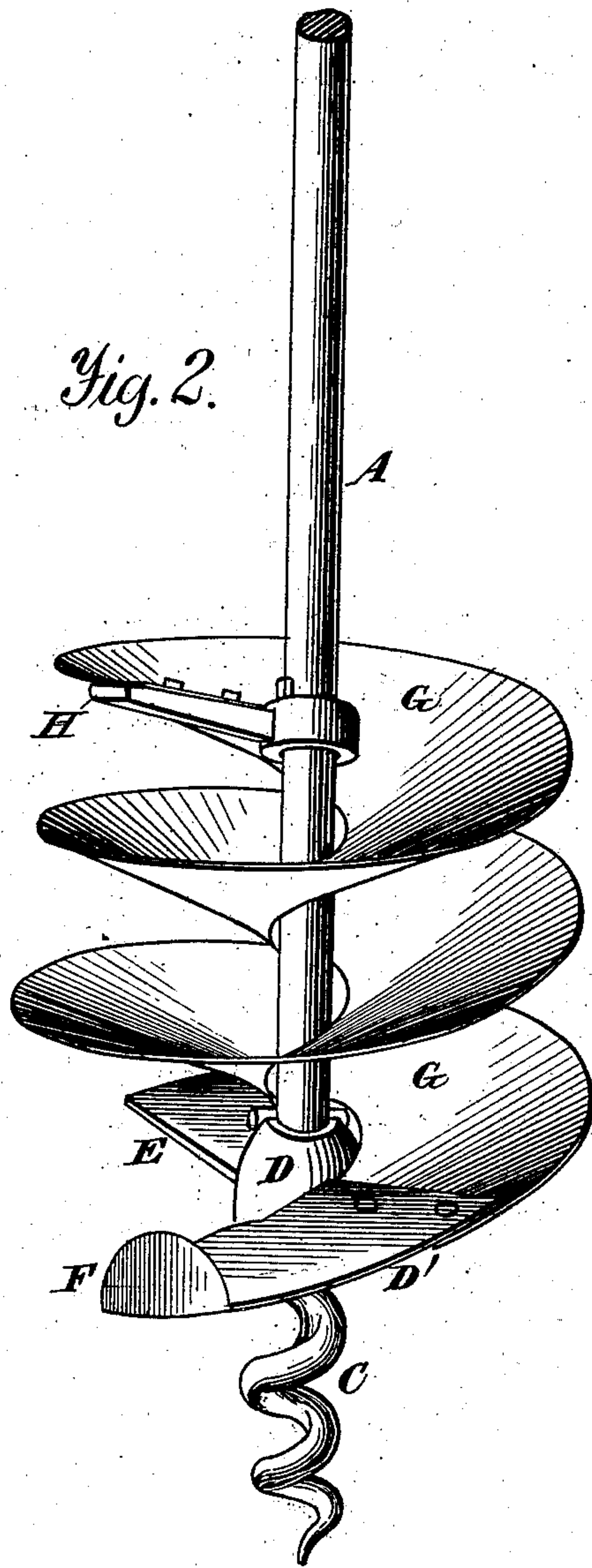
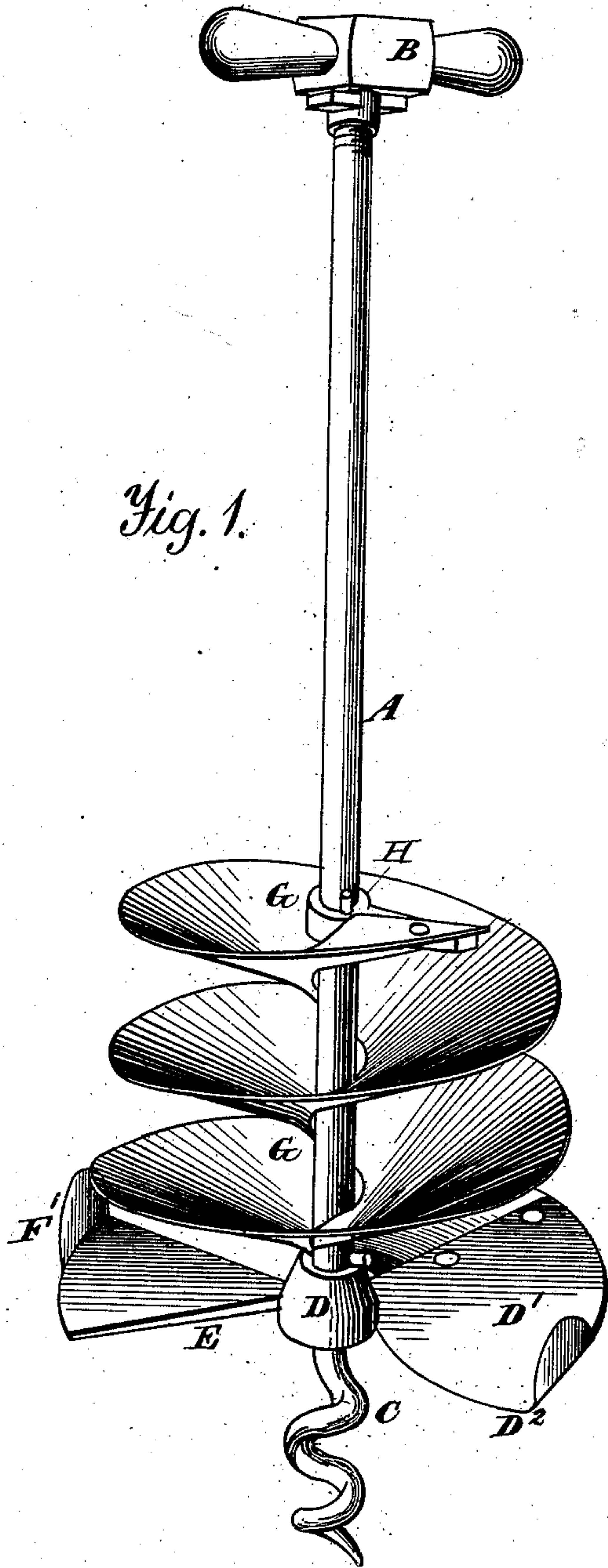


A. J. DINE.
Earth-Auger.

No. 228,044.

