25 Documents

Publication numbers	Title	Current assignees
WO200483531 A2	Soil sampler apparatus and method	AGRONOMIC INNOVATIONS, ...
US20180080914 A1	Ruggedized soil sampler for rough terrain sampling with row cleaning capability	BAUCOM ALLAN L
US9534464 B1	Soil sampling assembly	SOIL ANALYTICS
WO201653126 A1	Mobile service robot capable of collecting biological and soil samples for environmental monitoring	INTROSYS INTEGRATION FOR ROBOTIC SYSTEMS INTEGRAÇAO DE SIST ROBÓTICOS
US8955401 B1	Vehicle-Mounted Soil Sampling Apparatus	AGRO ROYALTY
US20140365083 A1	Crop product tracking system and method	AGRI LABS HOLDINGS
US20140251032 A1	Soil sampler	INTEGRATED SERVICE
US8613234 B1	Soil sampling apparatus	HARRELL LINFORD L
US20090071714 A1	Method and apparatus for soil sampling	UNIVERSITY OF IDAHO
US6766865 B1	Rotary soil probe	ACKERMAN ROGER J., ...
WO9853312 A1	Soil nutrient monitoring system	APPLIED MICROELECTRONICS
US5768940 A	Sample collector	DIRECTOR GENERAL OF THE INSTITUTE OF SPACE & ASTRONAUTICAL SCIENCE
US5741983 A	Soil sampler for analysis for fertilizer determination	CNH GLOBAL, ...
AU9352724 A	Rotary soil sampler	CHIEF EXECUTIVE OFFICER OF
GB8413823 D0	Fluted coulter blade	MARCHESINI, ...
US4356734 A	Soil sampling device	DALMANDI ALLAMI GAZDASAG
DK7704922 A	Penetrating machine	WOLF GARTEN
US3625296 A	Mechanical soil sampler	US DEPARTMENT OF AGRICULTURE
US3464504 A	Vehicle mounted soil sampling device	WILFRED H STANGE
FR2013205 A1	Fluted coulter disc blade	FORESIGHT ENTERPRISES, ...
DE1272610 B	Scheibensech	LEMKEN PFLUGFAB
US3122111 A	Implement for sod seeding	TAYLOR MACHINE WORKS
US2658290 A	Peat milling and handling machine	PIERCE FREDERICK E
US1455046 A	Tractor cultivator	EDWIN DOWNIE CHARLES,

Publication numbers	Title	Current assignees
		...
US--30901 A		

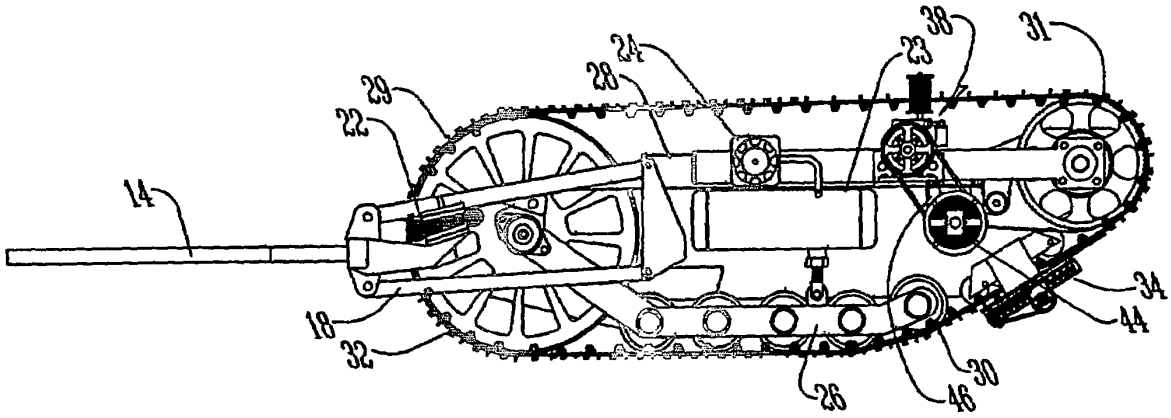
Family 1/25 - FAMPAT - ©Questel

Title

(WO200483531)

Soil sampler apparatus and method

Images



Publication data including kind & date

WO2004083531	A2	2004-09-30	WO200483531
US20060236786	A1	2006-10-26	US20060236786
WO2004083531	A3	2007-06-28	WO200483531
US7255016	B2	2007-08-14	US7255016
US20070256509	A1	2007-11-08	US20070256509
US7552654	B2	2009-06-30	US7552654
US20100037712	A1	2010-02-18	US20100037712
US7827873	B2	2010-11-09	US7827873

Abstract

(WO200483531)

An apparatus removes soil samples at intervals over a field of interest.The apparatus comprises a sampling assembly (60) that rotates on a track (32) riding on a plurality of idler wheels (29, 31).A probe (66) extends and retracts under the action of a scissored frame assembly (70), mechanically manipulated by passage of the scissored frame assembly (70) along a guide assembly (108).The probe (66) is extended into the ground and retracted on each revolution.An ejector (68) pushes soil from the probe (66) as it passes over a hopper (88) to retain the cores.The cores are pneumatically transferred from the hopper (88) to a plurality of sample collection containers (126).An electronic control system uses GPS location information to deposit collected cores in the appropriate container (126) based upon the current location of the apparatus in the field of interest.

Inventors

BURTON JAMES D

Latest standardized assignees - inventors removed

AGRONOMIC INNOVATIONS

AGROBOTICS

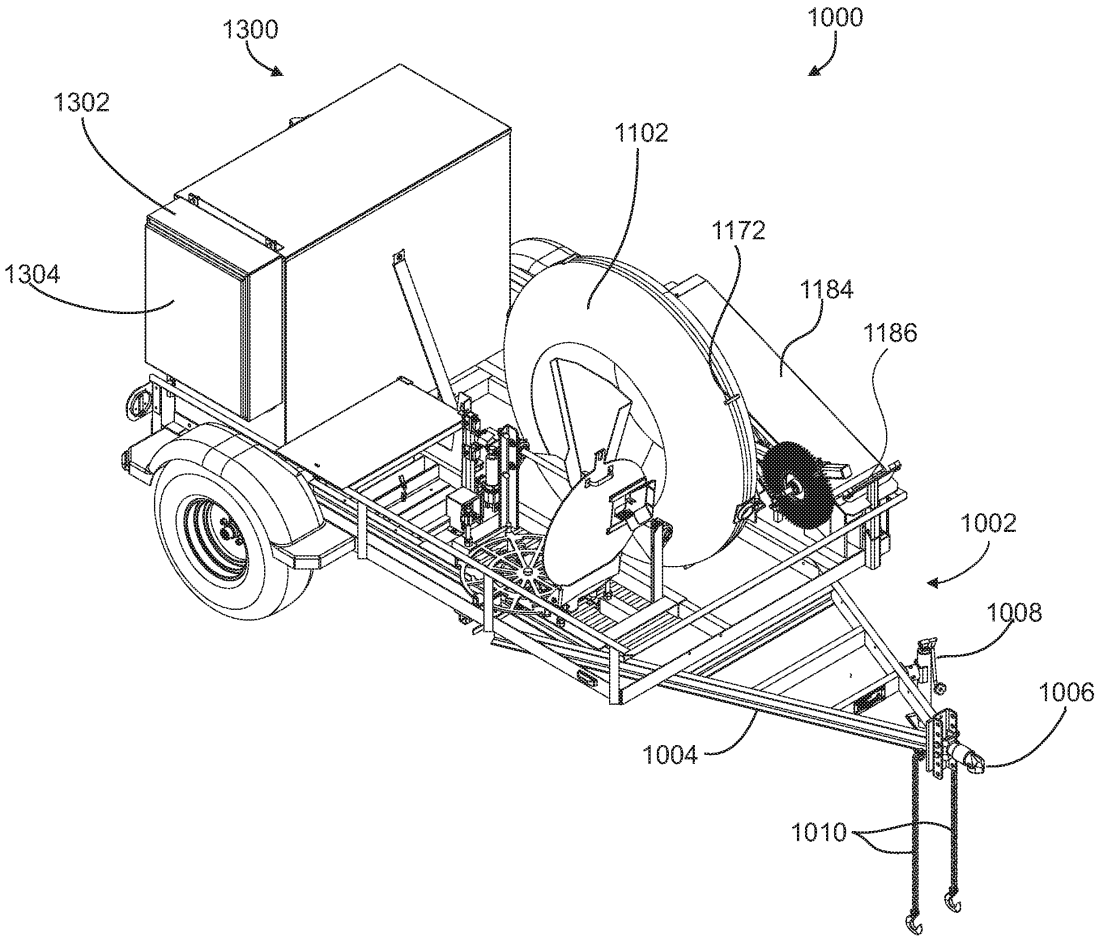
Family 2/25 - FAMPAT - ©Questel

Title

(US10018612)

Ruggedized soil sampler for rough terrain sampling with row cleaning capability

Images



Publication data including kind & date

US20180080914	A1	2018-03-22	US20180080914
US10018612	B2	2018-07-10	US10018612

Abstract

(US10018612)

A soil sampling apparatus consisting of a sample collection drum having a tapered probe for extracting soil plugs that are discharged by gravity into the drum.A row clearing apparatus may be disposed forward of the probe.As drum rotates, soil plugs are mixed and, when mixed, are discharged into a sample a removable container in a removable tray on a carousel.Prior to loading sample containers into the tray, a unique bar code is affixed thereto.A bar code reader tracks each container and information regarding each sample is stored by an electrical/electronic controller.GPS information from an onboard GPS system is included in the stored data.Stored data may be immediately transmitted or, alternately batch uploaded to a remote site.A communications controller typically provides cellular and Wi-Fi communications.The electrical/electronic controller is used to control all aspects of the soil sampler.

