(No Model.)

C. E. BILLINGS.

RATCHET DRILL.

No. 260,359. Patented July 4, 1882.

Fig. 1.

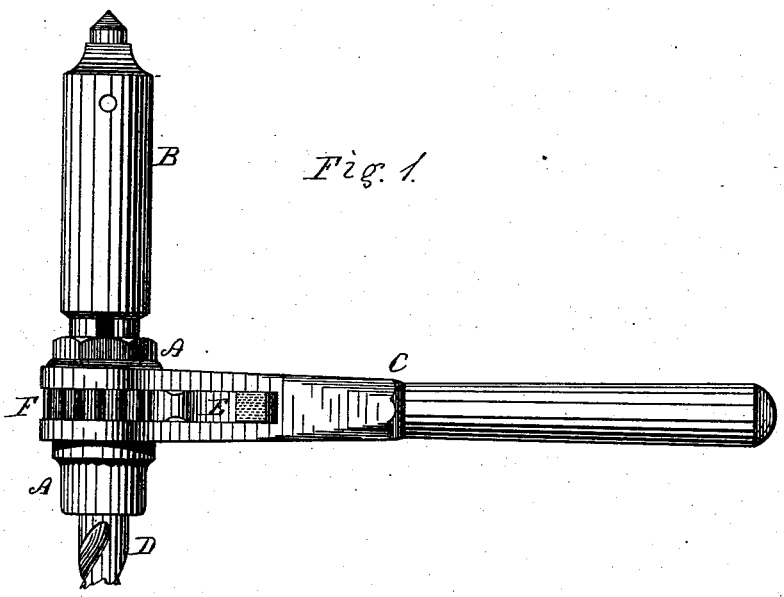
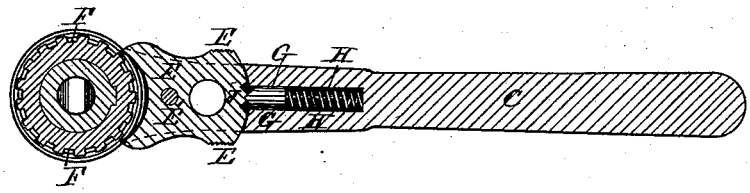


Fig. 2.



Witnesses.

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CHARLES E. BILLINGS, OF HARTFORD, CONNECTICUT.

RATCHET-DRILL.

SPECIFICATION forming part of Letters Patent No. 260,359, dated July 4, 1882.

Application filed March 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BILLINGS, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Ratchet-Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to hand-drills in which the drill is operated by means of an oscillating handle connected with the drill-stock by a pawl acting upon a ratchet so as to turn the drill intermittingly as the handle is moved back and forth.

The object of my invention is to provide a simple and efficient mechanism by means of which a double pawl may be readily and easily interlocked with the ratchet-wheel, so as to turn the drill in either direction, or be disengaged, so that the drill-stock can be turned freely in either direction.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of my improved drill. Fig. 2 is a section through the drill-stock and handle to show the interior construction.

A is the drill-stock.

B is a hollow sleeve fitting with a screw upon the drill-stock for the purpose of feeding the drill downward as it cuts. This is of the ordinary construction and is commonly turned by hand.

C is the handle, which is moved back and forth, so as to swing around the drill-stock.

D is a portion of a drill inserted into the stock A.

E is a swinging pawl, pivoted at E′ in the handle C.

F is a ratchet-wheel, into which the double pawl E enters according as one side or the other of the pawl is turned against it.

G is a plunger fitting into a socket in the handle C and operating against the pawl E.

H is a spring, which presses the plunger G into either one of the notches J in the pawl E. These notches are made with their sides at an angle, and the plunger G is tapered at its end, so that the pawl can be pressed to one side, and thereby force the plunger out of the notch in which it may be resting. There are three notches at J. The middle one is intended to be smaller than the other two, and is for the purpose of holding the pawl in the middle between the two deeper side notches, so that in this position the pawl shall not be engaged with the wheel F, and the drill can be freely turned. When the pawl is turned to one side by hand the plunger slips out from the notch in which it is engaged and enters the side notch. In this position the pawl is engaged, so that the drill-stock will be turned intermittingly one way or the other as the handle is swung back and forth. To reverse the rotation of the drill the pawl is turned to the opposite side, so as to cause the other projection to engage the wheel F. The same movement of the handle then causes the drill to rotate in the opposite direction.

My improved ratchet-drill is used in the customary manner with such tools, and it has the advantage of being readily and easily changed and adapted to either a right or left hand drill, or to have the pawl placed so as not to engage with the ratchet-wheel at all.

What I claim as my invention is—

The combination of the double-acting pawl E, provided with the notches J, the plunger G, and spring H, with the handle C, said plunger and spring being fitted into a socket in the oscillating handle and the ratchet-wheel F upon the drill-stock A, substantially as described.

CHARLES E. BILLINGS.

Witnesses:

THEO. G. ELLIS,

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