

Search history

Search 1: FT=(EXCAVATOR~ WEAR~ ASSEMBLY~ OR PIEVE~ OF WEAR~ AND LOCK~ PIN~ AND TOOL~ RETENTION~ AND ECCENTRIC~) (Results 0)
Search 2: ft=(excavator~ wear~ assembly~ and lock~ pin~ and tool~ retention~ and eccentric~) (Results 0)
Search 3: FT=(EXCAVATOR~ WEAR~ ASSEMBLY~ AND LOCK PIN~ AND TOOL~ AND ECCENTRIC~) (Results 0)
Search 4: wear assembly (Results 305)
Search 5: wear assembly and MEMBER and eccentric (Results 7)

Title: A MOUNTING PIN ASSEMBLY FOR AN EXCAVATOR WEAR **MEMBER**

Abstract: A retaining pin assembly having a body **member** with a latch cavity defined therein such that the latch cavity opens at an outer face of said body **member**. A latch **member** is located within the latch cavity and the latch **member** has a drive slot. A drive **member** is slidably located within the drive slot of the latch **member**. The retaining pin assembly also has an adjustment assembly adapted to move the drive **member** within the drive slot to thereby move the latch **member** from a retracted position whereby the latch **member** is located within the latch cavity, and an extended position, whereby at least a portion of the latch **member** extends outwardly of the opening of the latch cavity.

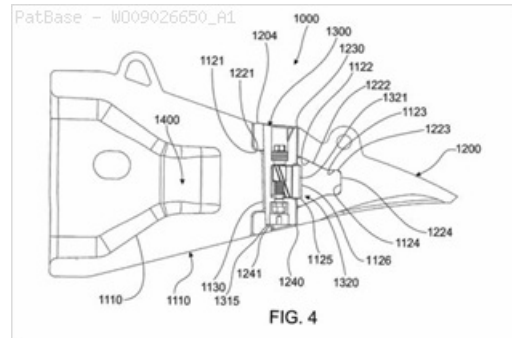
Classifications:

International (IPC 8-9): E02F9/28 F16B3/00 (Advanced/Invention);

E02F9/28 F16B3/00 (Core/Invention)

CPC: E02F9/2833 F16B2/14 F16B37/00

European: E02F9/28A2C F16B2/14 F16B37/00



Family:

Publication number	Publication date	Application number	Application date
WO09026650 A1	20090305	WO2008AU01283	20080829

Priority:

AU20070904723 20070831

Probable Assignee: CQMS PTY LTD

Assignee(s): (std): CQMS PTY LTD ; ORTON SIMON PETER ; PLANT BENJAMIN CHARLES

Inventor(s): (std): PLANT BENJAMIN CHARLES ; ORTON SIMON PETER

Agent(s): FISHER ADAMS KELLY

Designated states: AE AG AL AM AO 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 ST 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
WO09026650 A1	20090305	LSPB	+	published / reissued	
WO09026650 A1	20100302	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO09026650 A1	20101103	LSNE	-122	EP: PCT APPLICATION NON-ENTRY IN EUROPEAN PHASE	REF DOCUMENT NUMBER : 08783028 COUNTRY OF REF DOCUMENT : EP KIND CODE OF REF DOCUMENT : A1 DESIGNATED STATE(S) :

Title: WEAR **MEMBER** FOR EARTH WORKING EQUIPMENT

Abstract: A wear **member** and fastener for securing the wear **member** to earth working equipment. The fastener can be installed and maintained from the top of the assembly. An **eccentric** retainer is received in a recess of the wear **member** and is rotated to shift the wear **member** rearward on the earth working equipment. A bolt passing through aligned openings of the earth working equipment and the wear **member** is received by the retainer to secure the wear **member** to the earth working equipment.

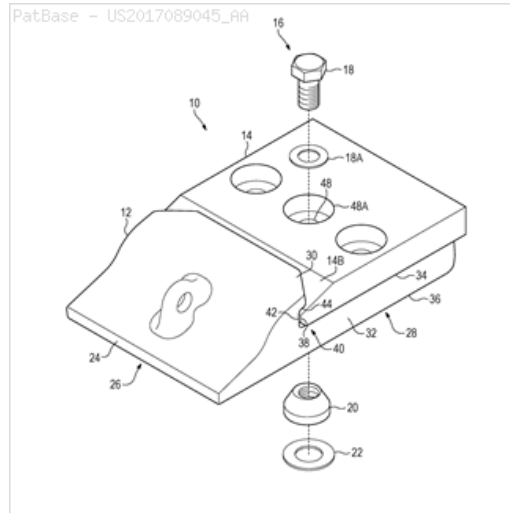
Classifications:

International (IPC 8-9): E02F3/40 E02F9/28 E21C35/00 E21C35/18 E21C35/19 F16B37/04 (Advanced/Invention)

International (IPC 1-7): E02F9/28

CPC: E02F9/2833 E02F9/2808 E02F3/40 E02F9/2883

US: 37/455



Family:

Publication number	Publication date	Application number	Application date
AU2016330932 AA	20180510	AU20160330932	20160929
BR112018005981 A2	20181009	BR20181105981	20160929
CA3000394 AA	20180328	CA20163000394	20160929
CL2018000769 A1	20180713	CL20180000769	20180323
CN108138471 A	20180608	CN201680056434	20160929
CO20180003014 A2	20180612	CO20180003014	20180321
EA201890839 A1	20180831	EA20180090839	20160929
EP3356609 A1	20180808	EP20160852555	20160929
EP3425130 A1	20190109	EP20180169915	20160929
ID201812475 A	20181130	ID2018PID02723	20160929
IN201817014228 A	20180907	IN201817014228	20180413
JP2018534450 T2	20181122	JP20180513830T	20160929
MX2018003794 A1	20180622	MX20180003794	20160929
PE07852018 A1	20180508	PE20180000436	20160929
PH2018500614 A	20181001	PH20180500614	20180321
US2017089045 AA	20170330	US20160279806	20160929
US2019003156 AA	20190103	US20180039607	20180719
US10030367 BB	20180724	US20160279806	20160929
WO17059009 A1	20170406	WO2016US54333	20160929

Priority:

US20150234473P 20150929 EP20160852555 20160929 US20160279806 20160929
WO2016US54333 20160929 US20180039607 20180719

Probable Assignee: ESCO GROUP LLC

Assignee(s): (std): ESCO CORP ; ESCO GROUP LLC WAS ESCO CORP.. ; ESCO GROUP LLC

Assignee(s): ESCO GROUP LLC WAS ESCO CORPORATION ; QIAN JUNBO ; MOORE SEAN G ; DUNFORD MATTHEW J ; HODGES GEOFFREY R ; HANKLAND JOEL S ; AMES JARED R ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AS ; CLARKE RODNEY K ; DARE MICHAEL C

Inventor(s): (std): MOORE SEAN G ; AMES JARED R ; CLARKE RODNEY K ; QIAN JUNBO ; DUNFORD MATTHEW J ; DARE MICHAEL C ; HANKLAND JOEL S ; HODGES GEOFFREY R ; DARE C MICHAEL ; CLARKE K RODNEY ; DUNFORD J MATTHEW ; MOORE G SEAN ; HODGES R GEOFFREY ; HANKLAND S JOEL ; JUNBO QIAN ; SEAN G MOORE ; MATTHEW J DUNFORD ; JOEL S HANKLAND ; RODNEY K CLARKE ; GEOFFREY R HODGES ; MICHAEL C DARE ; DUNFORD MATTHEW J ; JARED R AMES

Inventor(s): JOEL HANKLAND S ; MATTHEW DUNFORD J ; SEAN MOORE G ; GEOFFREY HODGES R ; DARE C ; CLARKE K ; DUNFORD J ; MOORE G ; HODGES R ; HANKLAND S ; MICHAEL DARE C ; RODNEY CLARKE K

Agent(s): MINTER ELLISON ; WILSON LUE LLP ; MARINO PORZIO ; JOSE ANDRES RINCON USCATEGUI ; OFFICE KIRKPATRICK ; ARGYMA ; BUDI RAHMAT SH ; ONO SHINJIRO ; YAMAMOTO OSAMU ; MIYAMAE TORU ; NAKANISHI MOTOHARU ; TAKEUCHI SHIGEO ; JOHN ; SCHAD STEVEN 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 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 KM KN KP KR KW 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
AU2016330932 AA	20180510	LSPB	+	published / reissued	
AU2016330932 AA	20180927	LSAS	HB	ALTERATION OF NAME IN REGISTER	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC OLDPARTY : FORMER NAME(S): ESCO CORPORATION
CA3000394 AA	20180328	LSPB	+	published / reissued	
CL2018000769 A1	20180713	LSPB	+	published / reissued	
CN108138471 A	20180608	LSPB	+	published / reissued	
CN108138471 A	20180608	LSPB	PB01	PUBLICATION	
CN108138471 A	20181120	LSAS	TA01	TRANSFER OF PATENT APPLICATION RIGHT	
CN108138471 A	20190215	LSAS	CB02	CHANGE OF APPLICANT INFORMATION	
CO20180003014 A2	20180612	LSPB	+	published / reissued	
EA201890839 A1	20180831	LSPB	+	published / reissued	
EP3356609 A1	20180808	LSPB	+	published / reissued	
EP3356609 A1	20180808	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20180427
EP3356609 A1	20181114	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC
EP3425130 A1	20190109	LSPB	+	published / reissued	
ID201812475 A	20181130	LSPB	+	published / reissued	
IN201817014228 A	20180907	LSPB	+	published / reissued	
JP2018534450 T2	20181122	LSPB	+	published / reissued	
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MX2018003794 A1	20180622	LSPB	+	published / reissued	
PE07852018 A1	20180508	LSPB	+	published / reissued	
PH2018500614 A	20181001	LSPB	+	published / reissued	
US10030367 BB	20180724	LSGT	+	granted / extensions (spc, cpc, pte)	
US10030367 BB	20170221	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:DARE, MICHAEL C.; CLARKE, RODNEY K; QIAN, JUNBO; AND OTHERS; SIGNING DATES FROM 20170103 TO 20170207; REEL/FRAME:041318/0630
US10030367 BB	20180704	LSGT	PAT1	Patented Case	

