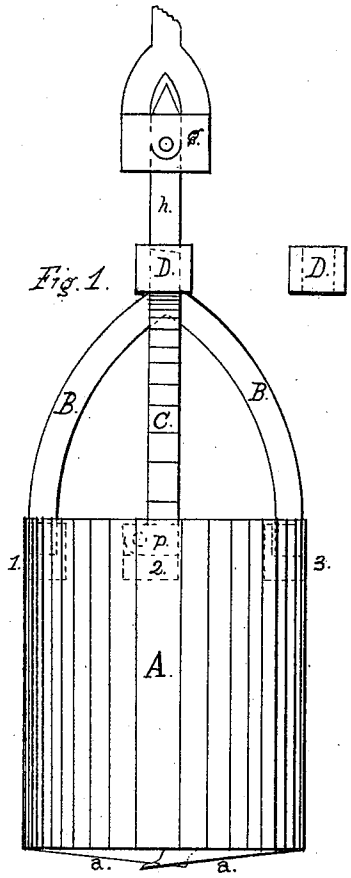
J. H. LIPPINCOTT.

EARTH-AUGER.

No. 174,544. Patented March 7, 1876.

Fig. 1.



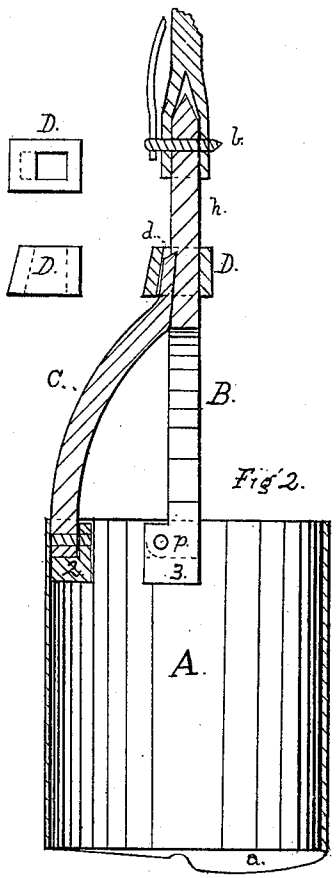


Fig. 2.

Fig. 3.

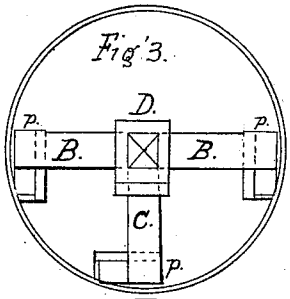


Fig. 4.

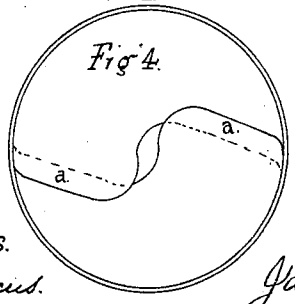
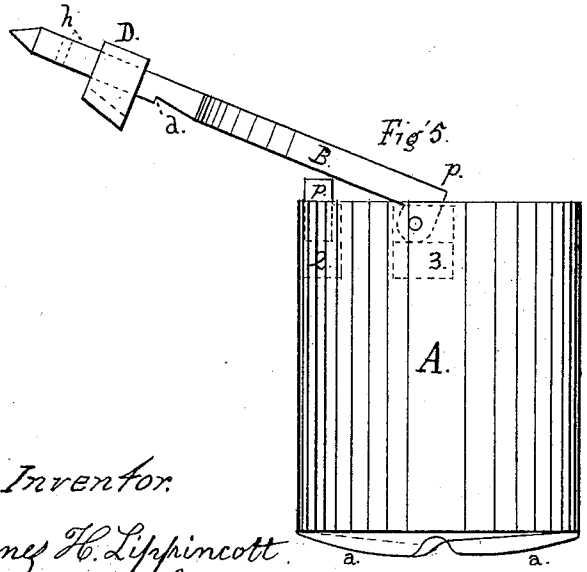


Fig. 5.



Witnesses.
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Geo. H. Lehman.

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UNITED STATES PATENT OFFICE.

JAMES H. LIPPINCOTT, OF BURLINGTON, NEW JERSEY.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **174,544**, dated March 7, 1876; application filed November 2, 1875.

To all whom it may concern:

Be it known that I, JAMES H. LIPPINCOTT, of Burlington and State of New Jersey, have invented a new and useful Improvement in Well-Boring Apparatus, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to construct a well-boring bucket with a bail, that can be firmly braced during the operation of boring, and readily removed when discharging the bucket; and consists in the method of constructing the hinge or joints of the bail, in combination with the brace or stay and lock, arranged to operate substantially as herein described.

Figure 1 is a vertical elevation view of my improvement. Fig. 2 is a vertical sectional view of Fig. 1. Fig. 3 is a top view; Fig. 4, a bottom view. Fig. 5 is a side elevation with the bail uncoupled and turned to one side for discharging.

Similar letters in the drawings refer to like parts.

A represents the bucket, which should be made of boiler-iron, and the rivets or screw-heads used in the construction should be countersunk into the outside, so that the outer surface will present a smooth surface. The bottom is provided with two cutting-lips, *a a*. This part of the machine is not new, as it is fully described in the Patent No. 12,303, January 30, 1855. B is the bail, which is constructed of wrought-iron, and the hinge or lower part is forged with a foot, *p*. The top of the bail is welded to a square bar, *h*, in which is cut a notch, *d*. The top of this bar is pointed, and made to fit a coupling, *g*, which is fastened by a pin, *b*. C is the brace; on the lower part is forged a foot, same as on the bail; the upper part is fitted to the notch *d*. (See Fig. 2.) D is the lock-strap. This is made with a square hole; one side is beveled or tapered, and is made to slide freely on the bar *h*, and the bevel to fit the bevel on the top of the brace C. On the inside of the bucket are fastened three lugs, 1 2 3. These lugs are directly under the feet *p*, and the heel of each foot rests on its lug when the brace is in position and the bail vertical, as shown in Figs. 1 and 2.

To use my improved bucket, a hole is dug in the ground, the diameter of the bucket, for a start. A cross-bar is fixed to the upright bar *h*, and by turning the bucket the cutting-lips will dig into the earth, and the earth will be forced into the bucket, which, when full, will be raised out of the hole by a crane or derrick. The lock D will be slid up off the upper part of the brace C, and the bail B will turn over and allow the earth to be removed; the bail is then raised and braced in position, and lowered into the hole for another operation.

When the bucket has been sunk so that the bar *h* wants lengthening, an additional length, having a coupling, *g*, on one end, is coupled to it, as is shown in the drawings, and other lengths may be added till the well is the desired depth.

In boring a soil where large boulders are encountered the bottom of the bucket should be made so that one of the lips may be removed, that the boulder will be lifted up into the bucket by the remaining lip. The boulder being removed from the well, the lip will be replaced and the boring continued.

The lips being removable, they can be readily removed for sharpening.

After boring a well, if it is desirable to enlarge the bore, cutters may be fixed to the bail and braced, and made to discharge the cuttings into the bucket, the lips or cutters *a a* being previously removed and a tight bottom put in.

I am aware that some of the parts shown and described in my specification are not new; but

What I claim as new, and desire to be secured to me by Letters Patent, is—

The combination of the pivoted bail B and pivoted brace C, having notch *d*, with the lock D, constructed as shown, and for the purpose described.

JAMES H. LIPPINCOTT.

Witnesses:
W. N. MARCUS,
JOHN SHINN.