J. & T. J. Ingels,

Well Auger.

No. 109214. Patented Nov. 15. 1870

Fig. 1.

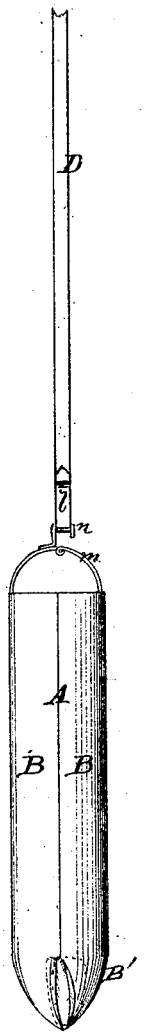


Fig. 3.

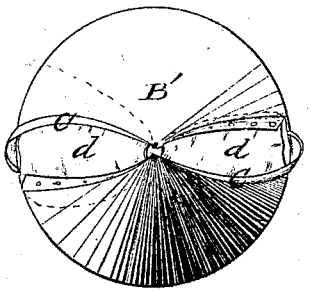


Fig. 4.

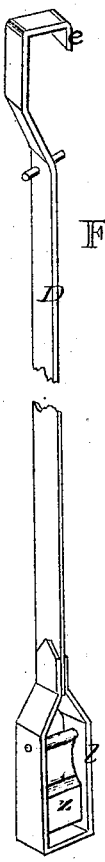
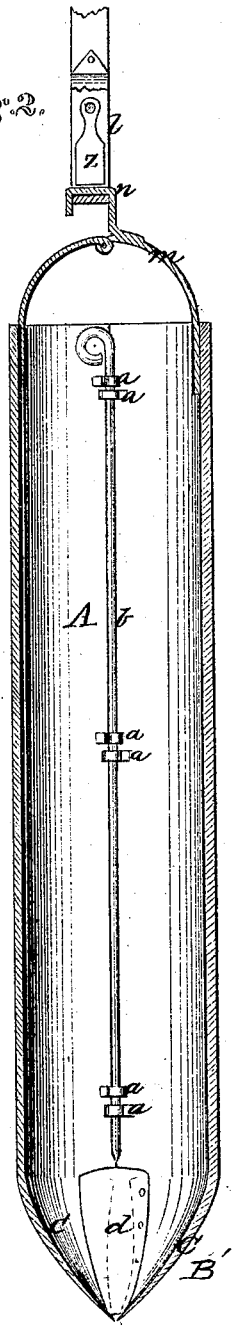


Fig. 2.



Witnesses.
D. D. Kane.
Chas. Kenyon

Inventor
James Ingels,
Thomas J. Ingels,
Chipman Fosmer & Co.
Attorneys.

United States Patent Office.

JAMES INGELS AND THOMAS J. INGELS, OF ATCHISON, KANSAS.

Letters Patent No. 109,214, dated November 15, 1870.

IMPROVEMENT IN WELL-AUGERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JAMES INGELS and THOMAS J. INGELS, of Atchison, in the county of Atchison and State of Kansas, have invented a new and valuable Improvement in Well-Augers; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a side view of our invention.

Figure 2 is a central vertical section of the same.

Figures 3 and 4 are details.

Our invention relates to means for boring and excavating wells; and consists in the shape of the bits, their valvular attachments, in the arrangement of the earth-bucket, and in the coupling devices for connecting the sections of the shaft.

The letter A of the drawing designates the bucket, made in two sections, B B, joined together vertically by means of the loops *a a* and the rods or keys *b b*. In joining the sections, the edges of the vertical walls are abutted against each other, the loops being arranged to extend across inside to receive the keys.

The letter B′ designates the conical end of the bucket.

It consists of the two triangular cutters or bits C C, bent in such a manner that the cutting-edges shall extend outward in a curved form, projecting beyond the general surface of the conical end B′, while the rear edges of the bits, to which the leather flaps or valves *d* are attached, shall be somewhat retracted inwardly, thus affording free scope to the action of the cutting-edges. At the same time, the earth removed by the cutters passes readily into the bucket under the flap, by which it is prevented from falling out after it has once entered.

It will be observed, from fig. 3 of the drawing, that the upper portion of the curved bit extends sufficiently out from the wall to excavate a circle of greater radius than that of the bucket, thus affording it easy passage in the excavation.

D D are the sections of the shaft.

Each section is provided with a hook, *e*, at one end, and a loop, *l*, at the other.

The loop is provided with a pendent pivoted stop or key, *z*, and, when the sections are joined by placing the hook of one into the loop of the next, this key *z* is designed to swing into place between the walls of the loop, and, by pressing upon the upper surface of the hook, to secure it in place.

The sections are made of broad, flat bars, and the breadth of the hook is equal to the width of the loop. A tight joint, without play, is thus secured.

The bottom of the pendent key *z* is made broad, to prevent lateral movement.

m represents the bail of the bucket, one-half of which is attached to one section, and hinged to the other half, which is secured to the other section, and provided with a hook, *n*, whereby the lowermost section of the shaft is connected to the bucket.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The well-boring devices herein described, consisting of sectional earth-bucket A, having the bits C, with valves *d* and hinged bail *m*, with hook *n*, and the sectional shafts D D, having the hooks *e* and loops *l*, provided with pendent keys *z*, when combined and arranged substantially as shown and described.

2. The sectional shaft D, having hook *e* and loop *l*, provided with pendent key *z*, when constructed and operated as and for the purposes shown and described.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

JAMES INGELS.
THOMAS J. INGELS.

Witnesses:
WM. C. SMITH,
S. H. GLENN.