US10030367 BB	20180817	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC, OREGON OLDPARTY : MERGER AND CHANGE OF NAME; ASSIGNORS:ESCO CORPORATION; ESCO GROUP LLC; REEL/FRAME:046848/0493 EFFECTIVE DATE : 20180711
US10030367 BB	20360929	PEXP		Calculated Patent Term Expiry	
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US2017089045 AA	20170630	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BANK OF AMERICA, N.A., AS ADMINISTRATIVE AGENT, NO OLDPARTY : NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS; ASSIGNOR:ESCO CORPORATION; REEL/FRAME:043070/0413 EFFECTIVE DATE : 20170630
US2017089045 AA	20171105	LSES	-NFA2	Non Final Action Counted, Not Yet Mailed	
US2017089045 AA	20171106	LSES	NFA1	Non Final Action Mailed	
US2017089045 AA	20180305	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2017089045 AA	20180605	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2017089045 AA	20180614	LSFE	+AWA3	Awaiting TC Resp, Issue Fee Payment Verified	
US2017089045 AA	20180614	LSFE	+PPV1	Publications -- Issue Fee Payment Verified	
US2017089045 AA	20180704	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2017089045 AA	20180716	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:BANK OF AMERICA, N.A.; REEL/FRAME:046355/0901 EFFECTIVE DATE : 20180711
US2019003156 AA	20190103	LSPB	+	published / reissued	
WO17059009 A1	20170406	LSPB	+	published / reissued	
WO17059009 A1	20180315	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2018513830 COUNTRY OF REF DOCUMENT : JP KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
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WO17059009 A1	20180326	LSNP	+WWE	WIPO INFORMATION:	REF DOCUMENT NUMBER : MX/A/2018/003794

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WO17059009 A1	20180427	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : A201802331 COUNTRY OF REF DOCUMENT : UA
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WO17059009 A1	20180510	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2016330932 COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20160929 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO17059009 A1	20181009	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 112018005981 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20180326

Title: ANNULAR BLOWOUT PREVENTER

Abstract: An annular blowout preventer having a resilient sealing ring with an inner bore through which well tools and the like may pass when the sealing ring is in the open position and which is compressible to smaller diameters for packing off around a drill string or the like, or even to fully close the bore, wherein the sealing ring is molded or is otherwise connected with confining upper and lower wedge members, and is actuated by an inflatable bag preferably having rigid confining strips which bridge the longitudinal distance from the upper to the lower wedges, whereby the sealing ring is substantially fully confined except at the sealing area of its inner bore.

Classifications:

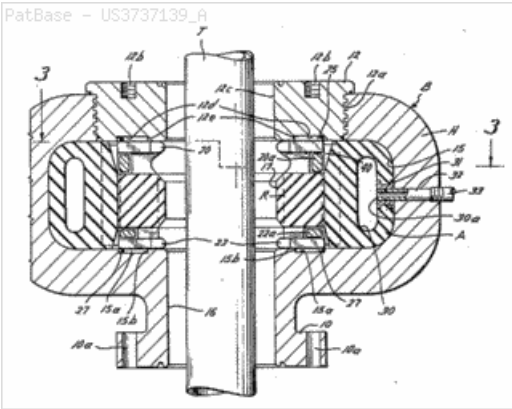
International (IPC 8-9): E21B33/06 F16L17/10 (Advanced/Invention);
E21B33/03 F16L17/00 (Core/Invention)

International (IPC 1-7): E21B33/06 F16K7/07

CPC: E21B33/06 F16L17/10

European: E21B33/06 F16L17/10

US: 251/1 251/1.2 251/5 277/324 277/332



Family:

Publication number	Publication date	Application number	Application date
US3737139 A	19730605	US19710157466	19710628

Priority:

US19710157466 19710628

Probable Assignee:

HYDRIL CO

Assignee(s): (std):

HYDRIL CO

Assignee(s):

HYDRIL CO US

Inventor(s): (std):

WATTS J

Inventor(s):

WATTS J US

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
US3737139 A	19730605	LSGT	+	granted / extensions (spc, cpc, pte)	

Title: EXCAVATOR WEAR EDGE

Abstract: A replaceable wear edge for the forward edge of an excavator such as the lip or wing and which includes a generally U-shaped wear **member** equipped with a generally T-shaped slot engageable with a conforming T-shaped boss on a confronting surface on the excavator, the wear **member** upper surface being equipped with a keeper-equipped opening for receiving a lock between the boss and wear **member**.

Classifications:

International (IPC 8-9): E02F3/40 E02F3/58 E02F3/60

E02F9/28 (Advanced/Invention);

E02F9/28 (Core/Invention);

E02F3/40 (Core/Non-invention)

International (IPC 1-7): E02F E02F3/14 E02F3/40 E02F3/58 E02F3/60

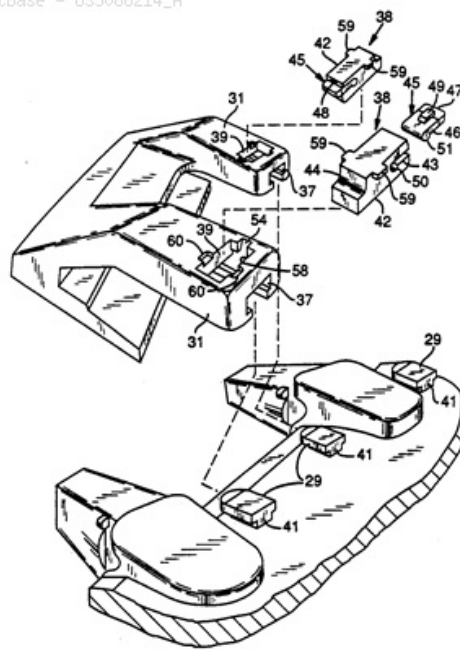
E02F3/80 E02F9/28 F16B1/00 F16B5/00

CPC: E02F9/2883 E02F3/60 E02F9/2841

European: E02F3/60 E02F9/28 E02F9/28A2C2

US: 172/772 172/772.5 37/141R 37/142A 37/398 37/450 37/451

PatBase - US5088214_A



Family:

Publication number	Publication date	Application number	Application date
AT129039 E	19951015	AT19920903826T	19920113
AU199211889 A1	19920827	AU19920011889	19920113
AU199337740 A1	19930903	AU19930037740	19930217
AU199717863 A1	19970605	AU19970017863	19970414
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AU678964 B2	19970619	AU19930037740	19930217
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CN2108126 U	19920624	CN19922000880U	19920117
DE69205378 D1	19951116	DE19926005378	19920113
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EP0530330 A4	19930609	EP19920903826	19920113
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EP0626025 B1	19990825	EP19930906967	19930217
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ES2137255 T3	19991216	ES19930906967T	19930217
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FI924152 A	19920916	FI19920004152	19920916
FI924152 A0	19920916	FI19920004152	19920916
GR3017725 T3	19960131	GR19950402385T	19951012
HK1005598 A1	19990115	HK19980104775	19980603
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NO180727 B	19970224	NO19920003604	19920916
NO180727 C	19970604	NO19920003604	19920916
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NZ251012 A	19980126	NZ19930251012	19930217
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PT100039 B	19990226	PT19920100039	19920117
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TH4841 B	19951019	TH19921000061	19920116
TR25592 A	19930701	TR19920000031	19920115
TW200551 B	19930221	TW19920100186	19920113
US5088214 A	19920218	US19910642390	19910117
US5241765 A	19930907	US19920837135	19920218
WO9213145 A1	19920806	WO1992US00197	19920113
WO9316239 A1	19930819	WO1993US01364	19930217
ZA9200033 A	19920930	ZA19920000033	19920103
ZA9301094 A	19931006	ZA19930001094	19930217

Priority:

US19910642390 19910117

JP19920503838 19920113

WO1992US00197 19920113

US19920837135 19920217

US19920837135 19920218

AU19930037740 19930217

WO1993US01364 19930217

Probable Assignee: ESCO CORP

Assignee(s): (std): ESCO CO ; ESCO CORP

Assignee(s): ESCO CORP PORTLAND ; ESCO CORP PORTLAND OREG US ; ESCO CORPORATIONUS ; ESUKO CORP ; GOETH FREDERICK C ; HUNGERFORD EMORY D ; JONES LARREN F ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AS ; ESCO A CORP OF OREGON CORP

Inventor(s): (std): JONES LARREN F ; HUNGERFORD EMORY D ; GOETH FREDERICK C ; JEANS LAREN F ; JOONZU RAREN EFU ; LARREN F JONES ; EMORY D HUNGERFORD ; RAREN EFU JIYOONZU ; FREDERICK C GOETH ; LAREN F JEANS ; GOETH FREDERICK ; JONES LARREN ; HUNGERFORD EMORY

Inventor(s): JONES ; Larren F. ; JONES LARREN F HUNGERFORD EMORY D GOETH FREDERICK C ; JONES LARREN F ALOHA OR 97007 US ; GEESU FUREDERITSUKU SHII ; HANGAAFUOODO EMORII DEII ; JONZU RAAREN EFU ; RAREN EFU JOONZU

Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; FINLAYSON AND SINGLEHURST; SARGENT

