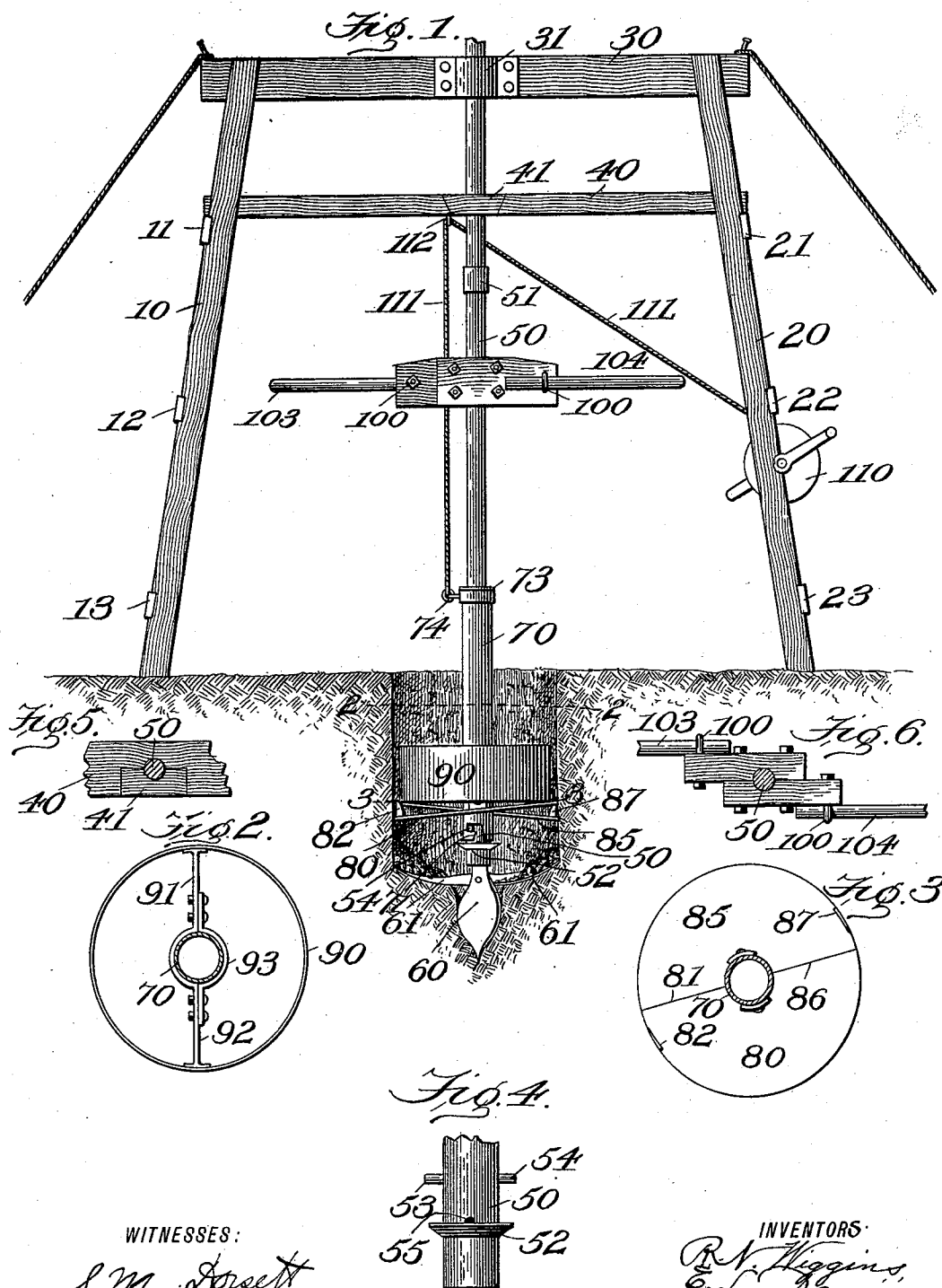


(No Model.)

R. N. WIGGINS & E. L. DAVIS.
HAND WELL AUGER.

No. 568,467.

Patented Sept. 29, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RICHARD N. WIGGINS AND EMMET L. DAVIS, OF DARDANELLE, ARKANSAS.

HAND WELL-AUGER.

SPECIFICATION forming part of Letters Patent No. 568,467, dated September 29, 1896.

Application filed July 11, 1895. Serial No. 555,674. (No model.)

To all whom it may concern:

Be it known that we, RICHARD N. WIGGINS and EMMET L. DAVIS, of Dardanelle, in the county of Yell, in the State of Arkansas, have invented a new and useful Improvement in Well-Augers, of which the following is a specification.

The object of our invention is to provide a well-auger especially adapted for operation by hand, which can be used for boring wells in clay and sand and which will be simple, strong, durable in construction, thoroughly effective for the purpose designed, and very cheap and inexpensive in manufacture.

Figure 1 of the accompanying drawings represents an elevation of this well-auger in operation. Fig. 2 represents a transverse section of the auger, taken on line 2 2 of Fig. 1. Fig. 3 represents a transverse section thereof on line 3 3 of Fig. 1. Fig. 4 represents an elevation, on an enlarged scale, of the lower portion of the boring-rod. Fig. 5 represents a plan of the hand-lever for turning the well-auger.

