

H. W. LUTZ & W. HUTCHISON:

DITCHING MACHINE.

APPLICATION FILED MAY 9, 1912.

1,065,457.

Patented June 24, 1913.

2 SHEETS-SHEET 1.

Fig. 3

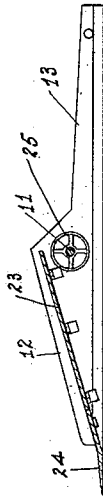
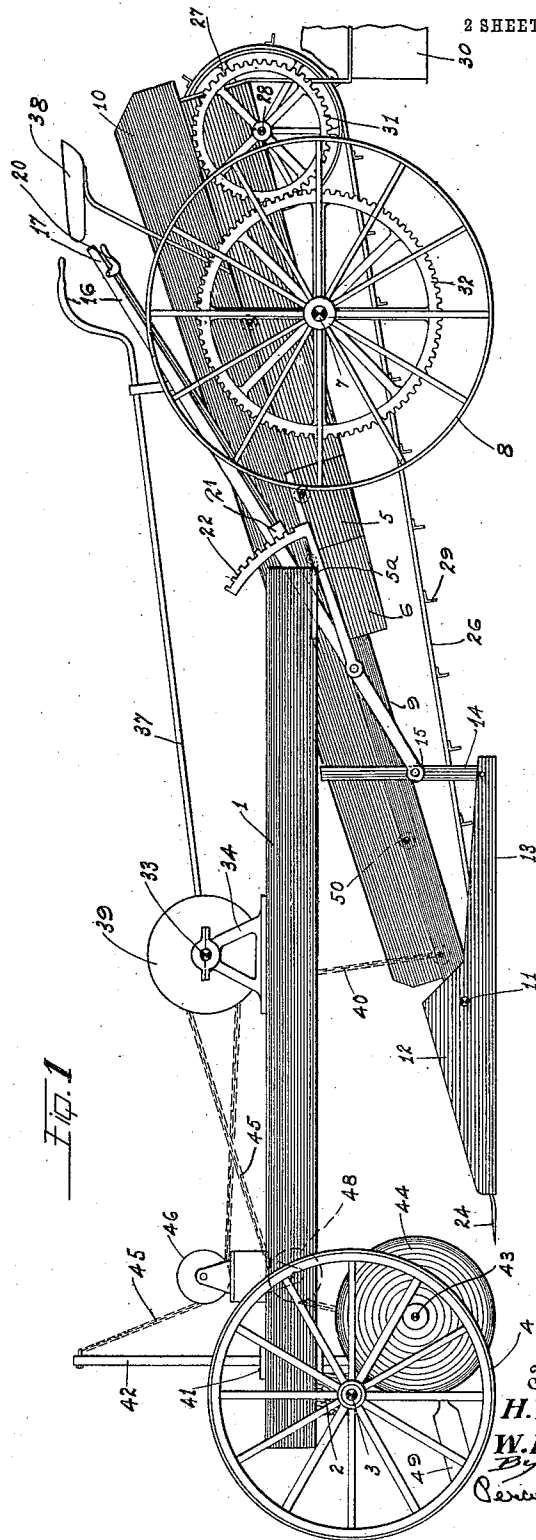