Inventors

BAUCOM ALLAN L

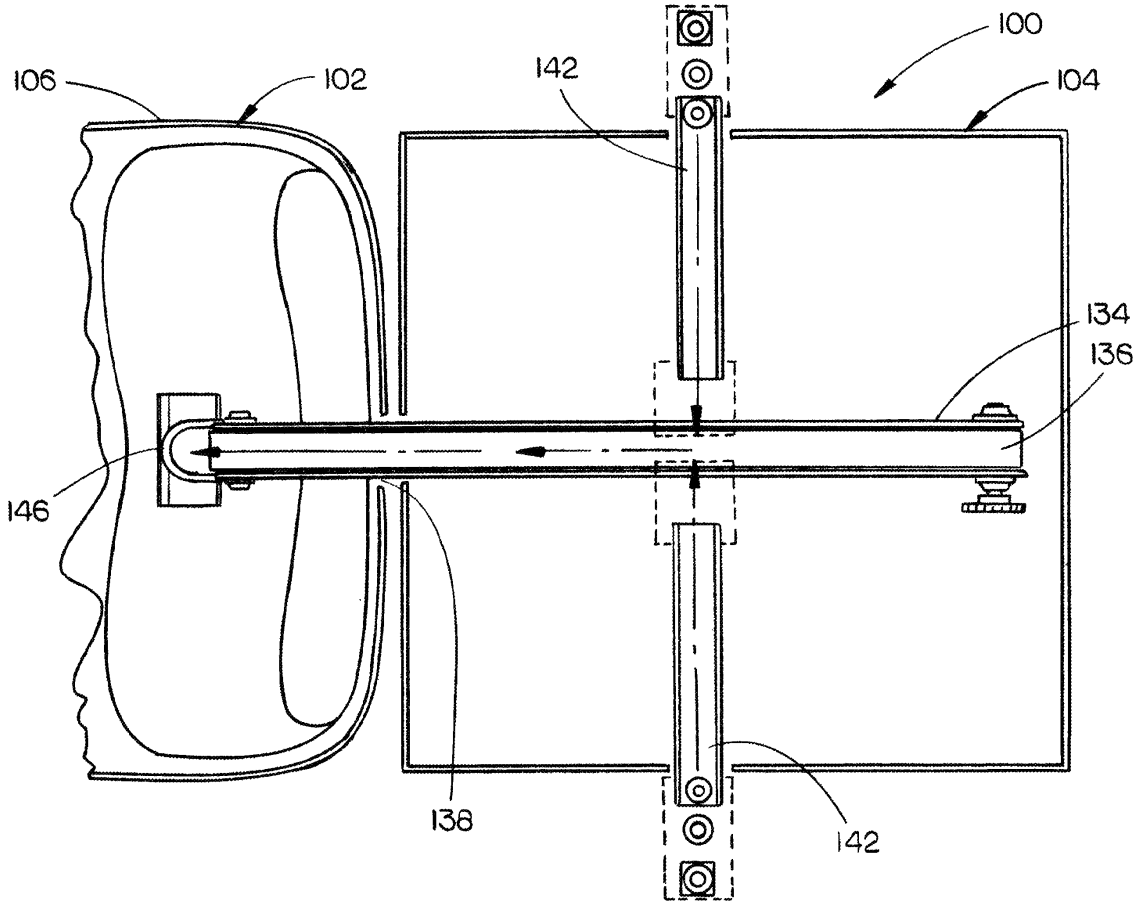
Family 3/25 - FAMPAT - ©Questel

Title

(US9534464)

Soil sampling assembly

Images



Publication data including kind & date

US9534464 B1 2017-01-03 US9534464

Abstract

(US9534464)

A soil sampler assembly includes a utility vehicle and a soil sampler module coupled to the utility vehicle.The utility vehicle includes a cab, and the soil sampler module is configured to deposit a soil sample in the cab.For example, the soil sampler assembly includes a conveyor system configured to convey the soil sample to the cab.The conveyor system includes a central conveyor and a lateral conveyor that feeds the central conveyor.The central conveyor is on a travel track.The soil sampler assembly further includes a sampler arm assembly.The sampler arm assembly includes a power cylinder, a guide cylinder, a transfer block, and a probe.The probe has a tip, and the tip of the probe includes an outer surface defining an outer taper bore and an inner surface defining an inner taper bore.

Inventors

KELLEY JAY T

RASMUSSEN MATTHEW J

Latest standardized assignees - inventors removed

SOIL ANALYTICS

Family 4/25 - FAMPAT - ©Questel

Title

(EP3200958)

Mobile service robot capable of collecting biological and soil samples for environmental monitoring

Images

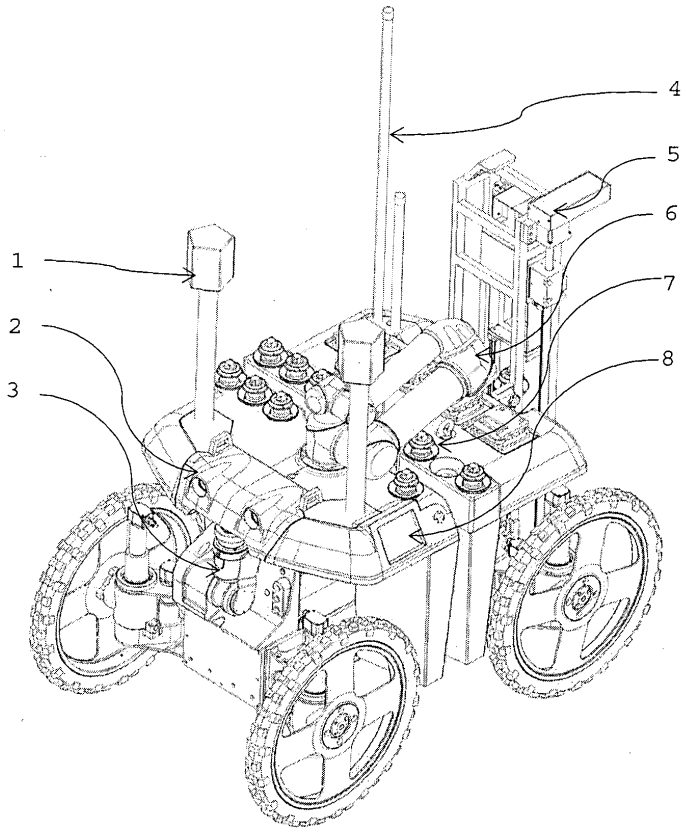


Figure 1

Publication data including kind & date

WO2016053126	A1	2016-04-07	WO201653126
EP3200958	A1	2017-08-09	EP3200958
PT107937	B	2017-08-16	PT-107937

Abstract

(EP3200958)

The present invention relates to a mobile service robot with all-terrain features that allows you to support the implementation of tasks in the area of environmental monitoring.Said robot comprises a coating of aluminium alloys and plastics with good corrosion resistance allowing its use in outdoor environments near saltwater areas, such as estuarine environments.The mechanical platform corresponding to the set constituted by the support structure (14, 15, 16), the transmission blocks (11), the rims of wheels (17), the tires (18) and driving motors (12) and steering (13) presents robustness levels and manoeuvrability suitable for navigation not only on solid grounds but also on sandy or muddy areas.The robot allows the collection of biological and soil samples for later laboratory analysis incorporating for such an interchangeable system comprising an anthropomorphic robotic arm with at least five degrees of freedom, an apparatus for collecting soil samples by drilling and an apparatus for collecting biological samples by drag.

Inventors

DA SILVA GUEDES MAGNO EDGAR
MARTINS DEUSDADO PEDRO MIGUEL
BENTO RAINHO CALDEIRA MARIA RAQUEL
GOMES DA SILVA ANDRÉ FILIPE
BENTES MOITA FLORES LUIS MIGUEL
BENTES MOITA FLORES NUNO MANUEL
FIGUEIREDO SANTANA PEDRO
BARATA DE OLIVEIRA JOSÉ ANTÓNIO

CARDOSO MARQUES FRANCISCO ANTERO
MARTINS MENDONÇA RICARDO ANDRÉ
LOPES LOURENÇO ANDRÉ FILIPE
FERREIRA MORAIS PINTO EDUARDO MANUEL
GIL CORISCO JOSÉ ALBERTO
MORAIS PORTUGAL LUIS MIGUEL
LOPES ALMEIDA SUSANA MARTA

Latest standardized assignees - inventors removed

INTROSYS INTEGRATION FOR ROBOTIC SYSTEMS INTEGRAÇAO DE SIST ROBÓTICOS

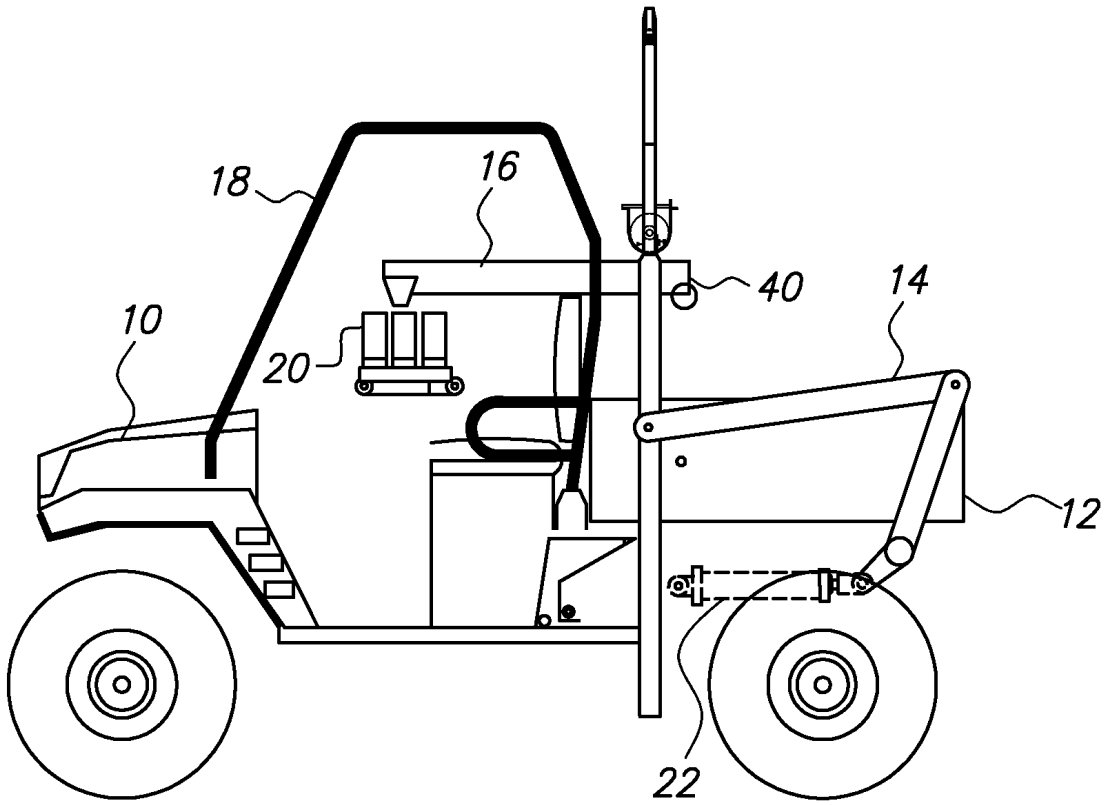
Family 5/25 - FAMPAT - ©Questel

Title

(US8955401)

Vehicle-Mounted Soil Sampling Apparatus

Images



Publication data including kind & date

US8955401 B1 2015-02-17 US8955401

Abstract

(US8955401)

A soil sampling apparatus comprising a motorized vehicle may be used to remove soil samples at intervals over a field of interest.The apparatus comprises a sampling assembly that rotates and extends downwardly into the soil to collect a sample.The probe assembly is raised to dump the sample into a collection assembly, which transfers the sample to a bagging assembly, where the sample may be bagged for later analysis.

