F. CAMP.

POST HOLE AUGER.

APPLICATION FILED JULY 24, 1916.

1,220,949.

Patented Mar. 27, 1917.

3 SHEETS—SHEET 1.

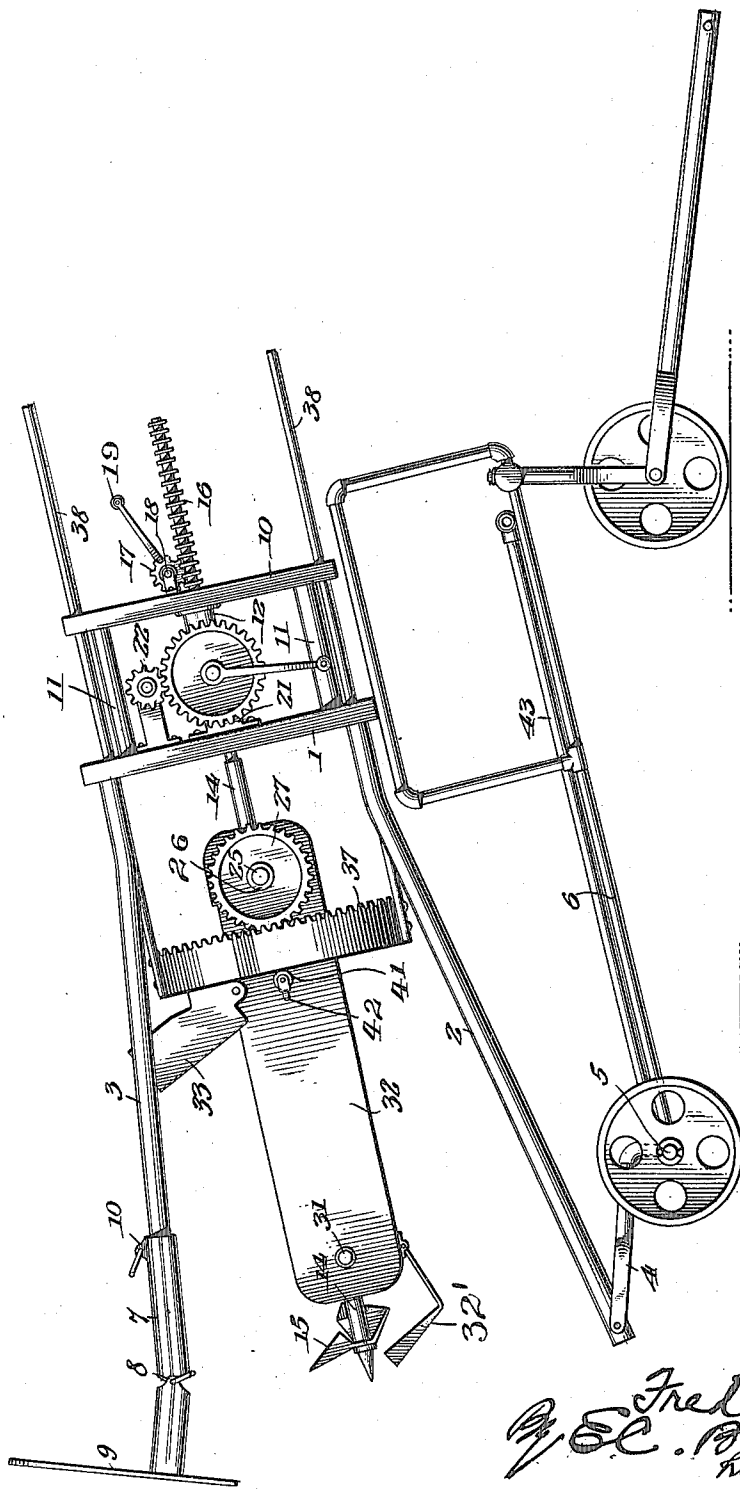


Fig. 1.

