669 B1	20090227	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20080618
EP0957669 B1	20090331	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080831
EP0957669 B1	20090331	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP0957669 B1	20090430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20080618
EP0957669 B1	20090527	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20090319
EP0957669 B1	20090527	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : MM4A
EP0957669 B1	20090612	LSAS	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : TP
EP0957669 B1	20090630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080831

EP0957669 B1	20090630	LSLE	-PG25	EPO] LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080831
EP0957669 B1	20090731	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080816
EP0957669 B1	20090831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20080618
EP0957669 B1	20091030	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20090806 YEAR OF FEE PAYMENT : 14
EP0957669 B1	20091130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20090831 YEAR OF FEE PAYMENT : 14
EP0957669 B1	20091130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20090708 YEAR OF FEE PAYMENT : 14
EP0957669 B1	20091130	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20090807 YEAR OF FEE PAYMENT : 14
EP0957669 B1	20100630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20080816
EP0957669 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20080919
EP0957669 B1	20110329	LSLE	-EUG	SE: EUROPEAN PATENT HAS LAPSED	REF COUNTRY CODE : EP
EP0957669 B1	20110427	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20100816
EP0957669 B1	20110520	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20110502
EP0957669 B1	20110622	LSDW	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R119 REF DOCUMENT NUMBER : 69637568 COUNTRY OF REF DOCUMENT : DE EFFECTIVE DATE : 20110301
EP0957669 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20100831
EP0957669 B1	20110729	LSLE	-PG25	LAPSED IN A CONTRACTING STATE	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONNOFLAPSE : LAPSE

				[ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20110301
EP0957669 B1	20110831	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20100816
EP0957669 B1	20120928	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20100817
EP0957669 B1	20160816	PEXP		Calculated Patent Term Expiry	
EP1041871 A1	20001011	LSPB	+	published / reissued	
EP1041871 A1	20001011	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20000608
EP1041871 A1	20001122	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : BURCH COMPANY
EP1041871 A4	20020731	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 20020614
EP1041871 A4	20020731	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	TEXT : 7A 01C 15/00 A, 7A 01D 34/82 B, 7A 01D 34/00 B
EP1041871 A4	20050323	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20050203
EP1041871 A4	20090812	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : ENVIRONMENTALLY SENSITIVE VEGETATION, LLC
EP1041871 B1	20091021	LSGT	+	granted / extensions (spc, cpc, pte)	
EP1041871 B1	20091021	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : FG4D
EP1041871 B1	20091030	LSNP	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : EP
EP1041871 B1	20091111	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : IE REF LEGAL EVENT CODE : FG4D
EP1041871 B1	20100401	LSLE	-NLV1	NL: LAPSED OR ANNULLED DUE TO FAILURE TO FULFILL THE REQUIREMENTS OF ART. 29P AND 29M OF THE PATENTS ACT	REF COUNTRY CODE : EP
EP1041871 B1	20100430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20091021
EP1041871 B1	20100430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20100222
EP1041871 B1	20100430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20100201

EP1041871 B1	20100430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FI NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20091021
EP1041871 B1	20100630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20091021
EP1041871 B1	20100630	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20091021
EP1041871 B1	20100730	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : MC NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20100701
EP1041871 B1	20100730	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20091021
EP1041871 B1	20100730	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP1041871 B1	20100924	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : FR REF LEGAL EVENT CODE : ST EFFECTIVE DATE : 20100831
EP1041871 B1	20100929	LSGT	+26N	NO OPPOSITION FILED	EFFECTIVE DATE : 20100722
EP1041871 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LI NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20091231
EP1041871 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20091209
EP1041871 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME- LIMIT LAPSED DATE : 20100122
EP1041871 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20091231
EP1041871 B1	20101029	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF

EP1041871 B1	20101130	LSLE	-PG25	INFORMATION FROM NATIONAL OFFICE TO EPO]	DUE FEES LAPSED DATE : 20091231
				LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20100701
EP1041871 B1	20110331	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20091021
EP1041871 B1	20110331	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20101123 YEAR OF FEE PAYMENT : 13
EP1041871 B1	20110429	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20091209
EP1041871 B1	20110930	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CY NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20091021
EP1041871 B1	20120928	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF FAILURE TO SUBMIT A TRANSLATION OF THE DESCRIPTION OR TO PAY THE FEE WITHIN THE PRESCRIBED TIME-LIMIT LAPSED DATE : 20091021
EP1041871 B1	20130828	LSLE	-GBPC	GB: EUROPEAN PATENT CEASED THROUGH NON-PAYMENT OF RENEWAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 20121209
EP1041871 B1	20131129	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB NOTIFICATIONNOFLAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 20121209
EP1041871 B1	20181209	PEXP		Calculated Patent Term Expiry	
IL123277 A1	20040831	LSPB	+	published / reissued	
IL123277 A1	20050124	LSGT	+FF	PATENT GRANTED	
IL123277 A1	20050320	LSFE	+KB	PATENT RENEWED	
IL123277 A1	20061004	LSFE	+KB	PATENT RENEWED	
IL123277 A1	20110428	LSLE	-MM9K	PATENT NOT IN FORCE DUE TO NON-PAYMENT OF RENEWAL FEES	
JP2005526479 T2	20050908	LSPB	+	published / reissued	
JP2005526479 T2	20060530	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20060530
JP2005526479 T2	20061221	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20061130
JP2005526479 T2	20070116	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2005526479 T2	20070123	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO	TEXT : JAPANESE INTERMEDIATE CODE: A01

				GRANT A REGISTRATION (UTILITY MODEL)	EFFECTIVE DATE : 20070123
JP2005526479 T2	20070222	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20070215
JP2005526479 T2	20070223	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP2007209330 A2	20070823	LSPB	+	published / reissued	
JP2007209330 A2	20070803	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2007209330 A2	20070815	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20070814
JP2007209330 A2	20070920	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20070911
JP2007209330 A2	20070921	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 3
JP2007209330 A2	20070921	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150
JP3920338 B2	20070530	LSGT	+	granted / extensions (spc, cpc, pte)	
JP3920338 B2	20100223	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	
JP3920338 B2	20160816	PEXP		Calculated Patent Term Expiry	
JP4014621 B2	20071128	LSGT	+	granted / extensions (spc, cpc, pte)	
JP4014621 B2	20100921	LSLE	-LAPS	CANCELLATION BECAUSE OF NO PAYMENT OF ANNUAL FEES	
JP4014621 B2	20261130	PEXP		Calculated Patent Term Expiry	
MX9801311 A1	19980531	LSPB	+	published / reissued	
MX9801311 A1	20040503	LSGT	+FG	GRANT OR REGISTRATION	
MX9801311 A1	20161031	LSLE	-MM	ANNULMENT OR LAPSE DUE TO NON-PAYMENT OF FEES	
NZ316296 A	20000128	LSPB	+	published / reissued	
NZ316296 A	20030829	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ316296 A	20060728	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ316296 A	20090731	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ316296 A	20160826	LSLE	-EXPY	PATENT EXPIRED	
RU2201062 C2	20030327	LSGT	+	granted / extensions (spc, cpc, pte)	
RU2201062 C2	20100720	LSLE	-MM4A	THE PATENT IS INVALID DUE TO NON-PAYMENT OF FEES	EFFECTIVE DATE : 20070817
RU2201062 C2	20160816	PEXP		Calculated Patent Term Expiry	
UA64038 C2	20040216	LSGT	+	granted / extensions (spc, cpc, pte)	
UA64038 C2	20160816	PEXP		Calculated Patent Term Expiry	
UA65597 C2	20001115	LSGT	+	granted / extensions (spc, cpc, pte)	
UA65597 C2	20001115	LSGT	+	granted / extensions (spc, cpc, pte)	