Designated states: AT AU BE BR CA CH DE DK ES FI FR GB GR IE IT JP KR LI LU MC NL NO NZ PT RU SE

Legal status (INPADOC)

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Patent	Date recorded	Event group	Code	Event	Details
AT129039 E	19951015	LSGT	+	granted / extensions (spc, cpc, pte)	
AT129039 E	19960515	LSPB	+UEP	PUBLICATION OF TRANSLATION OF EUROPEAN PATENT SPECIFICATION	
AT129039 E	19981015	LSLE	-REN	CEASED DUE TO NON-PAYMENT OF THE ANNUAL FEE	
AT129039 E	20120113	PEXP		Calculated Patent Term Expiry	
AU199211889 A1	19920827	LSPB	+	published / reissued	
AU199337740 A1	19930903	LSPB	+	published / reissued	
AU199717863 A1	19970605	LSPB	+	published / reissued	
AU642377 B2	19931014	LSGT	+	granted / extensions (spc, cpc, pte)	

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BRPI9205368 A	19950411	LSES	+EE	REQUEST FOR EXAMINATION	
BRPI9205368 A	19980630	LSGT	+FF	DECISION: INTENTION TO GRANT	
BRPI9205368 A	19981229	LSGT	+FG9A	PATENT OR CERTIFICATE OF ADDITION GRANTED	
BRPI9205368 A	20130702	LSLE	-B21A	EXPIRY ACC. ART. 78, ITEM I OF IPL- EXPIRY OF THE TERM OF PROTECTION	TEXT : PATENTE EXTINTA EM 13/01/2012
BRPI9305911 A	19970819	LSPB	+	published / reissued	
BRPI9305911 A	19990914	LSGT	+FF	DECISION: INTENTION TO GRANT	
BRPI9305911 A	20000321	LSGT	+FG9A	PATENT OR CERTIFICATE OF ADDITION GRANTED	
BRPI9305911 A	20130709	LSLE	-B21A	EXPIRY ACC. ART. 78, ITEM I OF IPL- EXPIRY OF THE TERM OF PROTECTION	TEXT : PATENTE EXTINTA EM 17/02/2013
CA2076019 AA	19920812	LSPB	+	published / reissued	
CA2076019 AA	19930308	LSES	+EEER	EXAMINATION REQUEST	
CA2076019 C	19990420	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2076019 C	20120113	LSLE	-MKEX	EXPIRY	
CA2076019 C	20120113	PEXP		Calculated Patent Term Expiry	
CA2129004 AA	19940727	LSPB	+	published / reissued	
CA2129004 AA	19950428	LSES	+EEER	EXAMINATION REQUEST	
CA2129004 C	19971216	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2129004 C	20130422	LSLE	-MKEX	EXPIRY	EFFECTIVE DATE : 20130218
CA2129004 C	20130217	PEXP		Calculated Patent Term Expiry	

CL1993000179 A1	19940307	LSPB	+	published / reissued	
CL45926 B	20091110	LSGT	+	granted / extensions (spc, cpc, pte)	
CL45926 B	20241110	PEXP		Calculated Patent Term Expiry	
CN2108126 U	19920624	LSPB	+	published / reissued	
CN2108126 U	19920624	LSPB	+C06	PUBLICATION	
CN2108126 U	19930714	LSGT	+C14	GRANT OF PATENT OR UTILITY MODEL	
CN2108126 U	20000802	LSLE	-C17	CESSATION OF PATENT RIGHT	
DE69205378 D1	19961107	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE69205378 T2	19960515	LSGT	+	granted / extensions (spc, cpc, pte)	
DE69205378 T2	20120113	PEXP		Calculated Patent Term Expiry	
DE69326139 D1	20000914	LSGT	+8364	NO OPPOSITION DURING TERM OF OPPOSITION	
DE69326139 D1	20130217	LSLE	-R071	EXPIRY OF RIGHT	REF DOCUMENT NUMBER : 626025 COUNTRY OF REF DOCUMENT : EP
DE69326139 D1	20130219	LSLE	-R071	EXPIRY OF RIGHT	
DE69326139 T2	19991209	LSGT	+	granted / extensions (spc, cpc, pte)	
DE69326139 T2	20130217	PEXP		Calculated Patent Term Expiry	
DK0530330 T3	19960219	LSGT	+	granted / extensions (spc, cpc, pte)	
DK0530330 T3	20120113	PEXP		Calculated Patent Term Expiry	
EP0530330 A1	19930310	LSPB	+	published / reissued	
EP0530330 A1	19930331	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19930204
EP0530330 A4	19930609	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	EFFECTIVE DATE : 19930421
EP0530330 A4	19950111	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 19941124
EP0530330 B1	19951011	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0530330 B1	19951231	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL PAYMENT DATE : 19951231 YEAR OF FEE PAYMENT : 5
EP0530330 B1	19960101	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2079179 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :
EP0530330 B1	19960201	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : LU PAYMENT DATE : 19960201 YEAR OF FEE PAYMENT : 5
EP0530330 B1	19961002	LSGT	+26N	NO OPPOSITION	

EP0530330 B1	19961218	LSFE	+PGFP	FILED ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DK PAYMENT DATE : 19961218 YEAR OF FEE PAYMENT : 6
EP0530330 B1	19961223	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GR PAYMENT DATE : 19961223 YEAR OF FEE PAYMENT : 6
EP0530330 B1	19961223	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : AT PAYMENT DATE : 19961223 YEAR OF FEE PAYMENT : 6
EP0530330 B1	19970113	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 : 19970113
EP0530330 B1	19970206	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE PAYMENT DATE : 19970206 YEAR OF FEE PAYMENT : 6
EP0530330 B1	19970422	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH PAYMENT DATE : 19970422 YEAR OF FEE PAYMENT : 6
EP0530330 B1	19970801	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : NL LAPSED DATE : 19970801
EP0530330 B1	19971001	LSLE	-NLV4	NL: LAPSED OR ANULLED DUE TO NON-PAYMENT OF THE ANNUAL FEE	REF COUNTRY CODE : EP EFFECTIVE DATE : 19970801
EP0530330 B1	19980113	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 NON-PAYMENT OF DUE FEES LAPSED DATE : 19980113
EP0530330 B1	19980131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : CH NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 19980131
EP0530330 B1	19980131	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : BE NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES LAPSED DATE : 19980131
EP0530330 B1	19980131	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 NON-PAYMENT OF DUE FEES LAPSED DATE : 19980131
EP0530330 B1	19980131	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 : 19980131
EP0530330 B1	19980202	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT	COUNTRY OF REF DOCUMENT : DK NOTIFICATION OF LAPSE : LAPSE BECAUSE OF NON-PAYMENT OF DUE FEES

EP0530330 B1	19980731	LSLE	-BERE	INFORMATION FROM NATIONAL OFFICE TO EPO] BE: LAPSED	LAPSED DATE : 19980202 PARTYTYPE : OWNER REF COUNTRY CODE : EP OWNER : ESCO CORP. EFFECTIVE DATE : 19980131
EP0530330 B1	19980915	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : CH REF LEGAL EVENT CODE : PL
EP0530330 B1	20000501	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DK REF LEGAL EVENT CODE : EBP
EP0530330 B1	20110531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20110126 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20110531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20110127 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20110531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20110301 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20110531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20110127 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20110729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20110125 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20110729	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 20110126 YEAR OF FEE PAYMENT : 20
EP0530330 B1	20120113	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R071 REF DOCUMENT NUMBER : 69205378 COUNTRY OF REF DOCUMENT : DE
EP0530330 B1	20120114	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R071 REF DOCUMENT NUMBER : 69205378 COUNTRY OF REF DOCUMENT : DE
EP0530330 B1	20120201	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : PE20 EXPIRY DATE : 20120112
EP0530330 B1	20120306	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : SE REF LEGAL EVENT CODE : EUG
EP0530330 B1	20120430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF EXPIRATION OF PROTECTION LAPSED DATE : 20120114
EP0530330 B1	20120510	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FD2A EFFECTIVE DATE : 20120510
EP0530330 B1	20120629	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 EXPIRATION OF PROTECTION LAPSED DATE : 20120112

EP0530330 B1	20120731	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 EXPIRATION OF PROTECTION LAPSED DATE : 20120114
EP0530330 B1	20120112	PEXP		Calculated Patent Term Expiry	
EP0530330 B1	20120113	PEXP		Calculated Patent Term Expiry	
EP0626025 A1	19941130	LSPB	+	published / reissued	
EP0626025 A1	19941130	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 19940909
EP0626025 A4	19950517	LSES	+A4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED	
EP0626025 A4	19970730	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 19970612
EP0626025 B1	19990825	LSGT	+	granted / extensions (spc, cpc, pte)	
EP0626025 B1	19991216	LSGT	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FG2A REF DOCUMENT NUMBER : 2137255 COUNTRY OF REF DOCUMENT : ES KIND CODE OF REF DOCUMENT : T3 DESIGNATED STATE(S) :
EP0626025 B1	20000809	LSGT	+26N	NO OPPOSITION FILED	
EP0626025 B1	20120430	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : FR PAYMENT DATE : 20120306 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20120531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE PAYMENT DATE : 20120228 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20120531	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : PT PAYMENT DATE : 20120201 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20120629	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : GB PAYMENT DATE : 20120224 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20120629	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : IT PAYMENT DATE : 20120224 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20120629	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : SE PAYMENT DATE : 20120228 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20130219	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : DE REF LEGAL EVENT CODE : R071 REF DOCUMENT NUMBER : 69326139 COUNTRY OF REF DOCUMENT : DE
EP0626025 B1	20130226	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : PT REF LEGAL EVENT CODE : MM4A TEXT : MAXIMUM VALIDITY LIMIT REACHED EFFECTIVE DATE : 20130217

