

(No Model.)

J. WATSON.
BIT STOCK.

No. 309,902.

Patented Dec. 30, 1884.

Fig. 1.

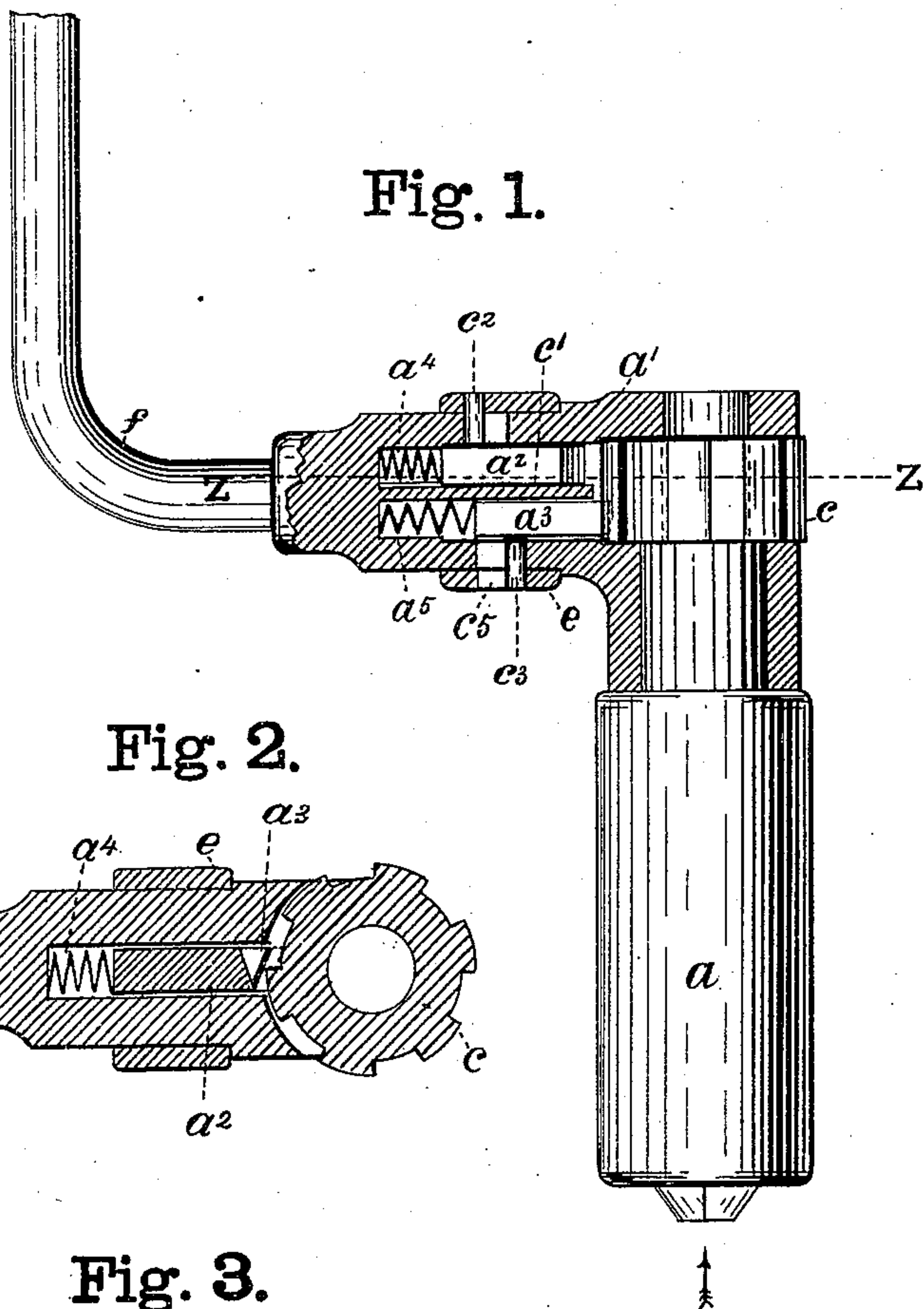


Fig. 2.