UA65597 C2	20181209	PEXP		Calculated Patent Term Expiry	
UA65597 C2	20181209	PEXP		Calculated Patent Term Expiry	
UA66389 C2	20020315	LSGT	+	granted / extensions (spc, cpc, pte)	
UA66389 C2	20020315	LSGT	+	granted / extensions (spc, cpc, pte)	
UA66389 C2	20210116	PEXP		Calculated Patent Term Expiry	
UA66389 C2	20210116	PEXP		Calculated Patent Term Expiry	
US6125621 A	20001003	LSGT	+	granted / extensions (spc, cpc, pte)	
US6125621 A	20000914	LSGT	PAT1	Patented Case	
US6125621 A	20000914	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6125621 A	20010502	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, THE, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:BURCH, THOMAS B.; REEL/FRAME:011770/0083 EFFECTIVE DATE : 20010423
US6125621 A	20030311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AM CAPITAL, LLC, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST; ASSIGNOR:BURCH COMPANY; REEL/FRAME:013821/0732 EFFECTIVE DATE : 20030127
US6125621 A	20040329	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6125621 A	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MCMILLAN, LEE Q., NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:BURCH COMPANY; REEL/FRAME:017164/0013 EFFECTIVE DATE : 20051227
US6125621 A	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : RELEASE OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:AM CAPITAL, LLC; REEL/FRAME:017154/0878 EFFECTIVE DATE : 20060131
US6125621 A	20080331	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6125621 A	20090610	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL, LLC, OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MCMILLAN, LEE Q.; REEL/FRAME:022804/0308 EFFECTIVE DATE : 20090604
US6125621 A	20120330	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6125621 A	20180209	PEXP		Calculated Patent Term Expiry	
US6164049 A	20001226	LSGT	+	granted / extensions (spc, cpc, pte)	
US6164049 A	20001207	LSGT	PAT1	Patented Case	
US6164049 A	20001207	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE

US6164049 A	20021112	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:BURCH, THOMAS B.; REEL/FRAME:013231/0514 EFFECTIVE DATE : 20021004
US6164049 A	20030311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AM CAPITAL, LLC, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST; ASSIGNOR:BURCH COMPANY; REEL/FRAME:013821/0732 EFFECTIVE DATE : 20030127
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US6164049 A	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : RELEASE OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:AM CAPITAL, LLC; REEL/FRAME:017154/0878 EFFECTIVE DATE : 20060131
US6164049 A	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MCMILLAN, LEE Q., NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:BURCH COMPANY; REEL/FRAME:017164/0013 EFFECTIVE DATE : 20051227
US6164049 A	20080605	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6164049 A	20090610	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL, LLC, OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MCMILLAN, LEE Q.; REEL/FRAME:022804/0308 EFFECTIVE DATE : 20090604
US6164049 A	20120618	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6164049 A	20181209	PEXP		Calculated Patent Term Expiry (a terminal disclaimer has been filed)	
US6374586 BA	20020423	LSGT	+	granted / extensions (spc, cpc, pte)	
US6374586 BA	20020404	LSGT	PAT1	Patented Case	
US6374586 BA	20020404	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US6374586 BA	20021112	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:BURCH, THOMAS B.; REEL/FRAME:013231/0514 EFFECTIVE DATE : 20021004
US6374586 BA	20030311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AM CAPITAL, LLC, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST; ASSIGNOR:BURCH COMPANY; REEL/FRAME:013821/0732 EFFECTIVE DATE : 20030127
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US6374586 BA	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MCMILLAN, LEE Q., NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:BURCH COMPANY; REEL/FRAME:017164/0013 EFFECTIVE DATE : 20051227
US6374586 BA	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : RELEASE OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:AM CAPITAL, LLC; REEL/FRAME:017154/0878 EFFECTIVE DATE : 20060131
US6374586 BA	20090610	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL, LLC, OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MCMILLAN, LEE Q.; REEL/FRAME:022804/0308 EFFECTIVE DATE : 20090604
US6374586 BA	20090928	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 8
US6374586 BA	20130827	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 12
US6374586 BA	20200919	PEXP		Calculated Patent Term Expiry (PTA 109 days)	
US6446420 BA	20020910	LSGT	+	granted / extensions (spc, cpc, pte)	
US6446420 BA	19990927	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:WORSHAM, ARCH DOUGLAS; BURCH, THOMAS B.; REEL/FRAME:010264/0207; SIGNING DATES FROM 19990916 TO 19990920
US6446420 BA	20030311	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : AM CAPITAL, LLC, NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST; ASSIGNOR:BURCH COMPANY; REEL/FRAME:013821/0732 EFFECTIVE DATE : 20030127
US6446420 BA	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BURCH COMPANY, NORTH CAROLINA OLDPARTY : RELEASE OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:AM CAPITAL, LLC; REEL/FRAME:017154/0878 EFFECTIVE DATE : 20060131
US6446420 BA	20060214	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : MCMILLAN, LEE Q., NORTH CAROLINA OLDPARTY : ASSIGNMENT OF SECURITY INTEREST IN UNITED STATES PATENTS AND TRADEMARKS; ASSIGNOR:BURCH COMPANY; REEL/FRAME:017164/0013 EFFECTIVE DATE : 20051227
US6446420 BA	20060301	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
US6446420 BA	20090610	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ENVIRONMENTALLY SENSITIVE VEGETATION CONTROL, LLC, OLDPARTY : ASSIGNMENT OF

