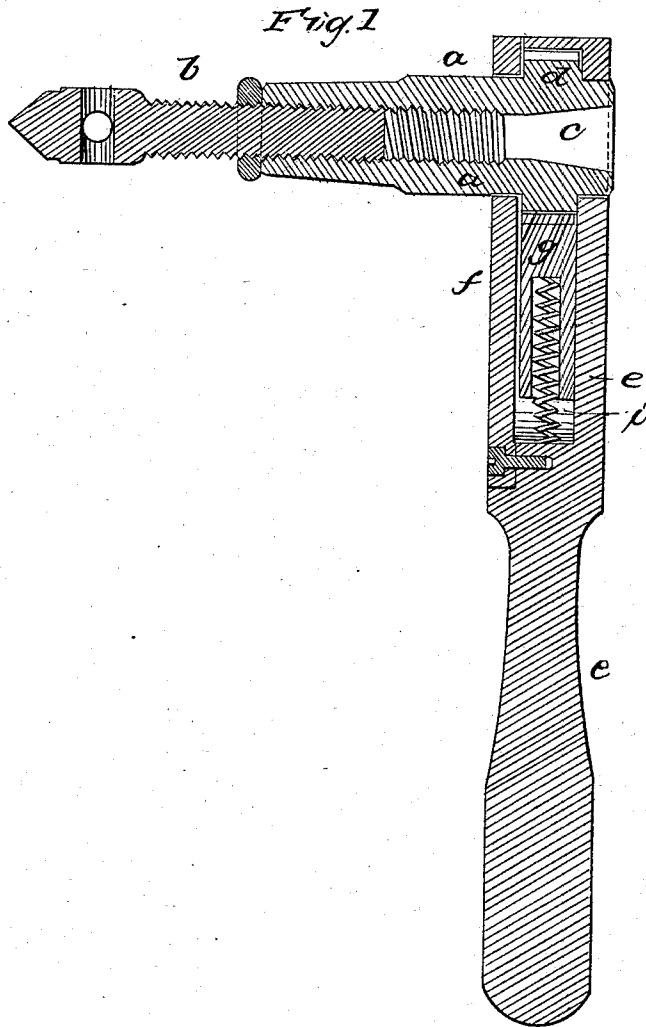
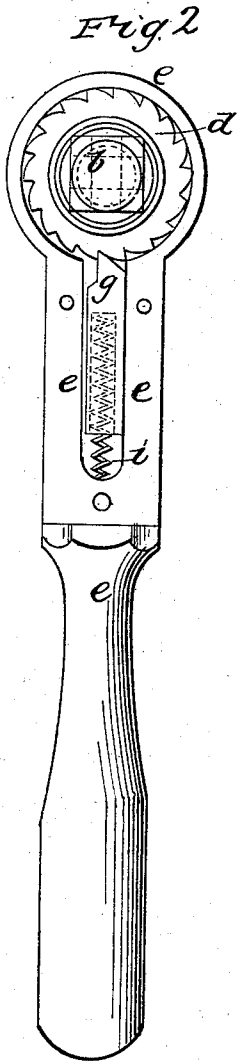


E. A. RAYMOND.

Ratchet Drill.

No. 39,496.

Patented Aug. 11, 1863.



witnesses
Lemuel W. Serrell
Thos. Geo. Harold

Inventor
Edward A. Raymond

UNITED STATES PATENT OFFICE.

EDWARD A. RAYMOND, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. **39,496**, dated August 11, 1863.

To all whom it may concern:

Be it known that I, EDWARD A. RAYMOND, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Ratchet-Drills; and I do hereby declare the following to be a full, clear, and exact description of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a section of my ratchet-drill stock, and Fig. 2 is a side view of the same with the cap of the pawl removed.

Similar letters designate the same parts.

The nature of my said invention consists in a sliding spring-pawl in a mortise in the stock taking the ratchet-teeth around the drill-holder, which ratchet and the contiguous portion of the drill-holder are inclosed in and sustained by the end of the stock.

Ratchet-drills have before been made, but, in consequence of the ratchet-teeth being exposed, or an opening provided where the lever-pawl has entered to take said teeth, the said teeth become obstructed by the small pieces or chips of metal bored out by the drill, which cause wear and often breakage of the teeth, in consequence of said pieces of metal getting between the end of the pawl and the teeth. This difficulty is entirely removed by my said invention, because the ratchet and pawl are entirely inclosed, and the sliding pawl is much stronger than the hinged lever-pawl, and does not wear loose as quickly, be-

cause the bearing-surface is much larger than in the hinge of the lever-pawl.

In the drawings, *a* is the drill or tool holder with the pressing-up screw *b* at one end and the squared drill-socket *c* at the other end, as usual. *d* is the ratchet-wheel, around *a*, and *e* is the lever or stock, formed with a cavity at the end to contain the ratchet-wheel *d*, and with eyes to pass and surround the tool-holder *a*. One of these eyes is formed in the movable pawl-cap *f* that is retained by screws to the side of *e*. Within the stock *e* is a cavity or mortise receiving the sliding pawl *g*, that is kept toward the ratchet-teeth *d* by a spring, *i*, which spring passes into a cavity in the pawl. It will now be seen that as the lever-stock *e* is swung back, the pawl *g* runs over the teeth of *d* by sliding in its mortise, and the spring *i* throws the said pawl up into the teeth to take the same in rotating the holder *a* and drill therein, and the pawl and ratchet cannot become obstructed or injured by any substance getting into the same, because they are both tightly inclosed.

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

The tool-holder *a*, ratchet *d*, pawl *g*, and stock *e*, constructed, combined, and arranged as specified.

In witness whereof I have hereunto set my signature this 18th day of June, 1863.

Witnesses: EDWARD A. RAYMOND.

LEMUEL W. SERRELL,
THOS. GEO. HAROLD.