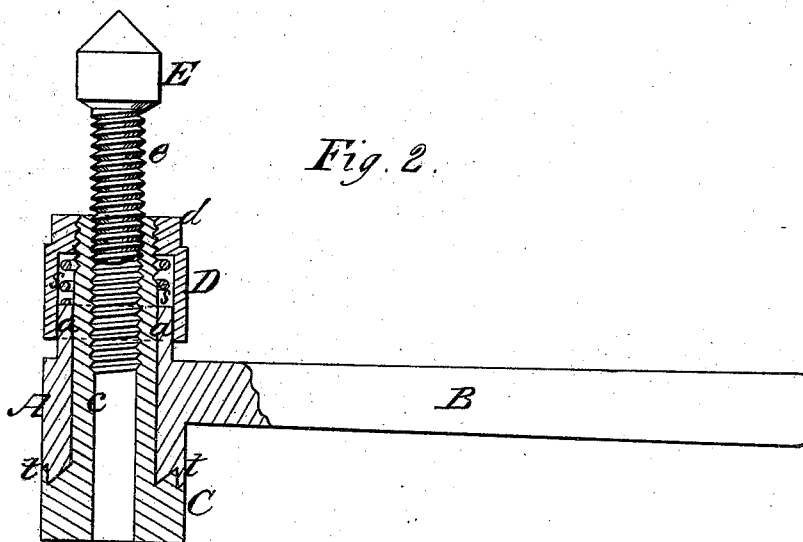
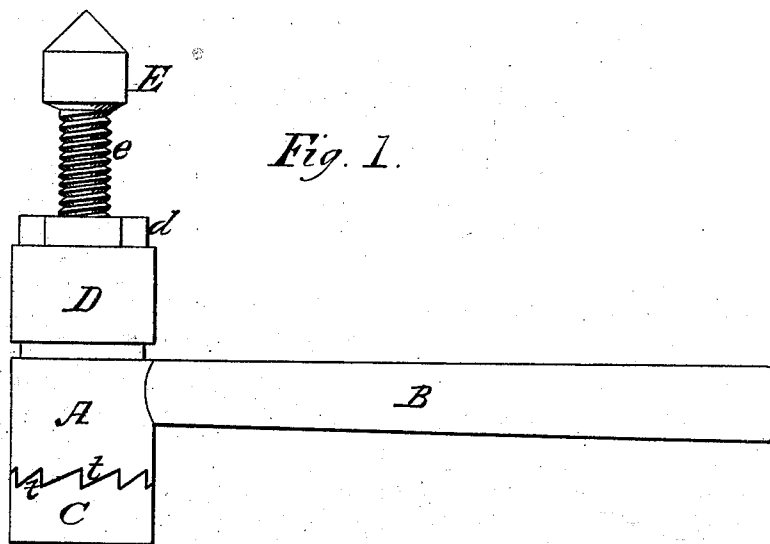


W. CAMPBELL.
Ratchet-Drills.

No. 150,826.

Patented May 12, 1874.



WITNESSES

Mary J. Wiley.
Geo. E. Upham.

By

Walter Campbell
Chipman & Co.

INVENTOR

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WALTER CAMPBELL, OF TIDIOUTE, PENNSYLVANIA.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. **150,826**, dated May 12, 1874; application filed March 14, 1874.

To all whom it may concern:

Be it known that I, WALTER CAMPBELL, of Tidioute, in the county of Warren and State of Pennsylvania, have invented a new and valuable Improvement in Ratchet-Drills; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my ratchet-drill. Fig. 2 is a sectional view of the same.

This invention has relation to hand-drills of the kind which are known as the "smiths' press-drills." It consists in the combination, with the drill-stock, ratchet-hub, feed-screw, and spring, of a sleeve-nut screwed upon the stock, and inclosing the spring, as hereinafter explained.

In the annexed drawings, A designates a cylindrical tubular hub, having a long handle, B, formed on it. The lower end of this hub is surrounded with ratchet-teeth *t*, which engage with corresponding teeth, *t*, formed on the upper end of a hub, C. The hub C is constructed with a central socket for receiving the bits, and it has formed on its upper end a cylindrical stem, *c*, which passes freely through the tubular hub A, and receives upon its upper screw-threaded end a hollow cap, D. This cap has a nut-head, *d*, on its upper end, and its lower end receives loosely into it the upper reduced end *a* of the hub A. Inside of the cap D is a helical spring, *s*, which operates by its recoil to keep the teeth *t* of the two hubs

A and C in gear with one another. E designates a center-point, having a screw-threaded stem, *e*, formed on it, which is screwed into the upper end of the tube C, as shown in Fig. 2. By turning this screw as the work of drilling progresses, the bit will be fed up to its work; and by turning the cap D, the spring *s* can be made to act with more or less force to keep the ratchet-teeth *t* in gear.

The manner of using this drill is to confine it between the work and an overhanging arm or bracket, and give a vibrating movement to the handle B, which will impart an intermittent rotary movement to the head C and the drill-bit which is confined therein.

I am well aware that a ratchet-drill having two hubs connected by annular ratchet-teeth and an adjustable center-point, as shown in the patent of L. B. Rillard, dated July 31, 1860, No. 29,353, is not my invention, and therefore I do not claim such invention, broadly; but

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

The adjustable cap D, with nut-head *d* on its upper end, and its lower end fitting over the reduced end *a* of the hub A, in combination with the helical spring *s* and ratchet-hubs A and C, substantially as and for the purpose mentioned.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WALTER CAMPBELL.

Witnesses:

JOHN TONKIN, Jr.,
M. G. CUSHING.