No. 875,789. PATENTED JAN. 7, 1908.

T. DE YOUNG, JR.

MECHANISM FOR CLEANING EXCAVATOR BUCKETS.

APPLICATION FILED JUNE 8, 1907. 2 SHEETS—SHEET 1.

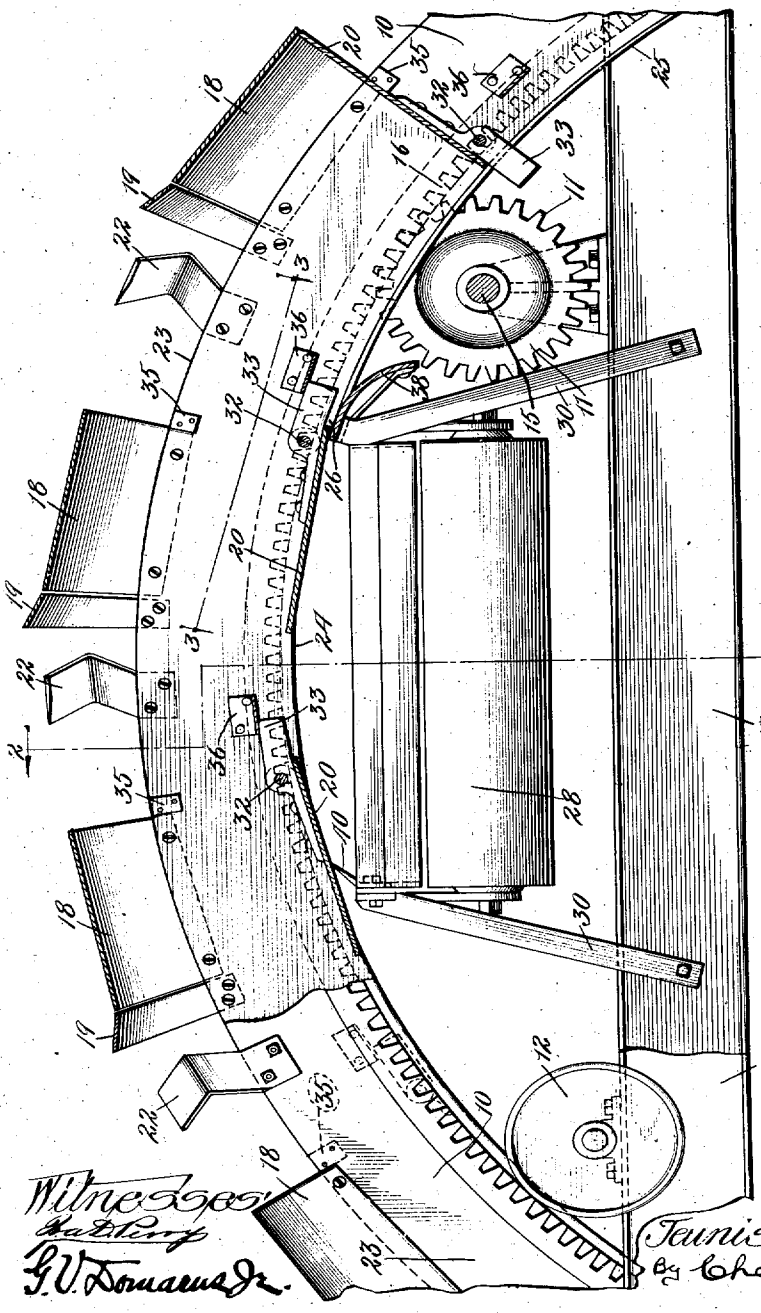


Fig. 1.

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Fig. 2.