ASSIGNORS INTEREST;
 ASSIGNOR:MCMILLAN, LEE Q.;
 REEL/FRAME:022804/0308
 EFFECTIVE DATE : 20090604

US6446420 BA	20100910	LSLE	-LAPS	LAPSE FOR FAILURE TO PAY MAINTENANCE FEES	
US6446420 BA	20101011	LSLE	-PEX1	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	
US6446420 BA	20101011	LSLE	-STCH	INFORMATION ON STATUS: PATENT DISCONTINUATION	TEXT : PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
US6446420 BA	20101102	LSLE	-FP	EXPIRED DUE TO FAILURE TO PAY MAINTENANCE FEE	EFFECTIVE DATE : 20100910
US6446420 BA	20190901	PEXP		Calculated Patent Term Expiry	
USD386190 S1	19971111	LSGT	+	granted / extensions (spc, cpc, pte)	
USD386190 S1	19971028	LSGT	PAT1	Patented Case	
WO9706664 A1	19970227	LSPB	+	published / reissued	
WO9706664 A1	19960816	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 96197470.2 COUNTRY OF REF DOCUMENT : CN
WO9706664 A1	19971218	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9706664 A1	19980205	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2228601 COUNTRY OF REF DOCUMENT : CA
WO9706664 A1	19980205	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2228601 COUNTRY OF REF DOCUMENT : CA KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO9706664 A1	19980209	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 09011589 COUNTRY OF REF DOCUMENT : US
WO9706664 A1	19980210	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 316296 COUNTRY OF REF DOCUMENT : NZ
WO9706664 A1	19980217	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1996928915 COUNTRY OF REF DOCUMENT : EP
WO9706664 A1	19980217	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : PA/A/1998/001311 COUNTRY OF REF DOCUMENT : MX
WO9706664 A1	19980618	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9706664 A1	19991124	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1996928915 COUNTRY OF REF DOCUMENT : EP
WO9706664 A1	20010410	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 142530 COUNTRY OF REF DOCUMENT : IL
WO9929153 A1	19990617	LSPB	+	published / reissued	
WO9929153 A1	19981209	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 98813343.1 COUNTRY OF REF DOCUMENT : CN
WO9929153 A1	20000607	LSNP	ENP	ENTRY INTO THE	REF DOCUMENT NUMBER :

WO9929153 A1	20000607	LSNP	ENP	NATIONAL PHASE IN:	2316962 COUNTRY OF REF DOCUMENT : CA
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WO9929153 A1	20000608	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 1998960827 COUNTRY OF REF DOCUMENT : EP
WO9929153 A1	20000608	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 16332/99 COUNTRY OF REF DOCUMENT : AU
WO9929153 A1	20000609	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : KR
WO9929153 A1	20000609	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : IN/PCT/2000/69/KOL COUNTRY OF REF DOCUMENT : IN
WO9929153 A1	20000704	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 200000619 COUNTRY OF REF DOCUMENT : EA
WO9929153 A1	20001011	LSPB	+WWP	WIPO INFORMATION: PUBLISHED IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 1998960827 COUNTRY OF REF DOCUMENT : EP
WO9929153 A1	20001012	LSWD	REG	REFERENCE TO NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : 8642
WO9929153 A1	20020207	LSGT	+WWG	WIPO INFORMATION: GRANT IN NATIONAL OFFICE	REF DOCUMENT NUMBER : 16332/99 COUNTRY OF REF DOCUMENT : AU