EP0626025 B1	20130313	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : GB REF LEGAL EVENT CODE : PE20 EXPIRY DATE : 20130216
EP0626025 B1	20130402	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : SE REF LEGAL EVENT CODE : EUG
EP0626025 B1	20130430	LSLE	-PG25	LAPSED IN A CONTRACTING STATE [ANNOUNCED VIA POSTGRANT INFORMATION FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : DE NOTIFICATIONOFLAPSE : LAPSE BECAUSE OF EXPIRATION OF PROTECTION LAPSED DATE : 20130219
EP0626025 B1	20130430	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 EXPIRATION OF PROTECTION LAPSED DATE : 20130216
EP0626025 B1	20130531	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 EXPIRATION OF PROTECTION LAPSED DATE : 20130226
EP0626025 B1	20130628	LSFE	+PGFP	ANNUAL FEE PAID TO NATIONAL OFFICE [ANNOUNCED FROM NATIONAL OFFICE TO EPO]	COUNTRY OF REF DOCUMENT : ES PAYMENT DATE : 20120227 YEAR OF FEE PAYMENT : 20
EP0626025 B1	20130718	LSLE	REG	REFERENCE TO A NATIONAL CODE	REF COUNTRY CODE : ES REF LEGAL EVENT CODE : FD2A EFFECTIVE DATE : 20130718
EP0626025 B1	20130731	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 EXPIRATION OF PROTECTION LAPSED DATE : 20130218
EP0626025 B1	20130216	PEXP		Calculated Patent Term Expiry	
EP0626025 B1	20130217	PEXP		Calculated Patent Term Expiry	
ES2079179 T3	19960101	LSGT	+	granted / extensions (spc, cpc, pte)	
ES2079179 T3	19960101	LSGT	+FG2A	DEFINITIVE PROTECTION	REF DOCUMENT NUMBER : 530330 COUNTRY OF REF DOCUMENT : ES
ES2079179 T3	20120113	PEXP		Calculated Patent Term Expiry	
ES2137255 T3	19991216	LSGT	+	granted / extensions (spc, cpc, pte)	
ES2137255 T3	19991216	LSGT	+FG2A	DEFINITIVE PROTECTION	REF DOCUMENT NUMBER : 626025 COUNTRY OF REF DOCUMENT : ES
ES2137255 T3	20130217	PEXP		Calculated Patent Term Expiry	
FI104842 B	20000414	LSPB	+	published / reissued	
FI104842 B	20120916	PEXP		Calculated Patent Term Expiry	
FI924152 A	19920916	LSPB	+	published / reissued	
GR3017725 T3	19960131	LSGT	+	granted / extensions (spc, cpc, pte)	
GR3017725 T3	20151012	PEXP		Calculated Patent Term Expiry	
HK1005598 A1	19990115	LSPB	+	published / reissued	
HK1005598 A1	20041215	LSFE	+PF	PATENT IN FORCE	

HK1005598 A1	20120210	LSLE	-PE	PATENT EXPIRED	EFFECTIVE DATE : 20120112
HK1005598 A1	20180603	PEXP		Calculated Patent Term Expiry	
JP2130738 C3	19970711	LSGT	+	granted / extensions (spc, cpc, pte)	
JP2130738 C3	20120113	PEXP		Calculated Patent Term Expiry	
JP2637625 B2	19970806	LSGT	+	granted / extensions (spc, cpc, pte)	
JP2637625 B2	20040420	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2637625 B2	20050419	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2637625 B2	20060523	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2637625 B2	20070515	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2637625 B2	20080507	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 12
JP2637625 B2	20090416	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 12
JP2637625 B2	20090421	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 13
JP2637625 B2	20110412	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 15
JP2637625 B2	20130217	LSLE	-EXPY	CANCELLATION BECAUSE OF COMPLETION OF TERM	
JP2637625 B2	20130217	PEXP		Calculated Patent Term Expiry	
JP2807452 B2	19981008	LSGT	+	granted / extensions (spc, cpc, pte)	
JP2807452 B2	20040727	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2807452 B2	20050712	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2807452 B2	20060808	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP2807452 B2	20070807	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 10
JP2807452 B2	20080805	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 11
JP2807452 B2	20090728	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 12
JP2807452 B2	20100720	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE IS RENEWAL	YEAR OF FEE PAYMENT : 13

JP2807452 B2	20110712	LSFE	+FPAY	DATE OF DATABASE) RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 14
JP2807452 B2	20120113	LSLE	-EXPY	CANCELLATION BECAUSE OF COMPLETION OF TERM	
JP2807452 B2	20120404	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 14
JP2807452 B2	20170307	PEXP		Calculated Patent Term Expiry	
JP5504803 T2	19930722	LSPB	+	published / reissued	
JP7504242 T2	19950511	LSPB	+	published / reissued	
JP8019698 B4	19960228	LSPB	+	published / reissued	
JP8019698 B4	20050222	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP8019698 B4	20060207	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP8019698 B4	20070306	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP8019698 B4	20080311	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 13
JP8019698 B4	20090219	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 13
JP8019698 B4	20090224	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 14
JP8019698 B4	20100212	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 14
JP8019698 B4	20100216	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 15
JP8019698 B4	20110215	LSFE	+FPAY	RENEWAL FEE PAYMENT (EVENT DATE IS RENEWAL DATE OF DATABASE)	YEAR OF FEE PAYMENT : 16
JP8019698 B4	20120113	LSLE	-EXPY	CANCELLATION BECAUSE OF COMPLETION OF TERM	
JP9328787 A2	19971222	LSPB	+	published / reissued	
KR19937000740 A	19930316	LSPB	+	published / reissued	
KR970001731 B1	19970101	LSGT	+	granted / extensions (spc, cpc, pte)	
KR970001731 B1	19970214	LSGT	+	granted / extensions (spc, cpc, pte)	
KR970001731 B1	20120917	PEXP		Calculated Patent Term Expiry	

KR970001731 B1	20120917	PEXP		Calculated Patent Term Expiry	
MX9200227 A1	19920701	LSPB	+	published / reissued	
MY119043 A	20050331	LSGT	+	granted / extensions (spc, cpc, pte)	
MY119043 A	20200331	PEXP		Calculated Patent Term Expiry	
NO180727 B	19970224	LSPB	+	published / reissued	
NO180727 C	19970604	LSGT	+	granted / extensions (spc, cpc, pte)	
NO180727 C	20120916	PEXP		Calculated Patent Term Expiry	
NO923604 A	19920916	LSPB	+	published / reissued	
NZ241315 A	19930927	LSPB	+	published / reissued	
NZ241315 A	20020426	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ241315 A	20050324	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ241315 A	20120224	LSLE	-EXPY	PATENT EXPIRED	
NZ251012 A	19980126	LSPB	+	published / reissued	
NZ251012 A	20030228	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ251012 A	20060224	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	
NZ251012 A	20130222	LSLE	-EXPY	PATENT EXPIRED	
PT100039 A	19940429	LSPB	+	published / reissued	
PT100039 A	19940429	LSPB	+BB1A	LAYING OPEN OF PATENT APPLICATION	EFFECTIVE DATE : 19930914
PT100039 B	19990226	LSGT	+	granted / extensions (spc, cpc, pte)	
PT100039 B	19990226	LSGT	+FG3A	PATENT GRANTED, DATE OF GRANTING	EFFECTIVE DATE : 19981123
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US5088214 A	19920207	LSGT	PAT1	Patented Case	
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US5088214 A	20101129	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BANK OF AMERICA, N.A., AS ADMINISTRATIVE AGENT, WA OLDPARTY : NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS; ASSIGNOR:ESCO CORPORATION; REEL/FRAME:025406/0714 EFFECTIVE DATE : 20101118
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ZA9200033 A	20120102	PEXP		Calculated Patent Term Expiry	
ZA9301094 A	19931006	LSGT	+	granted / extensions (spc, cpc, pte)	
ZA9301094 A	20130216	PEXP		Calculated Patent Term Expiry	

Title: **WEAR ASSEMBLY** FOR EARTH WORKING EQUIPMENT

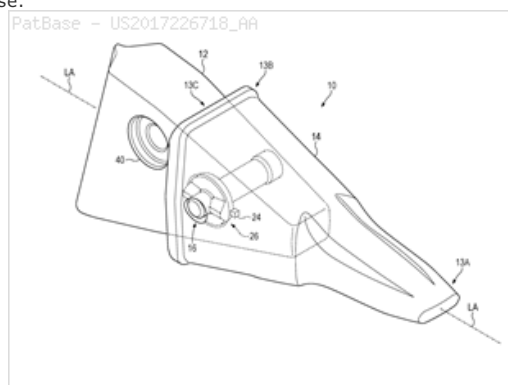
Abstract: A **wear assembly** for earth working equipment includes a base, a wear **member** and a lock. The lock includes a retainer and a lock body. The retainer is seated in a recess in the base. A key of the retainer is received in the keyway of the wear **member** as the cavity receives the base. A lock body passes through aligned openings of the base, retainer and wear **member** to engage the retainer and secure the wear **member** to the base.