Inventors

BURTON JAMES D

Latest standardized assignees - inventors removed

AGRO ROYALTY

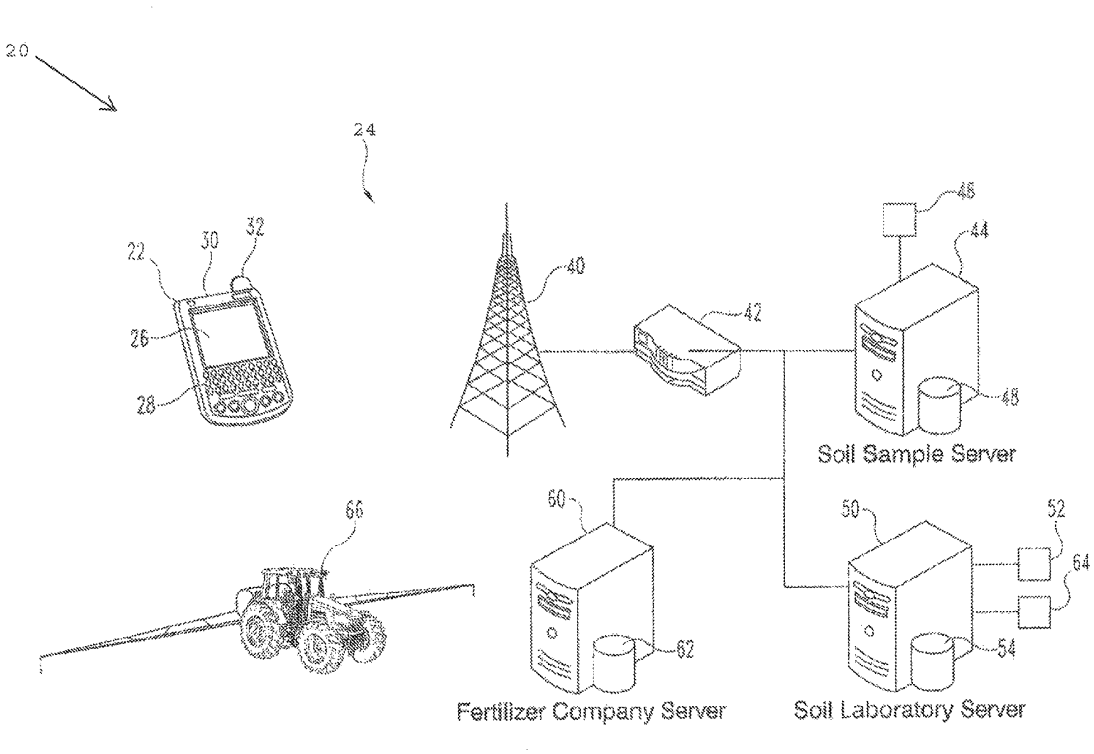
Family 6/25 - FAMPAT - ©Questel

Title

(US9538710)

Crop product tracking system and method

Images



Publication data including kind & date

US20140365083	A1	2014-12-11	US20140365083
US9538710	B2	2017-01-10	US9538710

Abstract

(US9538710)

A system is disclosed that can be used in precision farming to apply crop product to a field.The system includes a remote terminal connected with a network.The remote terminal includes a scanning application configured to allow the remote terminal to scan a unique product identifier associated with a crop product to be applied to a field.A server is connected with the remote terminal via the network.A transmission application is associated with the remote terminal that is configured to transmit the unique product identifier to the server.A lookup application associated with the server is configured to query a crop product database to retrieve one or more crop product data properties associated with the crop product.A prescription map generation application is configured to generate a prescription map for the field as a function of the one or more crop product data properties.A map transmission application is configured to transmit the prescription map to a field terminal associated with a piece of farming equipment which applies the crop product to the field according to the prescription map.

Inventors

COVELY TONY W

Latest standardized assignees - inventors removed

AGRI LABS HOLDINGS

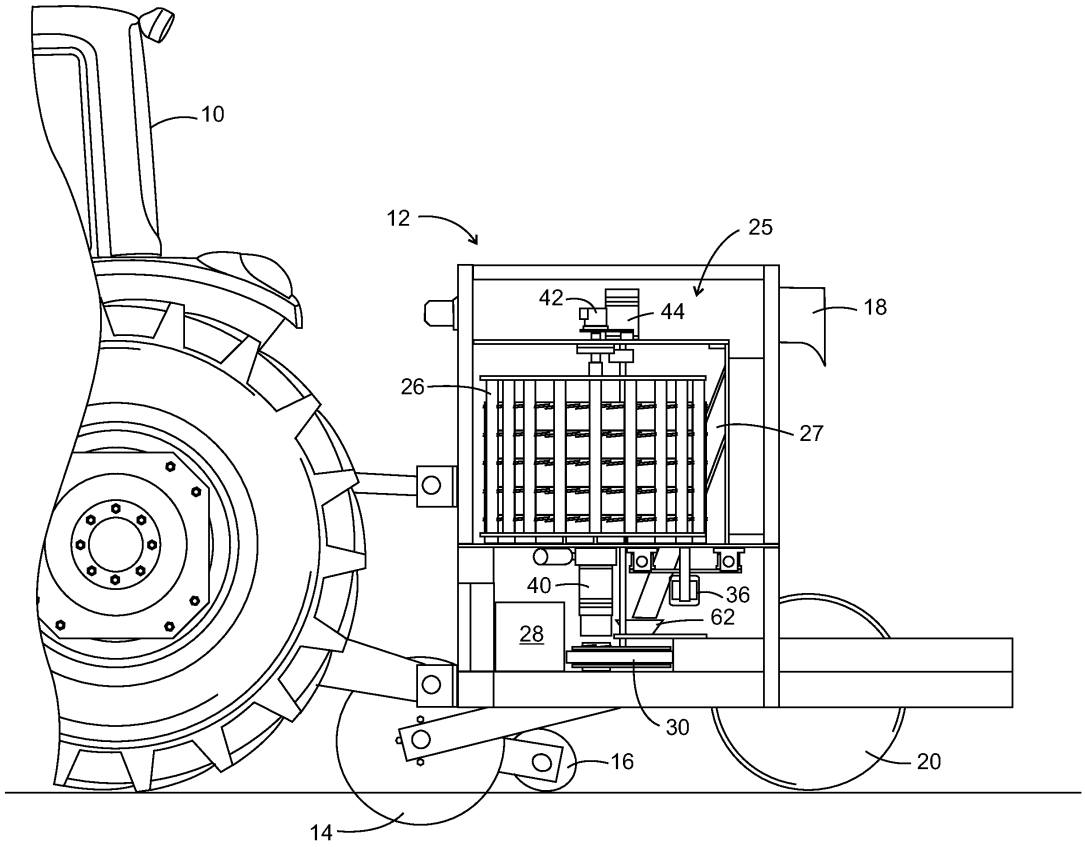
Family 7/25 - FAMPAT - ©Questel

Title

(US9500567)

Soil sampler

Images



Publication data including kind & date

US20140251032	A1	2014-09-11	US20140251032
US9116078	B1	2015-08-25	US9116078
US9500567	B2	2016-11-22	US9500567

Abstract

(US9500567)

An automated soil sampler is removably mounted on an agricultural tractor and collects soil samples in a farm field while the tractor is driven through the field.At a periodic interval, the soil sampler momentarily lowers a soil collection knife into the soil to collect a soil sample, raises the collection knife out of the soil, and transfers the collected soil sample into a bar-coded storage container.The GPS location of the soil sample is associated with the storage container's bar-code in a data file.The interval between successive periodic soil samples corresponds to a determined forward displacement of the tractor.Storage containers that have received soil samples are moved to a storage area until all of the soil samples for a given field have been collected.

Inventors

SCHEIDERER DAVID
GRAND MICHEL
MADDUX DWAYNE
DELK EVAN

Latest standardized assignees - inventors removed

INTEGRATED SERVICE

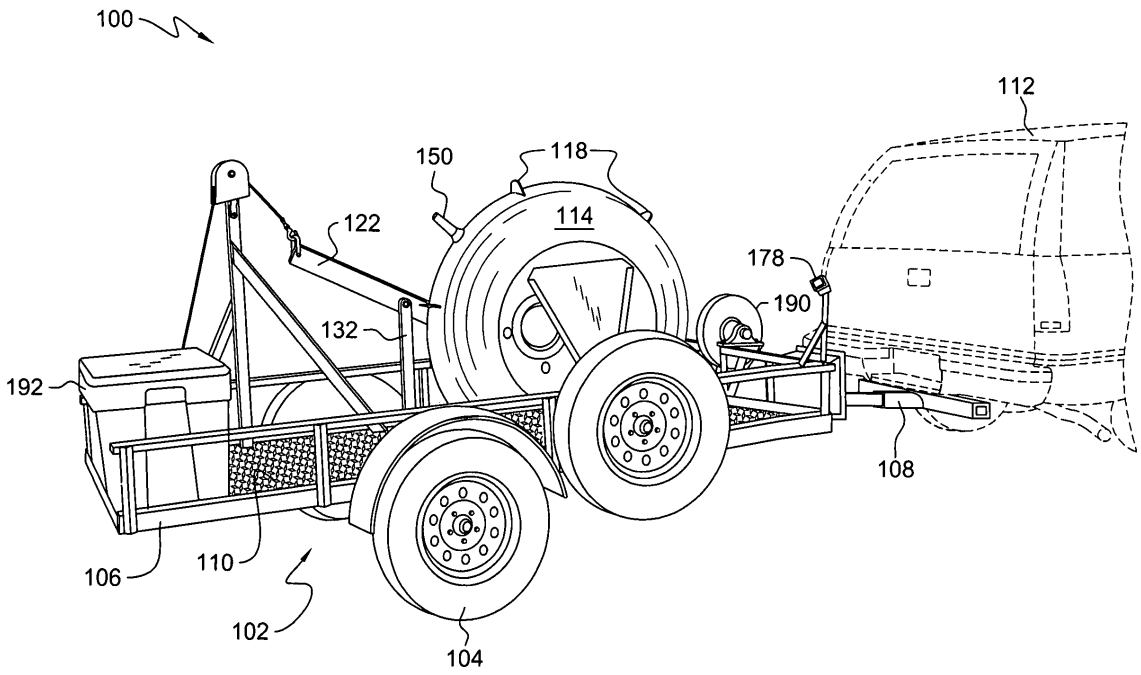
Family 8/25 - FAMPAT - ©Questel

Title

(US8613234)

Soil sampling apparatus

Images



Publication data including kind & date

US8613234 B1 2013-12-24 US8613234

Abstract

(US8613234)

A soil sampler having a hollow, ground-contacting drum having a hollow, tapered probe projecting outwardly therefrom for extracting soil plugs.Each soil plug is discharged by gravity into the drum interior.As the drum rotates, all soil plugs are blended with each other.After soil plug collection, the drum is raised and a chute is inserted into the drum.As the drum continues to rotate, the blended soil sample falls from the top of the drum into the chute, slides down the chute and is deposited into a removable cup on a horizontal circular platform of a soil collection carousel assembly.The circular platform is then rotated to bring a new, empty cup into position to receive the next blended sample.The soil sampler is mounted on a trailer drawn by a truck or tractor.All functions are remotely controlled from the cab of the truck or tractor.

