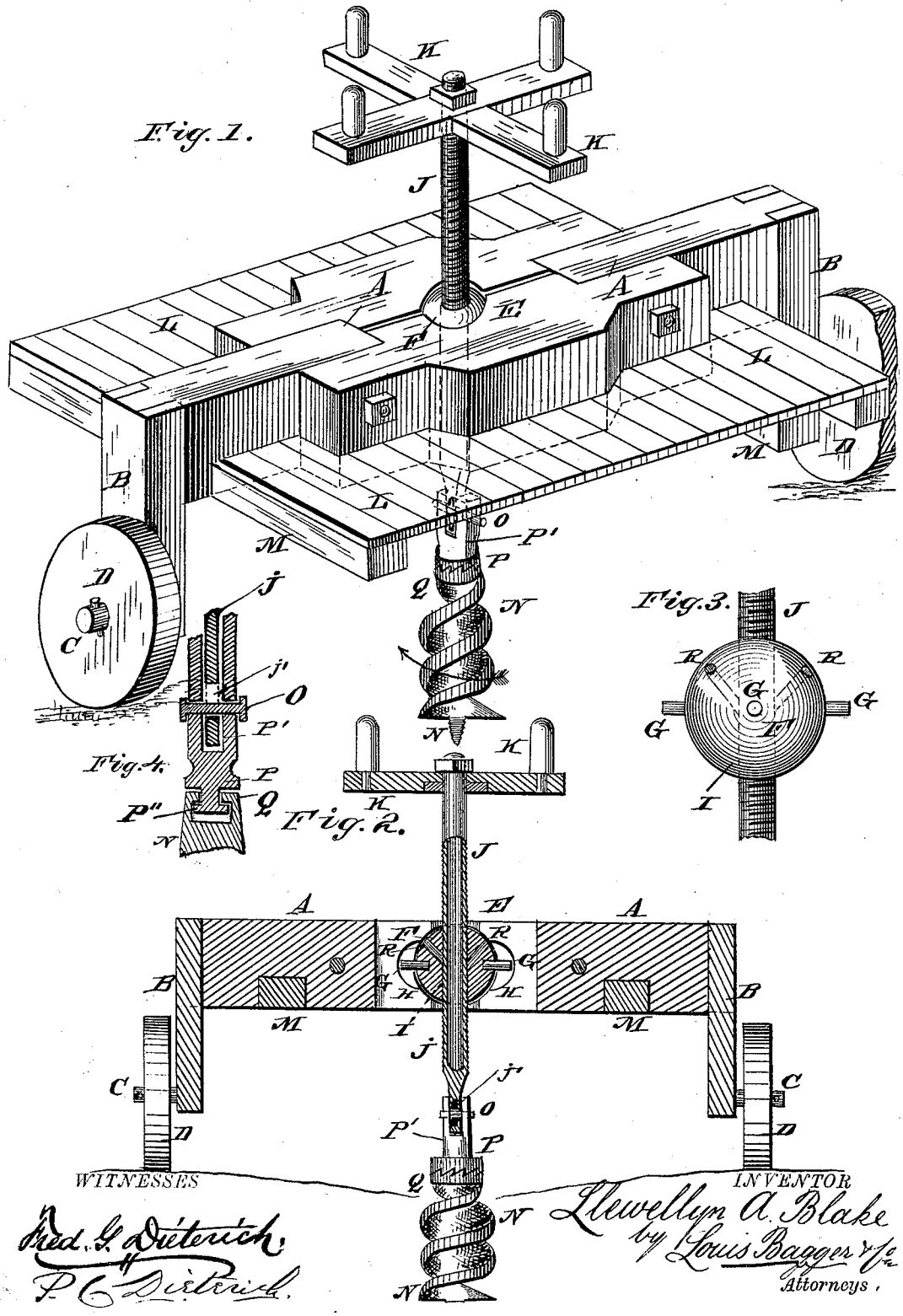
(No Model.)

L. A. BLAKE.

EARTH AUGER.

No. 250,778. Patented Dec. 13, 1881.



WITNESSES

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UNITED STATES PATENT OFFICE.