Classifications:

International (IPC 8-9): E02F9/28 F16B21/18
F16B5/06 (Advanced/Invention)

International (IPC 1-7): E02F9/28

CPC: E02F9/2833 E02F9/2875 E02F9/2841



Family:

Publication number	Publication date	Application number	Application date
AU2017217225 AA	20180823	AU20170217225	20170207
BR112018016138 A2	20190102	BR20181116138	20170207
CA3014044 AA	20180808	CA20173014044	20170207
CL2018002124 A1	20181221	CL20180002124	20180807
CN108699818 A	20181023	CN201780010160	20170207
CO20180008893 A2	20181113	CO20180008893	20180827
EA201891797 A1	20190131	EA20180091797	20170207
EP3414403 A1	20181219	EP20170750624	20170207
ID201810966 A	20181005	ID2018P0006883	20170207
IN201817033361 A	20181214	IN201817033361	20180905
JP2019510145 T2	20190411	JP20180540426T	20170207
KR20180110016 A	20181008	KR20187025395	20170207
MX2018009582 A1	20181217	MX20180009582	20170207
PE14842018 A1	20180918	PE20180001491	20170207
US2017226718 AA	20170810	US20170426461	20170207
WO17139257 A1	20170817	WO2017US16806	20170207

Priority:

US20160292490P 20160208 US20170426461 20170207 WO2017US16806 20170207

Probable Assignee: ESCO CORP

Assignee(s): (std): ESCO CORP ; ESCO CORP LLC ; ESCO GROUP LLC

Assignee(s): ESCO LLC CORP ; SNYDER CHRISTOPHER D ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AS

Inventor(s): (std): SNYDER CHRISTOPHER D ; CHRISTOPHER D SNYDER

Agent(s): MINTER ELLISON; WILSON LUE LLP; MARINO PORZIO; ARGYMA; BUDI RAHMAT SH; ONO SHINJIRO; YAMAMOTO OSAMU; MIYAMAE TORU; NAKANISHI MOTOHARU; SCHAD STEVEN 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 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 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
AU2017217225 AA	20180823	LSPB	+	published / reissued	
CA3014044 AA	20180808	LSPB	+	published / reissued	
CL2018002124 A1	20181221	LSPB	+	published / reissued	
CN108699818 A	20181023	LSPB	+	published / reissued	
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CO20180008893 A2	20181113	LSPB	+	published / reissued		
EA201891797 A1	20190131	LSPB	+	published / reissued		
EP3414403 A1	20181219	LSPB	+	published / reissued		
EP3414403 A1	20181219	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20180904	
ID201810966 A	20181005	LSPB	+	published / reissued		
IN201817033361 A	20181214	LSPB	+	published / reissued		
JP2019510145 T2	20190411	LSPB	+	published / reissued		
KR20180110016 A	20181008	LSPB	+	published / reissued		
MX2018009582 A1	20181217	LSPB	+	published / reissued		
PE14842018 A1	20180918	LSPB	+	published / reissued		
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US2017226718 AA	20180817	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC, OREGON OLDPARTY : MERGER AND CHANGE OF NAME; ASSIGNORS:ESCO CORPORATION; ESCO GROUP LLC; REEL/FRAME:046848/0493 EFFECTIVE DATE : 20180711	
US2017226718 AA	20190315	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications		
WO17139257 A1	20170817	LSPB	+	published / reissued		
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Title: WEAR ASSEMBLY

Abstract: Wear **members** for **wear assemblies** include a lock configured to secure the wear **member** to a base, where the lock has two engagement positions, namely: (a) a first position that secures the lock to the wear **member**, and (b) a second position that secures the wear **member** to the base. The locks are further configured to be unlatched and removed from the wear **member** in two phases, a first retraction of the latching mechanism, followed by a rotation of the lock itself with removal from the wear **member**.

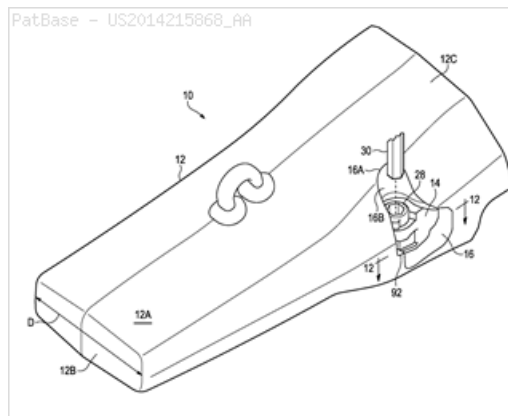
Classifications:

International (ipc 8-9): E02F E02F9/00 E02F9/28 (Advanced/Invention); E02F9/28 (Core/Invention)

International (ipc 1-7): E02F9/28

CPC: E02F9/2825 E02F9/2841 E02F9/2858 E02F9/2833 E02F9/2808 E02F9/2816 E02F9/2883 E02F9/00

US: 1/1 37/455

**Family:**

Publication number	Publication date	Application number	Application date
AP201407635 A0	20140531	AP20140007635	20121116
AR088953 AA	20140716	AR2012P104392	20121122
AU2012318298 AA	20130606	AU20120318298	20121116
AU2012318298 BB	20160204	AU20120318298	20121116
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CN106120942 B	20181123	CN201610702726	20121116
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EA201691552 A1	20161230	EA20160091552	20121116
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EP2783052 A1	20141001	EP20120851848	20121116
EP2783052 A4	20150819	EP20120851848	20121116
HK1195796 A1	20141121	HK20140109254	20140912
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JP2014533787 T2	20141215	JP20140543512T	20121116
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JP2018159266 A2	20181011	JP20180113335	20180614
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WO13078101 A1	20130530	WO2012US65689	20121116

Priority:

US20110563448P	20111123	US20120720928P	20121031	US20120720928	20121031
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Probable Assignee: ESCO GROUP LLC

Assignee(s): (std): ESCO CORP ; ESCO GROUP LLC

Assignee(s): STANGELAND KEVIN S ; JOHNSTON CHRISTOPHER A ; ROSKA MICHAEL B ; ROSSI WILLIAM D ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AS ; CONKLIN DONALD M

Inventor(s): (std): KEVIN S STANGELAND ; DONALD M CONKLIN ; CHRISTOPHER A JOHNSTON ; MICHAEL B ROSKA ; KEVIN S STRANGELAND ; ROSKA MICHAEL ; STRANGELAND KEVIN S ; ROSSI WILLIAM D ; ROSKA MICHAEL B ; CONKLIN DONALD M ; JOHNSTON CHRISTOPHER A ; STANGELAND KEVIN S ; WILLIAM D ROSSI

Inventor(s): MICHAEL ROSKA

Agent(s): KING AND WOOD MALLESONS; MINTER ELLISON; DIMOCK STRATTON LLP; WILSON LUE LLP; PORZIO RIOS Y ASOCIADOS; MARINO PORZIO; LUZ CLEMENCIA DE PAEZ; MADGWICK PAUL ROLAND; WENPING AND CO; YAMAMOTO OSAMU; TAKEUCHI SHIGEO; ONO SHINJIRO; KOBAYASHI YASUSHI; MIYAMAE TORU; NAKANISHI MOTOHARU; JOHN; SCHAD STEVEN 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 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 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
AR088953 AA	20140716	LSPB	+	published / reissued	
AR088953 AA	20170427	LSGT	+FG	GRANT, REGISTRATION	
AU2012318298 AA	20130606	LSPB	+	published / reissued	
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AU2016202743 BB	20170615	LSGT	+	granted / extensions (spc, cpc, pte)	
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CN103958792 B	20190215	LSAS	CP01	CHANGE IN THE NAME OR TITLE OF A PATENT HOLDER	
CN103958792 B	20321116	PEXP		Calculated Patent Term Expiry	
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CN106120942 A	20161116	LSPB	+C06	PUBLICATION	
CN106120942 A	20181113	LSAS	TA01	TRANSFER OF PATENT APPLICATION RIGHT	
CN106120942 B	20181123	LSGT	+	granted / extensions (spc, cpc, pte)	
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CN107338827 A	20171110	LSPB	+	published / reissued	
CN107338827 A	20171110	LSPB	PB01	PUBLICATION	
CN107338827 A	20181113	LSAS	TA01	TRANSFER OF PATENT APPLICATION RIGHT	
CN107338827 A	20190205	LSAS	CB02	CHANGE OF APPLICANT INFORMATION	
CN107905289 A	20180413	LSPB	+	published / reissued	
CN107905289 A	20180413	LSPB	PB01	PUBLICATION	
CN107905289 A	20181109	LSAS	TA01	TRANSFER OF	

CN107905289 A	20190205	LSAS	CB02	PATENT APPLICATION RIGHT CHANGE OF APPLICANT INFORMATION	
CO6960518 A2	20140530	LSPB	+	published / reissued	
EA028644 B1	20171229	LSGT	+	granted / extensions (spc, cpc, pte)	
EA028644 B1	20321116	PEXP		Calculated Patent Term Expiry	
EA028644 B9	20180228	LSGT	+	granted / extensions (spc, cpc, pte)	
EA028644 B9	20180228	LSPB	TH4A	PUBLICATION OF THE CORRECTED SPECIFICATION TO EURASIAN PATENT	
EA028644 B9	20190329	LSRE	PD4A	REGISTRATION OF TRANSFER OF A EURASIAN PATENT IN ACCORDANCE WITH THE SUCCESSION IN TITLE	
EA201400605 A1	20141230	LSPB	+	published / reissued	
EA201691552 A1	20161230	LSPB	+	published / reissued	
EA201891545 A1	20181130	LSPB	+	published / reissued	
EP2783052 A1	20141001	LSPB	+	published / reissued	
EP2783052 A1	20141001	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20140618
EP2783052 A4	20150819	LSES	+RA4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED (CORRECTED)	EFFECTIVE DATE : 20150717
EP2783052 A4	20150819	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : E02F 9/28 20060101AFI20150713BHEP
EP2783052 A4	20181010	LSAS	RAP1	RIGHTS OF AN APPLICATION TRANSFERRED	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC
EP2783052 A4	20190320	LSES	+17Q	FIRST EXAMINATION REPORT DESPATCHED	EFFECTIVE DATE : 20190215
HK1195796 A1	20141121	LSPB	+	published / reissued	
IN03361DN2014 A	20150605	LSPB	+	published / reissued	
JP2014533787 T2	20141215	LSPB	+	published / reissued	
JP2014533787 T2	20151014	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20151014
JP2014533787 T2	20160914	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20160914
JP2014533787 T2	20170314	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20170314
JP2014533787 T2	20170719	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2014533787 T2	20170724	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20170724

