G. W. SHAPLEY & D. PHILLIPS.

EARTH-AUGER.

No. 184,916. Patented Nov. 28, 1876.

Fig. 1.

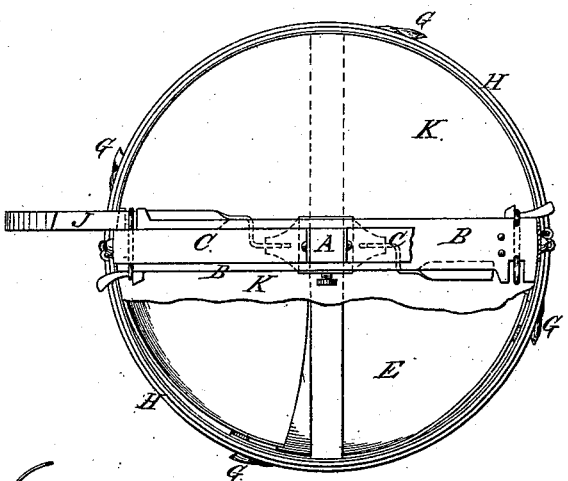


Fig. 2.

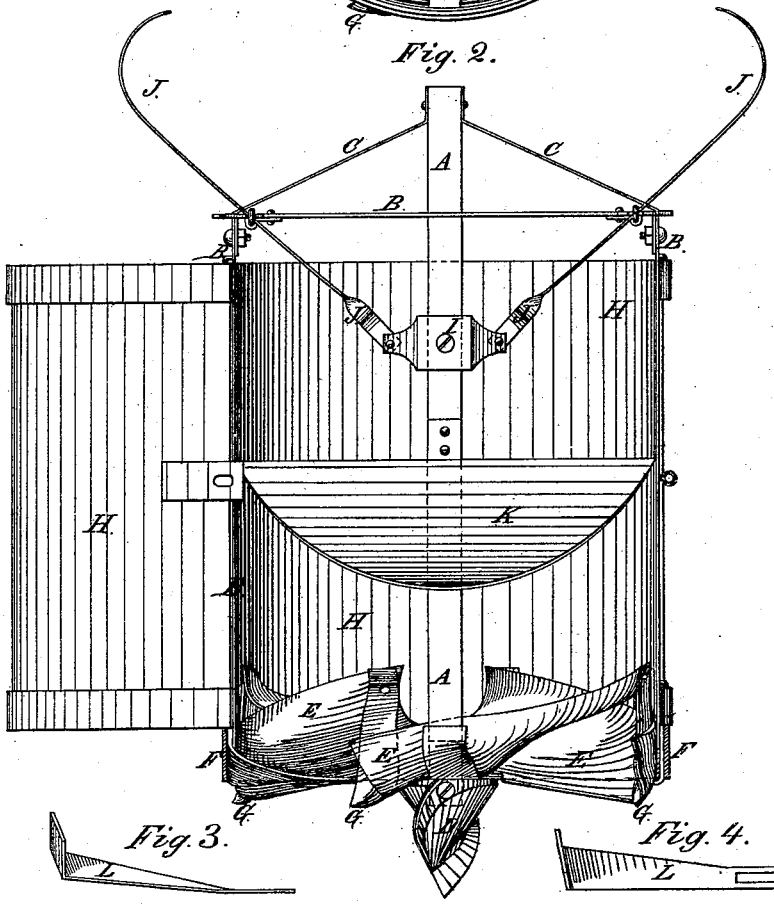
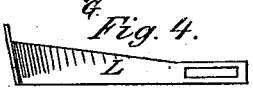


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE W. SHAPLEY AND DANIEL PHILLIPS, OF AUSTIN, MINNESOTA.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **184,916**, dated November 28, 1876; application filed April 25, 1876.

To all whom it may concern:

Be it known that we, GEORGE W. SHAPLEY and DANIEL PHILLIPS, of Austin, in the county of Mower and State of Minnesota, have invented a new and useful Improvement in Well-Auger, of which the following is a specification:

Figure 1 is a top view of our improved well-auger, part being broken away to show the construction. Fig. 2 is a side view of the same, part of the case being turned back. Figs. 3 and 4 are detail views of the lower reamers.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved well-auger, which shall be so constructed as to enable a much larger hole to be bored than the diameter of the auger, and which shall be easily operated, and effective in operation, moving the small stones from the center toward the rim, so that they may be taken up by the cutters.

The invention will first be described in connection with drawing, and then pointed out in the claims.

A represents the lower section of the shaft, to the lower part of which is attached a vertical square frame, B, the upper end of which is strengthened by the braces C. To each of the side bars of the frame B are hinged semi-cylindrical plates H, which plates H, when closed together, form the case of the auger, so that they may be opened to empty the auger. The hinges of the plates H are sliding or detachable, so that the said plates may be detached, if desired, for convenience in emptying the auger.

To the lower end of the shaft A is attached a screw-drill or reamer-shaped piece, D, to lead the auger into the ground, and push the earth and stones outward from the center, so that they may be taken up by the cutters E attached to the frame B, and to the rim F attached to the bars or frame that supports the cutters E. The cutters E are made of mold-board shape, which enables them to take up stones nearer to the center than they otherwise could.

To the cutters E and the rim F are attached points G, which project a little beyond the said rim F, and are made something like a plow, so as to cut a space for the case H to pass down into and move the earth inward so that it will be taken up by the cutters E.

To the shaft A, within the upper part of the case H, is attached a block, I, to the opposite sides of which are hinged the inner ends of the reamers J, which pass through guides attached to the top bar of the frame B, and project beyond the case H, so as to cut a hole of a larger diameter than the case H.

The reamers J may be made to project more or less to cut a larger or smaller hole, by adjusting the block L upon the shaft A.

The earth loosened by the reamers J falls into the upper part of the case H, and is received upon the partition K, attached to the shaft A to relieve the cutters E from its weight.

The partition K may be made flat, or conical, or V-shaped, as shown in Fig. 2. The latter construction is preferred, as it facilitates the discharge of the earth when the case H is opened.

L are reamers, to be attached to the lower end of the auger when the hole has been sunk nearly to the required depth to ream out the lower part of the hole below the point where the reamers J can operate.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of shaft A, frame B, and semi-cylindrical plates H, the latter detachably hinged, substantially as and for the purpose described.

2. The combination, with shaft A, frame B, and plates H, of the drill-cutter D, mold-board cutters E, rim F, and points G, arranged substantially as and for the purpose specified.

3. The reamers J, attached to blocks I, adjustable on shaft A, as and for the purpose described.

4. The combination of the partition K with the shaft A, and the middle part of the case H, substantially as herein shown and described.

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