

(No Model.)

W. H. GIBBS.
EARTH AUGER.

No. 505,456.

Patented Sept. 26, 1893.

Fig. 1.

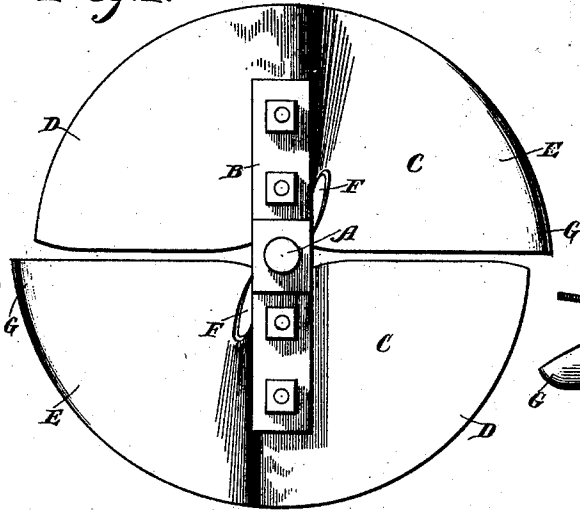


Fig. 2.

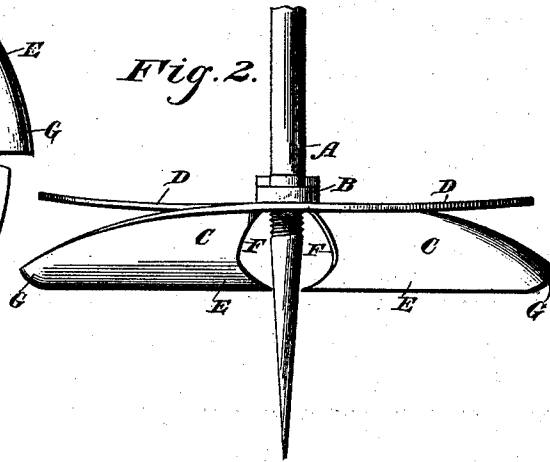


Fig. 3.

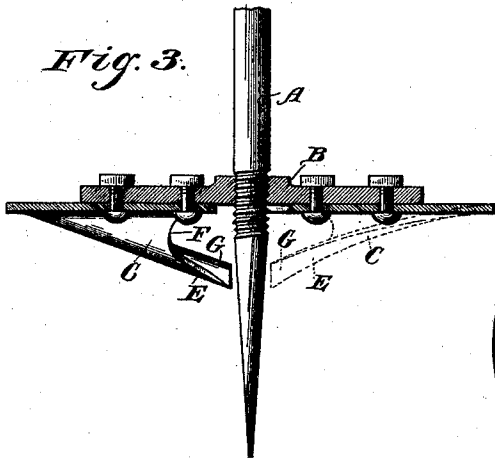
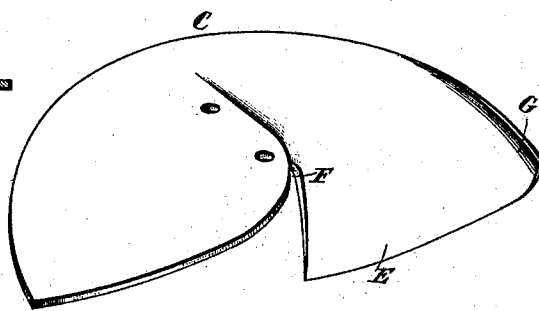


Fig. 4.



Witnesses;

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Inventor,

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By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY GIBBS, OF MENDON, ILLINOIS, ASSIGNOR OF ONE-HALF TO
JAMES P. GRAHAM, OF SAME PLACE.

EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 505,456, dated September 26, 1893.

Application filed August 10, 1892. Serial No. 442,674. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY GIBBS, a citizen of the United States, residing at Mendon, in the county of Adams and State of Illinois, have invented a new and useful Earth-Auger, of which the following is a specification.

My invention relates to improvements in earth augers, the object of the same being to provide an auger which will not soon wear to a circular shape and become difficult of operation on account of clinging to the sides of the hole.

A further object of my invention is to provide an auger which may be readily drawn from the hole, without causing the excessive suction commonly resulting from a choking of the bit or a too close fit of the latter in the hole, sufficient clearance not having been provided.

A further object of my invention is to provide an auger having a throat of sufficient size to prevent clogging of the earth therein.

A further object of my invention is to provide an auger which will cut a clean hole, without leaving an uncut core.

A further object of my invention is to provide an auger in which the parts may be detached in such a manner as to allow the cutting edges to be sharpened.