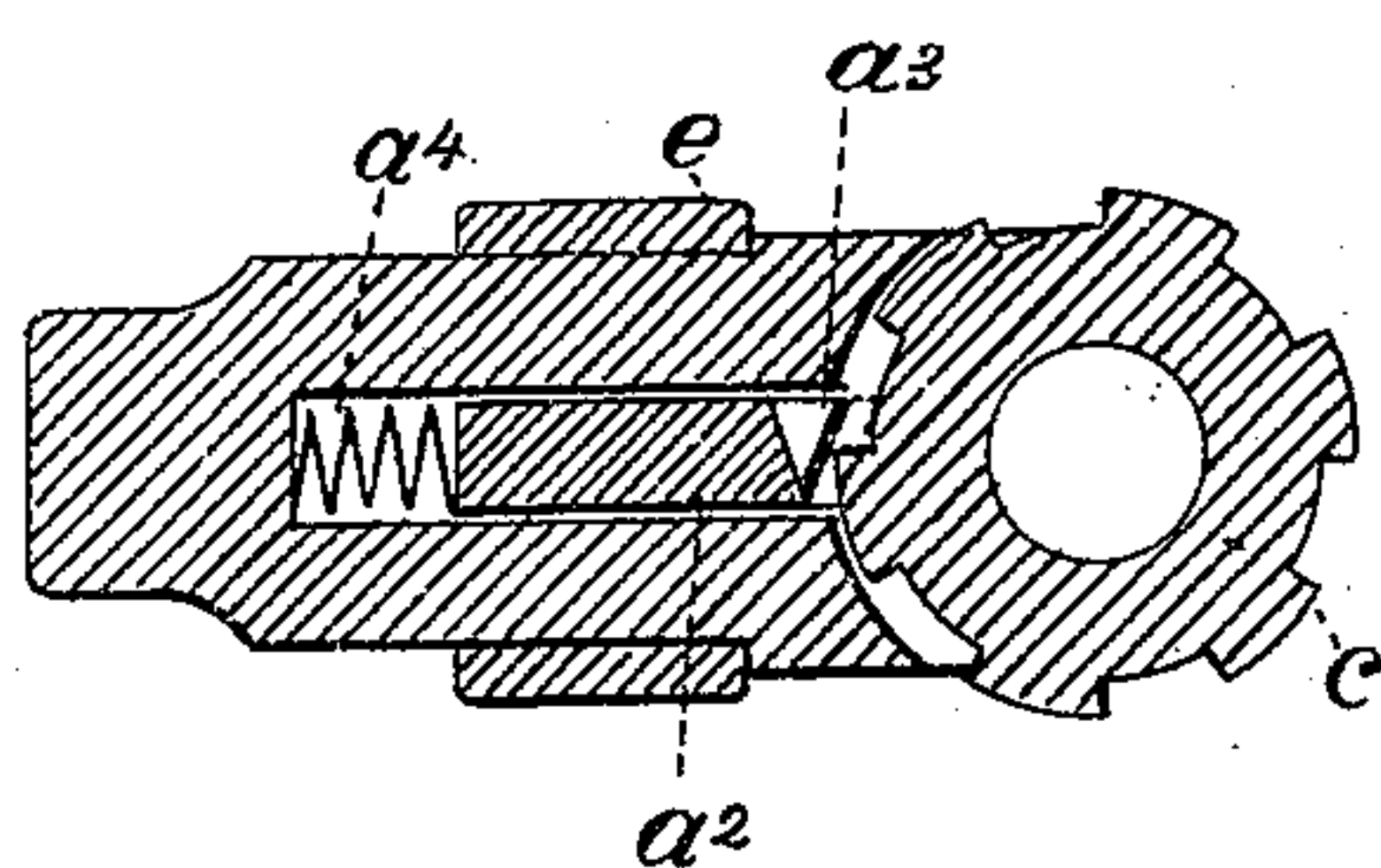
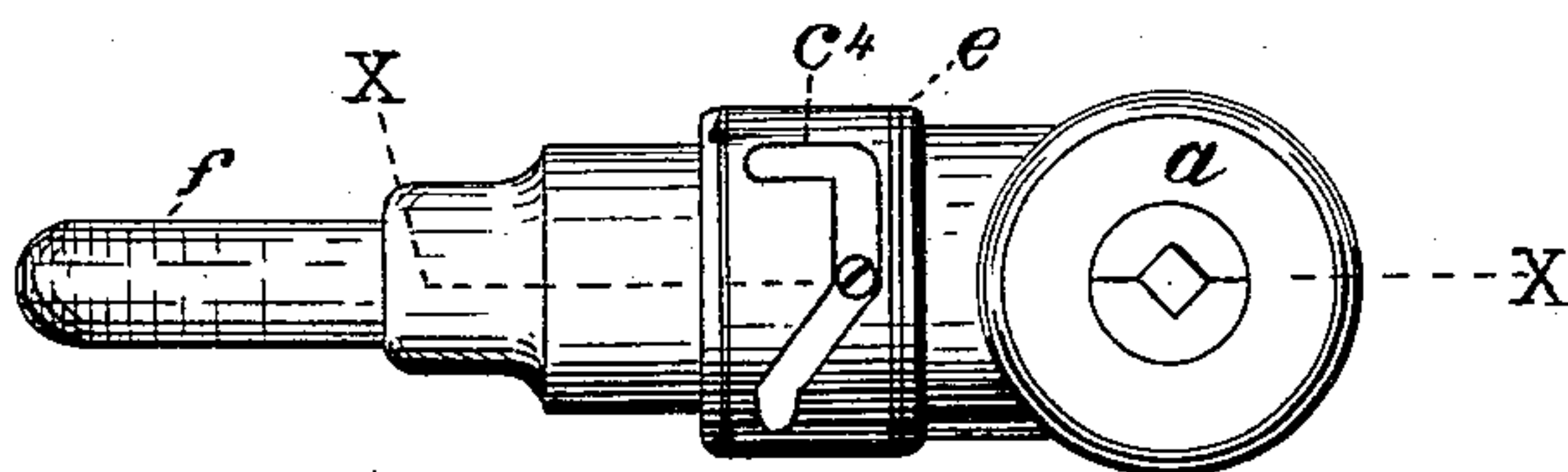


