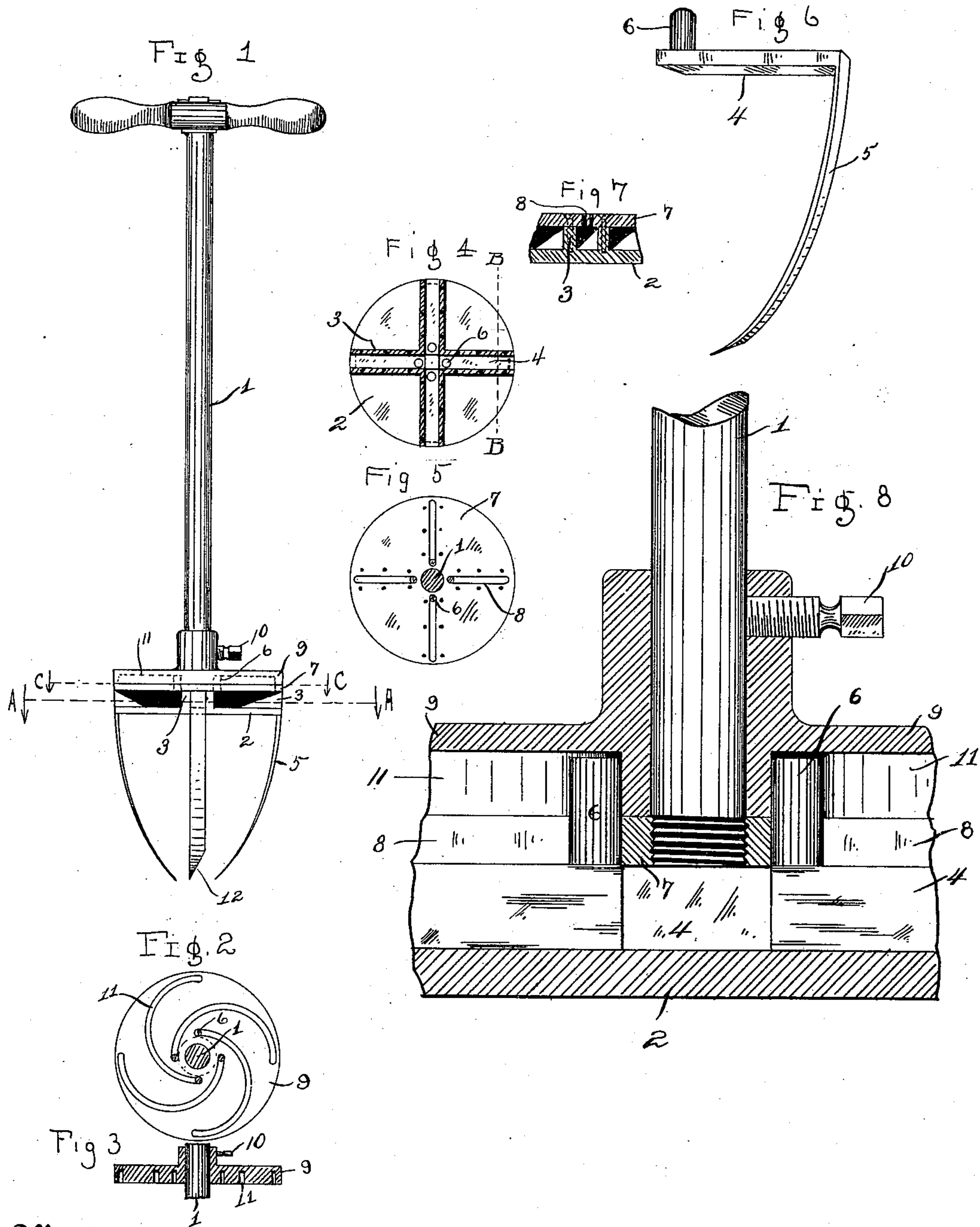


(No Model.)

E. HARPER.
EARTH AUGER.

No. 546,529.

Patented Sept. 17, 1895.



Witnesses
A. S. Courtwright.
Nienna Purdy.

Inventor
Emsley Harper
By Attorney *H. Lockwood*

UNITED STATES PATENT OFFICE.

EMSLEY HARPER, OF LAWRENCE, INDIANA.

EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 546,529, dated September 17, 1895.

Application filed May 20, 1895. Serial No. 550,023. (No model.)

To all whom it may concern:

Be it known that I, EMSLEY HARPER, of Lawrence, county of Marion, and State of Indiana, have invented a certain new and useful Earth-Auger; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to an earth-auger, and has for its object simplicity and cheapness of construction and ease and efficiency in manipulation. Its full nature will be understood from the following description and accompanying drawings.

In the drawings, Figure 1 is an elevation of my earth-auger. Fig. 2 is a bottom view of the cam-plate. Fig. 3 is a central vertical section of the cam-plate. Fig. 4 is a section on the line A A of Fig. 1. Fig. 5 is a section on the line C C of Fig. 1. Fig. 6 is a detail of a blade and shank. Fig. 7 is a section on the line B B of Fig. 4. Fig. 8 is a central section of the auger-head, portions being broken away.

To a suitable handle-bar 1, at its lower end, I secure the disk or plate 2, provided with guideways 3, as shown in Figs. 4 and 8. These guideways preferably are on the upper side of such plate. I then place in such guideways the shanks 4, on which the blades 5 are mounted, with the lugs 6 upwardly extending. After they are placed properly the plate 7 is secured upon the plate 2, and it is provided with radial slots 8, through which the lugs 6 extend. Upon this plate 7 I place the cam-plate 9, adjustably secured to the handle-bar by the set-screw 10. This cam-plate is provided with a series of eccentric grooves or slots 11, into which the lugs 6 extend.

The auger-blades here shown are preferably narrow and long, extending downward and curved inwardly, as shown, until their points come rather close together. The cutting-edge of these plates is straight vertically; but the back edge is beveled at the lower end,

as shown at 12. This construction of the lower end enables the auger to dig into the earth as it is rotated; and, of course, as it digs in the outward bend of the blades above cuts off the dirt as the auger is turned. When a sufficient amount of dirt has been cut, the auger is lifted, and, since the points of the blades come so close together, the blades form a basket for holding the dirt. The auger is unloaded by turning it on its side and letting the dirt fall out between the blades where they are widest apart. To increase or diminish the diameter of the auger, I have made the shanks 4 radially movable in the auger-head and provided the cam-plate 9 with eccentric grooves or slots that engage the lugs 6. When such cam-plate is rotated, the blades will all simultaneously be moved either outward or inward, as desired. When the blades have been moved to the position desired, the cam-plate is securely clamped in place by the set-screw 10.

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

1. In an earth auger, an auger head with radial guideways in it, downwardly extended blades with shanks that fit within the guideways and have lugs on them, and a rotatable cam plate having eccentric grooves or slots in which the lugs extend and move, and means for holding the cam plate in a fixed position, substantially as set forth.

2. In an earth auger, the handle bar 1, the cam plate 9 with the eccentric grooves or slots 11 and the set screw 10, the plate 2 with radial guideways 3 therein, the plate 7 with the radial slots 8, and the blades 5 with the shanks 4 that fit into the guide ways, and the lugs 6 that extend into the slots in the plates 8 and 9, all combined substantially as set forth.

In witness whereof I have hereunto set my hand this 16th day of May, 1895.

EMSLEY HARPER.

Witnesses:

V. H. LOCKWOOD,
A. S. CURTRIGHT.