Inventors

HARRELL LINFORD L

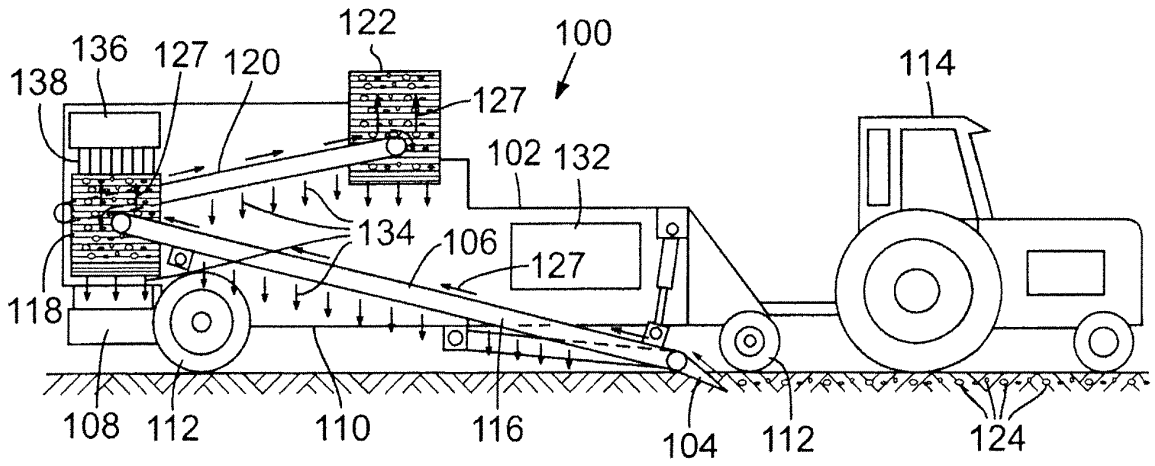
Family 9/25 - FAMPAT - ©Questel

Title

(US8051725)

Method and apparatus for soil sampling

Images



Publication data including kind & date

US20090071714	A1	2009-03-19	US20090071714
US8051725	B2	2011-11-08	US8051725

Abstract

(US8051725)

A soil collection device can be used to collect soil samples from a harvester that excavates soil while harvesting a ground crop.The soil collection device can include a collection area for collecting soil that is excavated from the ground by the harvester and discarded from the harvester.A storage device can receive and store at least a portion of the discarded soil in individual containers.A location marking device can being configured to mark the individual containers of discarded soil with information concerning the location of the soil collection device at or about the time the discarded soil was received in the individual containers.

Inventors

SHRESTHA DEV S

Latest standardized assignees - inventors removed

UNIVERSITY OF IDAHO

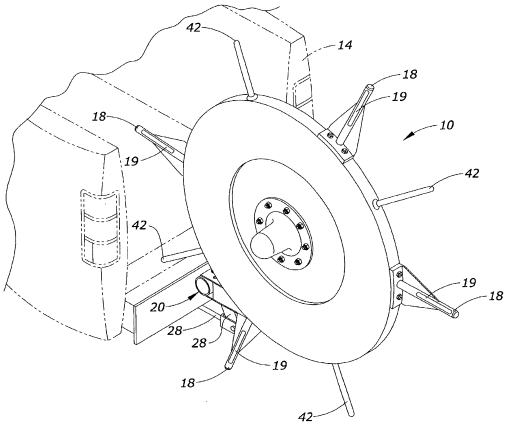
Family 10/25 - FAMPAT - ©Questel

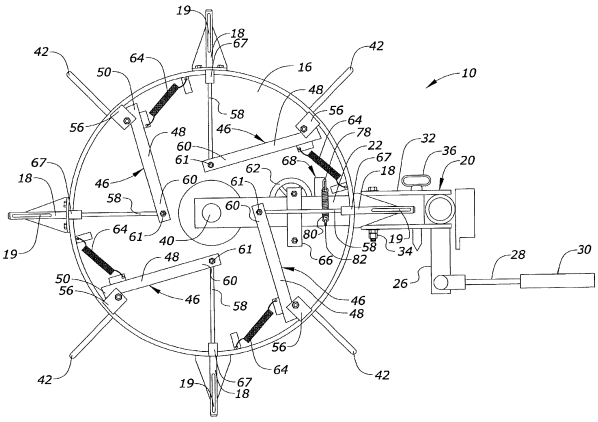
Title

(US6766865)

Rotary soil probe

Images





Publication data including kind & date

US6766865	B1	2004-07-27	US6766865

Abstract

(US6766865)

An improved rotary soil probe is provided with a frame pivotally mounted on the rear of a truck or vehicle for movement about a horizontal axis between raised and lowered positions.A rotatable wheel is pivotally mounted to the frame for movement about an upwardly angled axis between an extended use position and a folded transport position.The wheel includes probes extending radially outwardly from the perimeter of the wheel.The probes are adapted to receive soil samples as the wheel is rolled along the ground.Plunger assemblies automatically discharge the soil samples on each rotation of the wheel so that the samples can be continuously collected, without the need to stop to clean out the soil samples.

Inventors

DAGEL JOHN H

HESSE MATT B

ACKERMAN ROGER J

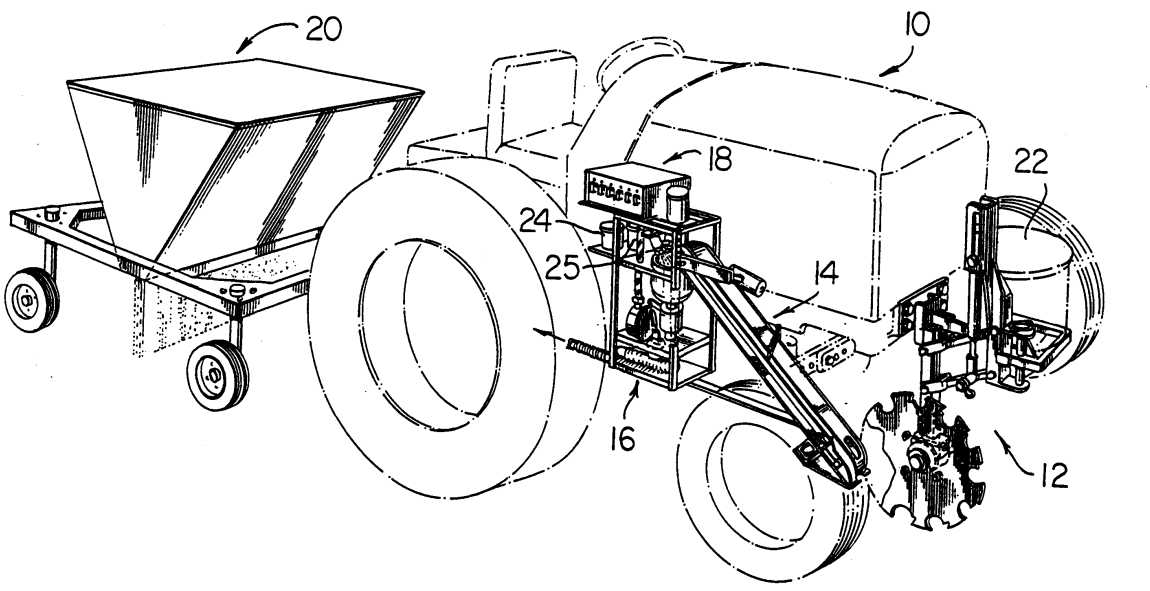
Family 11/25 - FAMPAT - ©Questel

Title

(WO9853312)

Soil nutrient monitoring system

Images



Publication data including kind & date

WO9853312	A1	1998-11-26	WO9853312
AU2945697	A	1998-12-11	AU9729456

Abstract

(WO9853312)

An improved apparatus for measuring soil nutrient concentration or pH level in soil samples of a known size is used in combination with a soil sampling and transport subassembly (12, 14) mounted on a farm vehicle (10) for on the go measurement of soil nutrient or pH levels in a field.A controller (18) is provided to sequence the operation of the various subassemblies and the system includes provision of a fertilizer applicator (20) automatically having its fertilizer application rate controlled based upon the measured soil nutrient concentrations or pH levels and ground speed of the farm vehicle (10).

Inventors

ADSETT JOHN

SIBLEY KEVIN

BURRIS DOUGLAS

TERRY GRANT

CREELMAN STEPHEN

THOTTAN JACOB

Latest standardized assignees - inventors removed

APPLIED MICROELECTRONICS

Family 12/25 - FAMPAT - ©Questel

Title

(US5768940)

Sample collector

Images

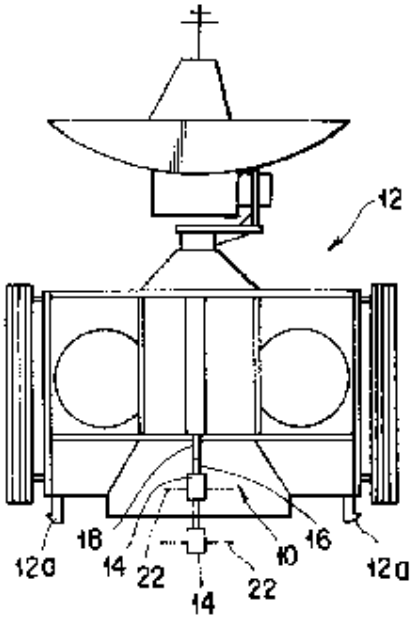


FIG. 1

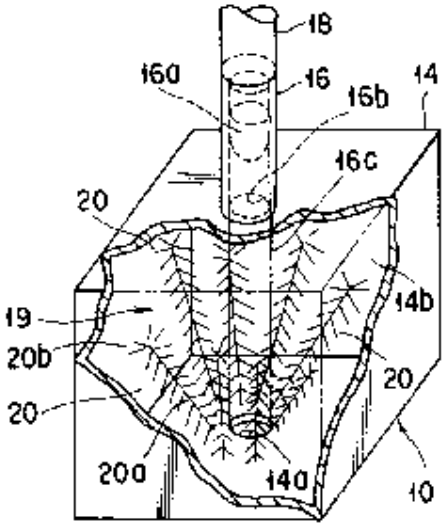


FIG. 2

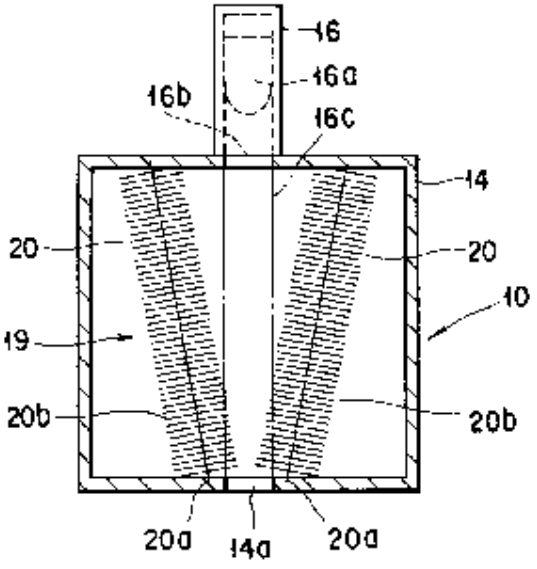


FIG. 3

Publication data including kind & date

US5768940 A 1998-06-23 US5768940

Abstract

(US5768940)

A sample collector of this invention includes a projectile projecting unit in which a projectile is loaded and which has a projecting outlet for projecting out the projectile loaded therein, an enclosed container which is communicated with the projecting outlet of the projectile projecting unit, which has a projectile passing hole arranged at a position located away from the projecting outlet, the passing hole allowing the projectile to pass through it after the projectile is projected out from the projecting outlet, and which covers a space between the projecting outlet of the projectile projecting unit, and a kinetic energy absorbing mechanism which is arranged around a projectile path between the projecting outlet of the projectile projecting unit and the projectile passing hole of the enclosed container.The kinetic energy absorbing mechanism may be an independent active type such as brushes or an integral passive type structured by a part of the container.

