J. M. Butler.

Earth Auger.

No. 27,268. Patented Feb. 28, 1860.

Fig. 2.

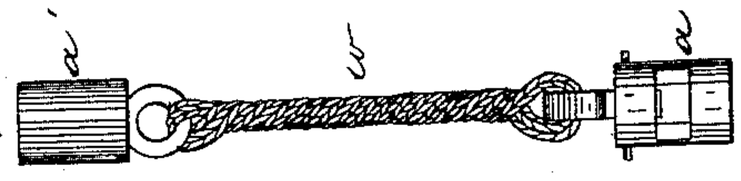


Fig. 3

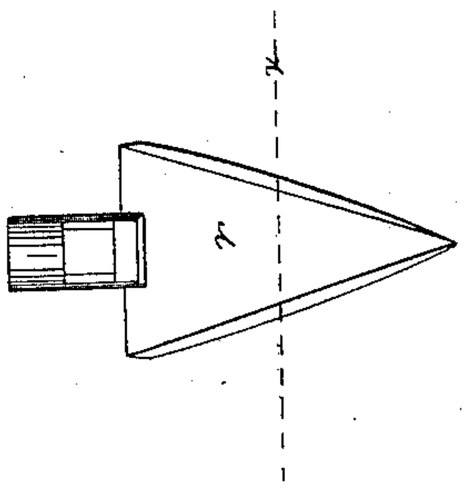
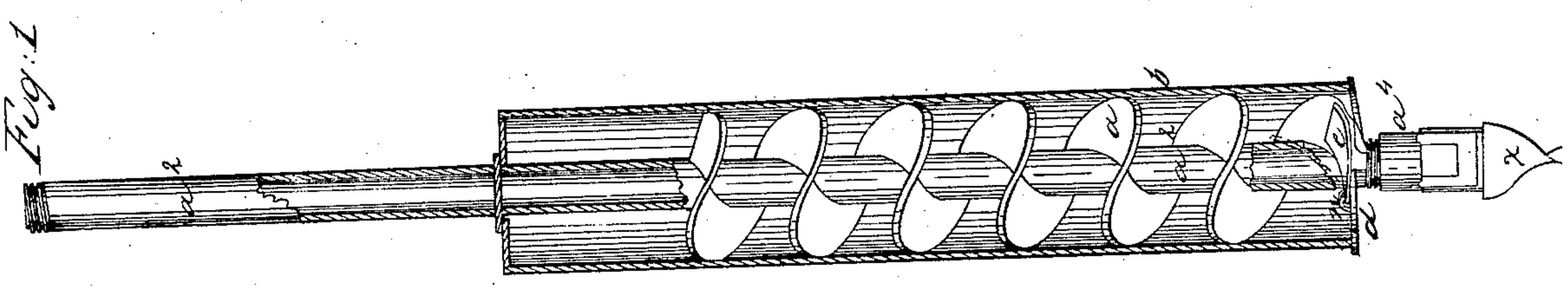


Fig. 4.

Fig. 1



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH M. BUTLER, OF OXFORD, MISSISSIPPI.

IMPLEMENT FOR BORING WELLS.

Specification of Letters Patent No. 27,268, dated February 28, 1860.

To all whom it may concern:

Be it known that I, Jos. M. BUTLER, of Oxford, in the county of Lafayette and State of Mississippi, have invented an Improvement in Augers for Boring Wells; and I do hereby declare 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 accompanying drawings.

My invention consists in an improvement in augers for boring wells described and represented as follows.

The auger *a* is operated within the case *b* by means hereinafter described. Hitherto great difficulty has been encountered when boring through sand in preventing the sand from "running back" as the auger is lifted and to prevent this result I combine with the auger, a valve *e* which opens upward and closes upon the whole width of the auger thread at a little distance above its cutting edge *c*. This valve is hinged at *n* to the disk or diaphragm *d*, which is secured to the auger shaft in nearly a horizontal direction and fills up the lower end of the case *b* with the exception of the space which is covered by the valve. When the auger is drawn up the weight of the sand closes the valve and it is retained. Instead of using rods or poles for turning the auger I employ wire ropes *w*, which are in suitable lengths and connected by suitable couplings *a'* and while there is sufficient rigidity in these to turn the auger they are at the same time sufficiently flexible to be wound around a windlass and are also very portable.

In Figure 3, *r* represents a point or tool substituted for *x* in Fig. 1, when boring through rock. Fig. 4 is a cross section through *r* at the line *x'* showing the edges of the tool turned in opposite directions so as to cut in one direction when turning.

The shaft a^2 of the auger I make hollow, as shown in Fig. 1, which maintains an equilibrium of atmospheric pressure above and below the auger while it is being drawn up and greatly diminishes the labor of boring wells. The coupling a^3 which is to be attached to shaft a^2, is hollow and open on each side as shown in Fig. 2 to allow the air to pass and the tool coupling a^4 similarly provided for the same purpose.

I claim—

1. The employment of wire rope for operating the auger as herein set forth.

2. I also claim making the shaft of the auger hollow as herein set forth.

J. M. BUTLER.

Witnesses:

CHAS. G. PAGE,

WM. H. HARRISON.