

W. P. Dolin,
Pat. Stock.

No. 110,960.

Patented Jan. 17. 1871.

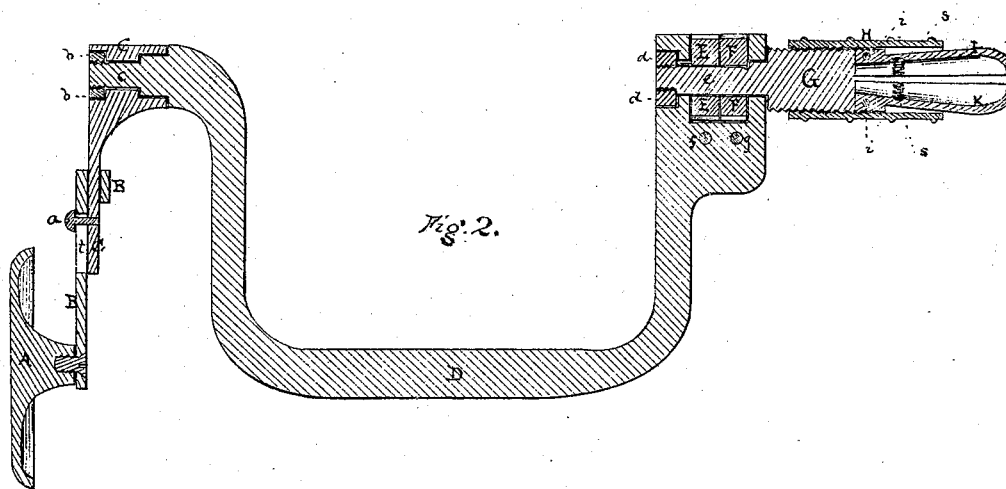
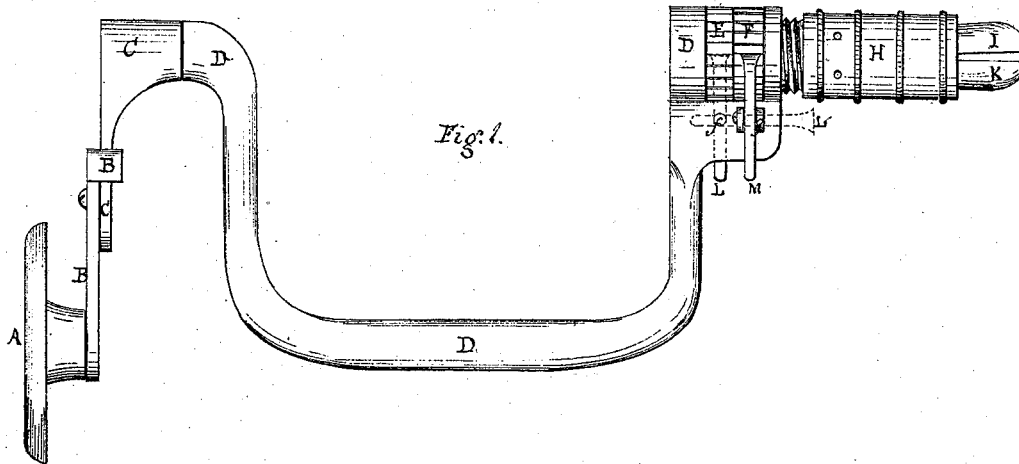
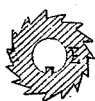


Fig. 3.



Witnesses.

F. H. Howard
E. G. Hartough

Fig. 4.



Wm. P. Dolin
By his Attorney
Chas. F. Farnsbury

United States Patent Office.

WILLIAM PENDLETON DOLIN, OF CHARLOTTESVILLE, VIRGINIA.

Letters Patent No. 110,960, dated January 17, 1871; antedated January 14, 1871.

