H. P. BELL.

Rock-Drill.

No. 159,885. Patented Feb. 16, 1875.

Fig. 1.

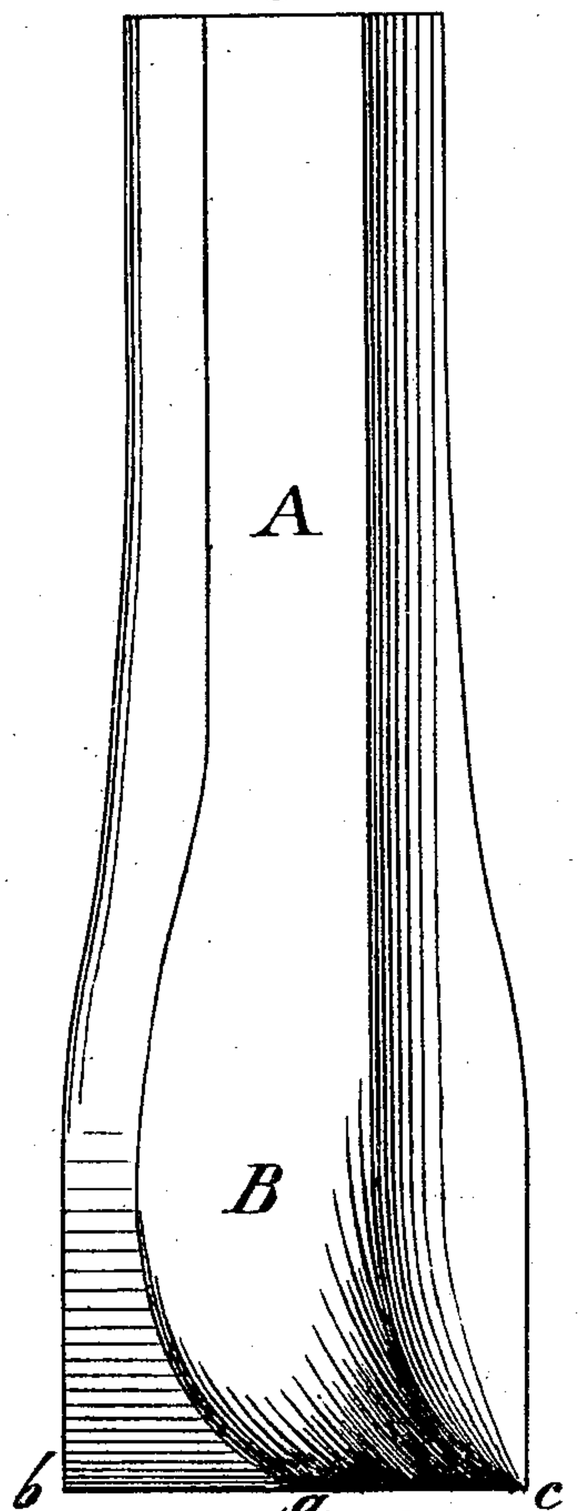


Fig. 3.

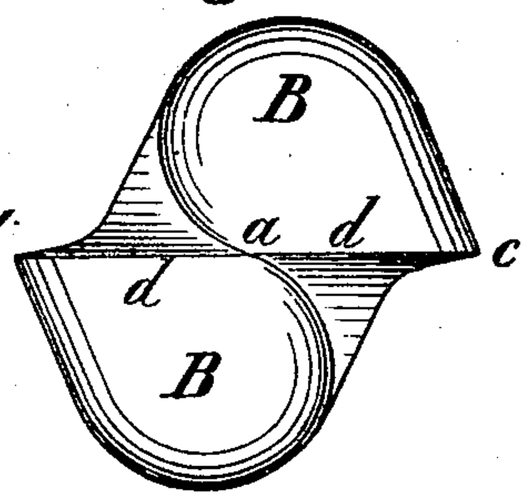


Fig. 2.