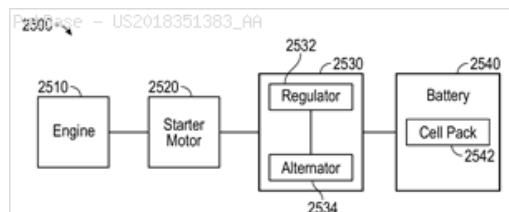
Title: LITHIUM-ION BATTERY FOR ENGINE STARTING

Abstract: An engine includes at least one piston, a rotatable crankshaft, a starter motor, a lithium-ion battery, and a charging system. The rotatable crankshaft is coupled to the at least one piston. The starter motor is configured to selectively initiate rotation of the crankshaft. The lithium-ion battery is in electrical communication with the starter motor and has at least one cell. The charging system is powered by motion of at least one component of the engine. The charging system provides energy to the lithium-ion battery to charge the lithium-ion battery. The engine has a starting condition, a miming condition, and a stopping condition. The charging system continuously applies a voltage potential to the at least one cell while the engine is in a running condition.

Classifications:

International (IPC 8-9): A01D34/68 B60L1/00 B60L11/18 B60W10/26 F02N11/08 H01M10/0525 H01M10/46 H01M4/58 H02J7/00 H02J7/14 (Advanced/Invention)

CPC: B60W10/26 Y02T10/7011 Y02T10/705 Y02T90/16 H02J7/0068 A01D34/6818 A01D2101/00 H01M10/0525 H01M10/46 H01M4/5825 B60L1/003 F02N11/0862 H02J7/1461 B60L58/10



Family:

Publication number	Publication date	Application number	Application date
EP3265352 A1	20180110	EP20160711074	20160303
US2018351383 AA	20181206	US20160555323	20160303
WO16144697 A1	20160915	WO2016US20707	20160303

Priority:

US20150129627P 20150306 US20160555323 20160303 WO2016US20707 20160303

Probable Assignee: BRIGGS AND STRATTON CORP

Assignee(s): (std): BRIGGS AND STRATTON CORP

Inventor(s): (std): ZEILER JEFFREY M ; GILPATRICK RICHARD J

Agent(s): LAWRENCE JOHN; GUNDERSEN JEFFREY S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
EP3265352 A1	20180110	LSPB	+	published / reissued	
EP3265352 A1	20180110	LSSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20170904
US2018351383 AA	20181206	LSPB	+	published / reissued	
US2018351383 AA	20181024	LSSES	NFA1	Non Final Action Mailed	
WO16144697 A1	20160915	LSPB	+	published / reissued	
WO16144697 A1	20170907	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE

Title: PROCESSO E DISPOSITIVO PARA CORTAR MATERIAL

Abstract: Source: BR8204617A [PT] o • 4 • 44 ss • | '4 | 4 m 4 ' • | • 44ss 0 00 4000 4 4 0 0 RESUMO Patente de- Invencao de "PROCESSO E DISPOSITIVO PARA CORTAR MATERIAL", dito processo fazendo uso de um cor tador compreendendo um disco volante livre tendo um 5 bordo de corte formado em torno de sua periferia, sejn do dito disco volante livre montado de forma que o seu eixo fique essencialmente paralelo a direcao do fluxo do material a ser cortado enquanto atravessa um trajeto num plano inclinado na direcao do fluxo de di 10 to material de forma que o eixo do disco caminha na- direcao do fluxo de dito material essencialmente no ritmo do trajeto de dito material a medida que corta- atraves do referido material **Machine translation:** • 4 • 44 ss • | '4 | 4 m 4 ' •... • ss 0 00 4000 4 4 0 0 44 SUMMARY of Patent-Invention of "process and DEVICE for CUTTING MATERIAL," said process making use of a color computer comprising a disc wheel having 1 5 free cutting board formed around your periphery, sejn of the disco volante free mounted so that your axle essentially parallel to the direction of flow of the material to be cut while crosses a path a inclined plane in the direction of flow of di 10 to form material that the **blade** shaft walks in-flow direction of said material essentially the path of said material as it cuts through this material

