

(No Model.)

W. PIRSSON.

RATCHET DRILL.

No. 261,758.

Patented July 25, 1882.

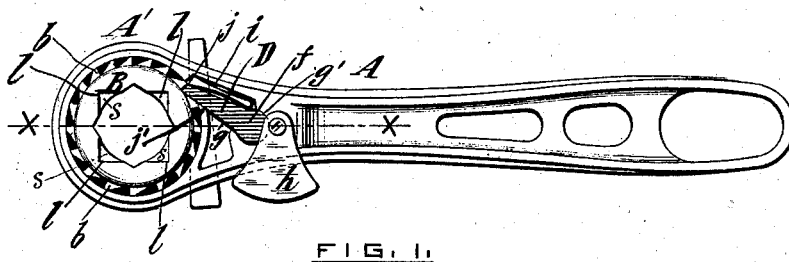


FIG. 1.

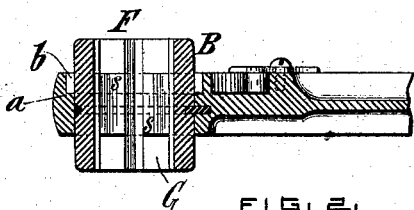


FIG. 2.

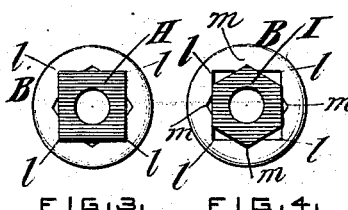


FIG. 3.

FIG. 4.

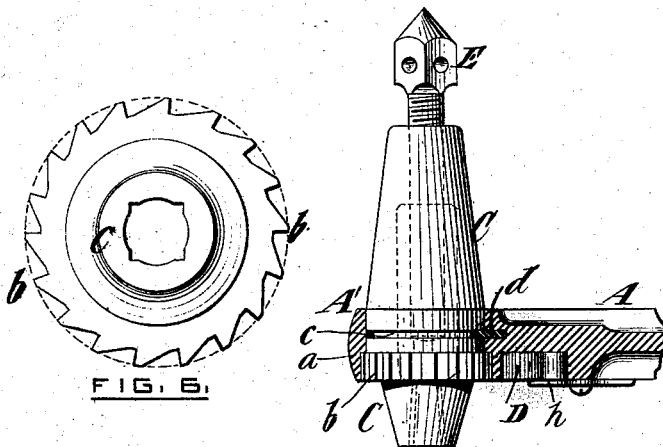


FIG. 5.

WITNESSES.

Geo. H. Bates

Geo. H. Bates

INVENTOR.

William Pirsson
by his Attorneys
Rowan & Brown

UNITED STATES PATENT OFFICE.

WILLIAM PIRSSON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH TO
CHARLES H. PEABODY, OF PROVIDENCE, RHODE ISLAND.

RATCHET-DRILL.

SPECIFICATION forming part of Letters Patent No. 261,758, dated July 25, 1882.

Application filed September 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PIRSSON, of the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Ratchet Drills and Wrenches, of which the following is a specification.

The invention consists in the combination, with a stock and a ring-shaped head provided with a pawl, of interchangeable wrench and drill sockets fitted to said head, and each having ratchet-teeth and an annular groove, and a key inserted in said head and adapted to engage with the groove in either socket, whereby I enable one stock to serve either for a ratchet-drill or ratchet-wrench.

In the accompanying drawings, Figure 1 represents a side view of a ratchet-wrench embodying my invention. Fig. 2 represents a central longitudinal section of the head thereof on the dotted line *xx*, Fig. 1. Fig. 3 represents an end view of the wrench-socket containing a square nut. Fig. 4 represents a similar view of the socket containing a hexagon nut. Fig. 5 represents a longitudinal section through the head portion of a ratchet-drill embodying my invention, and Fig. 6 is an end view of the drill-socket upon a larger scale.

Similar letters of reference designate corresponding parts in all the figures.

A designates the stock of the drill and wrench, which has a ring-shaped head, *A'*, at one end; and B and C designate respectively the wrench-socket and the drill-socket, both of which are adapted to fit within the ring-shaped head *A'*. The said ring-shaped head is provided with an internal shoulder, *a*, and each of the sockets B and C is provided with ratchet-teeth *b*, which form a shoulder or flange which strikes against the shoulder *a* when the socket is inserted in the ring-shaped head.

Each socket has formed in it an annular groove, *c*, and *d* designates a key which is driven through a mortise formed in the stock at right angles to the axis of the socket. This enters the annular groove and holds the socket B or C against displacement endwise when once secured in place.

D designates the ratchet-pawl, which en-

gages with the teeth *b*, and which has a cylindric head, *f*.

The pawl fits in a cavity, *g*, in the stock A, which has in it a recess, *g'*, of cylindric form, into which the head *f* of the pawl fits, and in which it is secured by a removable cap-plate, *h*. The cavity *g* also contains a spring, *i*, acting on the pawl to hold it in engagement with the ratchet-teeth *b*.

When one socket is removed from the stock the pawl is no longer held by the ratchet-teeth and would be liable to spring inward, thus interfering with the insertion of the other socket in the stock. To prevent this, one side, *j*, of the notch or slot *j*, through which the point of the pawl works, is adapted to form a stop to the pawl for preventing its inward movement when the socket is removed and the pawl is no longer supported by the ratchet-teeth *b*.

Upon the end of the drill-socket C is the feed-screw E, which is common in ratchet-drills.

In opposite ends of the socket B are two square cavities, F G, and between them are projections *s*, which are formed by filling in the corners of the said cavities. These projections form a stop common to both cavities. This stop is not here claimed, as it forms the subject of a claim in another application for Letters Patent filed herewith. The two cavities F G in the socket B are both of them square, so as to take a square nut, H, as shown in Fig. 3, the corners of the nut fitting in the corners of the cavity; but in the middle of each side of the cavity is a notch, *m*, which is greater than a right angle, and should be a notch of about one hundred and twenty degrees, (120°.) When thus formed the socket is adapted to receive a hexagon nut, I, as shown in Fig. 4, two opposite corners of the nut fitting in two opposite notches, *m*, while two opposite sides of the nut fit two opposite sides of the square socket. When thus constructed the wrench may be shifted upon either a square or hexagon nut a quarter of a turn to take a new hold.

The peculiar construction of the cavities F G in the wrench-socket B form no part of my present invention, but may be made the sub-

ject for a future application for Letters Patent.

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

- 5 The combination, with the stock A and ring-shaped head A', provided with a pawl, D, of the interchangeable sockets fitted to said ring-shaped head, each having the annular groove

c, and provided with ratchet-teeth, and the key d, inserted in said head and adapted to enter the groove in either socket, substantially as specified. 10

WM. PIRSSON.

Witnesses:

FREDK. HAYNES,
ED. MORAN.