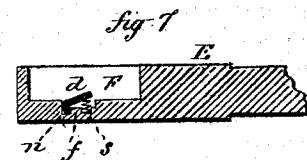
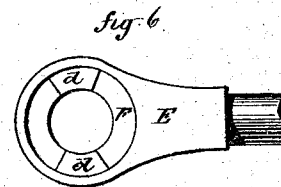
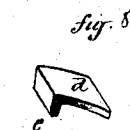
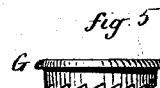
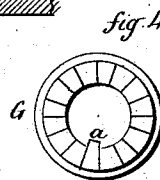
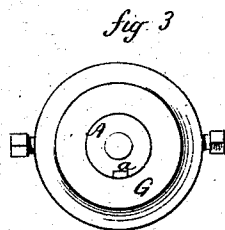
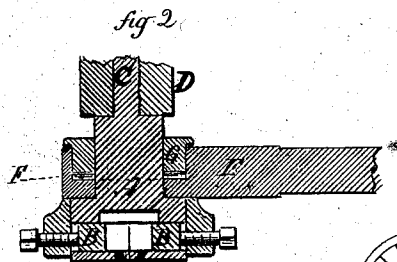
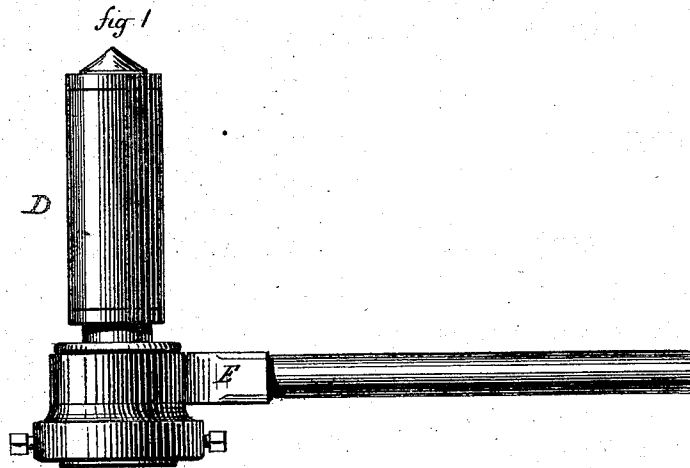


H. SMITH.
Ratchet-Drills.

No. 156,602.

Patented Nov. 3, 1874.



Witnesses.
J. H. Shumway
A. J. Tibbitts

Henry Smith
Inventor
By atty.
John E. Earle

UNITED STATES PATENT OFFICE.

HENRY SMITH, OF MERIDEN, CONNECTICUT, ASSIGNOR TO CHARLES PARKER, OF SAME PLACE.

IMPROVEMENT IN RATCHET-DRILLS.

Specification forming part of Letters Patent No. **156,602**, dated November 3, 1874; application filed October 15, 1874.

To all whom it may concern:

Be it known that I, HENRY SMITH, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Ratchet-Drill; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, side view; Fig. 2, vertical central section; Fig. 3, top view, the adjusting screw-sleeve removed; Figs. 4, 5, 6, 7, and 8, detached views.

This invention relates to an improvement in the device for drilling metals known as ratchet-drills; and the invention consists in the peculiar arrangement of parts and manner of hanging the pawls, as fully hereinafter described.

A is the head, into which the drill is set, and secured by jaws B B, or in other suitable manner. Above the head A is the adjusting-screw C and sleeve D, operated to feed the drill in the usual manner. On the head A the lever E is hung, so as to be turned freely thereon, the axis of the head being the axis of the lever. In the lever around the head a recess, F, is formed, and in this sets a collar, G, splined or otherwise attached to the head A, as seen at *a*, Figs. 3 and 4. The under surface of the collar G is toothed radially, as seen in Figs. 4 and 5, and in the corresponding or up-

per surface of the lever one or more pawls, *d*, are set in the following manner: The pawl *d* is of segmental form, as seen in Fig. 8, constructed with a downward-projecting lug or flange, *e*, at one end. In the lever a recess, *f*, is formed corresponding to the pawl, and with a cavity, *n*, to receive the flange *e*; and beneath the pawl thus arranged a spring, *s*, is arranged, the tendency of which is to hold up the pawl, as seen in Fig. 7.

When the lever is turned backward, the pawl or pawls will pass over the teeth on the collar G, the spring *s* yielding to allow it so to do; but upon turning in the opposite direction the pawls will engage corresponding teeth on the collar G, and cause the head A and drill to be turned with it.

This construction enables the making of the head of less diameter than when the pawls act upon the periphery; it also affords a strong and firm seat or bearing for the pawls, and incloses them so that any derangement of the operative parts by outside influences is avoided.

I claim—

The combination of the head A, toothed collar G, recessed lever E, and pawl or pawls *d*, constructed and operating substantially as described.

HENRY SMITH.

Witnesses:

JOSEPH H. BECKETT,
RALPH A. PALMER.