

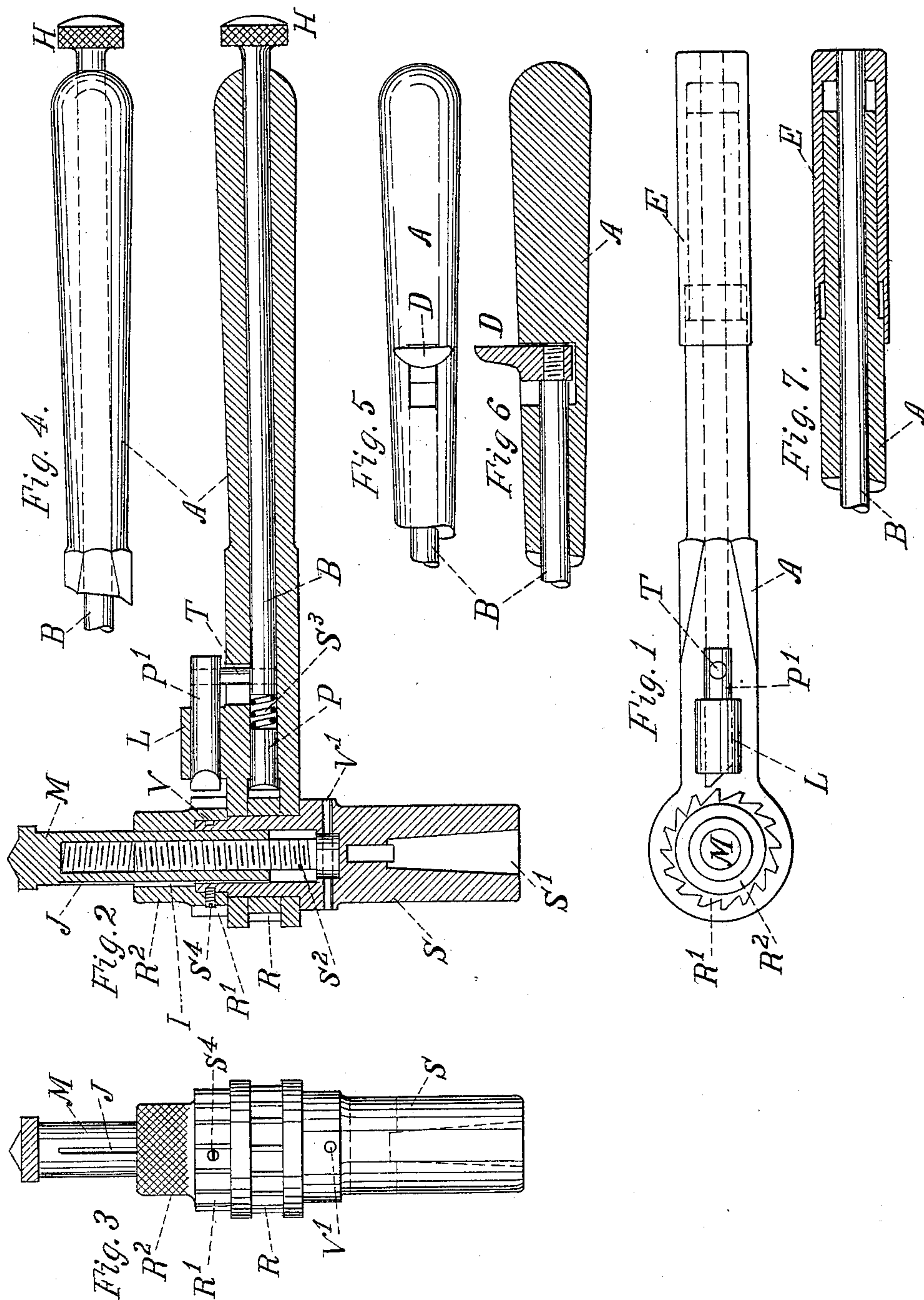
(No Model.)

H. D. HINCKLEY.

RATCHET DRILL.

No. 318,561.

Patented May 26, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

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RATCHET-DRILL.

SPECIFICATION forming part of Letters Patent No. 318,561, dated May 26, 1885.

Application filed May 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. HINCKLEY, a citizen of the United States, residing at Hartford, in the county of Hartford, State of Connecticut, have invented a new and useful Improvement in Ratchet-Drills, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to that class of ratchet-drills having devices for feeding the drill to the piece being drilled; and it consists in certain combinations of mechanism, hereinafter described and claimed, whereby the said feeding of the drill is done, not automatically or uniformly, but at the will of the operator.

