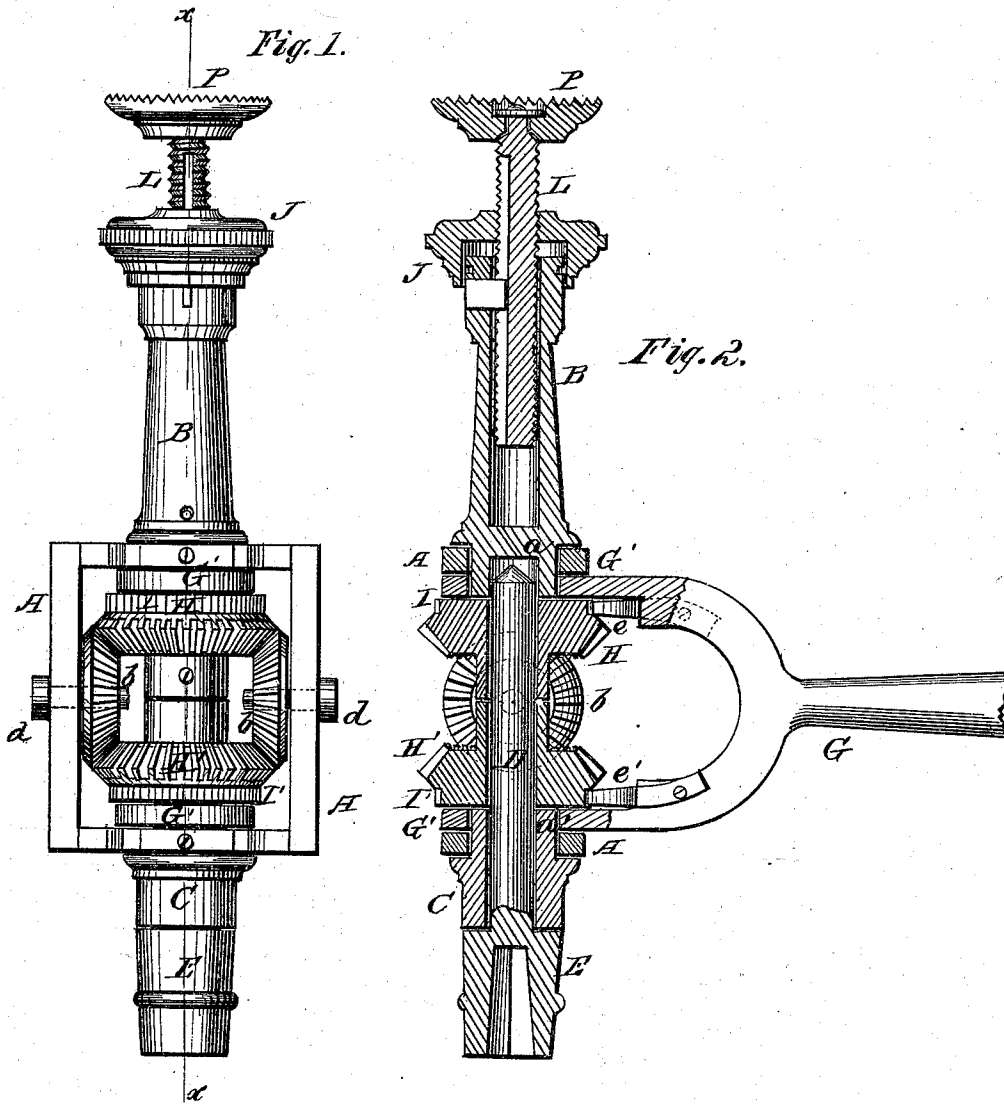


A. & I. BECK.
RATCHET-DRILL.

No. 173,755.

Patented Feb. 22, 1876.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ANDREW BECK AND ISRAEL BECK, OF PHILLIPSBURG, PENNSYLVANIA.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. 173,755, dated February 22, 1876; application filed October 19, 1875.

To all whom it may concern:

Be it known that we, ANDREW BECK and ISRAEL BECK, of Phillipsburg, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Drills; and we do hereby declare that the following is a full, clear, and exact description thereof, which 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.

The nature of our invention consists in the construction and arrangement of a ratchet-drill, as will be hereinafter more fully set forth.

In the annexed drawing, Figure 1 is a side elevation, and Fig. 2 a vertical section, of my invention.

A represents a rectangular frame of any suitable dimensions, in the upper bar of which is inserted a hollow tenon, *a*, formed on the lower end of a post, B, as shown. In the bottom bar of the frame A is inserted a hollow hub or collar, C, a part, *a'*, of which projects within the frame about the same distance as the hollow tenon *a*, above mentioned.

Through the hub C is then passed the vertical shaft D, having on its lower end a suitable coupling, E, for attaching the drill, the upper end of said shaft extending upward into the hollow tenon *a*. G represents a handle or lever, provided with two arms, G' G', having an eye in their outer ends, which fit over the parts *a* and *a'* and turn freely thereon.

On the shaft D within the frame A are placed two beveled cog-wheels, H and H', which are connected by means of idle beveled pinions *b b*, placed upon studs *d d*, projecting from the sides of the frame A.

The beveled cog-wheel H is made fast on the shaft D, while the cog-wheel H' turns loosely thereon.

The wheels H H' are formed, respectively, with ratchet-wheels I I' on their hubs, the

teeth of said ratchets being turned in opposite directions.

On the arms G' of the lever or handle G are attached suitable spring-pawls *e e'*, to take into the ratchet-wheels I I'.

It will readily be seen that by moving the handle in one direction, the pawl *e* operating on the ratchet I, the wheel H will be revolved, and, as said wheel is attached to the shaft D, having the drill connected thereto, the drill will be rotated thereby. As the handle or lever G is moved in the opposite direction, the pawl *e* slips over the ratchet-wheel I, while the pawl *e'* turns the wheel I' H', and, through the idle-pinions *b b*, turns the wheel H in the same direction as before, and thus the drill is turned continuously in the same direction.

On the upper end of the post B is placed a hand-wheel, J, with female screw-threads in the center, through which is passed a screw, L, having a disk or knob, P, on its upper end, which screw is feathered in the post, so as not to turn in the same, but be raised and lowered by the turning of the hand-wheel J; and thereby regulate the feed of the drill.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The handle G, having arms G', provided with spring-pawls *e*, in combination with the drill-shaft D, wheels H H', ratchet-wheel I', and pinions *b b*, all constructed and arranged substantially as and for the purpose set forth.

2. The combination of the frame A, post B, collar C, shaft D, gears H H' *d*, handle-arms G', with spring-pawls, the hand-wheel J, screw L, and disk P, all substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

ANDREW BECK.
ISRAEL BECK.

Witnesses:

W. C. WAGONER,
DAVID P. FUNK.