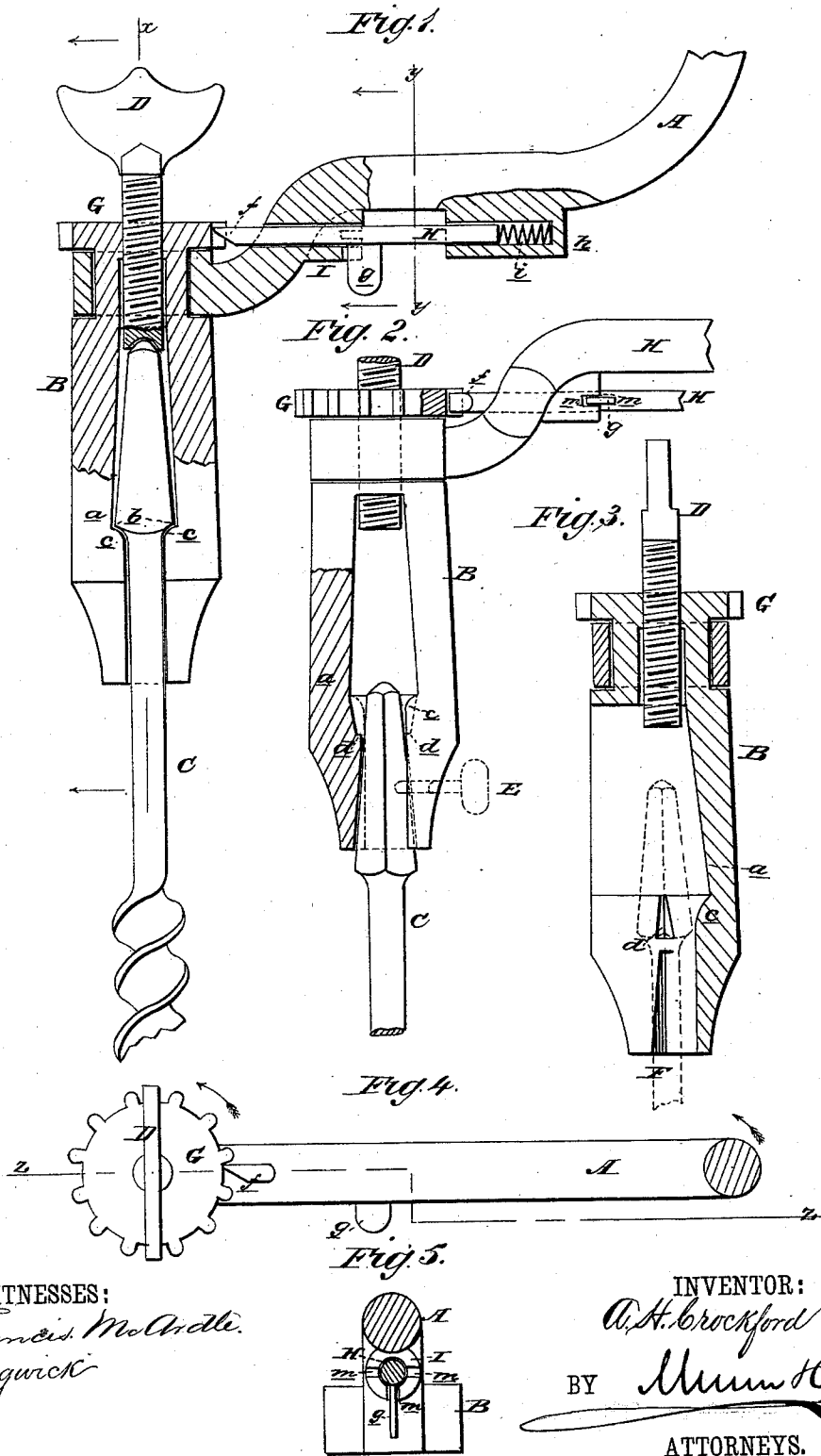


A. H. CROCKFORD.
Bit-Brace.

No. 223,484.

Patented Jan. 13, 1880.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALFRED H. CROCKFORD, OF NEWARK, NEW JERSEY.