Inventors

KAWAGUCHI JUNICHIRO
FUJIWARA AKIRA
SAWAI SHUJIRO
ABE MASANAO
NAKAMURA AKIKO

Latest standardized assignees - inventors removed

DIRECTOR GENERAL OF THE INSTITUTE OF SPACE & ASTRONAUTICAL SCIENCE

Family 13/25 - FAMPAT - ©Questel

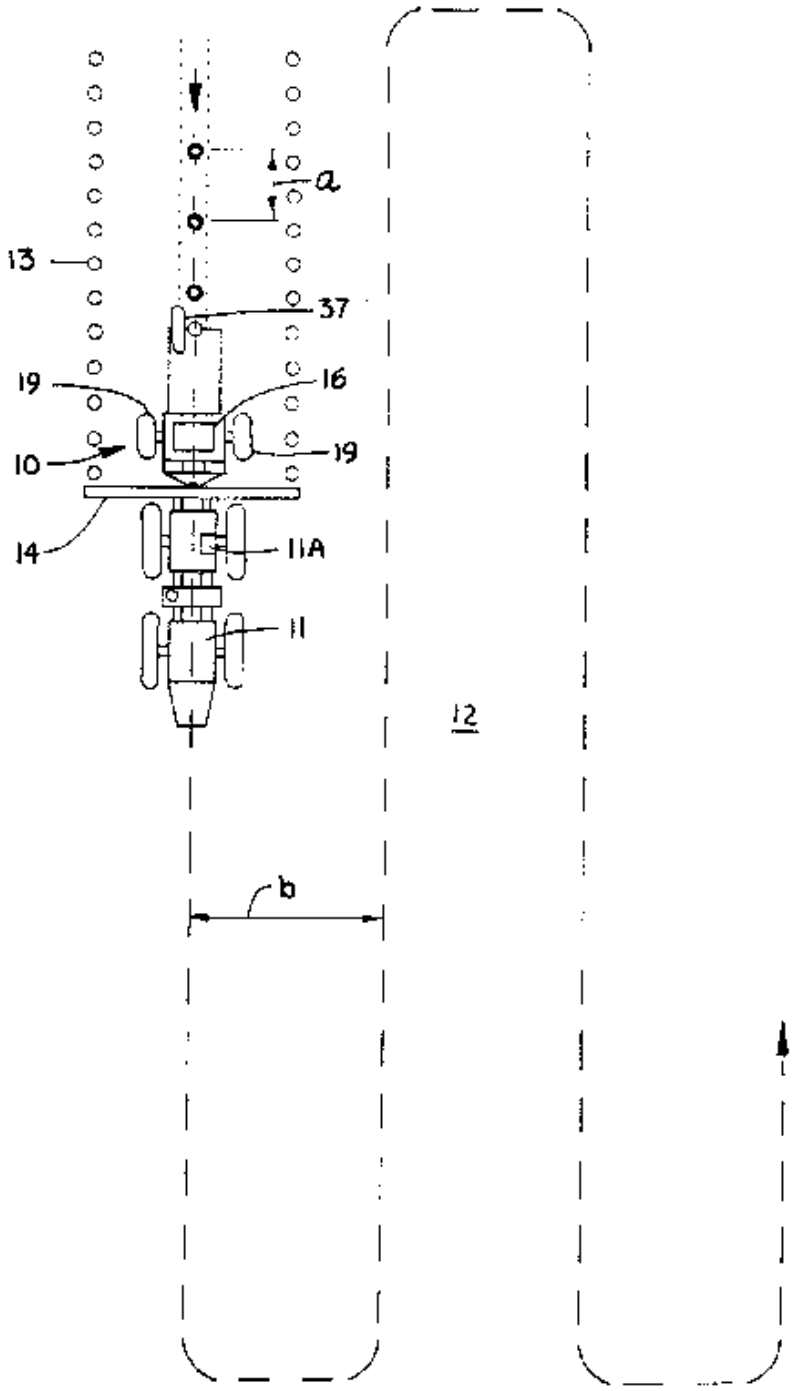
Title

(US5741983)

Soil sampler for analysis for fertilizer determination

Images

FIG. 1



Publication data including kind & date

US5741983 A 1998-04-21 US5741983

Abstract

(US5741983)

An automatic soil sampler (10) removes soil samples (65) at known locations and transfers the samples to a packaging station (23) where the samples are packaged and identified.The packages (87) are left in a strip and moved to a container (168).The sampler (10) repeats the sampling function at identifiable intervals measured by an odometer (11A) and permits the sampling and packaging to be completed rapidly.

Inventors

SKOTNIKOV ANDREY V

PISARCHIK VLADIMIR

VALJUSHKEVICH GENNADY

Latest standardized assignees - inventors removed

CNH GLOBAL

BLUE LEAF IP

Family 14/25 - FAMPAT - ©Questel

Title

(AU-662258)

Rotary soil sampler

Publication data including kind & date

AU5272493	A	1994-07-14	AU9352724
AU662258	B2	1995-08-24	AU-662258

Inventors

BAKER MICHAEL JOSEPH

Latest standardized assignees - inventors removed

CHIEF EXECUTIVE OFFICER OF

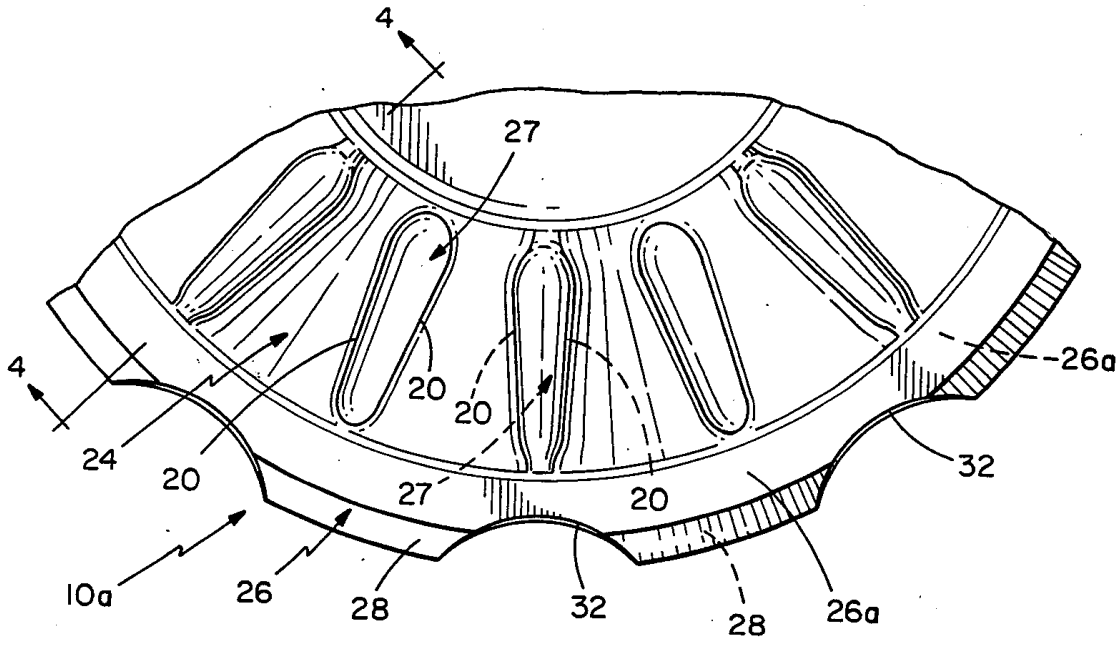
Family 15/25 - FAMPAT - ©Questel

Title

(US4538688)

Fluted coulter blade

Images



Publication data including kind & date

GB8413823	D0	1984-07-04	GB8413823
AR231784	A1	1985-03-29	AR-231784
ES533248	A0	1985-04-01	ES-533248
ES8503924	A1	1985-04-01	ES8503924
US4538688	A	1985-09-03	US4538688
AU2893984	A	1985-09-05	AU8428939
FR2560479	A1	1985-09-06	FR2560479
DE3421668	A1	1985-09-12	DE3421668
GB2154845	A	1985-09-18	GB2154845

BR8403186	A	1986-01-28	BR8403186
AU558782	B2	1987-02-05	AU-558782
CA1220964	A	1987-04-28	CA1220964
GB2154845	B	1987-05-28	GB2154845
FR2560479	B1	1987-09-18	FR2560479
MX161188	A	1990-08-14	MX-161188

Abstract

(US4538688)

Disclosed herein is a fluted coulter disc blade with a circumferential cutting edge portion, flutes circumferentially spaced apart around the disc and having a radially and axially tapered configuration, notches in the peripheral cutting edge portion, and circumferential openings through the flutes.

Inventors

SZUCS ROBERT J

MCNICHOLAS SANDRA M

Latest standardized assignees - inventors removed

MARCHESINI

INGERSOLL HOLDING

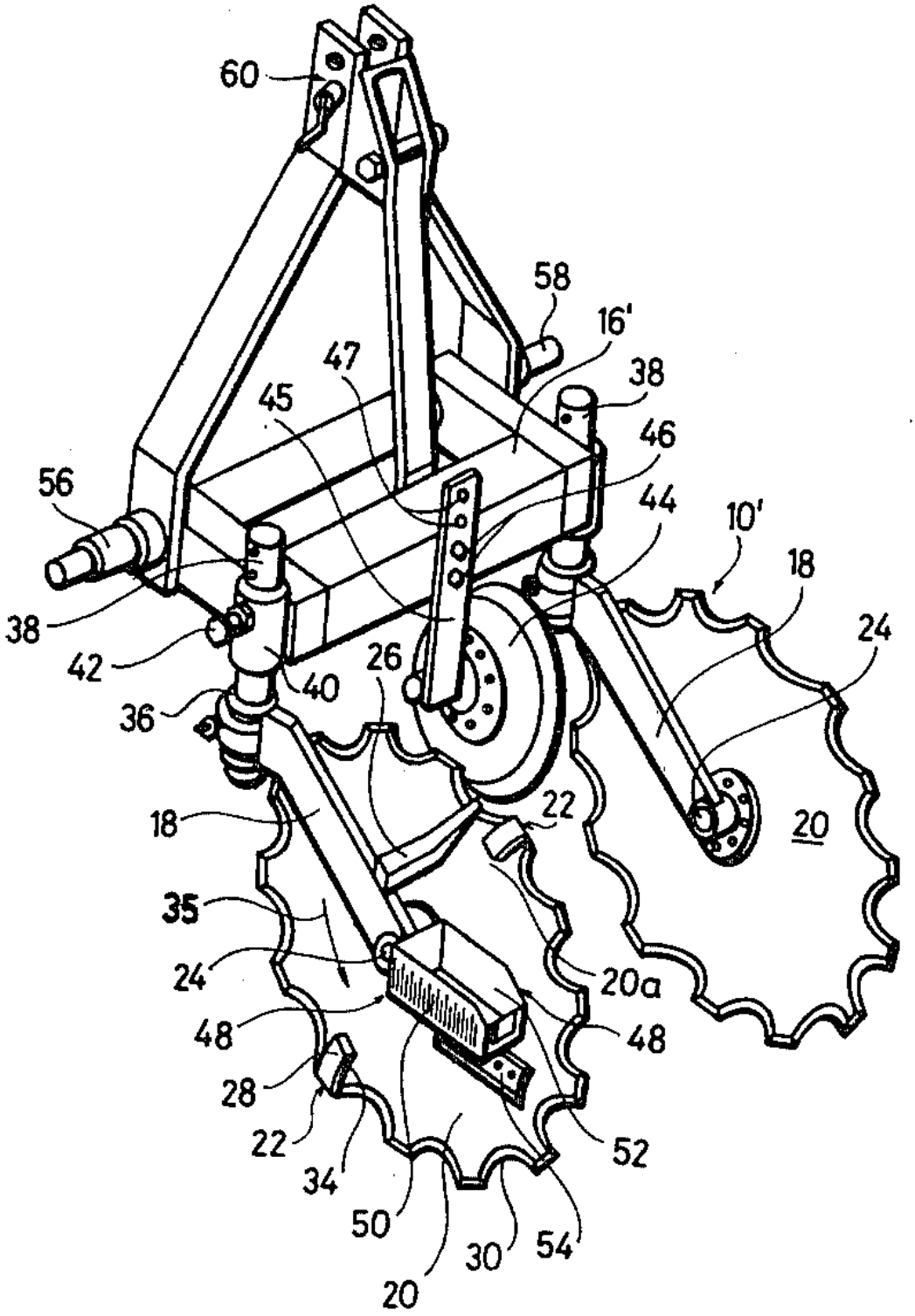
Family 16/25 - FAMPAT - ©Questel

Title

(US4356734)

Soil sampling device

Images



Publication data including kind & date

US4356734 A 1982-11-02 US4356734

Abstract

(US4356734)

There is disclosed a soil sampling device having a sampling unit arranged on a disc which can be rotated around a quasi-horizontal axle on the arm of a frame attached to a vehicle.Also on the arm is a sample removing unit which removes the sample from the sampling unit and places it in a sample collection box.The invention provides a means to carry out soil sampling quickly, reproducibly and automatically and obtain an authentic picture of the properties of the investigated soil.