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By E. C. Brandenburg
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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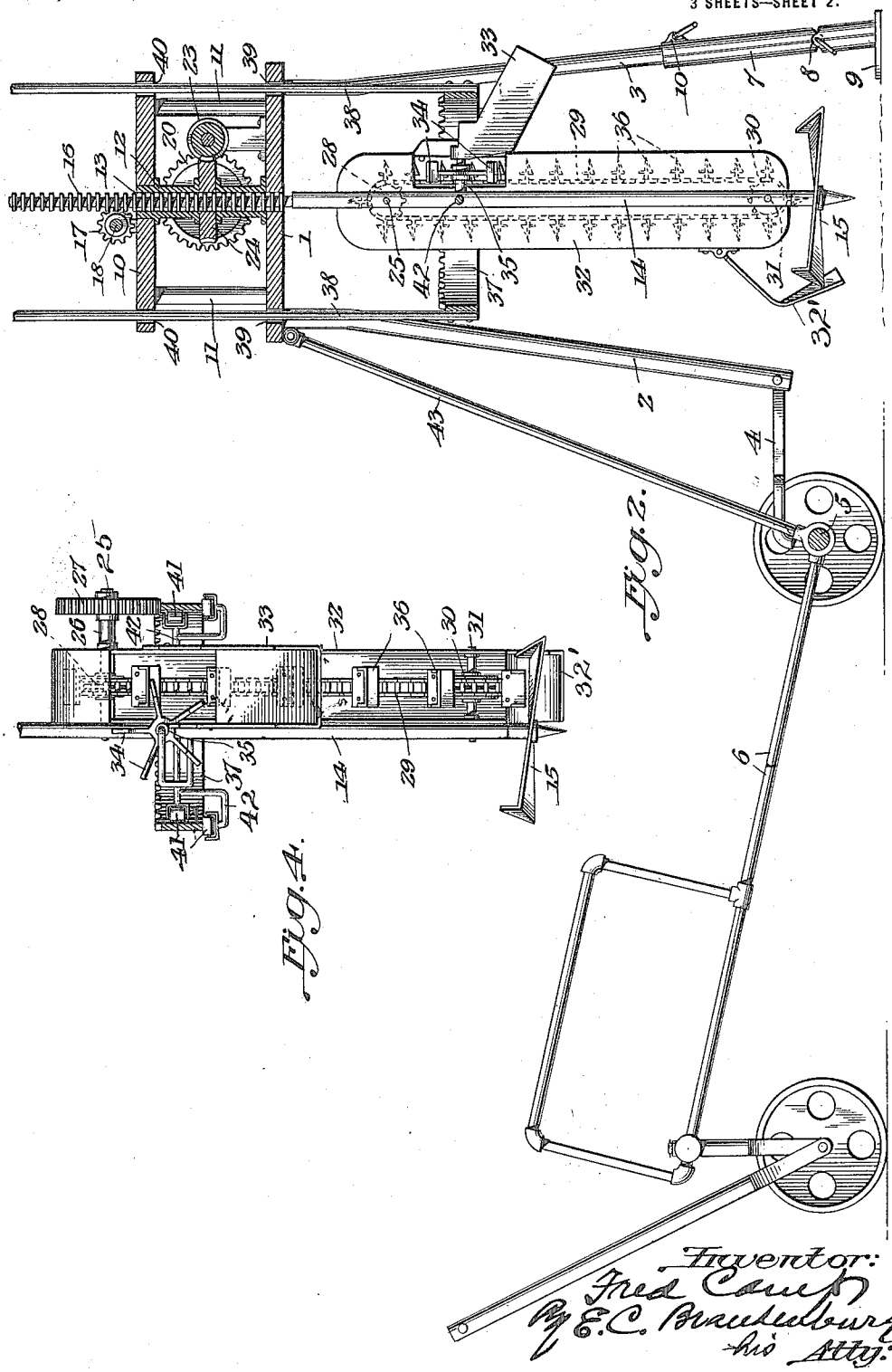


Fig. 2.

Fig. 4.

