H. A. WOLF.

EXPANSIBLE POST HOLE AUGER OR DIGGER.

APPLICATION FILED MAY 13, 1915.

1,149,707.

Patented Aug. 10, 1915.

2 SHEETS—SHEET 1.

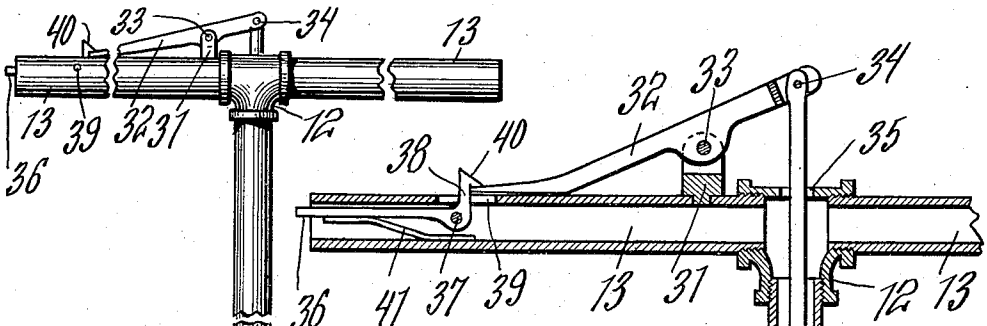


Fig. 2.

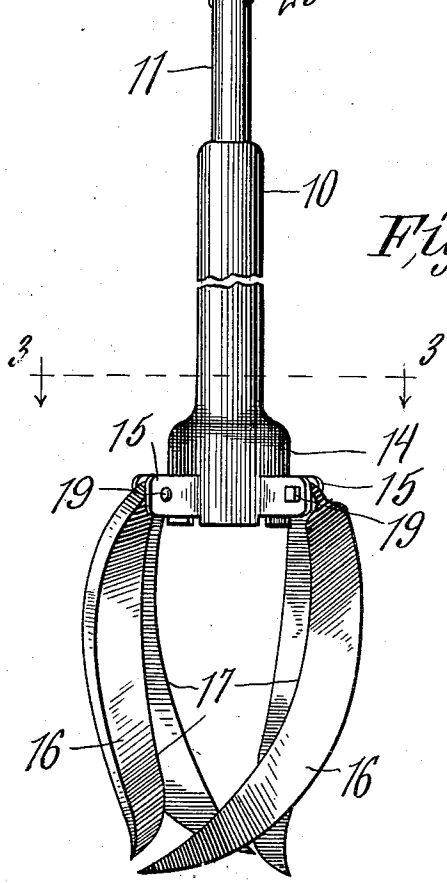
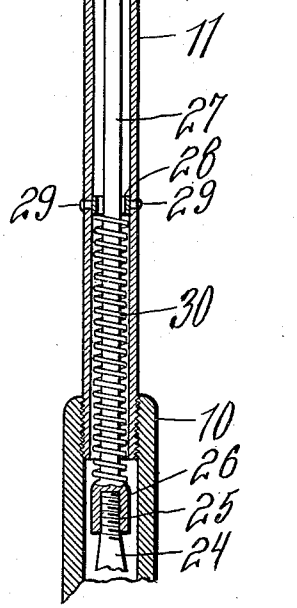


Fig. 1.



Witness

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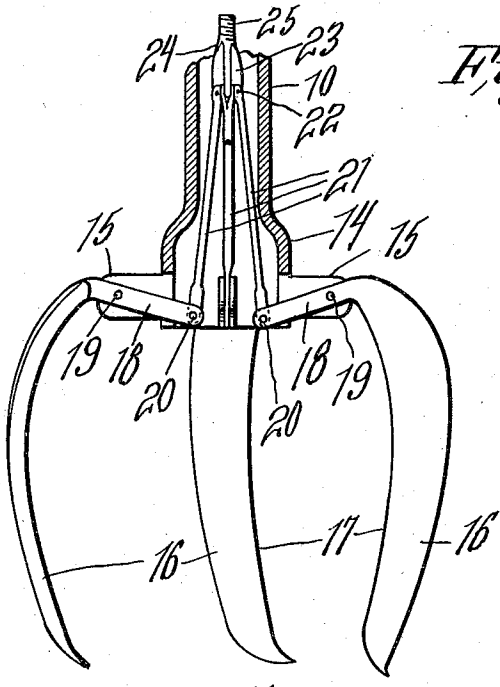


Fig. 4.