Inventors

IVANCSICS JOZSEF

Latest standardized assignees - inventors removed

DALMANDI ALLAMI GAZDASAG

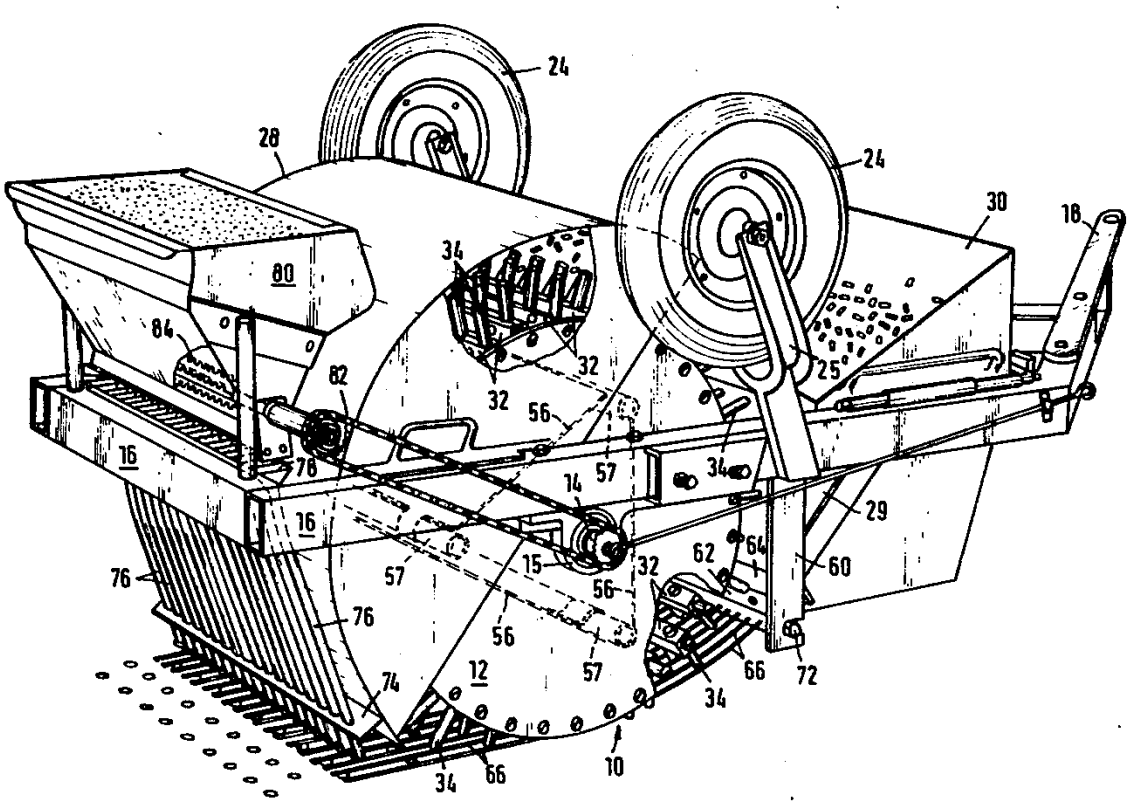
Family 17/25 - FAMPAT - ©Questel

Title

(US4148362)

Penetrating machine

Images



Publication data including kind & date

DK492277	A	1978-05-06	DK7704922
NL7712252	A	1978-05-09	NL7712252
FR2369781	A1	1978-06-02	FR2369781
US4148362	A	1979-04-10	US4148362
ATA785277	A	1979-11-15	AT7707852
AT357355	B	1980-07-10	AT-357355
GB1576256	A	1980-10-08	GB1576256
CH623454	A5	1981-06-15	CH-623454
FR2369781	B1	1982-02-12	FR2369781
IT1087283	B	1985-06-04	IT1087283

Abstract

(US4148362)

A lawn perforating machine for forming rows of holes in the ground comprises a perforating roller which is adapted to roll on the ground and whose peripheral surface carries perforating tubes mounted for pivotal movement about axes extending parallel to the axis of the roller so that from the beginning to the end of their contact with the ground their axes remain substantially perpendicular to the ground.Part of the periphery of the roller is enclosed by a guide plate to intercept plugs of earth formed by the perforating tubes.In one embodiment a spring comb is disposed behind the roller to produce clean holes even in wet ground.

Inventors

ORTH GUNTHER

Latest standardized assignees - inventors removed

WOLF GARTEN

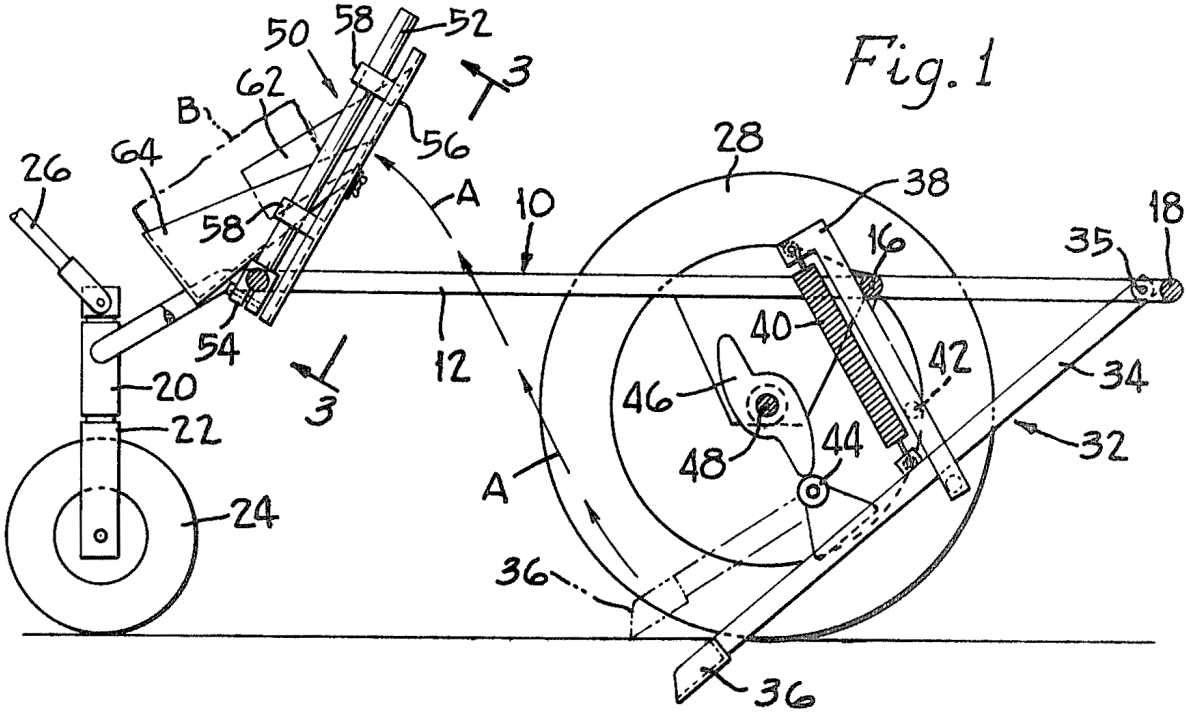
Family 18/25 - FAMPAT - ©Questel

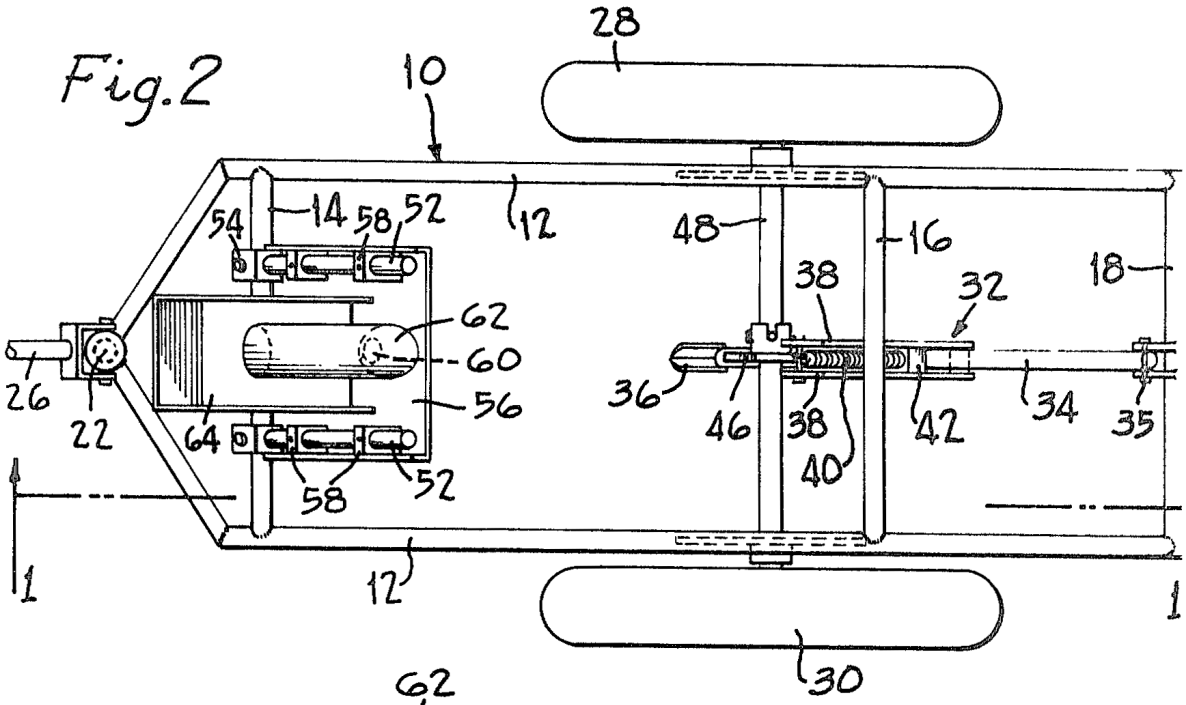
Title

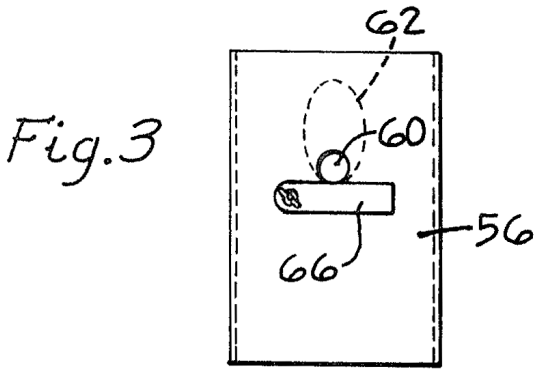
(US3625296)