Fig. 1



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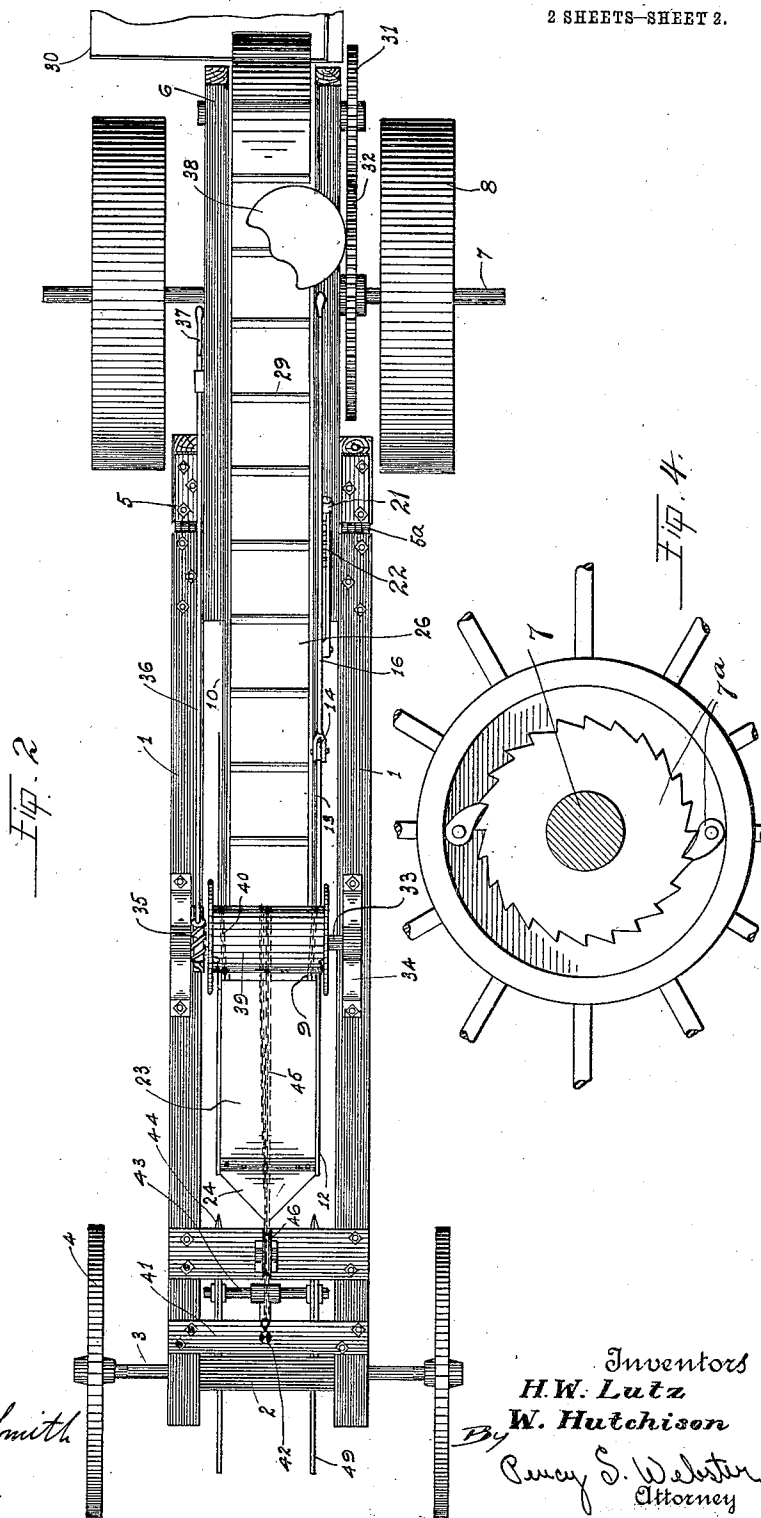
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UNITED STATES PATENT OFFICE.

HARRY W. LUTZ AND WILLIAM HUTCHISON, OF ANTIOCH, CALIFORNIA.

DITCHING-MACHINE.

1,065,457.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed May 9, 1912. Serial No. 696,126.

To all whom it may concern:

Be it known that we, HARRY W. LUTZ and WILLIAM HUTCHISON, citizens of the United States, residing at Antioch, in the county of Contra Costa, State of California, have invented certain new and useful Improvements in Ditching-Machines; and we do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in excavators and particularly to that class known as ditching machines the object of the invention being to produce a ditching machine having an improved excavating or digging point which will be easily adjustable for the different depths of ditches, there being in operation with such digging point an adjustable pair of disks adapted to ride ahead of the digging point to cut the sides of the ditches. We further provide an adjustable conveyer, such conveyer and such disks having a raising and lowering means by means of which such conveyer, disks and digging point may be raised or lowered in one simultaneous movement, such digging point having a further independent adjusting means whereby its angle of operation may be changed according to the depth of the ditch.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects, we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of the complete device. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional view of the digging point. Fig. 4 is a fragmentary view, showing the wheel structure and means for connecting the frame therewith.

