H. L. PRATT.

Ratchet Bit-Brace.

No. 200,757. Patented Feb. 26, 1878.

Fig. 1.

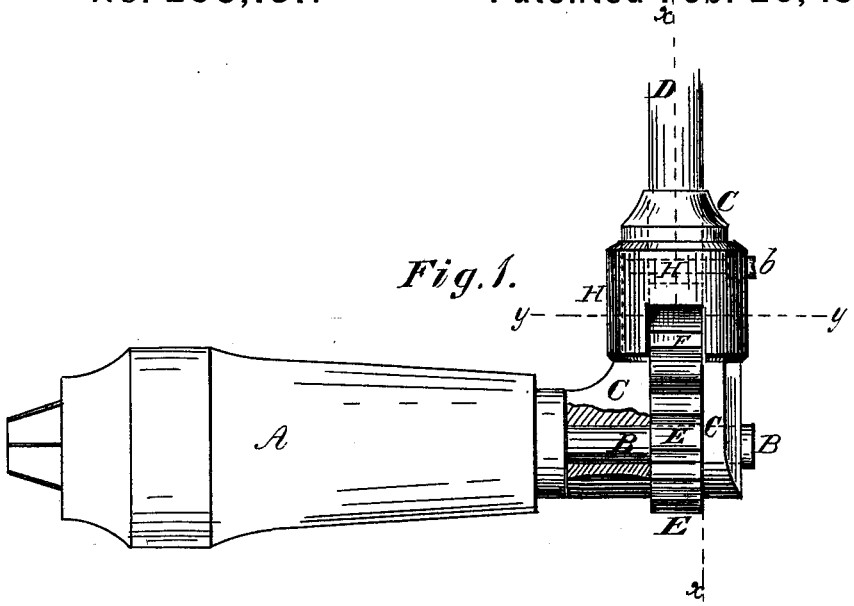


Fig. 2.

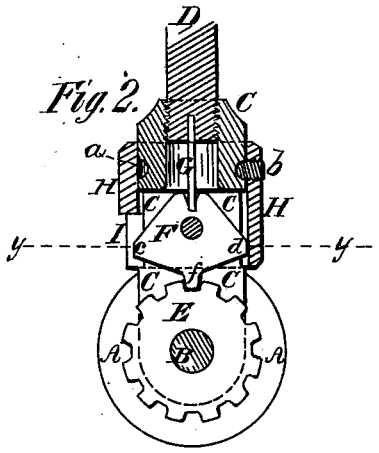
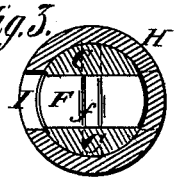


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY L. PRATT, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN RATCHET BIT-BRACES.

Specification forming part of Letters Patent No. **200,757**, dated February 26, 1878; application filed December 26, 1877.

To all whom it may concern:

Be it known that I, HENRY L. PRATT, of Brooklyn, county of Kings, and State of New York, have invented certain Improvements in Ratchet Bit-Braces, of which the following is a specification:

My invention relates to ratchet bit-braces; and consists in a novel construction, combination, and arrangement of parts, which have for their object to simplify the construction, facilitate the manipulation, and improve the operation of such bit-braces, as will be fully hereinafter set forth.

Referring to the drawings, Figure 1 is a side view. Fig. 2 is a vertical section through the line *x x*, Fig. 1. Fig. 3 is a transverse section through the line *y y*, Figs. 1 and 2.

A is the bit-stock or tool-holder, from the rear end of which projects a spindle, B, having bearings in the block C attached to the handle D of the brace. This block is slotted, and between the walls of the slot, and firmly secured on the shaft or spindle B, is the notched disk or wheel E. In the slot is pivoted the triangular-shaped pawl F, the tooth *f* of which enters freely the notches in the wheel or disk E. The pawl F is kept in a middle position by the spring G, as shown in Fig. 2. H is a ring or sleeve, swiveled on the block C by the groove and screw *a b*. This ring is cut away, as shown at I, the opening being of a width equal to the thickness of the pawl F. (See Fig. 3.) The interior diameter of the ring, as shown at Fig. 3, is slightly greater than the width of the pawl.

On referring to Fig. 2 it will be seen that the wheel E may rotate in the direction indicated by the arrow thereon, inasmuch as the opening in the ring H is in such a position as to allow the end *c* of the pawl to move outward as the pawl is vibrated by the notches and bands of the wheel or disk E, while it would be impossible for the wheel to move in the reverse direction, as the end *d* is obstructed by the solid portion of the ring, and thus prevented from moving outward. On turning the ring one-half round, the opening in it is brought into position to allow the other end of the pawl to move outward while the opposite end is obstructed, thus permitting rotation in the opposite direction to that just described.

When the ring or sleeve is turned one-quarter round, or even less, from the positions mentioned above, and shown in Figs. 2 and 3, both ends of the pawl are confined in the ring, and the pawl thus locked in its middle position, and prevented from moving in either direction. Thus, by turning the ring, the wheel and the bit-holder may be driven in either direction, or firmly locked to the handle of the brace.

For convenience of manipulation, a stop is provided in the groove of the block C, so as to allow of the rings being rotated only halfway round in either direction.

When the pawl is in position to rotate the wheel in either direction, or to lock it to the brace-handle, as shown in Fig. 2, the axis of the wheel, the pivot of the pawl, and the center of its tooth are all in a straight line.

The metal of the ring need not be cut entirely through if a sufficiently deep recess be formed in the interior thereof to allow of the necessary movement of the ends of the pawl. The wheel may also be inclosed. The other parts of the brace are constructed as usual.

It is obvious that, instead of the ring or sleeve shown and described, any other suitable movable stop may be employed for obstructing and preventing the motion of the pawl—such, for instance, as a movable pin to be inserted in the block C across the slot therein, on either side of the pawl; and I therefore do not confine myself to the use of the ring.

I claim—

1. The combination, with the ratchet-wheel E, spring-acted detent or pawl F, provided with a single tooth, and so pivoted as to oscillate on its pivot in substantially the same plane with the disk E, and a stop, substantially as described, which may be moved from side to side of said pawl, or adjusted so as to lock the same in a central position, whereby the bit-stock may be rotated in either direction or locked to the brace-handle, constructed and operating substantially in the manner described and specified.

2. The combination of the notched wheel or disk E, double-acting spring-pawl F, and swiveled ring H, constructed and operating substantially in the manner described and specified.

HENRY L. PRATT.

Witnesses:

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