Mechanical soil sampler

Images







INVENTORS
HAROLD E. MABRY
DONALD WHITTAM

BY

R. Hoffman
ATTORNEY

Publication data including kind & date

US3625296 A 1971-12-07 US3625296

Abstract

(US3625296)

Apparatus and method for collecting subsamples of surface soil.The apparatus is a wheeled device having a spring-loaded, hinged lever provided with a cam following roller and digger foot, an adjustable spring and bumper block, a cam mounted

on a wheel axle and a holder for a sample collection container having a baffle with opening and adjustable cover plate.The cam rotates with the axle and a cam lobe intermittently engages the cam follower whereupon the lever is pressed downward and the digger foot is forced into the soil.When the cam lobe disengages from the follower a spring pulls the lever rapidly upward until it strikes the bumper block.The resultant impact causes the soil sample on the digger foot to be thrown upward and forward into the sample collection container.

Inventors

MABRY HAROLD E

WHITTAM DONALD

Latest standardized assignees - inventors removed

US DEPARTMENT OF AGRICULTURE

Family 19/25 - FAMPAT - ©Questel

Title

(US3464504)

Vehicle mounted soil sampling device

Images

Filed Sept. 26, 1966

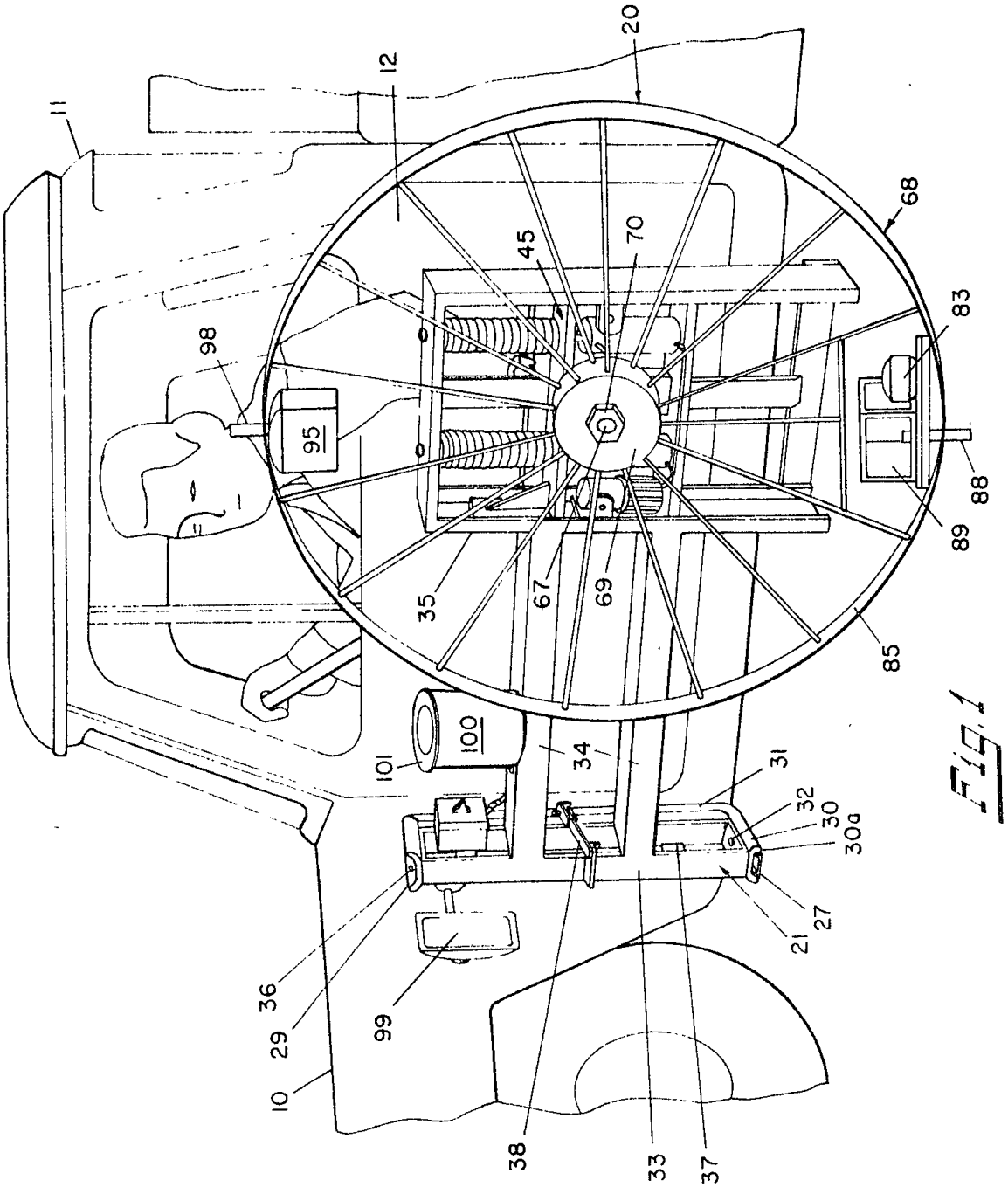


Fig. 1

INVENTOR.
WILFRED H. STANGE
BY Joseph G. Werner
John M. Winter
ATTORNEYS

Publication data including kind & date

US3464504 A 1969-09-02 US3464504

Inventors

STANGE WILFRED H

Family 20/25 - FAMPAT - ©Questel

Title

(US3559748)

Fluted coulter disc blade

Images

FIG. 1

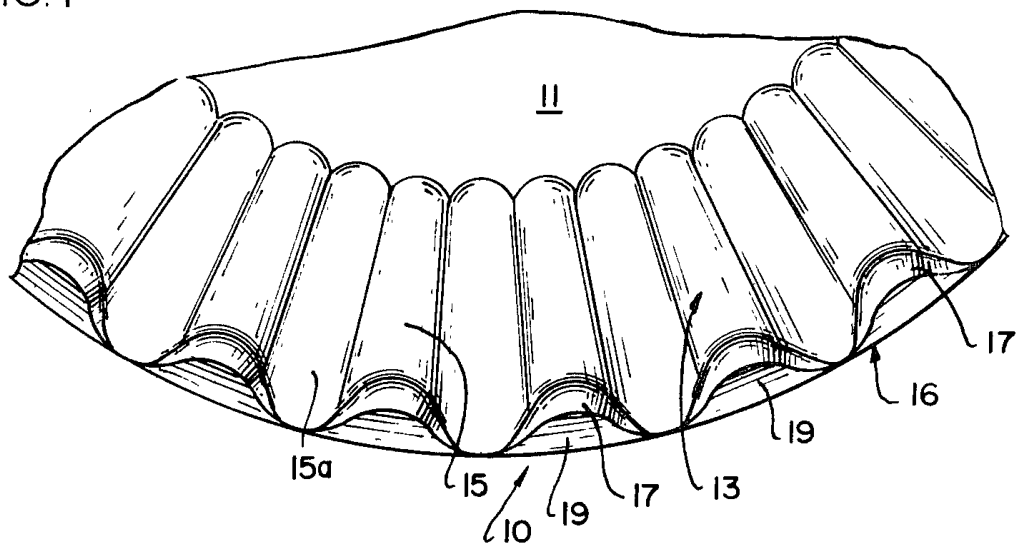


FIG. 2

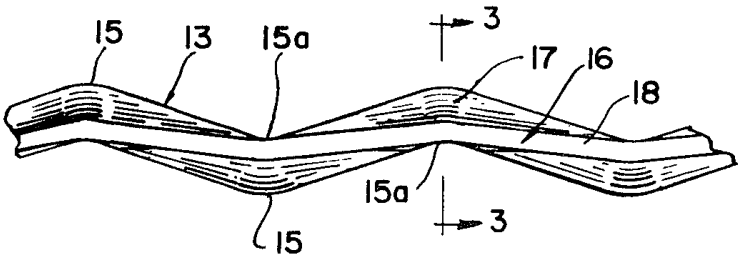


FIG. 3

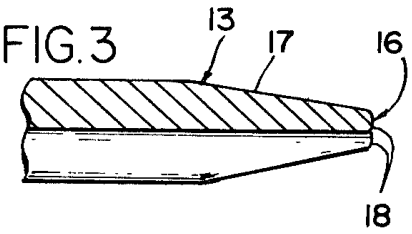


FIG. 4

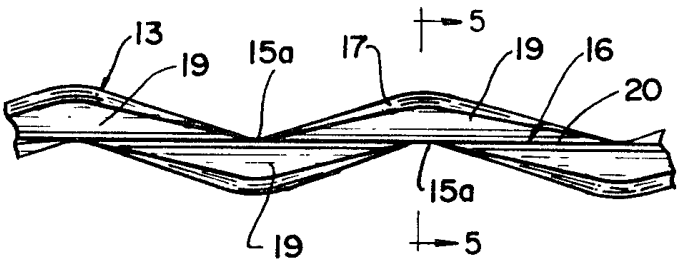
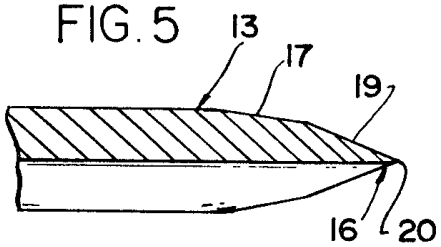


FIG. 5



INVENTOR

LEE E. SHELTON

BY Evan D Roberts

Publication data including kind & date

FR2013205	A1	1970-03-27	FR2013205
DE1936449	A1	1970-09-03	DE1936449
GB1218336	A	1971-01-06	GB1218336
ZA6904755	B	1971-01-27	ZA6904755
US3559748	A	1971-02-02	US3559748
ES369642	A1	1971-07-16	ES-369642
FR2013205	B1	1973-07-13	FR2013205
DE1936449	B2	1976-03-25	DE1936449

Abstract

(US3559748)

A fluted coulter disc blade having a fluted peripheral portion with a diminished thickness peripheral portion outwardly of the flutes to provide a substantially circular and straight cutting edge.