A further object of my invention is to provide an auger which will not be deflected by having its lip strike a root or stick, and which will not be deflected when the point of its stock strikes a stone or other obstruction.

Further objects of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a plan view of an auger embodying my improvements. Fig. 2 is a side view of the same. Fig. 3 is a sectional view at right angles to Fig. 2. Fig. 4 is a detail view of one of the blades.

A designates the stock, tapered at its lower end, and provided above said tapered portion with a threaded portion which screws in a tapped opening in the center of the connecting bar, B.

C C represent approximately semi-circular

blades, secured to opposite arms of said connecting bar, the horizontal portions, D D, forming or lying in the plane of the floor of the auger, and the downwardly inclined lips, E E, terminating in the same vertical plane and a lower horizontal plane with the rear edge of the horizontal portions.

The lips or downwardly inclined portions of the blades comprise each, one-half of the blade of which it forms a part, or, one-fourth of the entire auger. As shown in the drawings, the depression of the lip is initiated close to the connecting bar, from which point the outer marginal edge of the lip diverges slightly from the true line of a circle and terminates at its intersection with the convex cutting edge, thus causing the outer end or angle of the lip to fall outside the boundary of a true circle drawn from the stock as a center, and farther from the latter than the corresponding rear outer edge of the horizontal portion of the other blade. From this it will be seen that while the general shape of the auger is elliptical, as is common in such devices, the precise shape of each blade is semi-oval, as will be seen clearly by reference to Fig. 1, the inner edge of the elongated portion of each semi-oval forming the cutting edge, and the positions of the two blades being reversed so that the elongated portion of one blade is opposite the blunt or round portion of the other, and vice versa. The effect of this construction and arrangement of the blades is that the lips always cut a larger hole than is necessary to allow the auger to pass, hence preventing close contact between the edges of the auger and the walls of the hole. Furthermore, the shape of the lip, with its outer marginal edge diverging from the circular contour and terminating abruptly at its intersection with the convex cutting edge, prevents wear upon the side edge of the lip, and thereby prevents the auger from being worn, rapidly, to a circular shape, as is common with the elliptical augers heretofore in use. Again, the inner marginal edge of the lip, commencing beneath the connecting bar, is concaved or recessed or cut-away, as shown at F, thus causing said edge to diverge sharply from the outer marginal edge of the lip, and lie almost directly in the

plane of a radius of the auger. Thus, the lip is provided with sharply divergent side or marginal edges; the cutting edge terminates at its outer end beyond the circumference of a true circle and at its inner end in proximity to the stock, whereby clearance is provided between the periphery of the auger and the walls of the hole and the earth is removed close to the stock so as to leave no core; and, the recess or cut-away portion at F provides clearance for the inner edge of the lip, to prevent the clogging and accumulation of earth around the stock. Furthermore, the outer marginal edge of the lip is turned up or flared, as shown at G, the object of such construction being to prevent the auger from being deflected by contact of one of the lips with a root, stick, or other obstruction. When the blades are constructed as shown and described, with the turned-up or flared portions, the root will be severed and other obstructions cut out of the way, without affecting the direction of the bore. Even the long pointed stock, forming a leader or guide for the auger is not sufficient to prevent deflection when the blades strike an obstruction, such, oftentimes, as a harder stratum of earth, but by providing the upwardly flared marginal edges for the lips, the latter act as guides to hold the auger steady and prevent deflection.

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

1. An earth-auger having duplicate oppositely-disposed blades, each comprising a horizontal portion and a downwardly-inclined lip which are separated by an intermediate radially disposed recess to clear the inner mar-

ginal edge of said lip, substantially as specified.

2. An earth-auger having duplicate, oppositely-disposed blades, each comprising a horizontal portion and a downwardly-inclined cutting lip separated at its inner marginal edge from the horizontal portion, the inner and outer marginal edges of the lip being forwardly divergent whereby the cutting edge of such lip terminates at its inner end close to the spindle and at its outer end beyond the marginal contour of the preceding horizontal portion, a recess being formed in rear of the inner terminal to clear the cutting edge.

3. In an auger, the downwardly-inclined lips having their inner marginal edges recessed and arranged radially, substantially as specified.

4. An earth auger blade having a cutting edge which terminates at its inner end close to the point of the spindle, and provided in rear of such inner end with a recess, whereby an excess of cut soil and pressure thereof about the spindle will be relieved through said recess, substantially as specified.

5. An earth auger having a lip whose cutting edge terminates at its inner end adjacent to the spindle and whose inner lateral edge is concaved to form an opening or recess to relieve the pressure about the spindle, substantially as specified.

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

WILLIAM HENRY GIBBS.

Witnesses:

H. L. NUTT,

L. E. EHROTT.