LLEWELLYN A. BLAKE, OF CORSICANA, TEXAS.

EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 250,778, dated December 13, 1881.

Application filed July 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, LLEWELLYN A. BLAKE, of Corsicana, in the county of Navarro and State of Texas, have invented certain new and useful Improvements in Earth-Augers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved machine for boring post-holes, &c. Fig. 2 is a vertical transverse section. Fig. 3 is a detail view, illustrating the ball and socket; and Fig. 4 is a sectional detail view of the auger-bit with its clutch and coupling.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to machines for boring post-holes, &c.; and it consists especially in certain improvements in the frame and operating mechanism, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents a frame provided at its ends with brackets B B, having spindles C C for the wheels D, upon which the said frame is supported. The frame or beam A is provided with a centrally-located box, E, to accommodate the ball F of a universal or ball-and-socket joint, which forms the bearing for the operating screw of the device. The said ball is provided with radiating pins or studs G, four in number, located centrally in a horizontal plane, and fitting in segmental cavities H in the box, thus enabling the ball to be adjusted at different angles. The ball F is provided with a central vertical threaded perforation, I, to receive the screw-threaded stem J of the bit or auger. This stem, in order to promote lightness and cheapness of construction, I prefer to make tubular, as clearly shown in Fig. 2 of the drawings. To the upper end of the stem J is keyed or otherwise secured a sprocket-wheel, K, which may, however, when circumstances shall require, be replaced by any other mechanism capable of being conveniently operated by hand or other power.

L is a platform constructed upon longitudinal beams M M, which are mortised in the under side of, and at right angles to, the main frame beam A, to accommodate the operator or attendant while working the machine.

N is the bit or auger, at the upper end of which is a flat serrated disk, Q, which is adapted to engage with a corresponding disk, P, near the lower end of the auger stem or coupling P′. This coupling P′ extends down through the disk Q into the central core or body of the bit, to which it is attached in such a manner as to permit the free rotation of the bit, but prevent it from becoming detached. Thus it will be observed that the parts P and Q form a clutch at the lower end of, and forming part of, the coupling P′, which operates to rotate the bit when the screw J, to which the bit-coupling P′ is coupled by a pin, O, is driven in one direction, as shown by the arrow in Fig. 1, while by reversing the screw the bit is simply lifted out of the hole bored by it without rotating. To enable the parts P and Q to operate in this manner, the recess in the top part of the bit N, which, as shown in Fig. 4, receives the button P″, on the lower end of P′, is made enough deeper than the thickness of the button to allow P P′ to rise and fall as required in the backward movement by the height of the clutch-teeth; and the pin O, which connects the parts J and P′ P has freedom to move vertically in a correspondingly long slot, *j′*, in the lower end of J.

The ball F is provided with slanting openings or channels R, through which lubricating material may be supplied to the feed-screw.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

The ball-and-socket joint enables the device to be used equally well upon level and hilly ground. Being mounted, the machine may be readily moved from place to place. An auger or bit of any size may be used, and the device is simple, easily operated, and comparatively inexpensive.

I am aware that it is not new, broadly, to mount the bit of an earth-auger at the end of its operating screw or shaft, upon or in combination with a clutch device, nor do I claim such construction broadly; but

What I claim as my improvement, and de-

sire to secure by Letters Patent of the United States, is—

1. In an earth-auger or post-hole borer, the combination of the frame A, having box E, provided with segmental cavities H, ball F, having a diametrical threaded bore for the feed-screw, radiating pins or studs G, and lubricating-channels R, and feed-screw J, carrying the bit at its lower end, substantially as and for the purpose herein shown and set forth.

2. In an earth-auger or post-hole borer, the combination of the feed-screw J, having a slot, *j'*, at its lower end, coupling-pin O, slotted shank or coupling P′, having the rigid clutch-disk P and button P″, and bit N, having the clutch-disk Q, and a central recess adapted to receive the button P″, and admit of vertical play of the same, substantially as and for the purpose herein shown and described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

LLEWELLYN A. BLAKE.

Witnesses:

AUGUST PETERSON,

JAMES H. MANDEVILLE.