JP2014533787 T2	20170831	LSFE	+A61	(UTILITY MODEL) FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20170822
JP2014533787 T2	20170901	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 6198747 COUNTRY OF REF DOCUMENT : JP
JP2017137755 A2	20170810	LSPB	+	published / reissued	
JP2017137755 A2	20180314	LSSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20180314
JP2017137755 A2	20181101	LSRV	-A02	DECISION OF REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A02 EFFECTIVE DATE : 20181101
JP2018159266 A2	20181011	LSPB	+	published / reissued	
JP2018159266 A2	20180911	LSAS	A711	NOTIFICATION OF CHANGE IN APPLICANT	TEXT : JAPANESE INTERMEDIATE CODE: A712 EFFECTIVE DATE : 20180911
JP6198747 B2	20170920	LSGT	+	granted / extensions (spc, cpc, pte)	
JP6198747 B2	20170727	LSGT	+A01	特許査定書 Decision of patent grant	
JP6198747 B2	20170829	LSFE	R100	特許料納付書 Patent fee payment form	
JP6198747 B2	20170901	LSGT	+R150	特許証 Patent certificate	
JP6198747 B2	20180918	LSAS	S111	REQUEST FOR CHANGE OF OWNERSHIP OR PART OF OWNERSHIP	TEXT : JAPANESE INTERMEDIATE CODE: R313111
JP6198747 B2	20181017	LSAS	R350	WRITTEN NOTIFICATION OF REGISTRATION OF TRANSFER	TEXT : JAPANESE INTERMEDIATE CODE: R350
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KR20140103916 A	20140827	LSPB	+	published / reissued	
KR20140103916 A	20181017	LSAS	N231	NOTIFICATION OF CHANGE OF APPLICANT	
KR20140103916 A	20190107	LSSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
MX2014006070 A1	20140826	LSPB	+	published / reissued	
MX2014006070 A1	20170330	LSGT	+FG	GRANT OR REGISTRATION	
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MX346723 B	20321116	PEXP		Calculated Patent Term Expiry	
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NZ719130 A	20161028	LSPB	+	published / reissued	
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NZ719130 A	20170428	LSFE	+RENW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 3 YEARS UNTIL 16 NOV 2019 BY COMPUTER PACKAGES INC EFFECTIVE DATE : 20170331
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PE11692018 A1	20180720	LSPB	+	published / reissued	
PE11702018 A1	20180720	LSPB	+	published / reissued	
PE20212014 A1	20141215	LSPB	+	published / reissued	
PE20212014 A1	20180418	LSGT	+FG	GRANT, REGISTRATION	
PH2014501085 A	20140728	LSPB	+	published / reissued	
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PH2016501241 A	20161121	LSPB	+	published / reissued	
PH2016501242 A	20161121	LSPB	+	published / reissued	
PH2016501242 B	20161121	LSGT	+	granted / extensions (spc, cpc, pte)	
TH147529 A	20160229	LSPB	+	published / reissued	
UA115536 C2	20171127	LSGT	+	granted / extensions (spc, cpc, pte)	
UA115536 C2	20321116	PEXP		Calculated Patent Term Expiry	
US10024036 BB	20180717	LSGT	+	granted / extensions (spc, cpc, pte)	
US10024036 BB	20160707	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:JOHNSTON, CHRISTOPHER A.; CONKLIN, DONALD M.; ROSKA, MICHAEL B.; AND OTHERS; REEL/FRAME:039099/0328 EFFECTIVE DATE : 20160402
US10024036 BB	20180627	LSGT	PAT1	Patented Case	
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OLDPARTY : MERGER AND CHANGE
OF NAME; ASSIGNORS:ESCO
CORPORATION; ESCO GROUP LLC;
REEL/FRAME:046848/0493
EFFECTIVE DATE : 20180711

US10024036 BB	20360428	PEXP		Calculated Patent Term Expiry (PTA 35 days)	
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US2016201299 AA	20170629	LSES	-NFA2	Non Final Action Counted, Not Yet Mailed	
US2016201299 AA	20170630	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : BANK OF AMERICA, N.A., AS ADMINISTRATIVE AGENT, NO OLDPARTY : NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS; ASSIGNOR:ESCO CORPORATION; REEL/FRAME:043070/0413 EFFECTIVE DATE : 20170630
US2016201299 AA	20170703	LSES	NFA1	Non Final Action Mailed	
US2016201299 AA	20180315	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2016201299 AA	20180327	LSFE	-AWA4	Awaiting TC Resp., Issue Fee Not Paid	
US2016201299 AA	20180327	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
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US2016201299 AA	20180716	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:BANK OF AMERICA, N.A.; REEL/FRAME:046355/0901 EFFECTIVE DATE : 20180711
US2018148908 AA	20180531	LSPB	+	published / reissued	
US2018148908 AA	20180123	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:JOHNSTON, CHRISTOPHER A.; CONKLIN, DONALD M.; ROSKA, MICHAEL B.; AND OTHERS; REEL/FRAME:044706/0096 EFFECTIVE DATE : 20140402
US2018148908 AA	20180817	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC, OREGON OLDPARTY : MERGER AND CHANGE OF NAME; ASSIGNORS:ESCO CORPORATION; ESCO GROUP LLC; REEL/FRAME:046848/0493 EFFECTIVE DATE : 20180711
US9322150 BB	20160426	LSGT	+	granted / extensions (spc, cpc, pte)	
US9322150 BB	20140410	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:JOHNSTON, CHRISTOPHER A.; CONKLIN, DONALD M.; ROSKA, MICHAEL B.; AND OTHERS; REEL/FRAME:032648/0893

					EFFECTIVE DATE : 20140402
US9322150 BB	20160406	LSGT	PAT1	Patented Case	
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US9322150 BB	20180716	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO CORPORATION, OREGON OLDPARTY : RELEASE BY SECURED PARTY; ASSIGNOR:BANK OF AMERICA, N.A.; REEL/FRA:046356/0064 EFFECTIVE DATE : 20180711
US9322150 BB	20180817	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : ESCO GROUP LLC, OREGON OLDPARTY : MERGER AND CHANGE OF NAME; ASSIGNORS:ESCO CORPORATION; ESCO GROUP LLC; REEL/FRA:046848/0493 EFFECTIVE DATE : 20180711
US9322150 BB	20340801	PEXP		Calculated Patent Term Expiry (PTA 113 days)	
VN18220 A1	20180226	LSPB	+	published / reissued	
WO13078101 A1	20130530	LSPB	+	published / reissued	
WO13078101 A1	20130408	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012318298 COUNTRY OF REF DOCUMENT : AU
WO13078101 A1	20140414	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2852303 COUNTRY OF REF DOCUMENT : CA
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WO13078101 A1	20140514	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 14103904 COUNTRY OF REF DOCUMENT : CO
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WO13078101 A1	20140520	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2014/006070 COUNTRY OF REF DOCUMENT : MX
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WO13078101 A1	20140523	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
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WO13078101 A1	20140617	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : A201403865 COUNTRY OF REF DOCUMENT : UA
WO13078101 A1	20140618	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2012851848 COUNTRY OF REF DOCUMENT : EP

WO13078101 A1	20140620	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 201400605 COUNTRY OF REF DOCUMENT : EA
WO13078101 A1	20160623	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 12016501242 COUNTRY OF REF DOCUMENT : PH
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WO13078101 A1	20160630	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 16175650 COUNTRY OF REF DOCUMENT : CO
WO13078101 A1	20170530	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 112014012274 COUNTRY OF REF DOCUMENT : BR KIND CODE OF REF DOCUMENT : A2 DESIGNATED STATE(S) : EFFECTIVE DATE : 20140521

Title: CONNECTION ASSEMBLY

Abstract: A coupling for connecting ground engaging tools to a lip of an excavator bucket or similar is disclosed. The coupling uses an **eccentric** rotating lock, whereby rotation of the lock alters the distance between bearing surfaces and thus allows tightening of the lock.