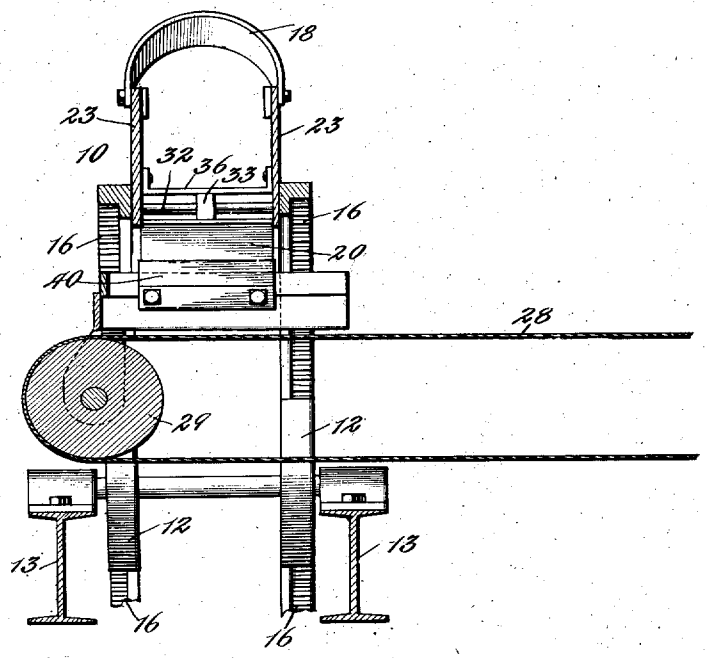


Fig. 3.

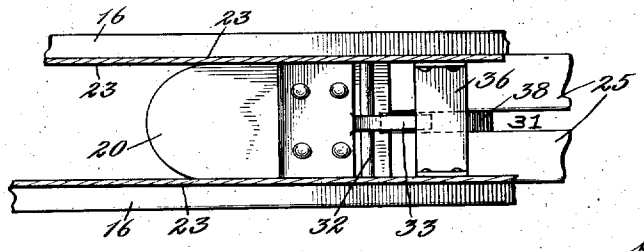


Fig. 4.

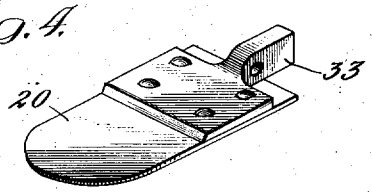
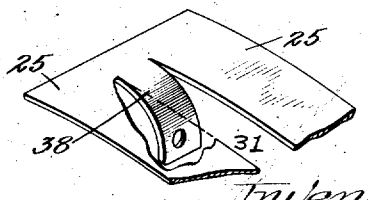


Fig. 5.



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UNITED STATES PATENT OFFICE.

TEUNIS DE YOUNG, JR., OF SOUTH HOLLAND, ILLINOIS.

MECHANISM FOR CLEANING EXCAVATOR-BUCKETS.

No. 875,789. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed June 8, 1907. Serial No. 378,016.

To all whom it may concern:

Be it known that I, TEUNIS DE YOUNG, Jr., a citizen of the United States, residing at South Holland, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Mechanism for Cleaning Excavator-Buckets, of which the following is a specification.

The invention relates to mechanism for excavating earth and particularly to traction ditch digging mechanism or "ditchers" such as are well known in the art.

The object of the invention is to provide means for cleaning all of the excavated earth out of each bucket, of such a mechanism, into the conveyer for carrying the same away, so that the machine may work at high efficiency.

The invention consists broadly in mechanism for carrying out the foregoing objects which can be easily made and installed, which is efficient in operation and not readily liable to get out of order.

In the specific embodiment of the invention here shown it consists in a pivoted bottom for each bucket of the excavator mechanism proper, combined with a scraper mechanism adjacent to the conveyer, a can and the power for driving the conveyer in such a way that the bucket bottoms are in normal position during the digging operation proper, are tilted first to dump the load from the bucket into the conveyer and finally into contact with the scraper whereby as the bucket bottom passes over the scraper it is completely cleaned off into the conveyer.

The invention also consists in details of construction which will be hereafter described and claimed.

The drawings illustrate only such parts of the ditcher proper as are necessary to illustrate the invention.

For convenience the invention is shown applied to the well known "Buckeye traction ditcher" made by the company of the same name, of Findlay, Ohio, but it may be applied to other similar machines without departing from the invention.

Figure 1 is a side view partly sectional of a portion of the main wheel 10 of such a ditcher mounted on wheels 11 and 12 carried by the supporting frame 13, the wheel 10 being rotatable by means of power, applied through the shaft 15, to the wheel 11, which is, as shown, made in the form of a gear or pinion having teeth meshing with the circular rack 16, secured to the wheel 10. On the wheel 10 are a plurality of buckets 18 each provided with a scraping or cutting edge 19. Each bucket has a bottom 20 which has heretofore been stationary with reference to the bucket 18 proper. Between each pair of buckets or more properly in front of each bucket is a cutter or plow 22 designed to break up the earth which the particular bucket edge 19 is approaching so that it may be scraped into the bucket 18. The plates 23 of the wheel 10 also form part of each bucket. The buckets are open on the circumference 24 of the wheel 10 said opening being closed during the upward travel of the buckets by the slotted stationary plate 25. The result of the construction heretofore described, which is no part of this invention, is that as the wheel is rotated in a counter clockwise direction the device cuts earth from the trench below the figure, scrapes it into the buckets 18 which carry said dirt up the plate 25 until its end 26 is reached after which the dirt, if loose, falls over said edge onto the conveyer belt 28 carried by wheel 29 by which it is conveyed off to one side of the ditch. The conveyer mechanism is supported on the beams 13 by the braces 30 as shown.

