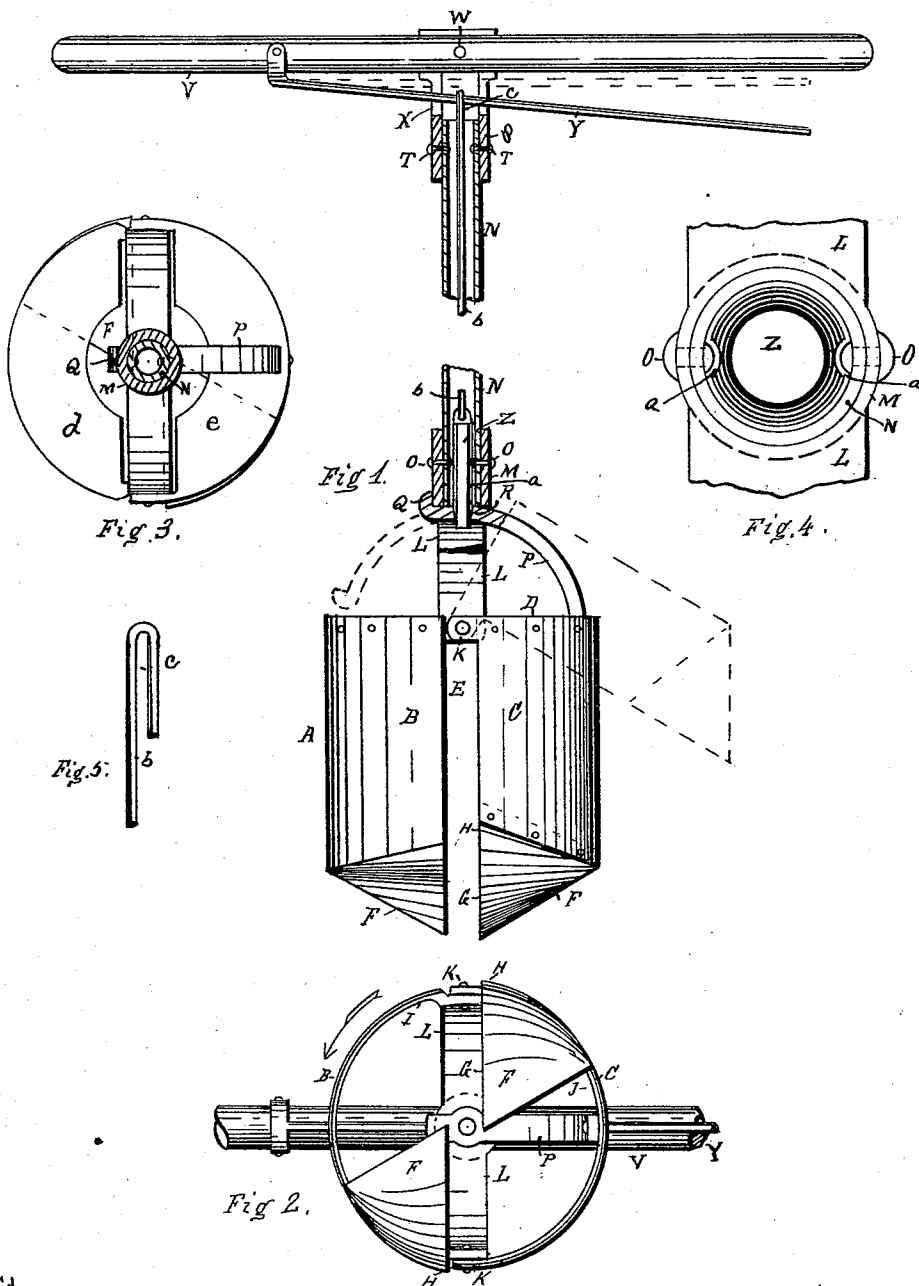


(No Model.)

J. D. BOWMAN.
EARTH AUGER.

No. 538,725.

Patented May 7, 1895.



Witnesses.

Raymond M. Hughes.
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By Robert S. Carr Atty.

UNITED STATES PATENT OFFICE.

JAMES DOUGLAS BOWMAN, OF COLLEGE CORNER, OHIO, ASSIGNOR OF ONE-HALF TO HARVEY Y. MILLER, OF UNION COUNTY, INDIANA.

EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 538,725, dated May 7, 1895.

Application filed December 20, 1894. Serial No. 532,488. (No model.)

To all whom it may concern:

Be it known that I, JAMES DOUGLAS BOWMAN, of College Corner, Butler county, Ohio, have invented certain new and useful Improvements in Earth-Augers, of which the following is a specification.

My invention relates to that class of earth augers adapted to excavate post holes and remove the dirt therefrom, and the objects of my improvement are to provide means to open the auger to empty its contents and to construct and combine its various parts in such manner that its operation may be facilitated and its greatest efficiency obtained in soils of widely different conditions and humidity. These objects are attained in the following described manner as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the auger with parts in section; Fig. 2, a view looking at the bottom; Fig. 3, a plan showing the bucket-cover. Fig. 4 shows the under side of the middle portion of the bail; Fig. 5, a side elevation of the top of the plunger-rod.