Classifications:

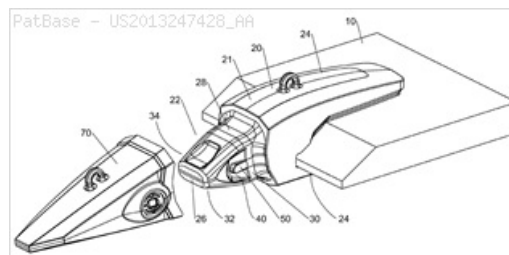
International (IPC 8-9): E02F E02F9/28 (Advanced/Invention);

E02F (Subclass/Invention)

CPC: E02F9/2841 E02F9/2891 E02F9/2825

European: E02F9/28A2B E02F9/28A2C2 E02F9/28L

US: 1/1 37/455 37/457



Family:

Publication number	Publication date	Application number	Application date
■ AP201306977 A0	20130731	AP20130006977	20111207
■ AP3572 A	20160203	AP20130006977	20111207
■ AU2011201408 BA	20120531	AU20110201408	20110328
■ AU2011340794 AA	20120614	AU20110340794	20111207
■ AU2011340794 BB	20151112	AU20110340794	20111207
■ AU2016200757 AA	20160225	AU20160200757	20160205
■ AU2016200757 BB	20170112	AU20160200757	20160205
■ AU2016200757 CA	20180816	AU20160200757	20160205
■ BR112013013263 A2	20160913	BR20131113263	20111207
■ CA2819753 AA	20130531	CA20112819753	20111207
■ CA2819753 C	20190305	CA20112819753	20111207
■ CA3030915 AA	20120614	CA20113030915	20111207
■ CL2013001616 A1	20131206	CL20130001616	20130606
■ CL55666 B	20180328	CL20130001616	20130606
■ CN103299006 A	20130911	CN201180059015	20111207
■ CN103299006 B	20180713	CN201180059015	20111207
■ CO6721057 A2	20130731	CO20130157525	20130704
■ EA027888 B1	20170929	EA20130000664	20111207
■ EA201300664 A1	20131230	EA20130000664	20111207
■ EA201700140 A1	20170731	EA20170000140	20111207
■ EP2649244 A1	20131016	EP20110847800	20111207
■ EP2649244 A4	20180613	EP20110847800	20111207
■ ID201601788 A	20160318	ID2013W0003068	20111207
■ ID201800717 A	20180126	ID2017P0005017	20111207
■ IN02085KN2013 A	20140328	IN2013KN02085	20130626
■ JP2013544994 T2	20131219	JP20130542308T	20111207
■ JP2016035200 A2	20160317	JP20150210526	20151027
■ JP5911886 B2	20160427	JP20130542308T	20111207
■ JP6159375 B2	20170705	JP20150210526	20151027
■ KR101901468 B1	20180921	KR20137017439	20111207
■ KR20140020844 A	20140219	KR20137017439	20111207
■ MX2013006120 A1	20140228	MX20130006120	20111207
■ MX359765 B	20181010	MX20150008370	20111207
■ MY168123 A	20181011	MY20130700922	20111207
■ NZ612880 A	20150130	NZ20110612880	20111207
■ NZ701811 A	20150731	NZ20110701811	20111207
■ PE11952014 A1	20140924	PE20130001318	20111207
■ PE14812018 A1	20180917	PE20180000109	20111207
■ US2013247428 AA	20130926	US20110991431	20111207
■ US2015368882 AA	20151224	US20150840555	20150831
■ US2018080200 AA	20180322	US20170822626	20171127
■ US8122623 BA	20120228	US20110155472	20110608
■ US9121160 BB	20150901	US20110991431	20111207
■ US9850641 BB	20171226	US20150840555	20150831
■ WO12075531 A1	20120614	WO2011AU01585	20111207
■ ZA201304803 A	20140925	ZA20130004803	20130627

Priority:

AU20100905369	20101207	AU20110201408	20110328	US20110155472	20110608
AU20110340794	20111207	JP20130542308T	20111207	CA20112819753	20111207
WO2011AU01585	20111207	NZ20110612880	20111207	US20110991431	20111207
US20130991431	20130604	US20150840555	20150831	JP20150210526	20151027
AU20160200757	20160205	US20170822626	20171127		

Probable Assignee: TALON ENGINEERING SDN BHD

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ENG SDN BHD ; TALON ENG SDN BHD CO NUMBER 1023659 H ; WALKER DAVID ; TALON ENGINEERING SDN BHD ; TALON ENGINEERING SDN BHD CO NUMBER 1023659 H ; TALON ENGINEERING SDN BHD CO NUMBER 1023659 H ; TALON ENGINEERING SDN BHD

Assignee(s): TALON ENGINEERING SDN BHD COMPANY NUMBER 1023659 H ; TALON ENGINEERING SDN BHD COMPANY NUMBER 1023659 H

Inventor(s): (std): HUGHES BENJAMN D ; BENJAMIN HUGHES ; HUGHES BENJAMIN D ; HUGHES BENJAMIN ; HUGHES BENJAMIN DAVID ; BENJAMIN DAVID HUGHES

Agent(s): ARMOUR IP; ARMOUR IP PTY LTD; MBM INTELLECTUAL PROPERTY LAW LLP; JOHANSSON Y LANGLOIS LTDA; MARGARITA CASTELLANOS ABONDANO; EVANS HUW DAVID DUNCAN; BELINDA ROSALINA SH LLM; DR BELINDA ROSALINA SH LLM; YAMAMOTO OSAMU; YAMAZAKI KOSAKU; ONO SHINJIRO; TAKEUCHI SHIGEO; KOBAYASHI YASUSHI; BACHMAN AND LAPOINTE PC; NEWMAN BARRY

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 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 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
AP3572 A	20160203	LSGT	+	granted / extensions (spc, cpc, pte)	
AP3572 A	20311207	PEXP		Calculated Patent Term Expiry	
AU2011201408 BA	20120531	LSGT	+	granted / extensions (spc, cpc, pte)	
AU2011201408 BA	20120531	LSAS	PC1	ASSIGNMENT BEFORE GRANT (SECT. 113)	PARTYTYPE : OWNER OWNER : RONNEBY ROAD PTY LTD OLDPARTY : FORMER APPLICANT(S): WALKER, DAVID
AU2011201408 BA	20120927	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU2011201408 BA	20190321	LSAS	PC	ASSIGNMENT REGISTERED	PARTYTYPE : OWNER OWNER : TALON ENGINEERING SDN BHD OLDPARTY : FORMER OWNER(S): RONNEBY ROAD PTY LTD
AU2011201408 BA	20310328	PEXP		Calculated Patent Term Expiry	
AU2011340794 AA	20120614	LSPB	+	published / reissued	
AU2011340794 AA	20150409	LSAS	PC1	ASSIGNMENT BEFORE GRANT (SECT. 113)	PARTYTYPE : OWNER OWNER : TALON ENGINEERING SDN. BHD OLDPARTY : FORMER APPLICANT(S): RONNEBY ROAD PTY LTD
AU2011340794 BB	20151112	LSGT	+	granted / extensions (spc, cpc, pte)	
AU2011340794 BB	20160310	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
AU2011340794 BB	20311207	PEXP		Calculated Patent Term Expiry	
AU2016200757 AA	20160225	LSPB	+	published / reissued	
AU2016200757 BB	20170112	LSGT	+	granted / extensions (spc, cpc, pte)	
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AU2016200757 BB	20171019	LSGT	+CH	OPPOSITION WITHDRAWN	PARTYTYPE : OPPONENT OPPONENT : ESCO CORPORATION
AU2016200757 BB	20171026	LSGT	+FGA	LETTERS PATENT SEALED OR GRANTED (STANDARD PATENT)	
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					THE STATEMENT(S) FILED 11 JAN 2018
AU2016200757 BB	20180816	LSRE	DA3	AMENDMENTS MADE SECTION 104	TEXT : THE NATURE OF THE AMENDMENT IS AS SHOWN IN THE STATEMENT(S) FILED 11 JAN AND 2 MAY 2018
AU2016200757 BB	20360205	PEXP		Calculated Patent Term Expiry	
CA2819753 AA	20130531	LSPB	+	published / reissued	
CA2819753 AA	20161128	LSES	+EEER	EXAMINATION REQUEST	EFFECTIVE DATE : 20161121
CA2819753 C	20190305	LSGT	+	granted / extensions (spc, cpc, pte)	
CA2819753 C	20311207	PEXP		Calculated Patent Term Expiry	
CA3030915 AA	20120614	LSPB	+	published / reissued	
CA3030915 AA	20190201	LSES	+EEER	EXAMINATION REQUEST	EFFECTIVE DATE : 20190122
CL2013001616 A1	20131206	LSPB	+	published / reissued	
CL55666 B	20180328	LSGT	+	granted / extensions (spc, cpc, pte)	
CL55666 B	20330606	PEXP		Calculated Patent Term Expiry	
CN103299006 A	20130911	LSPB	+	published / reissued	
CN103299006 A	20130911	LSPB	+C06	PUBLICATION	
CN103299006 B	20180713	LSGT	+	granted / extensions (spc, cpc, pte)	
CN103299006 B	20180713	LSGT	+GR01	PATENT GRANT	
CN103299006 B	20311207	PEXP		Calculated Patent Term Expiry	
CO6721057 A2	20130731	LSPB	+	published / reissued	
EA027888 B1	20170929	LSGT	+	granted / extensions (spc, cpc, pte)	
EA027888 B1	20180831	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 : MD COUNTRY OF REF DOCUMENT : TM
EA027888 B1	20311207	PEXP		Calculated Patent Term Expiry	
EA201300664 A1	20131230	LSPB	+	published / reissued	
EA201700140 A1	20170731	LSPB	+	published / reissued	
EP2649244 A1	20131016	LSPB	+	published / reissued	
EP2649244 A1	20131016	LSES	+17P	REQUEST FOR EXAMINATION FILED	EFFECTIVE DATE : 20130701
EP2649244 A1	20180307	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : E02F 9/28 20060101AFI20180201BHEP
EP2649244 A4	20180613	LSES	+RA4	SUPPLEMENTARY SEARCH REPORT DRAWN UP AND DESPATCHED (CORRECTED)	EFFECTIVE DATE : 20180511
EP2649244 A4	20180613	LSRE	RIC1	INFORMATION PROVIDED ON IPC CODE ASSIGNED BEFORE GRANT	CLASSIFICATIONSCHEME : IPC CLASSIFICATIONSYMBOL : E02F 9/28 20060101AFI20180504BHEP
ID201601788 A	20160318	LSPB	+	published / reissued	
ID201800717 A	20180126	LSPB	+	published / reissued	