Taking up now the features of this invention and the remaining figures of the drawings, Fig. 2 is a sectional detail view on line 2—2 of Fig. 1. Fig. 3 is a sectional detail plan view on line 3—3 of Fig. 1. Fig. 4 is a perspective view of the bucket bottom removed from the remaining parts and Fig. 5 is a perspective detail view of the cam for operating the bucket bottom or door.

In order to forcibly eject sticky earth such as "gumbo" soil from each bucket 18 as it passes the edge 26 of plate 25 each bucket bottom 20 is journaled on a rod or shaft 32 mounted in the plates 23 of wheel 10 and is made of such a size that it may be tilted backward and forward through the bucket proper between upright and horizontal position as shown. Depending from each shaft 32 is an arm 33 preferably counterweighted to normally hold the bucket bottom 20 in upright position the counterweight passing through the slot 31 in the plate 25. The travel of each bucket bottom is limited in the two extremes of its travel by stops 35 and 36. On the wheel 10 adjacent to the end 26 of plate 25 is a cam 38 and on the opposite side of the conveyer is a scraper 40 the two being so located as shown, that as the bottom

of a loaded bucket reaches point or line 26 and therefore all of the load which will fall out by gravity is free to and does fall down into the conveyer 28, the depending arm or counterweight 33 of that particular bucket bottom engages cam 38 and as the wheel 10 continues to revolve, forcibly tilts the door or bottom through the bucket to the horizontal position, seen at the center of Fig. 1, in which position the bucket engages the scraper 40 and is cleaned onto the conveyer. As the wheel 10 carries the door 20 on around its path of revolution the counterweight returns the bottom of the bucket to normal position before the bucket to which it belongs enters the ground again and begins to dig.

What I claim as new and desire to secure by Letters Patent, is:

1. In mechanism of the class described a carrying mechanism, means for propelling said carrying mechanism in a predetermined path, a bucket attached to said carrying mechanism having an open face, parallel to the path of travel of the carrying mechanism, a movable member within the bucket adapted to normally support load within the bucket, and means for automatically moving said supporting member to a position where its load carrying face is slightly out of the bucket through said open face and is then parallel with the path of travel of the bucket.

2. In a conveyer, a bucket open at one side, a member movable within said bucket, a scraper adjacent to the conveyer and means for automatically moving said movable member from a position in which it supports the load within the bucket into contact with said scraper for the purposes set forth.

3. In a conveyer a bucket open at one side, a bottom for the load in the bucket pivoted in such a position that as it is tilted it is moved out of the bucket through the opening and automatic means for so tilting said bottom as the load is discharged.

4. In a conveyer a bucket open at one side, a bottom for the load in the bucket pivoted in such a position that as it is tilted it is moved out of the bucket through the opening and a scraper adjacent to the position for discharging the load and automatic means for tilting said bottom into contact with said scraper as the load is discharged.

5. In a trencher, a power driven wheel carrying buckets adapted to dig the earth said buckets being open toward the center of the wheel, means for closing said opening in the wheel in the portion of its circumference where elevation is taking place, a pivoted bottom for each bucket adapted to support the load while elevating is taking place, a cam near the upper end of said closing means adapted to be engaged by each bucket bottom as it reaches the top of said closing means and tilt the bottom of the adjacent bucket toward the center of the wheel and a scraper adapted to be then engaged by the bottom of the bucket for the purpose set forth.

6. In a trencher, a power driven wheel carrying a plurality of earth digging buckets, a scraper adjacent to said wheel, a load supporting member within each bucket, and automatic means for successively moving each of said members from load supporting position into contact with said scraper for the purposes set forth.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

TEUNIS DE YOUNG, JR.

Witnesses:
TEUNIS DE YOUNG, Sr.,
DWIGHT B. CHEEVER.

Correction in Letters Patent No. 875,789.

It is hereby certified that in Letters Patent No. 875,789, granted January 7, 1908, upon the application of Teunis De Young, Jr., of South Holland, Illinois, for an improvement in "Mechanism for Cleaning Excavator Buckets," an error appears in the printed specification requiring correction, as follows: In line 28, page 1, the word "can" should read *cam;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of January, A. D., 1908.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

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