In the drawings, A represents the bucket of cylindrical form and which consists of similar semi-cylindrical members B and C preferably formed of sheet steel and depending from opposite halves of a jointed metal ring D. Said members are parallel and spaces E are preferably left open between their contiguous vertical edges. The lower ends thereof terminate in planes slanted in a downward direction from the same height on their vertical edges. Triangular shaped blades or bits F of sheet steel are formed integral with, or preferably riveted securely on the front portion of the lower edge of the respective members that form the bucket. They are formed with a front cutting edge G that is a continuation of the front vertical edge of said members, and are first curved in an outward direction from the respective member to form swells H, thence in a downward and inward direction toward the axis of the bucket until they terminate at points opposite to each other and on a line perpendicular to their edges.

Ring D that forms the frame work and gives rigidity to the bucket is separated into equal halves I and J by joints or hinges K to permit member C of the bucket to swing out-

wardly from member B as shown in dotted lines in Fig. 1. Vertical bail L in the form of a semi-circle is preferably formed integral with the extremities of portion I of the ring. Sleeve M is formed integral with the top of the bail and projects vertically therefrom to receive the lower extremity of the hollow stem N that is secured immovably therein by means of rivets O. Arm P in the form of a quadrant is formed integral at one end with the middle of portion J of the ring, or it may be formed separately and riveted thereto. Its opposite extremity after being extended under the middle portion of bail L terminates in lug Q that forms a stop against the bail. A tapered opening R is extended vertically through arm P near its top end to register with the hollow of stem N when lug Q rests against the edge of the bail.

Stem N is preferably formed of hollow iron pipe or tubing and may be of any convenient length to facilitate the use of the auger. The top of the stem terminates in sleeve S wherein it is securely fastened by means of rivets T. Said sleeve S is formed with a transverse opening through its top portion to receive the handle V and which is clamped therein by bolt W. The top of sleeve S is split to adapt it to handles that may vary in size and a transverse slot X depends from the handle opening therein a sufficient distance for the necessary movement of hand lever Y that is extended therethrough and pivotally secured at one end to the handle.

Plunger Z is movable in the hollow of stem N and its lower end is tapered to fit in the tapered hole or opening R in arm P to lock said arm in the proper position to hold the separate parts that form ring D in the same plane and the members that form the bucket rigidly parallel with each other. Longitudinal grooves a are formed in opposite sides of the plunger to avoid any interference with its movement by the heads of rivets O.

The plunger rod b engages with the top of the plunger and is extended upwardly in the hollow of the stem. Its top terminates in a long loop c through which the hand lever Y is movably extended. Said hand lever engages with the top of the loop to lift the plunger in the hollow of the stem and disengage

it from the arm P to permit the bucket to open. The length of the slot in the top of the plunger rod permits the hand lever to resume its lowered position while the plunger is raised 5 and while the bucket is open. When the bucket is closed the plunger descends by gravity into the opening in arm P and locks it in this position.

Plates *d* and *e* preferably of sheet iron are 10 secured to the respective portions of ring D to form a partial cover for the bucket as shown in Fig. 3. Said plates are intended to be applied only to augers to be used in dry and finely pulverizable soil, when the contents 15 of the bucket may be crowded until it becomes full and packed against said cover sufficiently tight to permit it to be removed from the post hole by the bucket without danger of being spilled.

20 In operation the bucket is locked in the closed position by the descent of the plunger in the stem. The handle is then turned with the sun and the bits penetrate the ground at an even speed due to the amount of lead or 25 downward slant they possess. The outward swells H of the bits cause them to bore a hole a little larger in diameter than that of the bucket to facilitate its removal from the hole. When the bucket becomes full it is re- 30 moved from the hole together with its contents and then emptied at a convenient place on the surface by lifting the plunger by means of the hand lever, when member C of the bucket swings open.

35 Having fully described my improvement,

what I claim as my invention, and desire to secure by Letters Patent, is—

1. In an earth auger, the combination, with a hollow handle, of a bail secured to the lower end thereof, two semi-cylindrical members se- 40 cured to the ends of the bail, one of them being pivotally secured, whereby it may be swung outwardly from the other, and is provided with an arm, the free end of which is provided with a lug and a perforation, a plun- 45 ger within the lower end of the handle, a handle lever pivotally secured to the cross piece of the handle, and a rod for connecting the plunger with the lever, substantially as set forth. 50

2. In an earth auger, the combination, with a substantially semi-cylindrical bail, the central portion of which is provided with an up- 55 wardly projecting sleeve, of two members secured to the bail, one of which is pivotally secured thereto, whereby it may be swung away from the other one, said pivoted member being provided with an arm in the form of a quadrant, the free end of which is perforated and adapted to lie under the sleeve of the 60 bail, a hollow stem secured to the sleeve, the upper end of which is provided with a cross piece, a plunger within the stem, a rod connected with the plunger, and means for moving the rod substantially as set forth.

JAMES DOUGLAS BOWMAN.

Witnesses:

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