Inventors

SHELTON LEE E

Latest standardized assignees - inventors removed

FORESIGHT ENTERPRISES

MARCHESINI

Family 21/25 - FAMPAT - ©Questel

Title

(DE1272610)

Scheibensech

Publication data including kind & date

DE1272610	B	1968-07-11	DE1272610

Inventors

SEN VIKTOR LEMKEN

LAAK THEO VAN

Latest standardized assignees - inventors removed

LEMKEN PFLUGFAB

Family 22/25 - FAMPAT - ©Questel

Title

(US3122111)

Implement for sod seeding

Images

FIG. 1

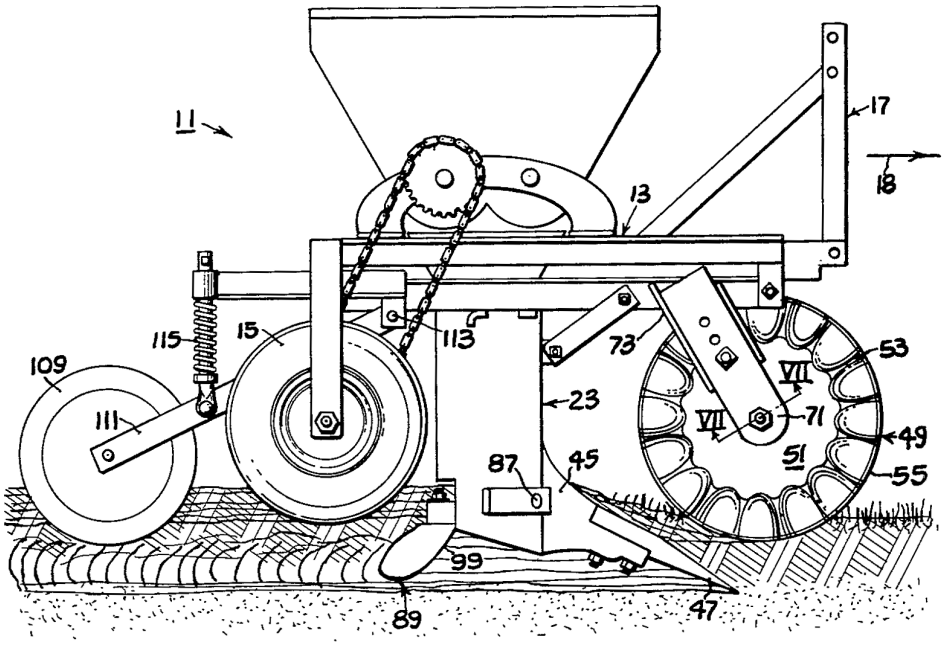
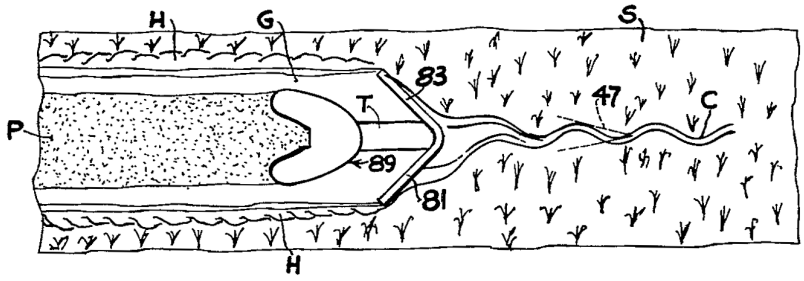


FIG. 2



INVENTOR.
WILLIAM A. TAYLOR, SR.
BY John R. Walker, III
Attorney

Publication data including kind & date

US3122111 A 1964-02-25 US3122111

Inventors

TAYLOR SR WILLIAM A

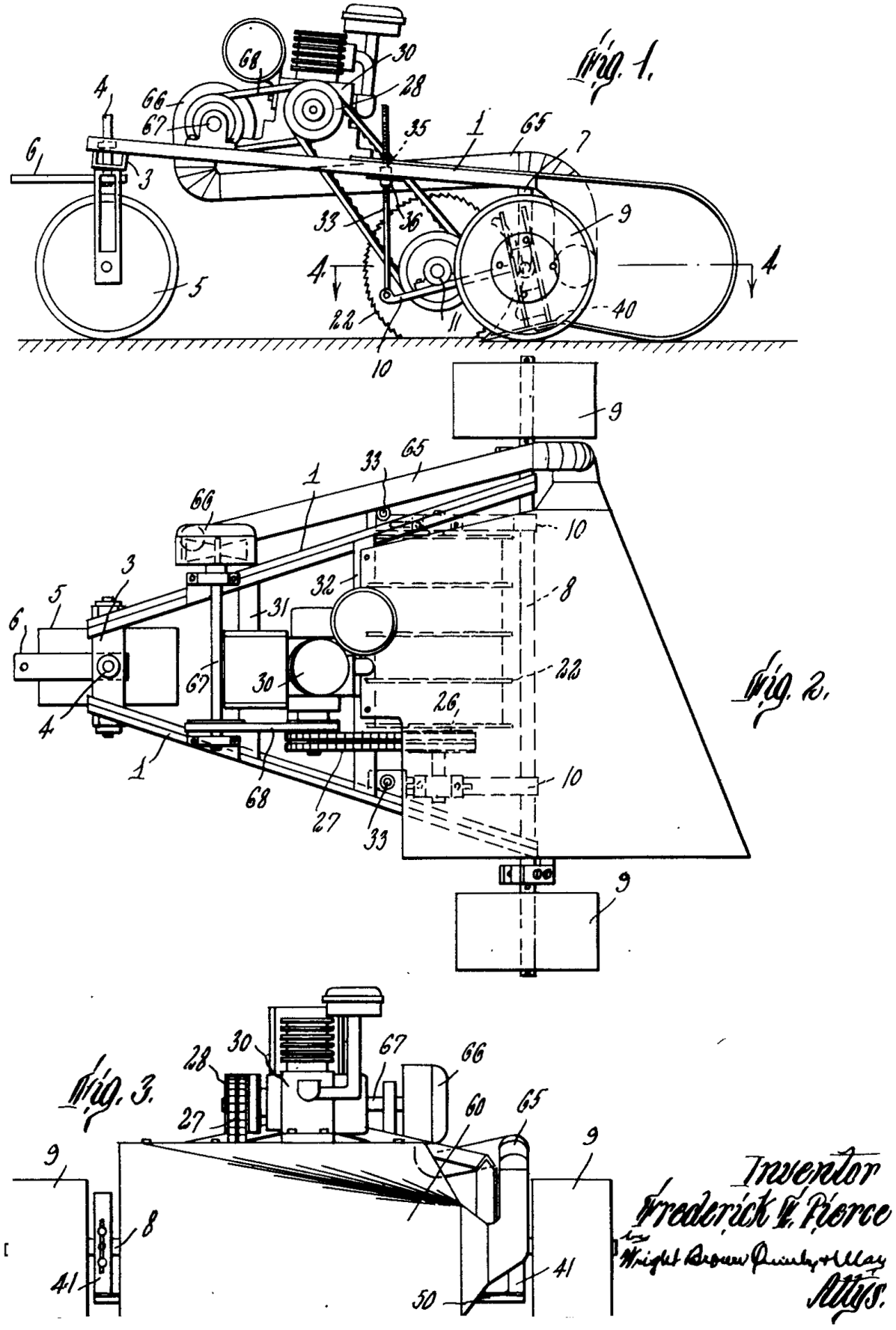
Family 23/25 - FAMPAT - ©Questel

Title

(US2658290)

Peat milling and handling machine

Images



Publication data including kind & date

US2658290 A 1953-11-10 US2658290

Inventors

PIERCE FREDERICK E

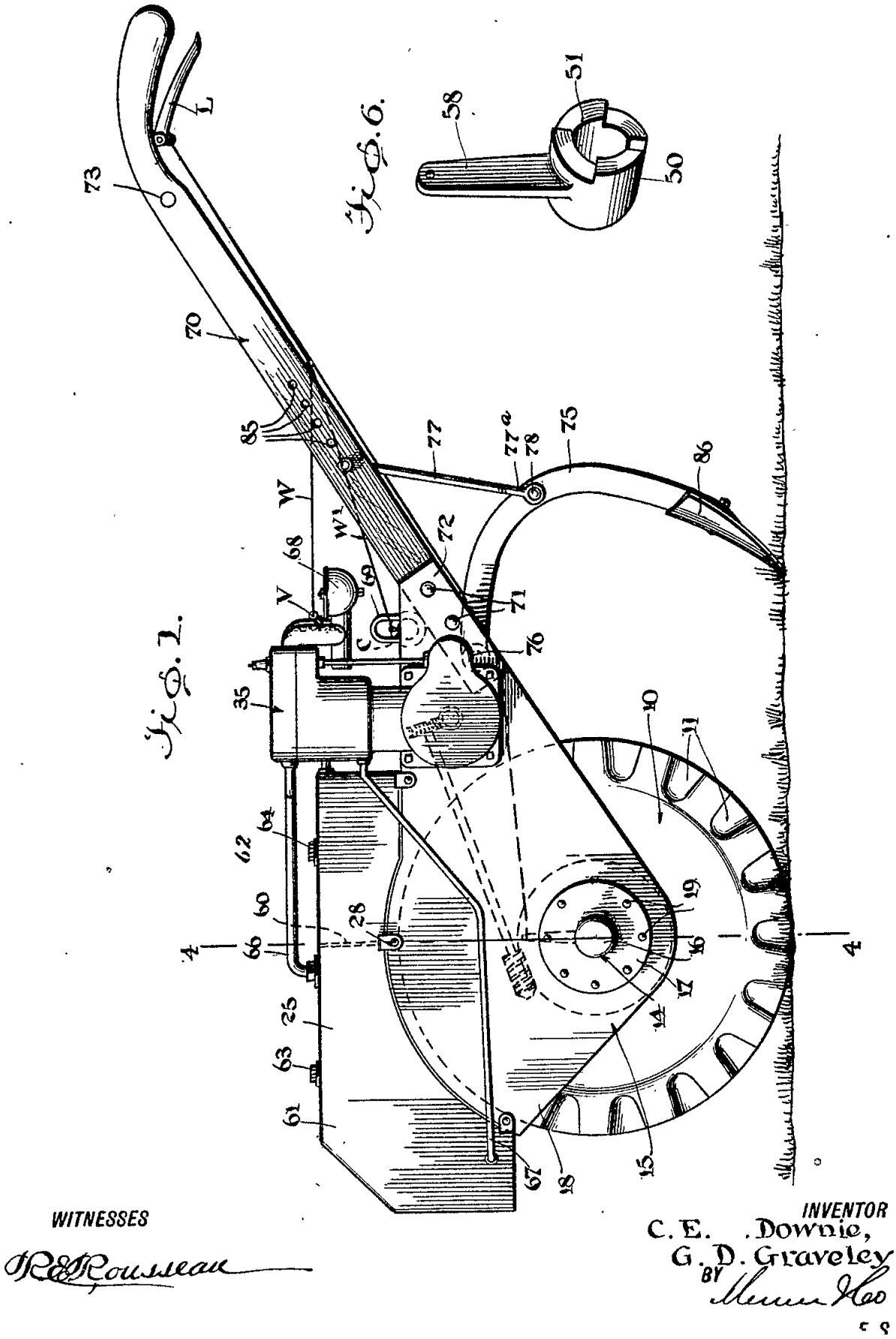
Family 24/25 - FAMPAT - ©Questel

Title

(US1455046)

Tractor cultivator

Images



Publication data including kind & date

US1455046 A 1923-05-15 US1455046

Inventors

EDWIN DOWNIE CHARLES
GRAVELY GEORGE D

Family 25/25 - FAMPAT - ©Questel

Publication data including kind & date

US30901	A	1860-12-11	US--30901