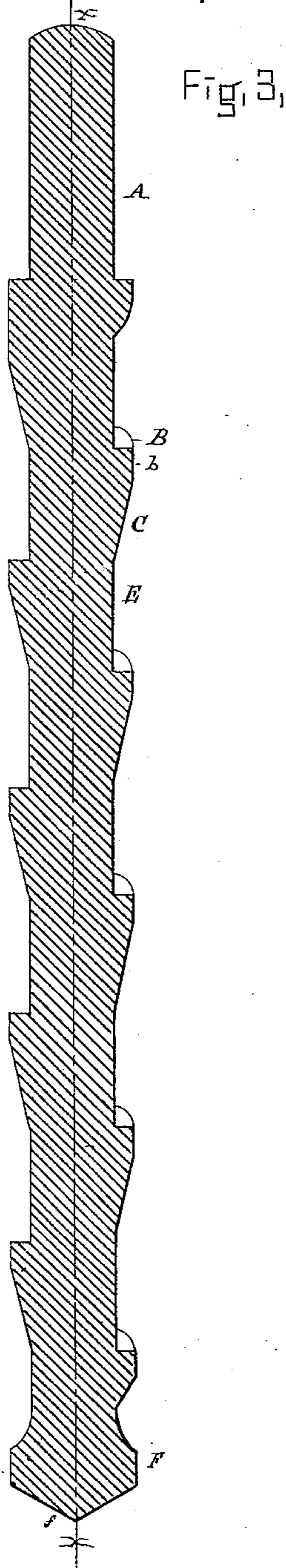
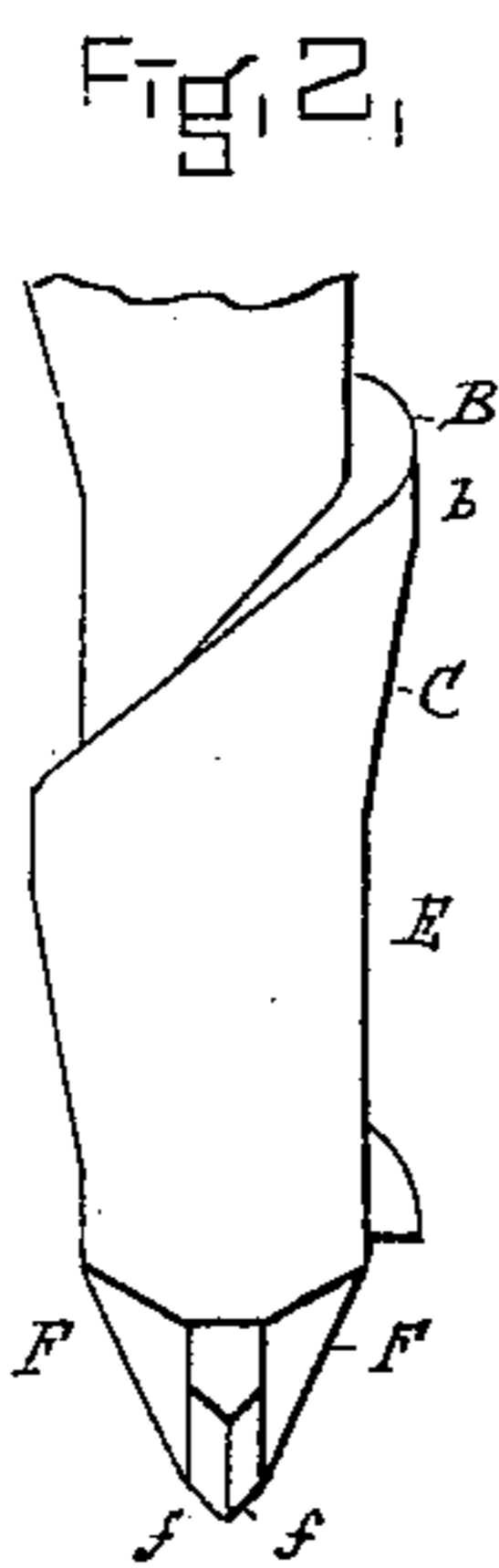
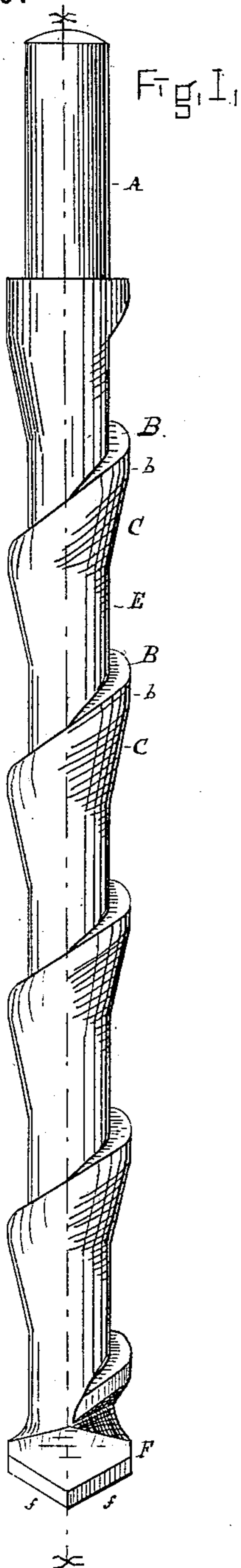


(No Model.)