Fig. 3.



Witnesses.

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JOHN WATSON, OF BUFFALO, NEW YORK.

BIT-STOCK.

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Application filed February 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN WATSON, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Ratchet-Braces, of which the following is a specification.

The object of this invention is to produce a simple and convenient means for operating a brace and bit in places where it is impossible to make an entire revolution of the brace or sweep; and it consists in a certain means for throwing either of the pawls in or out of gear, so as to operate the bit in either direction, and also for locking the same so that the brace may be used in the ordinary way, all of which will be fully hereinafter shown and explained by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the device, showing a portion of the brace or sweep to which it may be attached, the sectional portion being in line X X, Fig. 3. Fig. 2 is a section in line Z Z, Fig. 1; and Fig. 3 is a side elevation looking in the direction of the arrow in Fig. 1.

The bit-holder *a* is of the usual construction, and may be made in any well-known way. It is no part of this invention, and therefore requires no further description here.

a' is the outer shell of the reversible ratchet device.

a² a³ represent two pawls fitted within a square opening adapted to receive them and allow them to move longitudinally therein.

a⁴ a⁵ represent two spiral springs, one above each pawl, their object being to push the pawls toward the ratchet-wheel *c*. The pawls are separated from each other by a partition, *c'*, and are each provided with a pin, *c² c³*, which pins project through a slot on each side of the body or shell *a'*, and they also project through angular slots *c⁴ c⁵*. Both of the slots are of the same form and are directly opposite each other in the annular ring *e*. These angular slots are arranged as shown, so that when the

ring *e* is turned around one way the pawl *a²* will engage with the ratchet-wheel, and when turned the other way the pawl *a²* will be drawn away from the ratchet-wheel and the pawl *a³* will engage with it. It will be noticed that the pawls are chamfered off in opposite directions, so that by this construction the bit or drill can be made to move in either direction by simply turning the ring *e* either one way or the other until stopped by the pins at the end of the slot. It is arranged so as to turn easily in its place, and is adapted to be operated by the fingers.

f represents a portion of an ordinary bit-brace. It will be seen from this construction that there are two pawls arranged side by side in separate apartments. Each pawl is provided with a spiral spring at its upper end for moving them endwise or longitudinally, both pawls being square, or so they cannot turn, and each pawl is beveled at the bottom, so that when in place the bevels or inclines will be in opposite directions, as shown, and so that while one pawl can turn the ratchet in one direction only the other pawl can turn it only in the opposite direction.

I claim as my invention—

1. In a ratchet-brace, a ratchet, *c*, and two longitudinally-movable pawls having their lower end faces inclined or beveled in opposite direction, as specified, and provided with pins *c² c³*, in combination with the springs, the slotted ring, the case *a'*, and a bit-holder, substantially as and for the purposes described.

2. The ring *e*, having the slots *c⁴ c⁵*, in combination with the pins *c² c³* and longitudinally-movable beveled-faced pawls *a² a³* and their operating parts, substantially as specified, for bringing either of the pawls in or out of action or moving them lengthwise to or from the ratchet-wheel, as described.

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Witnesses:

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