L. A. BLUE.

POST HOLE DRILL.

APPLICATION FILED JUNE 19, 1915.

1,216,932.

Patented Feb. 20, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

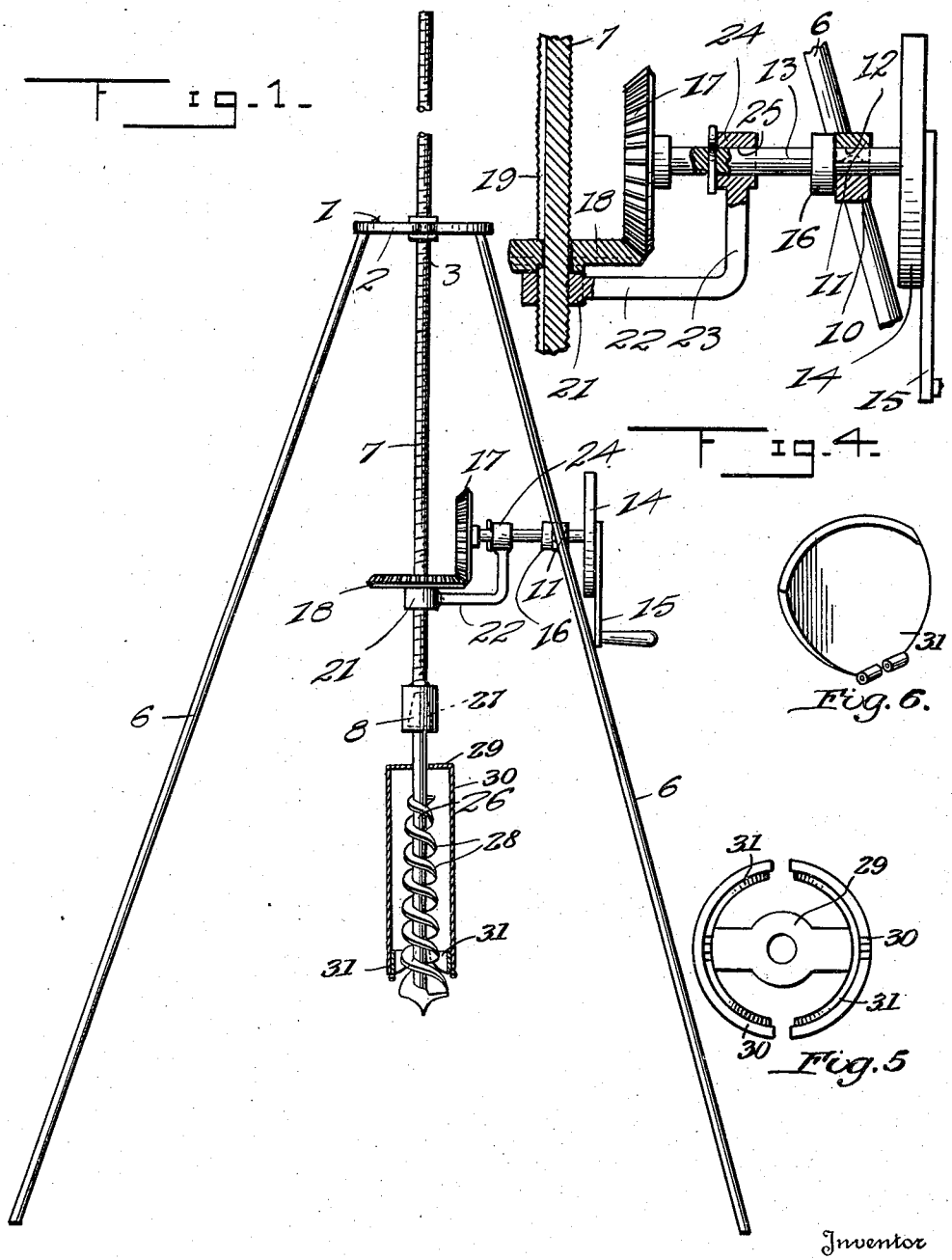


Fig. 4.

Fig. 6.