E. MOREAU.
ROCK DRILL.

No. 335,470.

Patented Feb. 2, 1886.



WITNESSES

O. B. Morris
G. H. Abbey.

INVENTOR

Eugène Moreau
By his Attorney
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UNITED STATES PATENT OFFICE.

EUGÈNE MOREAU, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO
THEODORE W. STERLING, OF NEW YORK, N. Y.

ROCK-DRILL.

SPECIFICATION forming part of Letters Patent No. 335,470, dated February 2, 1886.

Application filed August 5, 1885. Serial No. 173,662. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE MOREAU, a citizen of the Republic of France, residing at San Francisco, California, have invented a new and useful Improvement in Rock-Drills, of which the following is a full and complete specification, reference being had to the accompanying drawings.

The object of my invention is to provide a drill that will be adapted to percussive work and cut a hole rapidly, keeping itself in the meanwhile clear of the débris produced by the work, and thus avoiding one of the most serious objections to ordinary rock-drills—namely, packing—drills often becoming so firmly wedged in the holes that it is impossible to remove them. To avoid this the drill must be removed very often from the holes. Its replacement in perfect alignment, when operated by a machine, is a matter of considerable difficulty. I avoid these inconveniences by constructing my drill-tool of such a form that it will clear itself without being removed from the hole.

To this end my drill-tool consists of a cylindrical body with a square or cylindrical tang for insertion in the socket of the drill-operating machine, a chisel-point which may have a straight or pointed edge, and a single spiral thread winding around the cylindrical body. This thread is of a peculiar form, especially adapted to perform its duty of raising and throwing out the dust produced by the work by the action of the hammers, which play upon the head of the drill, and the rotation of the drill between the blows. The upper surface of the thread is at right angles to the axial line of the drill, and the under surface slopes gradually to the cylindrical shank or body of the drill, forming a strong supporting-shoulder. To avoid a sharp edge to the thread a small portion of the thread is parallel to the axis of the drill.

In the drawings, Figure 1 is a vertical view of the rock-drill, showing flat side of point. Fig. 2 is a vertical view of a portion of the drill, showing the edge of the point. Fig. 3 is a vertical axial section of the drill on a plane passing through the edge of the chisel-point.

A is the tang of the drill; B, the flat or up-

per surface of thread; *b*, cylindrical portion of thread; C, sloping under part or shoulder of the thread; E, cylindrical body of drill; F, chisel-point of drill; *f f*, bevel-edges of point. *x x* indicate axial line, (shown dotted.)

The operation of this tool is as follows: It is inserted by its tang in the socket of a drill-machine operating by hammers, which strike against the head of the drill, and the hammers are set at work. The drill is driven against and into the rock at each blow. Between the blows it receives a portion of a turn upon its own axis, and thus disintegrates the rock. As the dust accumulates, it is raised upon the flat upper surface of the thread to the top of the hole and thrown out by the rebound of the tool under the repeated blows of the hammers. The peculiar shape of the thread prevents the dust easily slipping back or packing under the threads, and the thread is so formed as to have a very strong shank or body to the drill, which is very essential in a drill which must withstand the repeated blows of heavy hammers for a long period.

I am aware that a rock-drill somewhat resembling my invention in form has been patented to D. W. Siprell, No. 232,767, September 28, 1880; but the drill there shown has a removable point, which would render it useless as a percussive tool, and its unsymmetrical body would also weaken it when used to receive blows axially.

I am also aware that a spiral well borer and reamer has been patented to S. H. Whittlesey, No. 52,632, February 13, 1866; but the tool shown and described is hollow and has a triple point entirely unadapted to withstand blows.

The essential points of a percussive drill are that the cutting point or edge shall be in a plane passing through the axis of the tool, that the tool shall be symmetrical, and that the shank shall be left as strong as possible. The thread, point, shank, and tang are all one solid piece of metal. The lower surface of the thread may be curved approximately to the angular shape shown.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

A rock-drill constructed of one solid piece

of metal with a point having its cutting-edge
in a plane passing through the axial line of
the tool, and the shank or body of the drill
surrounded by a single spiral thread, its up-
5 per surface at right angles to the axial line of
the drill, and uniting itself to the body of the
drill by a sloping under surface, all substan-
tially as described, and for the purpose set
forth.

In witness whereof I have hereunto set my io
hand this 25th day of July, 1885.

EUGÈNE MOREAU.

Witnesses:

R. T. DUNLOP,
SETH H. FENN.