(No Model.)

H. C. SERGEANT.

ROTATING DEVICE FOR ROCK DRILLS.

No. 522,623. Patented July 10, 1894.

Fig. 1.

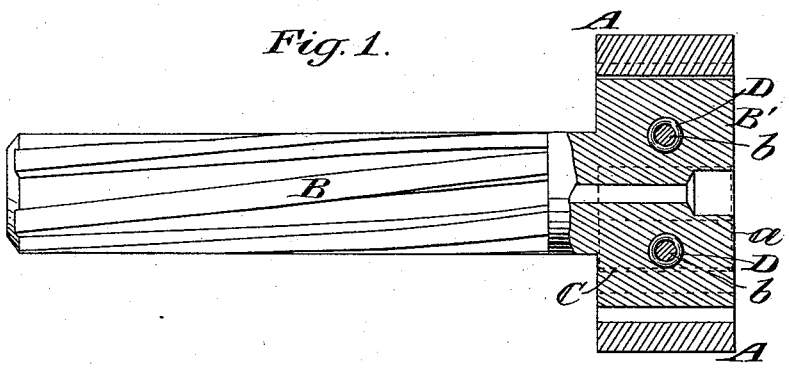


Fig. 2.

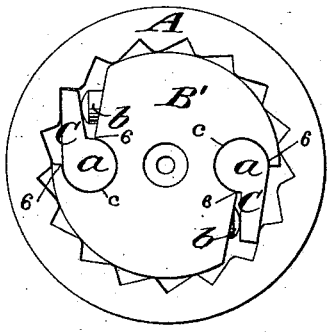
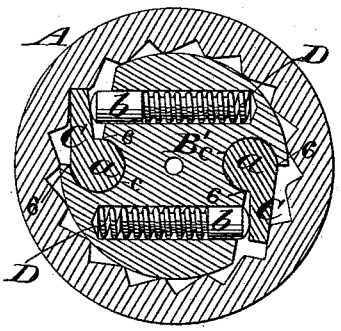


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY C. SERGEANT, OF WESTFIELD, NEW JERSEY, ASSIGNOR TO THE INGERSOLL-SERGEANT DRILL COMPANY, OF NEW YORK, N. Y.

ROTATING DEVICE FOR ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 522,623, dated July 10, 1894.

Application filed April 22, 1893. Serial No. 471,436. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SERGEANT, of Westfield, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Rotating Devices for Rock-Drills, of which the following is a specification.

This invention relates to rock drills such as are actuated by steam or compressed air and in which the rotation of the drill is produced by the combination of a ratchet ring and pawls with a spirally grooved or fluted bar known as a "rifle-bar" fitting a nut in the piston which carries the drill.

The nature of the invention will be described with reference to the accompanying drawings and its novelty set forth in the claims.

Figure 1 represents a longitudinal view of the rifle-bar with its head in section and a corresponding section of the ratchet ring. Fig. 2 is an end view of the rifle-bar and its pawls and the ratchet ring. Fig. 3 represents a section taken parallel with Fig. 2.

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

A is the ratchet ring which is represented like the ratchet ring commonly employed in rock drills and may be held within the drill cylinder in any suitable manner as by friction.

B is the rifle-bar grooved or fluted spirally to fit the nut (not shown) in the piston, and having in its head B′ the swinging pawls C C which engage with the ratchet ring when the bar is turned in one direction but run over the teeth of said ring when the bar is turned the other way.

The swinging pawls C C are each made with a cylindrical stock *a* which fits pivotally into a cylindrical seat or socket *c* formed by boring through the head B′ of the bar B parallel with the axis thereof. At the backs of the so fitted pawls are applied spiral springs D for the purpose of pressing them out toward the ratchet, the said springs acting through the heads of plunger-like pins *b* which with the said springs are inserted into sockets bored tangentially in the head B′, the heads of the said pins, which are pressed against the pawls, fitting the said tangential sockets and protecting the springs which are coiled around the smaller portions of the pins beside the said heads.

The cylindrical sockets *c* provided in the rifle bar head have lateral openings 6, 6, at the sides of the head but the said openings have, as shown in Figs. 2 and 3, a width less than the diameter of the sockets so that the sockets themselves are capable of containing more than half the circumference of the stocks and that the stocks themselves constitute their own pivots and are self-retained in proper place by the sockets themselves without the need of separate pins or other journals to form pivots.

The pawls, springs and pins constructed and applied within the rifle-bar head as herein described make a very substantial engagement between the rifle-bar and ratchet to hold the bar during the movement of the drill piston along the bar in one direction, yet provide for the free turning of the bar by the piston during the movement of the latter in the other direction.

What I claim as my invention is—

1. The combination with the ratchet ring, of the rifle-bar provided with swinging pawls located and self retained within its head, substantially as herein set forth.

2. The combination with the ratchet ring, of the rifle-bar having in its head cylindrical sockets parallel with its axis, and the swinging pawls having stocks of cylindrical form constituting pivots fitted to and retained by and within said sockets, substantially as herein set forth.

HENRY C. SERGEANT.

Witnesses:
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