IMPROVEMENT IN BIT-BRACES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM PENDLETON DOLIN, of Charlottesville, in the county of Albemarle and State of Virginia, have invented a new and useful improved Brace; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side view of my improved brace;

Figure 2 is a longitudinal central section of the same;

Figure 3 is a side view of one of the ratchet-wheels; and

Figure 4 an end view of the bit-holder.

The same part is marked by the same letter of reference in the several figures where it occurs.

The nature of the invention consists in giving to the brace such construction and adjustments that it will receive and hold bits of any-sized shank, and that it may be operated, either in the ordinary manner or as a ratchet-tool, for boring holes in positions inaccessible to the ordinary brace, all as hereinafter more particularly set forth.

The construction of my improved brace is clearly illustrated by the drawing, whereon A marks the head of the brace, which is pivoted to and turns on the slotted arm B. This arm has the slot *t* in it, through which the set-screw *a* passes into the arm C to fix the two arms together in the desired positions.

The position shown in figs. 1 and 2 is that which the head holds when the brace is used as a ratchet-tool; but when the brace is to be used in the ordinary manner the set-screw *a* is loosened, and the arm B is turned upon the arm C until the center of the head A coincides with the center of the spindle *c* at the upper end the crank D of the brace, (see fig. 2.)

The arm C is enlarged at one end, as shown, for the reception of the spindle *c*, which serves as the upper journal of the crank D.

The end of the spindle *c* is threaded, and receives the nut *b*, which passes into a counter-sink in the enlarged head of arm C.

The lower end of the crank D carries the device for holding and operating the bits.

Two ratchet-wheels, E F, with teeth set in opposite directions, are fixed on a spindle, *e*, by means of a feather (see fig. 3) in the bore of the wheels, entering a groove in said spindle *e*.

The upper end of spindle *e* is threaded, and receives a nut, *d*, which falls into a counter-sink in the enlarged lower end of crank D.

The ratchet-wheels are provided with spring-pawls L M, attached respectively to the swivel-pins *f g*, so that either pawl can be thrown out of gear at will.

The lower end of spindle *e* is enlarged, to form the

threaded shaft G, on which the interiorly-threaded sleeve H screws up and down.

To shaft G are pivoted, at *i i*, the jaws I K, which form the bit-holder. They are held apart by the springs *s s*, counteracted by the movements of the sleeve H, which, as it is screwed down, brings the jaws nearer together, and, as it is screwed in the opposite direction, allows the jaws to move apart in obedience to the springs *s s*.

Each jaw has a rectangular notch in it, and when the jaws are in contact these notches form a square hole, as shown in fig. 4.

It is obvious that the jaws, thus constructed, can be made to receive and hold a bit with a shank of any size within the limits of their movements.

The operation is as follows:

The bit to be used is inserted between the jaws I K, and the sleeve H screwed down till the bit is held firmly in place.

If the brace is to be used in the manner of an ordinary brace, both pawls are thrown into gear, and the center of the head A is placed over the upper end of spindle *c* and there fixed by the set-screw *a*.

If the brace is to be used for boring a hole in the corner of a room or against a wall, or in other position inaccessible to the common brace, the head A is turned around to the position shown in figs. 1 and 2, and fixed in that position by the set-screw *a*. The proper pawl to impart the boring motion to the bit is then thrown into gear, the other one being disengaged. The operator, now pressing upon the head A, works the crank D back and forth, and the boring is effected by the operation of the pawl upon the ratchet-wheel attached to the spindle of the tool-holder. To retract the bit, throw out the boring-pawl and engage the other one, when the same motion of the crank withdraws the bit from the hole it has bored.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the crank of a brace, of the head A and arms B and C, constructed and operating as specified.

2. The combination, with the crank of a brace, of the jaws I K, sleeve H, shaft G, spindle *e*, ratchet-wheels E F, and pawls *f g*, in the manner and for the purpose described.

The above specification of my said invention signed and witnessed at Washington this 21st day of June, A. D. 1870.

WILLIAM P. DOLIN.

Witnesses:

E. G. HARBAUGH,
CHAS. F. STANSBURY.