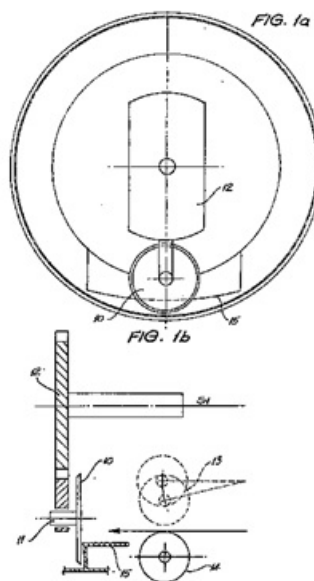
Classifications:

International (IPC 8-9): A01D41/00 A01D45/10 B02C18/06 B02C18/18 B02C18/22 B02C18/38 B26D1/62 B26D7/26 (Advanced/Invention); A01D41/00 A01D45/00 B02C18/00 B02C18/06 B26D1/00 B26D7/26 (Core/Invention)

International (IPC 1-7): A01D41/00 A01D45/10 B02C18/06 B02C18/18 B02C18/22 B02C18/38 B26D1/62 B26D7/26

PatBase - BR8204617_A

38204617



Family:

Publication number	Publication date	Application number	Application date
AU198286717 A1	19830210	AU19820086717	19820803
BR8204617 A	19830726	BR19820004617	19820804

Priority:

AU1981PF00037 19810804 AU19820086717 19820803

Probable Assignee: ARMSTRONG W E

Assignee(s): (std): ARMSTRONG W E ; ARMSTRONG WARWICK EDWARD

Assignee(s): ARMSTRONG WE

Inventor(s): (std): ARMSTRONG WARWICK EDWARD

Inventor(s): WARWICK EDWARD ARMSTRONG

Agent(s): FB RICE; FB RICE PTY LTD

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AU198286717 A1	19830210	LSPB	+	published / reissued	
BR8204617 A	19830726	LSPB	+	published / reissued	

Title: FILLING LEVEL DETECTOR FOR GRASS COLLECTING BOX

Abstract: The sensor has an operating lever (88) and a first switch (96), to deliver a warning signal. The lever is hinged about a horizontal pivot axis. The torque of the lever, which moves under gravity, can be altered, by altering the position of one or more masses (132) arranged on the lever. An Independent claim is included for a machine for **lawn**, garden or estate maintenance incorporating a collecting container, e.g. for grass, and the sensor.

Classifications:

International (IPC 8-9): A01D43/063 G01F23/14

G01F23/20 (Advanced/Invention);

A01D34/63 (Advanced/Non-invention);

A01D43/00 G01F23/00 G01F23/14 (Core/Invention);

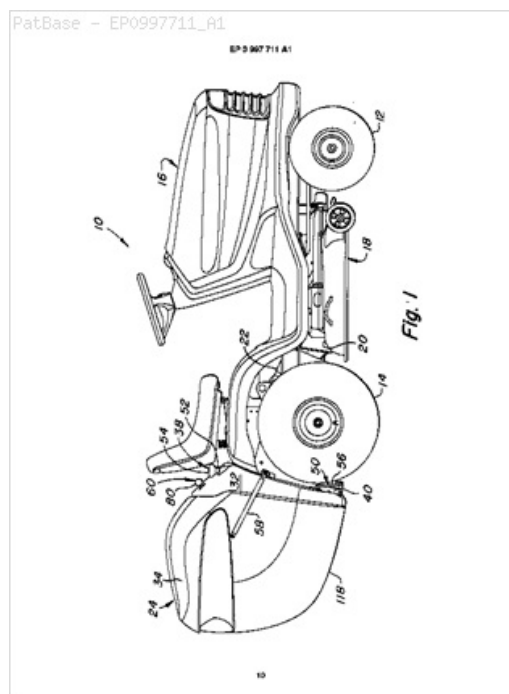
A01D34/63 (Core/Non-invention)