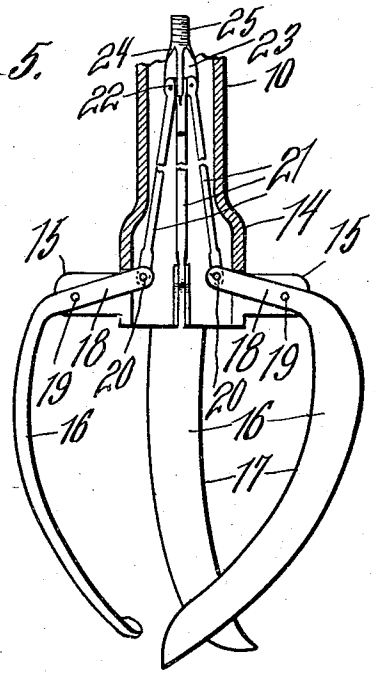


Fig. 5.

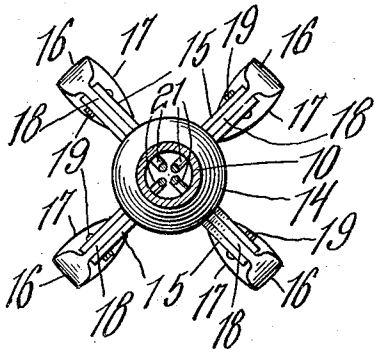


Fig. 3.

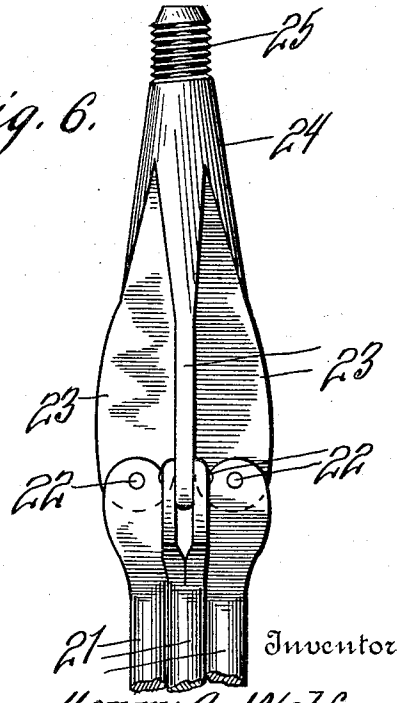


Fig. 6.

Witness

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UNITED STATES PATENT OFFICE.

HENRY A. WOLF, OF TRIPP, SOUTH DAKOTA.

EXPANSIBLE POST-HOLE AUGER OR DIGGER.

1,149,707. Specification of Letters Patent. Patented Aug. 10, 1915.

Application filed May 13, 1915. Serial No. 27,869.

To all whom it may concern:

Be it known that I, HENRY A. WOLF, a citizen of the United States, residing at Tripp, in the county of Hutchinson and State of South Dakota, have invented certain new and useful Improvements in Expansible Post-Hole Augers or Diggers, of which the following is a specification.

My invention relates to improvements in post-hole augers or diggers.

An important object of the invention is to provide a post-hole auger or digger, having automatic means, adapted when actuated, for suddenly swinging the cutter blades outwardly and subjecting them to a substantial jar, for removing any earth adhering to the cutter blades, upon the discharge of the greater part of the earth from between them.

A further object of the invention is to provide apparatus of the above mentioned character, which is simple in construction, inexpensive to manufacture, and convenient in use.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side elevation of a post-hole auger or digger embodying the invention, Fig. 2 is a central vertical longitudinal sectional view through the same, with parts in elevation and parts broken away, Fig. 3 is a horizontal sectional view taken on line 3—3 of Fig. 1, Fig. 4 is a central longitudinal sectional view through the lower portion of the apparatus, with the cutter blades opened, Fig. 5 is a similar view with the cutter blades in the inner position, and, Fig. 6 is an enlarged detail elevation of a coupling.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a tubular casing, forming the body portion of the apparatus. Connected with the upper end of this tubular casing, (see Fig. 2), and preferably extending therein and having screw-threaded engagement therewith, is a tubular handle 11, having a T-coupling 12 connected with its free end. This T-coupling carries tubular members 13 of a transverse hand grip, as shown.

The lower end of the casing or body portion 10 is provided with an enlarged portion 14 preferably integral therewith carrying spaced pairs of knuckles 15, preferably formed integral therewith. While I have shown four pairs of these knuckles it is to be understood that the number may be decreased or increased as may be found advantageous.

The numeral 16 designates cutter blades, preferably longitudinally curved and tapered, as shown, and having cutting edges 17. These cutter blades are provided at their upper ends with shanks or arms 18 arranged at approximately a right angle thereto. The shanks 18 are disposed between the knuckles 15 and are pivotally connected therewith by means of pins 19 or the like.

