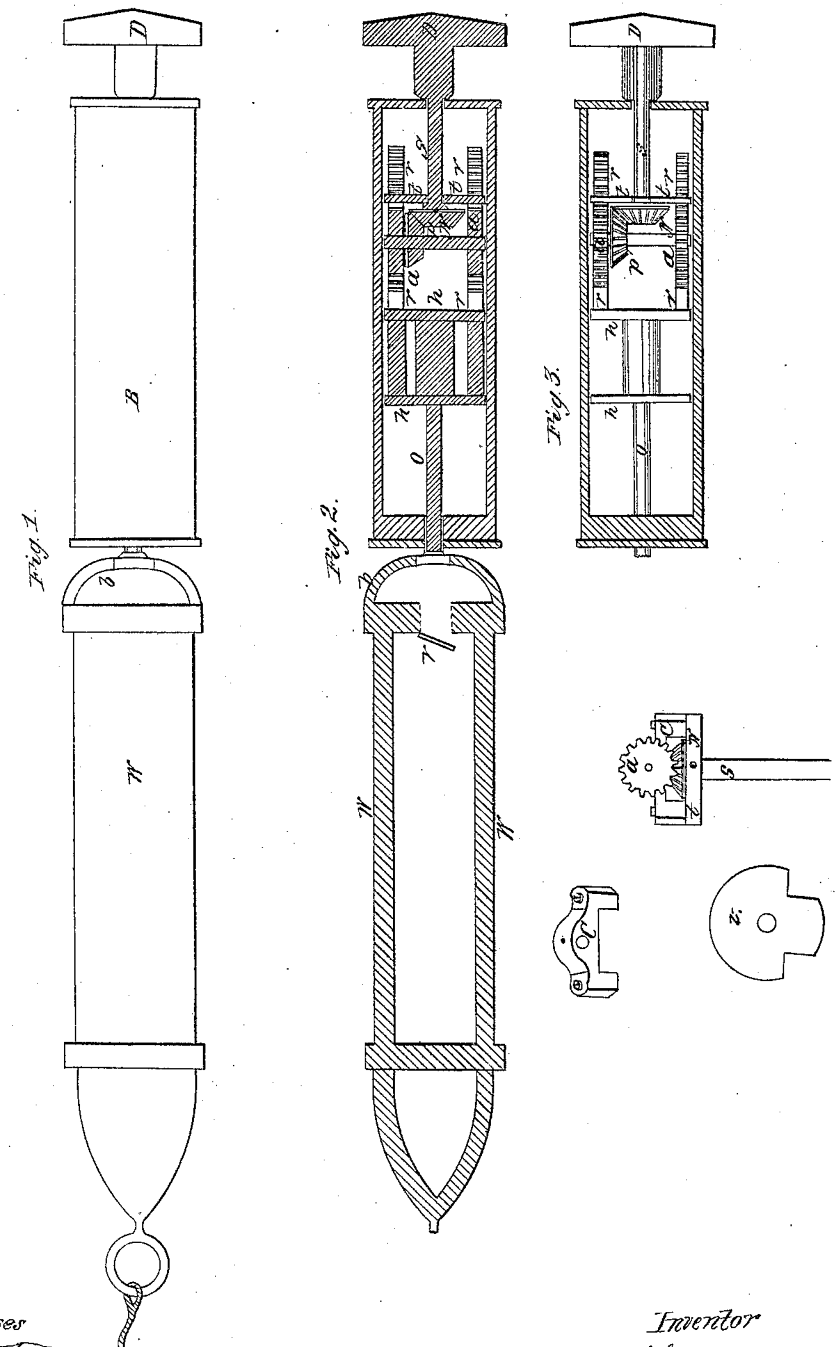
T. Mayhew,
Rock Drill.

No. 51,336. Patented Dec. 5, 1865.



Witnesses
Israel Bernhard
Charles Du Bois

Inventor
Theophilus Mayhew

UNITED STATES PATENT OFFICE.

THEOPHILUS MAYHEW, OF NEW YORK, N. Y.

IMPROVEMENT IN ROCK-DRILLS.

Specification forming part of Letters Patent No. **51,336**, dated December 5, 1865.

To all whom it may concern:

Be it known that I, THEOPHILUS MAYHEW, of the city, county, and State of New York, have invented a new and useful Improvement in Rotary Rock-Drills; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a longitudinal section of the same, and Fig. 3 a sectional view, showing the position of the gearing.

Similar letters of reference indicate corresponding parts in the several figures.

The object of my invention is to impart to the drill a rapid rotary motion, sufficient to enable the work to be done by cutting, grinding, or attrition, according to the nature of the substance to be operated upon; also, to avoid the necessity of using rigid shafting, the constant increase in the length and weight of which requires a constant increase of the power used to operate the drill; also, to avoid the loss of time required to remove and disconnect the shafting for the purpose of pumping sand, &c.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

The drill, which may be made circular, with cutting-edges or a rasp-like surface or other desirable form, is attached to the beveled cog-wheel N by means of the shaft S. The wheel N is geared to another beveled cog-wheel or pinion, P, which is turned by means of the cog-wheels *a a*, which run into the racks *r r*. The racks *r r* are attached to the cross-heads *h h*, which are connected with the weight W by the rod D and bail *b*. The weight W is attached to a rope, S′, by which it is moved up and down or drawn out the well.

The weight W is made hollow, and by inserting the valve V may be used as a sand-pump.

The cog-wheel gearing is all held in place by means of the cap C securely fastened to the cross-head *t*.

Operation: The weight W being raised or lowered, the racks *r r* firmly attached thereto operate the cog-wheels *a a*, which, in turn, operate the beveled wheels W and P, and a rotary motion is given to the drill D, which is made to perform one or more revolutions at each stroke, according to the length of the racks *r r*, which may be varied as desired.

The tube or box B, which remains nearly stationary during the operation of the drill, following it downward as the well is sunk, is less in diameter than the well to give room for the water and pulverized stone or sand to pass upward and enter the valve V.

An ordinary rope may may be used to connect the drill with the power used to operate it. By this means the operation of withdrawing the drill may be quickly performed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

Imparting to the drill D one or more rapid revolutions by means of the racks *r r* and gearing *a a* N P, when operated by the upward and downward motion of the weight W, substantially as and for the purposes set forth.

THEOPHILUS MAYHEW.

Witnesses:

ISRAEL REINHARD,
CHARLES DUBOIS.