Fig. 5

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

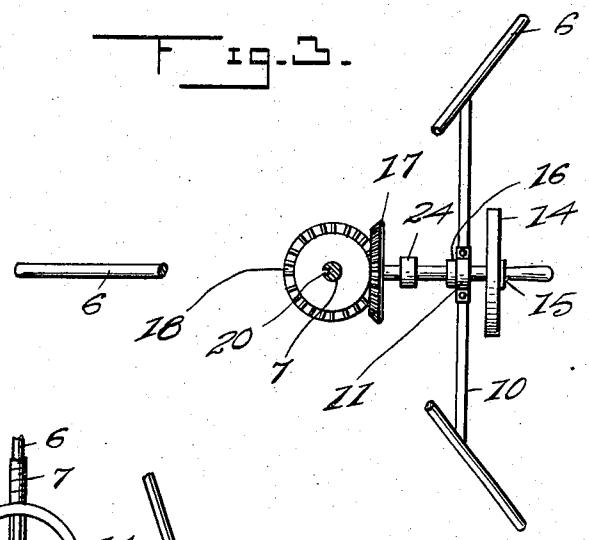
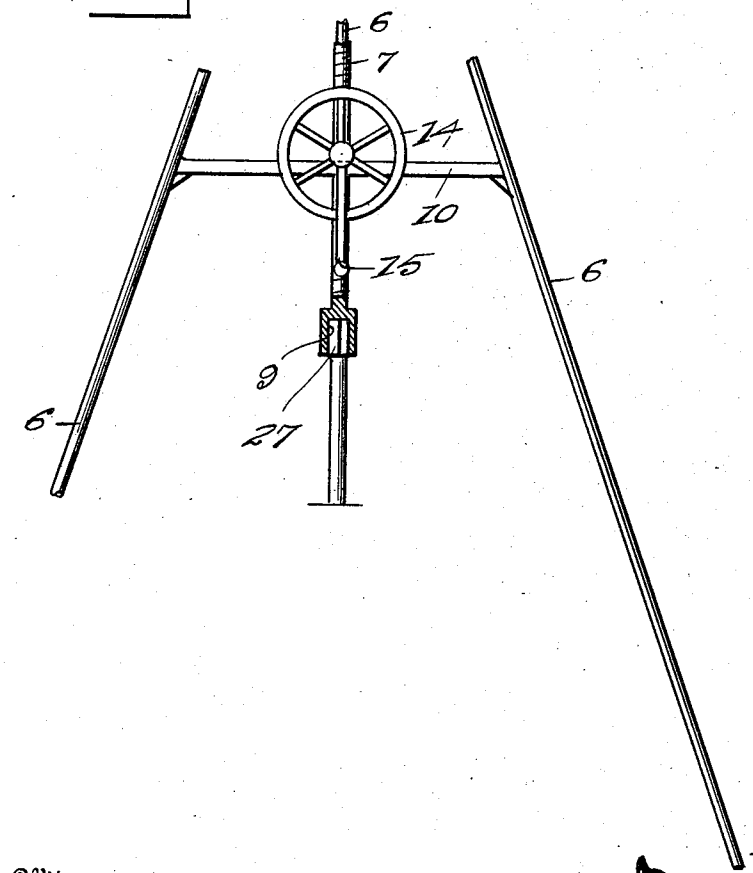


Fig. 2.



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UNITED STATES PATENT OFFICE.

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POST-HOLE DRILL.

1,216,932. Specification of Letters Patent. Patented Feb. 20, 1917.

Application filed June 19, 1915. Serial No. 35,136.

To all whom it may concern:

Be it known that I, LEE A. BLUE, a citizen of the United States, residing at Lyra, in the county of Palo Pinto and State of Texas, have invented certain new and useful Improvements in Post-Hole Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in post hole drills and the principal object of the invention is to provide a drill adapted for not only drilling the post holes but for the removal of the earth therefrom.

Another object of the invention is to provide a foldable drill capable of being readily placed in service and folded when not in use for transportation.

Still another object of the invention is to provide a novel form of bucket or sheath for the drill bit which will enable the earth to be removed from the post hole simultaneously with the removal of the drill bit therefrom.

With these and other objects in view the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which:—

Figure 1 is a view in elevation of a post hole drill constructed in accordance with this invention.

