

J. SWANK.
Ratchet-Drills.

No. 148,002.

Patented Feb. 24, 1874.

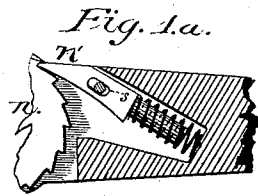
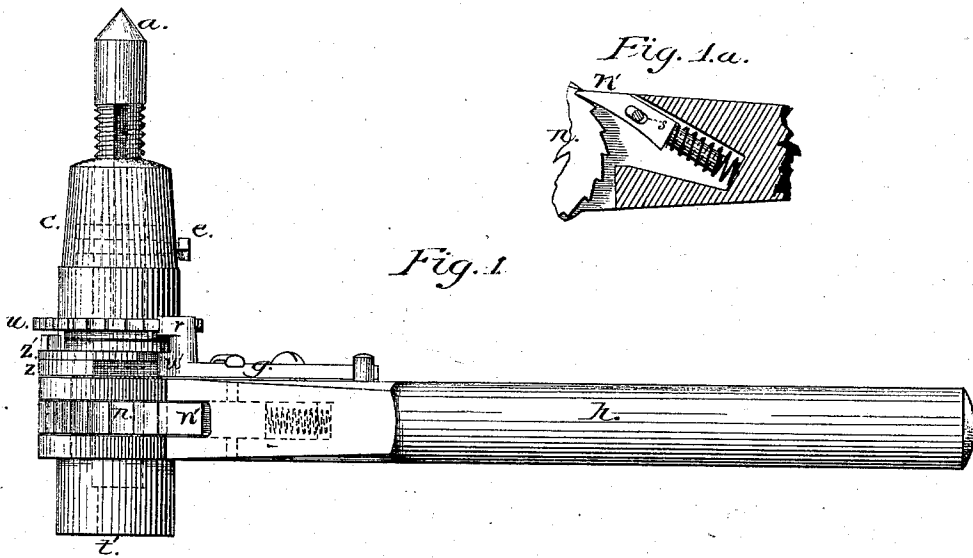
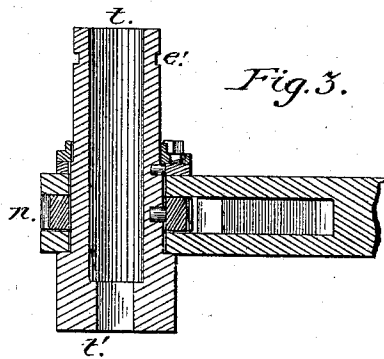
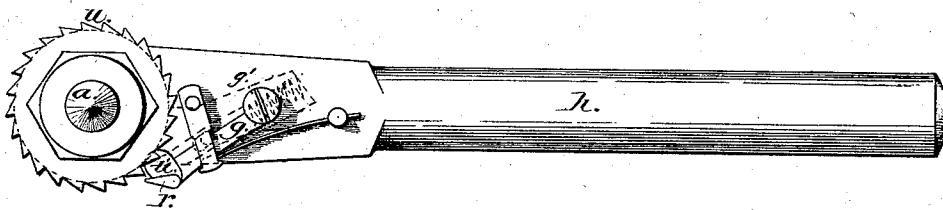


Fig. 2.



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JOSIAH SWANK, OF DELANO, PENNSYLVANIA.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. 148,002, dated February 24, 1874; application filed November 15, 1873.

To all whom it may concern:

Be it known that I, JOSIAH SWANK, of Delano, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in the combination, with a ratchet-drill, of an automatic feeding device, by which the drill-bit is kept constantly and evenly pressed against the object being operated upon, and in the novel construction of said automatic feeding device, by which the feed may be regulated, as desired.

The following description and the accompanying drawing will enable those skilled in the various arts (one or more) to which my invention appertains to make and use the same.

Figure 1 is a side view of a ratchet-drill, with my automatic feeding device attached; Fig. 2, a view of the abutment end, with feed-ratchet and handle; Fig. 3, a section taken through the tubular body of the drill, a part of the feeding device being removed. Fig. 1^a is a yielding impelling-pawl.

t is the tubular body of the drill, firmly attached to which is a ratchet-wheel, *n*, into which takes a spring-pawl, *n'*, attached to the bifurcated lever or handle *h*. In one end, the larger, of the tubular body, is a socket, *t'*, for the reception of the drill-bit. In the other end is a tooth or spline. *a* is the feed-screw, a slot or groove in one side of which fits over the tooth or spline in the tube when the screw is inserted therein. *c* is a cup-shaped sleeve, which fits loosely over the smaller part of the tubular body, as shown in Fig. 1. At the large end of this sleeve, and attached solidly thereto, is a ratchet-wheel, *u*, and a threaded opening in the other end fits over the feed-screw. A set-screw, *e*, secures the sleeve *c* upon the tubular body by projecting into the groove *e'*. Upon the tubular body, on the side of the handle toward the feed-screw, and close

to the handle, is a cam-disk, *z*. This cam-disk is rigidly attached to the tubular body. By the side of said disk is another cam-disk, *z'*, similar in shape, but turning loosely upon the tubular body. In the disk *z'* is cut a curved slot, and through this slot projects a set-screw from the disk *z*, by means of which the disk *z'* can be adjusted in different positions in relation to the other disk. *g* is an arm pivoted at *g'* to the handle *h*, while its other end has a lateral projection, provided with a tooth, *r*, and a curved-faced lug, *w'*. The tooth *r* takes into the ratchet-wheel on the sleeve *c*, and the lug *w'* rests upon the edges of the disks *z* *z'*. It is only when the lug *w'* is upon the depressed portion of the edges of the disks *z* *z'* that the tooth *r* can take into the ratchet-wheel *u* for turning the sleeve *c*, and thereby operate the feed-screw; and it is obvious that the disk *z'* may be so adjusted as to cause its full edge to lift the arm *g* from the depressed edge of disk *z* at any point desired, and the number of teeth taken off the wheel thus controlled.

In order that, when the drill has been set to a certain feed, the feed-pawl and boring-pawl *n'* may be sure to work together, the pawl *n'* has a slot-bearing, *s*, which allows it to slip about the length of a tooth of ratchet *u*.

The operation of my invention will be obvious from the description.

What I claim, and desire to secure by Letters Patent, is—

1. The combination and arrangement, as herein described, of the cam-disks *z* and *z'*, the arm *g*, and sleeve *c*, having ratchet-wheel *u*, substantially as described.

2. The combination and arrangement, as herein described, of the screw *a*, sleeve *c*, ratchet-wheel *u*, arm *r*, and cam-disks upon the body of the drill, substantially as described.

3. The spring-pawl *n'*, having slot-bearing *s*, combined with ratchet *n*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand.

JOSIAH SWANK.

Witnesses:

J. W. SWANK,
A. E. L. KEESE.