IN02085KN2013 A	20140328	LSPB	+	published / reissued	
JP2013544994 T2	20131219	LSPB	+	published / reissued	
JP2013544994 T2	20141030	LSES	+A621	WRITTEN REQUEST FOR APPLICATION EXAMINATION	TEXT : JAPANESE INTERMEDIATE CODE: A621 EFFECTIVE DATE : 20141029
JP2013544994 T2	20150729	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20150728
JP2013544994 T2	20151027	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20151027
JP2013544994 T2	20160225	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2013544994 T2	20160302	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20160301
JP2013544994 T2	20160407	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20160330
JP2013544994 T2	20160408	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 5911886 COUNTRY OF REF DOCUMENT : JP
JP2016035200 A2	20160317	LSPB	+	published / reissued	
JP2016035200 A2	20160928	LSES	-A131	NOTIFICATION OF REASONS FOR REFUSAL	TEXT : JAPANESE INTERMEDIATE CODE: A131 EFFECTIVE DATE : 20160928
JP2016035200 A2	20161221	LSRE	A521	WRITTEN AMENDMENT	TEXT : JAPANESE INTERMEDIATE CODE: A523 EFFECTIVE DATE : 20161221
JP2016035200 A2	20170509	LSGT	+TRDD	DECISION OF GRANT OR REJECTION WRITTEN	
JP2016035200 A2	20170511	LSGT	+A01	WRITTEN DECISION TO GRANT A PATENT OR TO GRANT A REGISTRATION (UTILITY MODEL)	TEXT : JAPANESE INTERMEDIATE CODE: A01 EFFECTIVE DATE : 20170511
JP2016035200 A2	20170615	LSFE	+A61	FIRST PAYMENT OF ANNUAL FEES (DURING GRANT PROCEDURE)	TEXT : JAPANESE INTERMEDIATE CODE: A61 EFFECTIVE DATE : 20170609
JP2016035200 A2	20170616	LSGT	+R150	CERTIFICATE OF PATENT OR REGISTRATION OF UTILITY MODEL	TEXT : JAPANESE INTERMEDIATE CODE: R150 REF DOCUMENT NUMBER : 6159375 COUNTRY OF REF DOCUMENT : JP
JP5911886 B2	20160427	LSGT	+	granted / extensions (spc, cpc, pte)	
JP5911886 B2	20160303	LSGT	+A01	特許査定書 Decision of patent grant	
JP5911886 B2	20160405	LSFE	R100	特許料納付書 Patent fee payment form	
JP5911886 B2	20160408	LSGT	+R150	特許証 Patent certificate	
JP5911886 B2	20190314	LSFE	R20	特許料納付書 Patent fee payment form	
JP5911886 B2	20190326	LSFE	+R250	RECEIPT OF ANNUAL FEES	TEXT : JAPANESE INTERMEDIATE CODE: R250
JP5911886 B2	20311207	PEXP		Calculated Patent Term Expiry	
JP6159375 B2	20170705	LSGT	+	granted / extensions (spc, cpc, pte)	
JP6159375 B2	20170518	LSGT	+A01	特許査定書 Decision of patent grant	
JP6159375 B2	20170613	LSFE	R100	特許料納付書 Patent fee payment form	

JP6159375 B2	20170616	LSGT	+R150	特許証 Patent certificate	
JP6159375 B2	20351027	PEXP		Calculated Patent Term Expiry	
KR101901468 B1	20180921	LSGT	+	granted / extensions (spc, cpc, pte)	
KR101901468 B1	20311207	PEXP		Calculated Patent Term Expiry	
KR20140020844 A	20140219	LSPB	+	published / reissued	
KR20140020844 A	20161125	LSES	A201	REQUEST FOR EXAMINATION	
KR20140020844 A	20180102	LSES	-E902	NOTIFICATION OF REASON FOR REFUSAL	
KR20140020844 A	20180702	LSGT	+E701	DECISION TO GRANT OR REGISTRATION OF PATENT RIGHT	
KR20140020844 A	20180917	LSGT	+GRNT	WRITTEN DECISION TO GRANT	
MX2013006120 A1	20140228	LSPB	+	published / reissued	
MX2013006120 A1	20150908	LSGT	+FG	GRANT OR REGISTRATION	
MX359765 B	20181010	LSGT	+	granted / extensions (spc, cpc, pte)	
MX359765 B	20311207	PEXP		Calculated Patent Term Expiry	
MY168123 A	20181011	LSGT	+	granted / extensions (spc, cpc, pte)	
MY168123 A	20311207	PEXP		Calculated Patent Term Expiry	
NZ612880 A	20150130	LSPB	+	published / reissued	
NZ612880 A	20150529	LSGT	+PSEA	PATENT SEALED	
NZ612880 A	20151224	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2016 BY BARRY NEWMAN EFFECTIVE DATE : 20151127
NZ612880 A	20161223	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2017 BY BARRY NEWMAN EFFECTIVE DATE : 20161202
NZ612880 A	20171222	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2018 BY BARRY NEWMAN EFFECTIVE DATE : 20171204
NZ612880 A	20181130	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2019 BY BARRY NEWMAN EFFECTIVE DATE : 20181120
NZ701811 A	20150731	LSPB	+	published / reissued	
NZ701811 A	20151127	LSGT	+PSEA	PATENT SEALED	
NZ701811 A	20160226	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2016 BY BARRY NEWMAN EFFECTIVE DATE : 20160217
NZ701811 A	20161223	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2017 BY BARRY NEWMAN EFFECTIVE DATE : 20161202
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NZ701811 A	20181130	LSFE	+RENEW	RENEWAL (RENEWAL FEES ACCEPTED)	TEXT : PATENT RENEWED FOR 1 YEAR UNTIL 07 DEC 2019 BY BARRY NEWMAN EFFECTIVE DATE : 20181120
PE11952014 A1	20140924	LSPB	+	published / reissued	
PE11952014 A1	20180122	LSGT	+FG	GRANT, REGISTRATION	

PE14812018 A1	20180917	LSPB	+	published / reissued	
US2013247428 AA	20130926	LSPB	+	published / reissued	
US2013247428 AA	20150812	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2015368882 AA	20151224	LSPB	+	published / reissued	
US2015368882 AA	20170213	LSES	NFA1	Non Final Action Mailed	
US2015368882 AA	20170525	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2015368882 AA	20170830	LSES	+ALW2	Allowed -- Notice of Allowance Not Yet Mailed	
US2015368882 AA	20170830	LSES	+NAM1	Notice of Allowance Mailed -- Application Received in Office of Publications	
US2015368882 AA	20171127	LSFE	+PPR1	Publications -- Issue Fee Payment Received	
US2015368882 AA	20171206	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US2018080200 AA	20180322	LSPB	+	published / reissued	
US2018080200 AA	20180607	LSES	NFA1	Non Final Action Mailed	
US2018080200 AA	20181016	LSES	NFA1	Non Final Action Mailed	
US2018080200 AA	20190422	LSWD	-ABD3	Abandoned -- Failure to Respond to an Office Action	
US8122623 BA	20120228	LSGT	+	granted / extensions (spc, cpc, pte)	
US8122623 BA	20120208	LSGT	PAT1	Patented Case	
US8122623 BA	20120208	LSGT	STCF	INFORMATION ON STATUS: PATENT GRANT	TEXT : PATENTED CASE
US8122623 BA	20130604	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TALON ENGINEERING SDN BHD, MALAYSIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HUGHES, BENJAMIN D.; RONNEBY ROAD PTY LTD.; REEL/FRAME:030538/0310 EFFECTIVE DATE : 20130524
US8122623 BA	20150818	LSFE	+FPAY	FEE PAYMENT	YEAR OF FEE PAYMENT : 4
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US9121160 BB	20130604	LSAS	AS	ASSIGNMENT	PARTYTYPE : OWNER OWNER : TALON ENGINEERING SDN BHD, MALAYSIA OLDPARTY : ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNORS:HUGHES, BENJAMIN D.; RONNEBY ROAD PTY LTD.; REEL/FRAME:030538/0310 EFFECTIVE DATE : 20130524
US9121160 BB	20150812	LSGT	PAT1	Patented Case	
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US9121160 BB	20320508	PEXP		Calculated Patent Term Expiry (PTA 153 days)	
US9850641 BB	20171226	LSGT	+	granted / extensions (spc, cpc, pte)	
US9850641 BB	20171206	LSGT	PAT1	Patented Case	
US9850641 BB	20350831	PEXP		Calculated Patent Term Expiry	
WO12075531 A1	20120614	LSPB	+	published / reissued	
WO12075531 A1	20130418	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2011340794

					COUNTRY OF REF DOCUMENT : AU DATE OF REF DOCUMENT : 20111207 KIND CODE OF REF DOCUMENT : A DESIGNATED STATE(S) :
WO12075531 A1	20130530	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 001318-2013 COUNTRY OF REF DOCUMENT : PE
WO12075531 A1	20130530	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : MX/A/2013/006120 COUNTRY OF REF DOCUMENT : MX
WO12075531 A1	20130531	LSNP	ENP	ENTRY INTO THE NATIONAL PHASE IN:	REF DOCUMENT NUMBER : 2819753 COUNTRY OF REF DOCUMENT : CA
WO12075531 A1	20130604	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 13991431 COUNTRY OF REF DOCUMENT : US
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WO12075531 A1	20130607	LSNE	NENP	NON-ENTRY INTO THE NATIONAL PHASE IN:	REF COUNTRY CODE : DE
WO12075531 A1	20130701	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 2011847800 COUNTRY OF REF DOCUMENT : EP
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WO12075531 A1	20130703	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 201300664 COUNTRY OF REF DOCUMENT : EA
WO12075531 A1	20130704	LSNP	+WWE	WIPO INFORMATION: ENTRY INTO NATIONAL PHASE	REF DOCUMENT NUMBER : 13157525 COUNTRY OF REF DOCUMENT : CO
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ZA201304803 A	20140925	LSGT	+	granted / extensions (spc, cpc, pte)	
ZA201304803 A	20330626	PEXP		Calculated Patent Term Expiry	