Patented May 25, 1880.



Witnesses.
A. Rupprecht,
Wm H. Bates.

A. J. Dine
Inventor.
D. P. Holloway & Co
Atty

UNITED STATES PATENT OFFICE.

ANDREW J. DINE, OF XENIA, INDIANA.

EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 228,044, dated May 25, 1880.

Application filed November 6, 1879.

To all whom it may concern:

Be it known that I, A. J. DINE, of Xenia, in the county of Miami and State of Indiana, have invented certain new and useful Improve-
5 ments in Earth-Augers; 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, reference
10 being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is an elevation, partly in perspective, of my improved earth-auger, showing the
15 handle for turning it, the central rod to which the other parts are affixed, the sheet-metal worm or screw for raising the earth, the cutting-blade, with its upwardly-projecting lip, the arm connected therewith for regulating the
20 depth of the cut, a screw-rod for aiding the feeding of the auger, and an arm for supporting the upper end of the sheet-metal worm; and Fig. 2 is a transverse section, partly in
25 perspective, of the parts above enumerated, with the exception of the handle.

Corresponding letters denote like parts in both of the figures.

This invention relates to that type of devices which are denominated "earth-augers;" and it
30 consists in the construction and in the combination of some of the parts of which it is composed, as will be more fully explained hereinafter.

In constructing implements of this character there is provided a rod, A, which is of any
35 length desired or made necessary by the depth of the hole to be bored, the implement being designed for use principally in the boring of holes for the reception of fence-posts. To one
40 end of this rod there is attached, in any suitable manner, a handle, B, for turning the implement, and upon its lower end there is formed a corkscrew-like projection, C, which is designed to aid in feeding the implement, or in
45 forcing it into the earth as it is turned around.

Upon the rod A, and near or at the lower end of its straight portion, there is affixed a hub, D, which has extending from it a blade,
50 D', which, so soon as it leaves the hub D, is widened out, as shown in Fig. 1 of the drawings, and is set at such an angle to the hori-

zontal axis of said hub as to cause its upper surface to form a part of the spiral or worm which carries the earth upward, and at the same time causes its forward and cutting edge
55 D² to be its lowest part, so that the act of cutting or loosening the earth in the bottom of the hole shall cause said blade to act in combination with the screw C in feeding the implement.

From the point of hub D, which is opposite or nearly opposite that to which the blade D' is attached there extends another blade or
60 arm, E, the under surface of which is in a horizontal plane somewhat above that of the cutting-edge of the blade D, in order that the depth of the cut of earth by said blade may be controlled, and the implement, as a whole, be
65 prevented from being too rapidly forced into the earth.

Upon the upper forward points of the cutting-blade D and the blade E there are formed or affixed vertical projections F and F', the
70 object of which is to press the earth outward upon the interior surface of the hole, and thus prevent it from falling inward as the implement is withdrawn, or while it is in use.

For the purpose of providing a worm or spiral passage for giving an upward direction to
80 the earth that is loosened from the bottom of the hole by the blade D', there is secured to its upper rear edge a piece of metal, G, preferably of thin steel or sheet-iron, because when made of sheet metal the implement will
85 be of less weight, and consequently more easily handled, than it would be if the worm were made of cast metal. It may, however, be made of cast metal and be so thin as not to be particularly objectionable. From the point where
90 this sheet joins the blade it extends upward in the form of a worm or spiral until it has passed several times around the rod or shaft A, where its upper end is secured to an arm,
95 H, which is keyed to the rod for the purpose of holding it in position thereon.

The blade D' being permanently fixed to the rod A and the intermediate part G being made of thin sheet metal, while the arm H is adjust-
100 ably affixed to the rod, it follows that the pitch of the spiral G may be changed at pleasure, and so as to be coarser or finer, as circumstances may require, which will be found to be

of great advantage in using the implement in different kinds of soil, as the earth removed by the blade can by these means be closely packed within the worm or spiral, or allowed
5 to merely rest upon the upper surface of each of the coils. It will follow, as a matter of course, that if a cast-metal worm is used the spaces between the coils cannot be changed; but even under such circumstances the imple-
10 ment will be found to be useful.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The hub D, having upon one portion of
15 its periphery a blade, D', which is at such an angle to its horizontal axis as to cause it to form a portion of the spiral or worm which carries the earth upward, said hub having upon

another portion of its periphery a blade or arm, E, the upper and lower surfaces of which 20 are in horizontal planes for the purpose of preventing the auger from entering the earth too rapidly, substantially as set forth.

2. The combination of the central rod, A, the hub D, blades or arms D' and E, worm C, 25 spiral G, and adjustable arm H, all constructed and arranged for operation substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of 30 October, 1879.

ANDREW J. DINE.

Witnesses:

JOHN RAYBURN,
A. H. CURRIE.