Fig. 2 is a fragmentary view in elevation and partly in section of a drill from another side.

Fig. 3 is a fragmentary top plan view showing portions broken away to more clearly illustrate the details of construction, and

Fig. 4 is an enlarged detail view illustrating the gearing and support therefor.

Fig. 5 is a bottom plan view of the sheath, and

Fig. 6 is a detail perspective view of one of the hinged doors.

Referring now to the drawings by characters of reference the numeral 1 designates the supporting plate of the device comprising a disk 2 having formed at the under side thereof, the collar 3. The disk and collar are each formed with centrally located axially alined apertures 4, having formed therein a series of screw threads. Pivotally connected as at 5 to the periphery of the disk are the legs 6, which form the stand for the drill. Extending through the screw threaded openings in the disk and collar is a threaded drill bar or stem 7, carrying at its lower end the socket 8 formed with the rectangular axial opening 9 in which the upper end of the drill bit sets.

Extending between two of the legs and removably secured thereto is the horizontal bar 10 formed with a central enlargement 11 having formed therein an opening 12, which is designed to receive and form a bearing for the shaft 13, carrying at its outer end the hand wheel 14 having secured thereto, the crank arm 15. Mounted on the shaft 13 to one side of the enlargement 11 is a suitable collar 16 which is secured to the shaft by means of a set screw. The end of the shaft opposite the hand wheel 14 carries the bevel gear 17, which meshes with the gear 18 on the drill bar or stem hereinbefore referred to. This drill bar or stem is formed with a longitudinally extending groove 19 throughout its entire length in which the tongue 20 carried by the bevel gear 18 is slidable.

A suitable internally screw threaded collar 21 is threaded onto the stem or drill bar and extending laterally therefrom is a suitable arm 22 having at its opposite end the upward extension 23, which is formed at its upper extremity with the enlargement 24 which is provided with an aperture 25 in which the shaft 13 is rotatably mounted.

The drill bit hereinbefore referred to comprises the shank or stem 26 having formed at its upper end the rectangular portion 27 which is of a size to fit within the rectangular opening in the socket at the lower end of the drill bar. At the lower end of the shank or stem 26 is formed a series of spiral blades 28 which increase in diameters until at their lower ends they are at their maximum width. Surrounding the stem 26 is a suitable plate 29 having extending downwardly therefrom the arms 30 which are arcuate in cross section and terminate at a point above the lower end of the spiral blades. Suitable doors 31 are pivoted at the lower ends of the arms and are held in such a position that when the bit is in action, the doors will remain in

their inoperative position and as soon as the bit is drawn upwardly to remove the drill from the post hole, the same will fall to their closed positions, thereby retaining the loose earth within the sheath or guard.

It will be apparent from the foregoing that in use the hand wheel is turned, thereby driving the gears and causing the threaded drill bar or stem to revolve, thus threading the same upwardly or downwardly within the frame and within the cuff. It will thus be seen that the bit may be raised or lowered according to the direction of rotation and when the drilling operation is concluded, the wheel may be rotated in such a direction as to raise the bit and the sheath thereby withdrawing the loose earth simultaneously with the removal of the bit from the post hole.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the appended claims.

What is claimed is:—

1. The combination with a drill and means to operate the drill, of a sheath carried by the drill to receive the loose earth and means carried by the sheath to lift the earth upon the withdrawal of the bit.

2. A post hole drill of the character described including a frame, legs supporting the frame, a drill bar threaded in the frame, means to turn the drill bar to cause the same to move upwardly or downwardly within the frame, a drill bit carried by the drill bar and a sheath at the lower end of the drill bit.

3. The combination with a frame, legs supporting the frame, a drill bar rotatable within the frame, said drill bar being threaded and having a slot extending throughout its entire length, a pinion mounted to slide on the drill bar, a lug extending into the slot whereby when the pinion is rotated the drill bar will be moved, and means to rotate the pinion, of a drill bit at the lower end of the drill bar and a sheath surrounding the drill bit to lift the earth simultaneously with the removal of the drill bit from the post hole.

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

LEE A. BLUE.

Witnesses:
FRANK ELLIS,
S. A. HOFFMAN.

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