In the drawings, Figure 1 is a plan view of a ratchet-drill embodying my improvements. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is an elevation of the end at the left hand in Figs. 2 and 3. Fig. 4 is a side elevation of the handle as shown in Fig. 2 in section. Fig. 5 is a plan view of a modification of the handle. Fig. 6 is a vertical longitudinal section of the form of handle shown in Fig. 5. Fig. 7 is a similar view of the same as shown in Fig. 1.

Similar letters refer to similar parts throughout the several views.

In these views A is the handle of the implement. It is formed bifurcated at one end, where a hole is bored through it to receive the spindle S. A hole is also drilled in the handle to receive a sliding rod, and it has a lug, L, affixed to or formed upon the upper side thereof to receive a sliding pawl.

S is the spindle of the implement, which is bored at S' to receive the shanks of drills, and is fitted to the handle in the usual way, as shown best in Fig. 2. It extends through both branches of the handle, and has a small groove turned therein, as shown at V, Fig. 2. This end of the spindle is bored to receive the round head of the thrust-screw S², which is rigidly secured therein by pin V'.

R is a ratchet, which is fixed to the spindle S between the two branches of the handle. It is operated by means of a sliding pawl, P, Fig. 2, which is pressed forward by a spring, S³. R' is a similar ratchet, having its teeth made

the reverse of those on ratchet R, and which is fitted to turn freely upon the upper end of spindle S, being held thereon by a screw, S⁴, which reaches through the side of the ratchet into the groove V. This ratchet is made with a hub, R², formed thereon, and preferably knurled, as shown in Fig. 3, for convenience in turning it by hand. On the inside there is a key, I, Fig. 2, which slides in a spline in the elevating-nut.

M is a tubular elevating-nut, formed, as shown in Fig. 2, to pass through the ratchet R', to fit into the bore in spindle S, and to fit over the screw S². It has a spline, J, in which the key I is adapted to slide.

P' is a sliding pawl, which slides through a hole in the lug L, Figs. 1 and 2, for operating the ratchet R'. Within the handle A is a sliding rod, B, which is connected to pawl P' by a pin, T, or other similar means. This rod is operated in one direction to withdraw pawl P' from said ratchet by spring S³, which spring is located between said rod and pawl P for that purpose.

The rod B may be constructed in a variety of ways. In Figs. 2 and 4 it extends through the handle and terminates in a head, H, by means of which the operator may work the rod B, and thereby the pawl P', at will. In Figs. 5 and 6 it is shown with a thumb-piece, D, which projects through a mortise in the side of the handle, and in Figs. 1 and 7 there is a sleeve, E, fitted loosely over the handle and connected to the rod, which the operator takes hold of to work the drill, and whereby he can also, by a sliding movement, operate the said pawl P'.

I have described the pawls P and P' as when constructed to operate by sliding; but it is obvious that by a slight modification of the other parts they could just as well be made to swing upon suitable pivots, which may be provided therefor. Such constructions are, indeed, so common that a particular description is unnecessary.

In operating my improved ratchet-drill the workman takes hold of the handle in the usual manner and gives it an oscillating motion, which, by means of pawl P acting upon ratchet R, imparts an intermittent rotary motion to

the spindle S, the ratchet R' and nut M being carried with it by the friction of said nut upon screw S. When during this operation the drill requires feeding to the work, the operator presses on the head H or thumb-piece D, or slides sleeve E, according to which style of handle is used, until the pawl P' engages with ratchet R', and upon the backward stroke thereby turns the nut M upward, this being repeated as required.

It is not necessary to construct the parts so as to feed the drill during the back-stroke, and the implement will operate equally well if the feeding is done during the forward stroke; but I prefer that arrangement because it seems to me most convenient.

Having thus described my invention, I claim—

1. In a ratchet-drill, in combination, a handle, as A, a spindle, S, having a screw and

nut, as S² and M, ratchet R, pawl P, ratchet R', pawl P', a thumb or hand piece, as H, and a suitable connection between said thumb or hand piece and said pawl P', substantially as and for the purpose set forth.

2. In a ratchet-drill of the class described, ratchet R', pawl P', connected to rod B, rod B, having a suitable thumb or hand piece, and a spring adapted to hold said pawl P' away from said ratchet, combined and operating substantially as described.

3. In combination, pawl P', connected to rod B, rod B, pawl P, and spring S³, placed between said pawl P and rod B, substantially as described.

HENRY D. HINCKLEY.

Witnesses:

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