

G. M. FILSTEAD.
Earth-Augers.

No. 148,199.

Patented March 3, 1874.

Fig. 1.

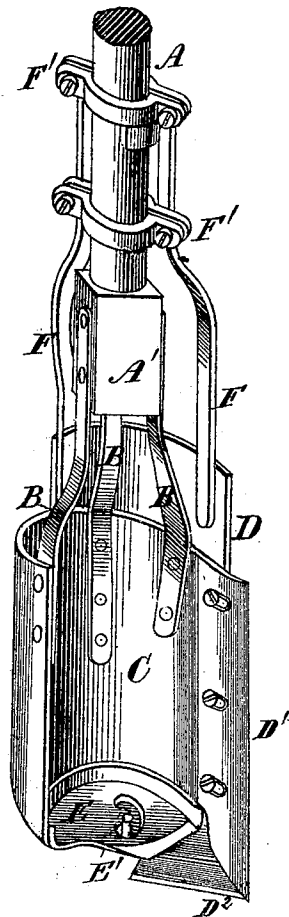


Fig. 2.

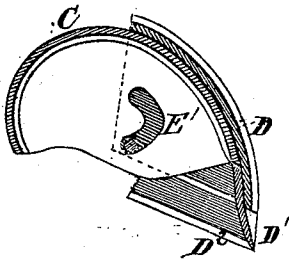
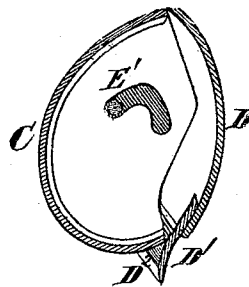


Fig. 3.



Witnesses.
A. Ruppert.

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Attys

UNITED STATES PATENT OFFICE.

GEORGE M. FILSTEAD, OF MENDOTA, ILLINOIS, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO MILROY A. McKEY AND HARRY A. ADAMS, OF SAME PLACE.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. 148,199, dated March 3, 1874; application filed January 20, 1874.

To all whom it may concern:

Be it known that I, GEORGE M. FILSTEAD, of Mendota, county of La Salle and State of Illinois, have invented an Auger for Boring Wells, of which the following is a specification:

Figure 1 is a perspective view of my improved auger, showing the parts in position for use or for boring. Fig. 2 is a transverse section, showing the parts in position for boring; and Fig. 3 is a similar section, showing the parts closed for removing the earth from the well.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to augers for boring wells, and for forming holes in the earth for other purposes; and it consists, first, in a novel construction, whereby the implement, while the parts are in certain positions, is capable of forming the hole, and afterward, by a change of position of the parts subsequent to removing it from the hole, is made to be of a less diameter, so that it can remove all the earth which has been loosened by its boring action through the pipe, which may be inserted as the boring process goes forward; and it further consists in the construction, combination, and arrangement of some of its parts, as will be more fully explained hereinafter.

In constructing implements of this character, I use a rod or handle, A, of wood or metal of the required length, it having upon its lower end an enlargement, as shown in Fig. 1, above which a portion thereof is made round to receive clamps, soon to be described. The remaining portion of said handle may be round or square, or of any other suitable form, for attaching to it a wrench for operating the parts of the auger. To the lower end of the handle bars of metal B B B are attached, which extend downward therefrom, and are connected to a curved piece of metal, C, which forms a portion of the auger. The outer surface of this piece is of a peculiar form, it having upon it portions of three circles of different diameters, as shown in Figs. 2 and 3, the larger circle being for the purpose of allowing the por-

tion upon which it is placed to fit the inner surface of the outer portion D of the auger when the parts are in position for boring, while the central portion is of a smaller circle, in order that when enough of earth has been cut loose to fill the space formed by closing the parts C and D together, as shown in Fig. 3, the part D may be prevented from turning with the handle A by being pressed firmly against the side of the hole which it has formed, as the part C is turned from the position shown in Fig. 2, which is effected by applying a wrench or lever to said handle above the surface of the earth. The remaining portion of the surface of the part C is of a circle less in diameter than either of the others, in order that, when closed upon the part D, it may come in close contact therewith, or with the cutter attached thereto, and thus, with the last-named part, form a cup or receptacle, which incloses the loosened earth, and provides for removing it from the hole by simply removing the auger therefrom. In order that a bottom head may be provided for the cup or cylinder above alluded to, a plate of metal, E, is secured to the lower end of the part C, as shown in Fig. 1, so that, when the earth is being removed, it, and a portion of the part D, forms such head, the plate E being provided with a cam-shaped slot, E', to allow it to revolve or turn upon a pin secured in the projecting lip of the part D. That portion of this implement which loosens the earth and forms the hole is the one designated by the letter D, it being a plate of metal bent into substantially the form shown in the drawings, its outer edge being provided with a cutter, D¹, which is attached to the plate D by means of screws, so that it may be readily removed for sharpening or replacement. To the lower end of plate D a cutter, D², is attached, which extends from about the center of the implement to its circumference, and is placed at an angle to its axis, as shown, in order that it may penetrate the earth below it, loosen it up, and force it up into the cup or receptacle before alluded to, preparatory to being lifted out of the well. From the upper end of plate D there extends upward two or

more bars, F F, which are attached to clamps F' F', which are made to embrace the rounded portion of the handle A, so that said rounded portion may rotate, or partially rotate, within said clamps when the parts are being closed up, as above described.

As will be seen by referring to Figs. 2 and 3, the greatest diameter of the auger, when the parts are in the position shown in Fig. 2, is longer than the diameter is when the parts are closed up for removal, as shown in Fig. 3, which fact constitutes an important feature of my improvement, as it enables the operator to remove the auger through the pipe, which may be placed in the well as fast as the earth is removed, or as fast as the auger penetrates it, the auger, with its inclosed earth, being withdrawn through the pipe, and returned through the same, and yet the hole be bored large enough for the outside diameter of the pipe, because of the fact of the increased diameter of the parts when in position for operation.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. An auger for boring well and other holes in the earth, consisting of the parts C D D' and suitable devices for operating them, they being constructed substantially as herein described, whereby said auger is made capable of having its diameter reduced for removal by closing the parts together, in doing which a chamber is formed for the reception and removal of the loosened earth, substantially in the manner set forth.

2. The combination and arrangement of the handle A, bars B, parts C D D', bars F, and clamps F', they being arranged to operate substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. M. FILSTEAD.

Witnesses:

R. B. POTTER,
S. F. WHEELER.