Any suitable frame may be used for supporting this well-auger. The frame herein shown comprises two similar end frames 10 and 20, the legs of the end frame 10 being connected by cross-bars 11, 12, and 13, and the legs of the end frame 20 by similar cross-bars 21, 22, and 23. These end frames preferably incline toward each other and are connected by a longitudinal top bar 30 and an intermediate longitudinal bar 40. The top bar 30 has a vertical guide-bearing 31 and the intermediate bar has a vertical guide-bearing 41 in register with the bearing 31. One side of the guide-bearing 41 is in the form of a detachable wedge-shaped block, which can be readily moved upward to form an open slot for the ready insertion or removal of the boring-rod. This wedge-shaped block retains its place without fastening on the downward movement of the rod.

A boring-rod 50 is adjusted vertically in vertical bearings 31 and 41. It is preferably tubular in form and may be composed of sections of gas-pipe one and one-half inches in diameter, more or less, the sections being connected by thimbles 51. This rod is provided

at its lower end with a flange 52 and above said flange with two lateral studs 53 and 54 and with a vent-hole 55. The flange protects the vent-hole from dirt and also tends to prevent the dirt from entering between the boring-rod and the sliding sleeve hereinafter described.

An auger-bit 60, having a blade 61, is secured to the lower end of the boring-rod 50 in any suitable manner, as by welding or otherwise.

A sliding sleeve 70, adapted to slide on the boring-rod 50, is provided at its lower end with angular slots 71 and 72, adapted to engage the studs 52 and 53 of the boring-rod, and forms a bayonet-joint fastening between the sliding sleeve and boring-rod. These slots are so adjusted that the studs will rest at the inner ends of the lateral portions thereof when the drill is in operation. This sleeve is provided at its top with a flange 73, having an eye 74.

Two segmental spiral blades 80 and 85, constituting a supplementary auger, are disposed on said sliding sleeve near the lower end thereof at acute angles to each other and nearly at right angles to said sleeve. The blade 80 has a radial cutting edge 81 and is provided with an upright cutter 82, and the blade 85 has a radial cutting edge 86 and an upright cutter 87, the upright cutters being disposed adjacent to the cutting edges of the blades.

A hollow cylinder 90, of a diameter nearly equal to that of the segmental blades 80 and 85, is connected by radial arms 91 and 92 with a collar 93, movable on the sleeve 70. This cylinder and its support constitute a sliding bucket-body and the segmental blades 80 and 85 constitute the bottom of the bucket.

A hand-lever 100 is adjustable on the boring-rod for turning the latter. This handle may be composed of two arms clamped together at their inner ends, each having a curved recess for receiving the boring-rod. These arms are provided at their outer ends with hand-pins 103 and 104.

A reel or windlass 110 is journaled on the end frame 20, and a rope 111 passes from said windlass through an eye or pulley 112 to the

eye 74 on the sleeve 70, whereby said sleeve and its bucket may be raised for discharging the dirt.

In the use of this well-auger the boring-rod 5 50, carrying the bit, auger-blades, and bucket, is adjusted vertically in the frame and the hand-lever 100 applied thereto. The boring-rod is turned by the hand-lever and penetrates the earth, as indicated in Fig. 1. The 10 bit 60 loosens the earth in the center, and the reamer 61 cuts out the required circuit. The earth is next cut by the segmental blades 80 and 85 and thrown above said blades into the bucket formed by said blades and the cylinder 90 above them. The sleeve 70, carrying 15 the bucket 90, is locked to the boring-bit by the bayonet-joint. When it is required to discharge the cut earth, the boring-rod 50 is turned backward sufficiently to permit the 20 disengagement of the sleeve 70 therefrom, and then the windlass 110 is turned and the cord 111, connected with the sliding sleeve 70, is wound thereon and said sleeve pulled upward, leaving the bit in position and the 25 boring-rod stationary. When the bucket is raised, the hollow cylindrical body 90 thereof can be readily shifted on the sleeve 70 to facilitate the discharge of the earth. After the earth is discharged the sleeve 70 is lowered

and automatically engages the studs 53 and 30 54, and when the boring-rod is turned the sleeve becomes locked, as before.

We claim as our invention—

In a well-auger, the combination of a boring-rod provided with a bit thereon, a sliding 35 sleeve on said boring-rod, means for locking said sliding sleeve against longitudinal movement on said boring-rod and permitting axial 40 movement thereof in one direction only to release the lock, a flange on said boring-rod adjacent to the lower end of said sliding sleeve when the latter is in locked position for preventing the entrance of dirt between the rod 45 and sleeve, a bucket-body movable vertically on said sleeve, segmental auger-blades fixed to said sliding sleeve below said bucket-body and covering the area thereof serving as a cutter and as a bottom for said body, and means 50 for raising said sleeve.

In testimony whereof we have signed this 50 specification in the presence of two subscribing witnesses.

R. N. WIGGINS.
E. L. DAVIS.

Witnesses:

JOHN C. BANKS,
WILLIAM N. MAY.