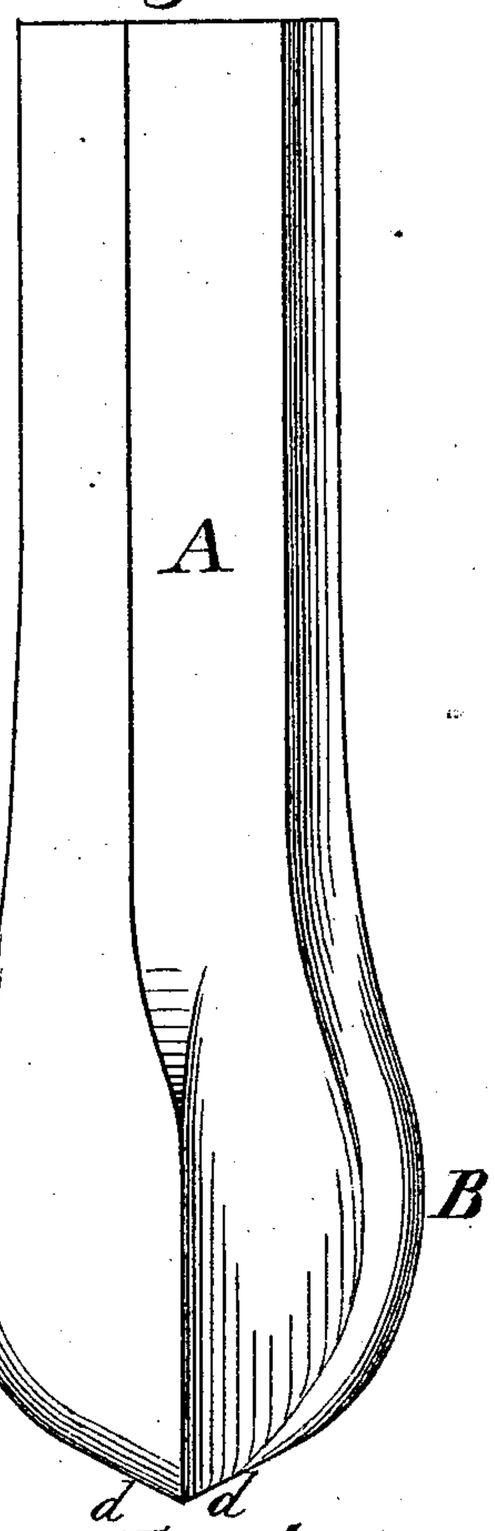
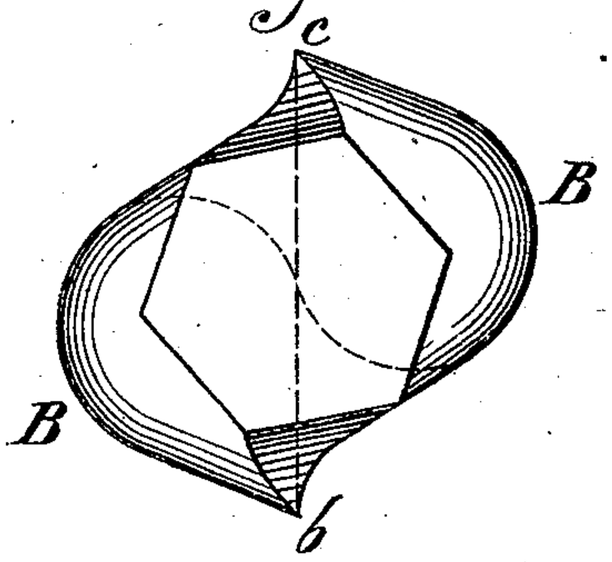


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY P. BELL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ROCK-DRILLS.

Specification forming part of Letters Patent No. **159,885**, dated February 16, 1875; application filed May 26, 1873.

To all whom it may concern:

Be it known that I, HENRY P. BELL, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Rock-Drills; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1 and 2 are side elevations of the device embodying my invention. Fig. 3 is a bottom view thereof. Fig. 4 is a top view.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a rock-drill which is constructed with straight cutting-edges and twisted cheeks, which are arranged diagonally on opposite faces, and terminate in said cutting-edges.

Referring to the drawings, A represents the stock of the drill. B represents cheeks, which, beginning at suitable points diagonally on opposite faces of the stock, extend downwardly in a twisted form toward the sides, and to the bottom edge of the drill, so that the inner surfaces of the two cheeks unite centrally at said bottom edge, as at *a*, and the bottom ends of the cheeks *a b a c* are right-lined, and the ends of the two cheeks, though on opposite sides, are continuous of each other, so as to form the cutting-edge *b a c*, which extends in a straight line in the length or width of the point of the drill, the side view of the cutting-edge presenting the angles shown at *d d*, Fig. 2, thus completing the said edge.

The diametrical distance across the two swells will be about equal to the width of the cutting-edge.

In operation, the edge *b a c d* cuts vertically downward, and the cheeks bear against the surface of the hole or bore, which, owing to the twisted form of said cheeks, causes rotary or lateral motion of the drill, and this combined motion is accomplished at each stroke, whereby the drilling operation is performed with great certainty and rapidity.

It will also be seen that the cutting-edge is backed by the two cheeks, respectively, and, consequently, correspondingly strengthened. Again, by this construction, the metal is thickest where the resistance or greatest strain occurs.

The hole or bore formed will be truly round, and subsequent reaming is not necessary.

The degree of twist of the cheeks will be proportioned with reference to the hardness and texture of the rock to be operated upon, the increase being with the hardness of the metal, and vice versa.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The rock-drill with the straight cutting-edge *b a c d* and the twisted cheeks B B, which are arranged diagonally on opposite faces, and terminate in said cutting-edge, substantially as and for the purpose set forth.

H. P. BELL.

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