BIT-BRACE

SPECIFICATION forming part of Letters Patent No. 223,484, dated January 13, 1880.

Application filed November 22, 1879.

To all whom it may concern:

Be it known that I, ALFRED H. CROCKFORD, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Hand-Brace, of which the following is a specification.

Figure 1 of the drawings represents an elevation, partly in section, on the line *y y* of Fig. 4. Fig. 2 is a partly-sectional side elevation of the same, showing another method for securing the bit. Fig. 3 is a partly-sectional elevation on line *x x*, Fig. 1, of a portion of the brace, showing a third method of securing the bit to the brace. Fig. 4 is a plan of the brace. Fig. 5 is a sectional elevation on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide an improved brace for bits and drills of all kinds, whereby the bits and drills may be centered and firmly secured within the brace, and whereby also they can readily be applied to work in places or positions where the brace-stock cannot have full swing.

In the drawings, A represents the brace-stock, and B the socket for receiving the heads of the bits. This socket B is open at one side, as shown at *a*, and is interiorly recessed, so as to correspond somewhat in shape and taper with the heads of the bits. In Fig. 1 a bit, C, is shown secured in place by having its head inserted through the side opening, *a*, into the recess of the socket B, and held in place by the engagement of its shoulders *b* upon the corresponding shoulders *c* of the said socket-recess, and by the pressure on its top of the thumb-screw D, that screws down vertically through the said socket B. In Fig. 2 the bit C is shown inserted in the end of the socket B, and held, as is usual, by a horizontal thumb-screw, E, and placed in this position the said bit C has a longer reach. In Fig. 3 a bit, F, is shown with a presumably smaller head than bit C, so that being entered flat face foremost into the side opening, *a*, it could not be held in that position by the shoulders *c*. Hence this bit F, after it is entered at the side opening, *a*, is turned diagonally, so that the corners or angles of two of its opposite shoulders shall

enter the short triangular grooves *d*, that are made in the shoulders *c*, and is therein firmly held by the co-operation of the screw D.

G is a ratchet formed on the top of the socket B, and H is a dog, with beveled point *f* and lug *g*, working horizontally through the brace-stock A. The rear end of this dog H is supported in a lug, *h*, that is attached to the under side of the stock A, while within the socket of this lug *h* is a spiral spring, *i*, that presses against the dog H and keeps its beveled point *f* engaged in the ratchet G. A boss or block, I, is formed on the under side of the stock A at the point where the dog H passes through the said stock, and in the face of this boss or block I are cut three slots or grooves, *m*, at right angles to each other, into which grooves *m* the lug *g* may be pressed to hold the dog H in any desired position.

When the dog H is in the position shown in Fig. 1, with the flat face of its point *f* uppermost and engaged in the ratchet G, it (the dog H) locks the brace-stock A to the socket B, so that both must move together in whichever direction the said brace A is turned, and in this case the movements of the brace, socket, and bit are like those of the usual design.

If the point *f* of the dog H be made to engage with the ratchet G, as shown in Fig. 4, an upward movement of the stock A in the direction of the arrow will cause the socket B to move in the same direction, and the bevel on the end of the dog H will permit the reverse movement of the stock A for the purpose of renewing the purchase of the said dog upon the ratchet G. By reversal of the beveled face of the dog's point *f*, the said point *f* still engaging in the ratchet G, the socket B may be turned in the opposite direction.

It often occurs that it is desirable to bore holes with a bit or drill in places or positions where a brace-stock cannot be turned entirely around. With this ratchet device it is possible, and indeed easy, to bore a hole with a brace and bit wherever the brace can have a sweep of a few inches.

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

1. The combination, with the ratchet-wheel
of socket B, of the stock A, having the hollow
lug *h*, and grooved boss I, with the spring-
dog H, having the lug *g*, as and for the pur-
5 pose described.

2. In a brace-socket having a side opening,
as herein shown and described, the shoulders

c and grooves *d* in the recess of the said
socket, substantially as and for the purpose
described.

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Witnesses:

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C. SEDGWICK.