Pivotally connected with the inner ends of the shanks 18, as shown at 20, are rigid pitmen or links 21, the upper ends of which are pivotally connected, as shown at 22 (see Fig. 6) with arms 23, of a coupling 24.

The upper end of this coupling is preferably screw-threaded, as shown at 25, for connection with a tubular head 26 of a rod 27. This rod extends longitudinally through the tubular handle 11 and passes through a ring 28, held stationary in the tubular handle 11 by means of clamping bolts 29, or the like. A stiff compressible coil spring 30 surrounds the lower portion of the rod 27 and is confined between the head 26 and the ring 28 and is adapted to suddenly force the rod 27 downwardly, when it is tripped and released, as will be more fully explained.

Secured to one tubular member 13 of the transverse hand grip is a support member 31, upon which is pivotally mounted a manually operated lever 32, as shown at 33. One end of this lever is preferably forked for receiving the upper end of the rod 27, which is pivoted thereto as shown at 34. The T-coupling 12 has an opening 35 for the passage of the rod 27. Pivotally mounted within this tubular portion 13, is a catch or latch 36, as shown at 37. This latch is substantially L-shaped and has a transverse portion 38, operating through an elongated slot 39. The end of the transverse portion 38 carries a dog 40 having its upper end beveled and detachably engaging with the end of the lever 32. The latch 36 is normally held in the active position by a spring 41, secured thereto, as shown.

The operation of the apparatus is as follows:—The lever 32 is swung to the inner holding position, and its free end strikes the beveled face of the dog 40, and it is operated to hold the lever in the inner position. This movement of the lever 32 moves the rod 27 upwardly, placing the spring 30 under compression, the rod 27 through the medium of the links 21, holding the cutter blades 16 in the inner or closed position. The cutter blades are placed in engagement with the earth and by rotating the apparatus, these blades cut into it. When the space between these blades has become completely filled with earth, the apparatus is elevated to bring the blades out of the opening. The blades are now shifted to the position where it is desired to dump the earth and the operator swings the free end of the latch 36 downwardly. This movement causes the dog 40 to trip the lever 32. The lever 32 being free to swing upon its pivot, the stiff spring 30 moves the rod 27 downwardly suddenly, which movement is suddenly arrested when the end of the lever 32 contacts with the coupling 12. In this manner the cutter blades 16 are suddenly swung outwardly, and this outward movement is suddenly arrested whereby they are jarred and all earth which would tend to adhere thereto shaken or thrown off.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, I claim:—

1. In apparatus of the character described, the combination with a handle, of cutter blades pivotally connected therewith, spring actuated means to suddenly swing the cutter blades outwardly, and means to suddenly arrest the outward movement of the cutter blades whereby they are violently jarred to shake earth or the like therefrom, substantially as described.

2. In apparatus of the character described, the combination with a handle, of cutter blades pivotally connected therewith, a rod mounted to move longitudinally of the handle and having connection with the cutter blades to swing them upon their pivots, a spring adapted to move the rod in a direction to swing the cutter blades to the open position, and means to normally hold the rod against movement in opposition to the spring and to suddenly release it and suddenly arrest the movement of the rod when it has traveled longitudinally a predetermined distance.

3. In apparatus of the character described, the combination with a handle, of cutter blades pivotally connected therewith and provided with laterally extending shanks, a rod mounted to move longitudinally of the handle, pitmen pivotally connecting the rod and the shanks, a spring adapted to move the rod in one direction to swing the cutter blades to the open position, a lever pivotally connected with the handle and pivotally attached to the rod and having its end adapted to contact with the handle to suddenly arrest the movement of the rod, and a latch to normally hold the lever against movement and adapted when operated to suddenly release it.

4. In apparatus of the character described, the combination with a tubular handle, of a tubular transverse hand grip secured to one end thereof, a tubular casing secured to the opposite end of the tubular handle and provided with spaced knuckles, cutter blades having inwardly extending shanks which are pivotally connected with the knuckles, a rod extending longitudinally within the tubular handle, means connecting the rod with the shanks, a compressible coil spring surrounding the rod and adapted to move it in a direction to swing the cutter blades outwardly, a lever pivotally mounted upon the transverse hand grip and having pivotal connection with the rod with its end adapted to contact with a portion of the hand grip to suddenly arrest the movement of the rod in one direction, and a pivoted latch mounted within the tubular hand grip and detachably engaging the end of the lever.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY A. WOLF.

Witnesses:
C. B. BULL,
B. P. FISHBURNE.

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