J. M. Butler,

Boring Artesian Wells.

No. 22,151. Patented Nov. 23, 1858.

Fig. 3.

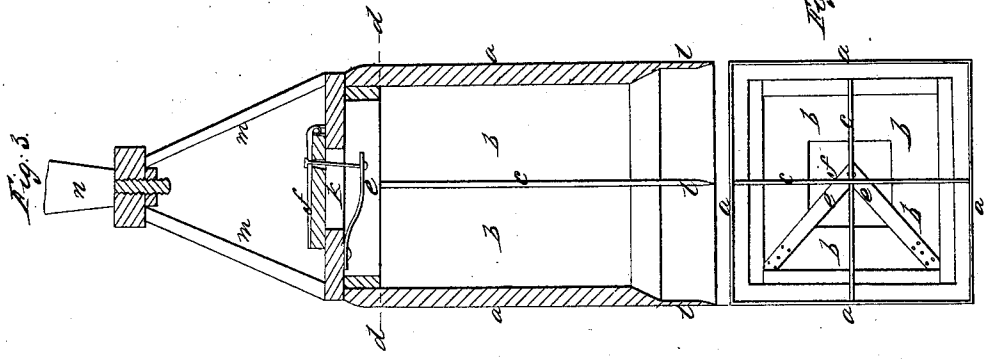


Fig. 4.

Fig. 2.

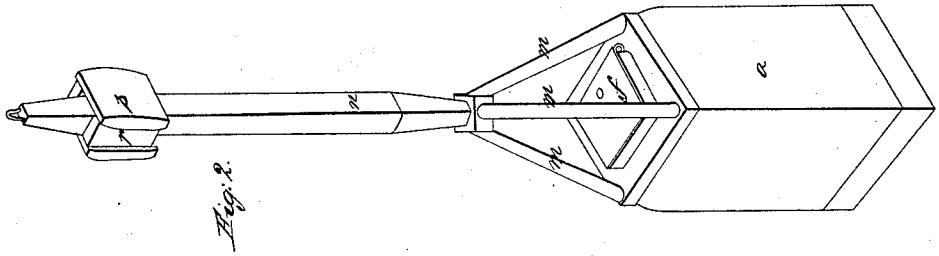
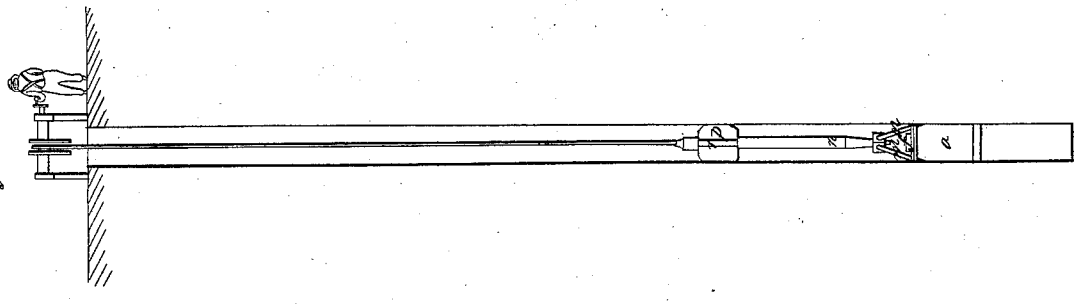


Fig. 1.



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

J. M. BUTLER, OF OXFORD, MISSISSIPPI.

APPARATUS FOR BORING WELLS.

Specification of Letters Patent No. 22,151, dated November 23, 1858.

To all whom it may concern:

Be it known that I, J. M. BUTLER, of Oxford, in the county of Lafayette and State of Mississippi, have invented an Improvement in Instruments for Boring Wells, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the annexed drawings, of which—

Figure 1 shows the operation of the instrument. Fig. 2 a perspective view of the instrument. Fig. 3 a vertical section through the same and Fig. 4 a bottom view.

My improvement in instruments for boring wells consists in making the boring chamber of square form and divided within into several chambers by means of vertical partitions as herein set forth.

The boring chamber *a* is an oblong square box usually made of cast iron hollow throughout and divided into several compartments *b* by the vertical partitions *c* extending from the bottom up to the line *d*. Within the chamber and above the partitions is a spring *e* which holds the valve *f* to its seat, over the aperture *k*. The lower portion of the box is formed by steel cutting edges *l* and the lower edges also of the partitions *c* are similarly formed. The chamber or box is connected by rods *m* with the main stem or plunger *n;* and upon this plunger is a guide piece *p* which being of the same form and horizontal area as the box, serves to keep the plunger vertical while boring, that is, after the guide is within the excavation. The spaces *r* on the guide are to allow the air to pass as the instrument ascends and decends.

The mode of using the instrument is as follows: The top of the plunger being connected with any machinery which will elevate it and allow it to fall by its own weight, the sharp edges *l* cut into the earth a little at each blow and the instrument decends until the chamber is full of earth, the valve *f* rising each time to liberate the air within the chambers. When the chamber is full, which we ascertain by the sound, the instrument is drawn up bringing the earth with it, and after emptying, it is sunk again to its work. The partitions *c* operate to sustain the earth in the box so that it will not fall out when drawn out. The area of a horizontal section through the box is about 8 inches square in a full size working instrument, and after the shaft of the well has been completed a curbing of wood is sunk the entire depth. In case of very light or sandy earth, the curbing is sunk as fast as the boring goes on, the instrument being of size to work within the curb. Where the earth is very hard or strong, the cutting edges *l* may be changed or renewed according to the kind of work to be done. When the curbing and boring go on together, the curbing is shod with steel cutting edges similar to those of the boring chamber *a*.

What I claim as my improvement in instruments for boring wells is—

The square chambered auger *a* constructed substantially as herein set forth.

J. M. BUTLER.

Witnesses:

A. A. MCMAHEN,

WM. H. HARRISON.