International (IPC 1-7): A01D34/70 A01D43/063 G01F23/20

CPC: A01D34/63 A01D43/0631 A01D2101/00 G01F23/14 G01F23/205

European: A01D43/063C G01F23/14 G01F23/20A K01D101/00

K01D34/63



Family:

Publication number	Publication date	Application number	Application date
CA2277003 AA	20000426	CA19992277003	19990708
EP0997711 A1	20000503	EP19990120738	19991020

Priority:

US19980179040 19981026 CA19992277003 19990708

Probable Assignee: DEERE AND CO

Assignee(s): (std): DEERE AND CO

Assignee(s): DEERE AND COMPANY ; SEBBEN DANIEL ANGELO ; ZELLMER TIMOTHY PAUL ; BENWAY RANDY EDWARD

Inventor(s): (std): BENWAY RANDY EDWARD ; ZELLMER TIMOTHY PAUL ; SEBBEN DANIEL ANGELO ; RANDY EDWARD BENWAY

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

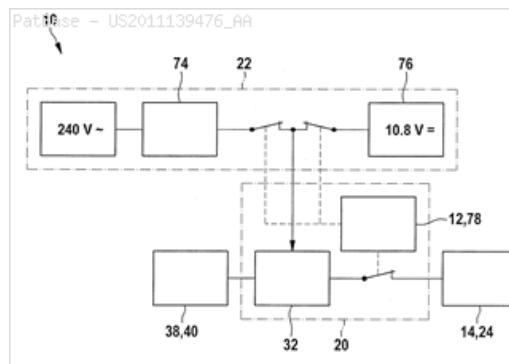
Legal status (INPADOC)

[View legal status timeline](#)

Patent	Date recorded	Event group	Code	Event	Details
CA2277003 AA	20000426	LSPB	+	published / reissued	
CA2277003 AA	19990708	LSES	+EEER	EXAMINATION REQUEST	
CA2277003 AA	20020708	LSLE	-FZDE	DEAD	
EP0997711 A1	20000503	LSPB	+	published / reissued	
EP0997711 A1	20000524	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20000330
EP0997711 A1	20000823	LSWD	-18W	APPLICATION WITHDRAWN	DATE APPLICATION WITHDRAWN : 20000704

Abstract: The invention relates to a garden **tool** having at least one working **blade** for performing a cutting operation. The garden **tool** includes a user control part for user activation of the garden **tool**. A drive unit generates a working motion of the at least one working **blade** which has a **blade** region for a linear and/or oscillating working motion of the at least one driven working **blade**. An electronic unit acts upon the drive unit with at least control and/or regulating signals, and an operating voltage unit furnishes an electrical energy supply to the electronic unit. It is proposed that the drive unit includes at least one excitation actuator having a volume of excitation-active material, which actuator is electrically supplied in operation by the operating voltage unit and is controlled or regulated by the electronic unit.

International (IPC 8-9): A01B1/02 A01B1/06 A01B1/24 A01B39/00
A01B45/02 A01D34/00 A01D34/01 A01D34/08 A01D34/10 A01D34/13
A01D34/30 A01D34/47 A01D34/67 A01D34/82 A01G1/12 A01G3/025
A01G3/033 A01G3/037 A01G3/04 A01G3/053 A01G3/06
A01G3/066 A01G3/067 A01G3/068 A01G3/069 A01G3/07
A01G3/071 A01G3/072 A01G3/073 A01G3/074 A01G3/075
A01G3/076 A01G3/077 A01G3/078 A01G3/079 A01G3/08
A01G3/081 A01G3/082 A01G3/083 A01G3/084 A01G3/085
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