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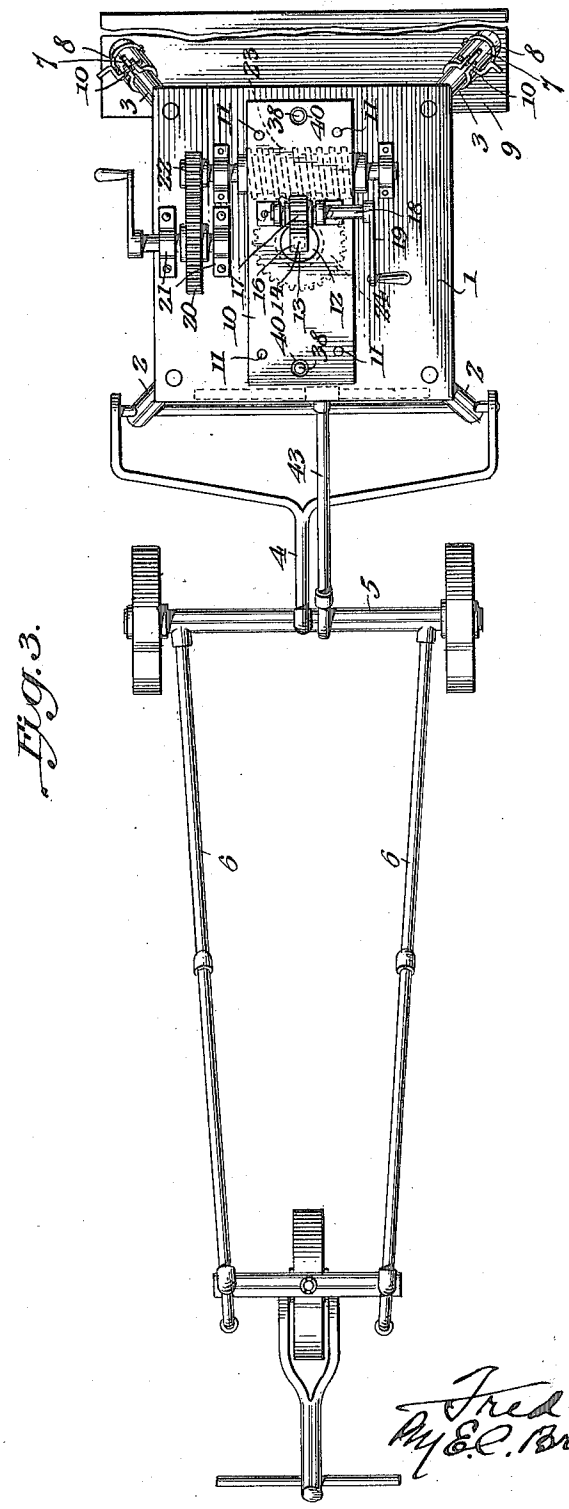


Fig. 3.

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UNITED STATES PATENT OFFICE.

FRED CAMP, OF DUNCOMBE, IOWA.

POST-HOLE AUGER.

1,220,949. Specification of Letters Patent. Patented Mar. 27, 1917.

Application filed July 24, 1916. Serial No. 110,971.

To all whom it may concern:

Be it known that I, FRED CAMP, a citizen of the United States, residing at Duncombe, in the county of Webster and State of Iowa, have invented certain new and useful Improvements in Post-Hole Augers, of which the following is a specification.

My invention relates to an improvement in post hole augers, and appertains more particularly to an auger with an endless conveyer in proximity thereto which is adapted to raise the earth from the hole as it is severed from the ground.

An object of my invention is to provide a device of this nature which is readily moved from place to place, and which is provided with means for holding the frame steady and rigid when the digging operation is proceeding.

A further object is to provide means on the endless conveyer for automatically cleaning the belt and buckets.

A further object is to provide adjustable means on the frame whereby the auger can be rigidly held on rough and uneven ground equally as well as on even and level ground.

A still further object is to provide improved means for raising and lowering the auger.

These objects are obtained by the use of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the entire machine in its inoperative position upon the truck;

Fig. 2 is a side elevation of the entire machine in an operative position, some of the parts being shown in section;

Fig. 3 is a top plan of the frame showing the relation of the parts;

Fig. 4 is a detailed elevation of the conveying means and the cleaner, showing their relation to the boring means.

A frame 1 is provided at the corners with legs 2—2 and 3—3. The legs 2—2 are pivotally mounted on a brace 4, rigidly affixed to the axle 5 of the truck 6.

The legs 3—3 are slidably received in the extensions 7—7, which are in turn pivoted, as at 8—8, to a base plate 9; means, such as clamps 10—10 are provided on the extensions 7—7, whereby the legs 3—3 may be fastened at any desired place in the extensions, 7—7. This is the preferred form of extension leg, but it is obvious that any other equally efficacious means might be employed.

On the top of the frame 1, a supporting plate 10 is located, and is held in a position substantially parallel to the frame 1 by means of the vertical supports 11—11. An opening is formed in the supporting plate 10, and the frame 1 and a bearing 12 is mounted therein. This bearing 12 has a square bore 13 in which is slidably received an auger shaft 14 connected at its lowermost end with the auger 15.

Means are provided on the supporting plate 10 for raising and lowering the auger shaft 14. The preferred form is shown in the accompanying drawings and consists in the formation of a rack 16 on the auger shaft 14, and a gear 17 mounted on a crank shaft 18 with means for operating the gear wheel, such as a crank 19.