Referring now more particularly to the characters of reference on the drawings, we first provide two main side beams 1 spaced apart and provided with a front cross beam

2 mounted on an axle 3 carrying supporting wheels 4. Hinged to the under side of the rear ends of said beams 1 as at 5^a are blocks 5 secured to beams 6, which beams 6 project at an incline and are journaled at their rear ends upon an axle 7 carrying supporting wheels 8. Such beams 6 are provided with projecting metal bars 9 provided with side boards 10. Pivotaly mounted on the members 9 on a pin as at 11 is an inclosed shoe 12 having a projecting arm 13 connected with the rear end of which are arms 14 provided with a plurality of holes 15 bolted through which holes may be a lever 16 having an operating handle 17 provided with a release rod and handle 20 having the usual form of release dog mechanism 21 engageable in a rack 22 secured to one of the beams 6. In the frame 12 is a digging point comprising a platform 23 bolted to the sides of the member 12 as shown in Fig. 3. Disposed between the sides of the member 12 and around the pin 11 just to the rear of the platform 23 is a pulley 25 movable over which is a conveyer 26 which moves between the members 9 and 10 and around a large pulley 27 disposed on an axle 28 journaled in the rear ends of the members 6, such conveyer being an ordinary belt conveyer provided with projecting iron flanges 29, such conveyer being adapted to discharge upon a side chute 30 at the rear end of the beams 6. On the shaft 28 is a gear wheel 31 which drives said shaft 28 and incidentally the conveyer 26 which gear wheel 31 is in turn driven by a gear wheel 32 secured on the axle 7 which is driven by means of the movement of the wheels 8 which are connected to said axle 7 by means of a pawl and ratchet structure 7^a of the usual type to permit the easy turning of corners.

The numeral 33 designates a shaft journaled in members 34 secured on the beams 1 and being adapted to engage a worm gear 35 having an operating handle 37 disposed within reach of the operator's seat 38 and in this connection it is also stated that the member 17 projects within reach of the operator's seat 38. Mounted on the shaft 33 is a drum 39 wound around which are chains 40 connecting at their lower ends with the members 9 whereby with the operation of the handle 37 the members 9 and all their connected parts may be raised or lowered by means of the hinges 5^a.

Movable vertically through plates 41, dis-

posed across the forward end of the beams 1 is a vertical post 42 bending at its lower end and having a pin or shaft 43 carrying a pair of cutting disks 44. From the upper end of the member 42 a chain 45 projects under a sheave 46 and thence around the drum 39 and thence over a sheave 48 and is then connected to the lower end of the post 42. By this structure, when the member 37 is operated and raises or lowers the members 9 and their connected parts, this will also raise or lower the disks 44 in order that they may at all times maintain the same plane as the other parts of the machine. Secured to the lower end of the member 42 are projecting feeler arms 49 adapted to project in the same plane as the disks 44 to maintain the proper horizontal position of the machine in the ditch since these feelers 49 will follow along the side edges of the ditch as it is dug and thus act as guides for the balance of the machine. Thus as will be seen from the structure given the disks 44 will first proceed alone and loosen up the dirt along the sides of the ditch to be dug and after a suitable depth is reached the members 49 guide the future action. After the side of the ditch is dug and loosened by the disks 44, the point 24 digs the level plane of the ditch and with the forward movement of the machine this dirt is pushed up over the plate 23 where it dumps onto the conveyer 26 and with the operation of such conveyer by means of the gear mechanism described, it delivers the dirt under the adjustable chute 30 from whence it is piled up on the edge of the ditch. The members 10 confine the dirt within their sides while the members 9 act as the guides for the conveyer, and to that end are provided with a plurality of rollers 50 to support the conveyer. Also, as can be readily seen by means of the adjusting lever 16 the angle of the point 24 may be turned either up or down according to the depth of the ditch by moving the member 12 on its pivotal point 11 and also by changing

the pivotal connection of the member 16 in one of the holes in the member 15. The degree of this angle may be correspondingly increased and decreased.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfils the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described our invention what we claim as new and useful and desire to secure by Letters Patent is:

1. A device of the character described comprising a frame mounted on wheels, another frame hinged to said first named frame and pivotally mounted on an axle carrying wheels, a conveyer carried by said second named frame, a digging point carried by said second named frame and adapted to discharge on said conveyer, means for raising and lowering said second named frame and means for tilting said digger point independently of any movement of said second named frame, as described.

2. A device of the character described comprising a main frame mounted on wheels, an independent frame hinged to said main frame, and being journaled on an axle carrying wheels, means for raising and lowering said second named frame, a conveyer disposed in said second named frame, a digging point flexibly journaled on said second named frame, means for inclining said digger point, said digger point discharging upon said conveyer, as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HARRY W. LUTZ.
WILLIAM HUTCHISON.

Witnesses:

STEPHEN N. BLEWETT,
PERCY S. WEBSTER.