It will be obvious that upon the rotation of the crank 19, the auger shaft 14 will be raised or lowered according to the direction of rotation.

On the frame 1, or at any other convenient place is located the means for rotating the auger shaft 14. If it is to be rotated by hand I prefer to use an apparatus such as disclosed in the accompanying drawings. This consists in a crank carrying gear 20, mounted in a bearing 21, the gear 20 being in engagement with a similar gear 22 mounted upon the same shaft with a worm gear 23.

A worm wheel 24 is fastened to the bearing 12 in engagement with the worm gear 23. This is arranged so that upon the rotation of the crank upon the gear 20, the bearing 12 will be rotated and thereby the auger shaft 14 will be rotated.

Beneath the frame 1 is mounted the conveying apparatus. This portion of the invention consists in a pin 25 which is rigidly affixed to the auger shaft 14, upon which is slidably keyed a sleeve 26 carrying at one end a spur gear 27, and having mounted thereon a pulley or sheave 28 over which a conveyer belt 29 passes to a corresponding pulley 30, mounted upon a shaft 31 also affixed to the auger shaft 14.

Any form of buckets might be used with this form of conveyer, and I preferably provide a housing 32 over all of this moving apparatus. One side of the housing 32 is left open, and a spout or outlet 33 is pro-

vided. A scoop 32′ is resiliently mounted on the bottom of said frame 32, so as to guide the severed earth into the buckets of the conveyer. This scoop is so made as not to interfere with the action of the auger 15 in any way. A cleaning device is attached to a pin, rigidly affixed to the auger shaft 14. This consists in a series of paddles 34 rigidly mounted upon a sleeve 35, and these paddles 34 are adapted to be operated like a sprocket by a chain, in other words, the paddles 34 are so mounted that they extend across the inner surface of the buckets 36, so that as each bucket 36 passes the cleaner, the paddle will be pulled across the bucket 36 to clean it.

The preferred means for rotating the gear wheel 27 is an annular rack 37 provided at two or more places on its edge with guides 38—38 adapted to pass vertically through holes 39—39 and 40—40 in the frame 1 and supporting plate 10 respectively.

Guide rollers 41—41 are provided on the ends of a shaft 42 passing through the auger shaft 14, and are adapted to press against the inner periphery of the gear ring 37, whereby the ring or rack 37 is maintained in a position equally distant at all points from the auger shaft 14.

As additional bracing means I preferably provide a bracing member 43, which is pivoted at one end to the axle 5. The other end of this brace 43 is preferably enlarged and is adapted to be placed beneath one edge of the frame 1, whereby any tendency of the frame to topple over toward the truck 6 is prevented because of the brace.

I claim:

1. In a post-hole auger, the combination with a frame, of an auger-shaft mounted thereon, an auger on said shaft, means mounted on the frame for rotating said shaft, conveying means mounted upon said shaft and adapted to rotate therewith, a housing for said conveying means, one end of which terminates in a scoop, and means for actuating said conveying means.

2. In a post-hole auger, the combination with a frame, of an auger-shaft mounted thereon, an auger on said shaft, means mounted on the frame for rotating said shaft, conveying means mounted upon said shaft and adapted to rotate therewith, a housing for said conveying means, one end of which terminates in a scoop, a spout mounted on said housing adapted to receive the contents of said conveying means, and means for actuating said conveying means.

3. In a post-hole auger, the combination with a frame, of an auger-shaft vertically slidable in said frame, conveying means mounted upon said shaft, and an actuated gear-wheel connected therewith, an annular rack located in the path of said gear-wheel, radial braces extending from said shaft having rollers adapted to bear upon said annular rack on its inner and lower surfaces for the purpose of supporting the same and keeping it in its proper position with respect to the shaft, said annular rack adapted to be firmly held between said gear-wheel on one edge, and said rollers on the other, vertical guiding means engaging said annular rack and passing through openings in said frame, whereby the annular rack is in constant engagement with said gear-wheel regardless of the vertical position of said shaft, and said conveying means will be actuated upon the rotation of said shaft.

4. In a post hole auger, the combination with a frame, of digging means mounted thereon, conveying means mounted in proximity to said digging means, and so arranged as to remove the earth as it is severed, and cleaning means comprising paddles so located as to be actuated by said conveyer means, whereby said conveyer means is cleaned as it passes said cleaning means.

In testimony whereof I affix my signature.

FRED CAMP.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."