

No. 693,117.

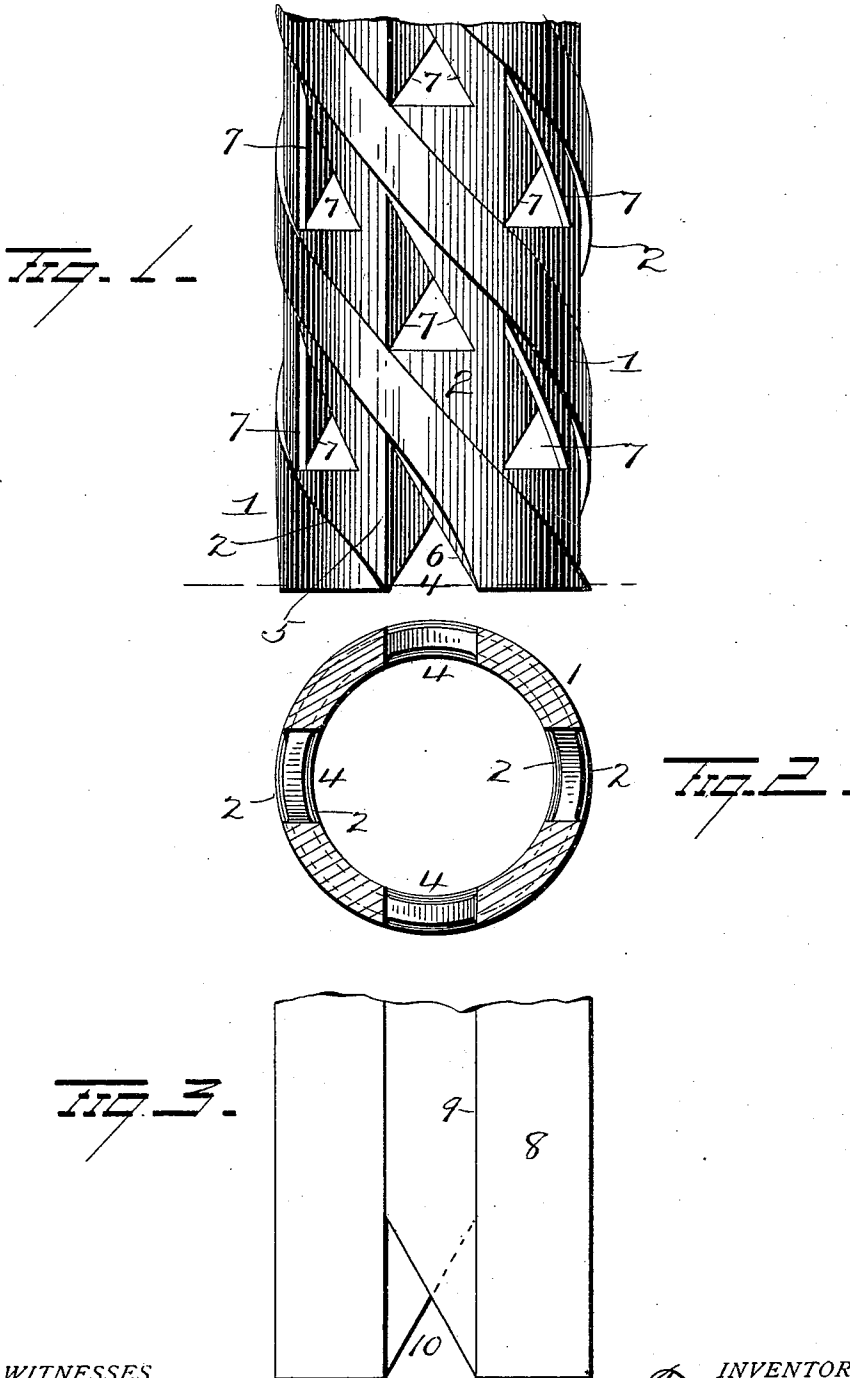
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F. H. DAVIS & C. A. TERRY.

BIT.

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(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANCIS HARLEY DAVIS, OF NEWBURGH, AND COLEMAN A. TERRY, OF
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BIT.

SPECIFICATION forming part of Letters Patent No. 693,117, dated February 11, 1902.

Application filed September 22, 1900. Serial No. 30,814. (No model.)

To all whom it may concern:

Be it known that we, FRANCIS HARLEY DAVIS, of Newburgh, in the county of Orange, and COLEMAN A. TERRY, of New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Mills or Bits; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in bits for core-boring apparatus, and more particularly to one in which shot is employed for cutting out the core, the object of the invention being to provide an improved mill or bit of this character to which the shot can be readily fed and which will accommodate itself to the wear, so that although it may become shorter it will still have practically the same application on the shot to be conveyed with a rolling pulverizing motion underneath its surface; and a further object is to provide a core-boring apparatus with notches to guide the shot beneath the same and with a series of auxiliary notches or holes which will be automatically brought into operation as others wear.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating our improvements. Fig. 2 is a view in section, and Fig. 3 is a view of a modified form of our invention.

1 represents our improved mill, which is provided on its inner and outer faces with parallel spiral grooves 2 and made at the lower ends of said parallel grooved portions with notches 4. These notches 4 are preferably made with a vertical wall 5 and an inclined wall 6, the vertical wall being in front of the inclined wall as the mill rotates, the inclined wall at the rear serving to direct the hardened metal shot under the lower edge thereof. These hardened shot or grains of metal are caused to roll or be drawn along beneath the mill under pressure of the drill and crumble or pulverize the stone, and the pul-

verized stone is then carried up by the stream of water or compressed air induced from the top through the drill-rod.

A series of triangular notches or holes 7, similar in shape to notches 4, are arranged in the spirally-grooved portions of the mill or bit 1 and in different planes, so that when one notch is worn out, or nearly so, another will be brought into operation, thus dispensing with the necessity of withdrawing the mill or bit to deepen the notch or make new ones, as is the case with all devices of similar character heretofore known.

In operation the shot will follow the grooves 2 in the inner face of the mill or bit, between the same and core being bored, to the lower end of mill or bit, and will also follow in the grooves 2 in the outer face of mill or bit to the bottom thereof and be fed beneath the same by the notches 4, as heretofore explained.

Instead of constructing our improvements as above described we might make them as shown in Fig. 3. In this form of our invention mill or bit 8 is made on its inner and outer faces with parallel vertical grooves 9 for the passage of the shot and with triangular notches 10 in the lower ends of said grooved portions to guide the shot beneath the bit or mill.

Various other slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of our invention, and hence we do not wish to be limited to the precise details set forth, but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A bit comprising a tubular body portion having an elongated groove in its wall and having holes in the grooved portions, each hole being in shape, a right-angle triangle having the base disposed horizontally and its side disposed vertically.

2. A bit, comprising a tubular body having a spiral groove in its wall, and having a series of triangular holes in the grooved portion, the sides of all the triangles disposed in

planes parallel with the axis of the bit and the bases of said triangles disposed horizontally.

3. A bit comprising a tubular body having external elongated grooves and also having
5 internal elongated grooves coincident with and corresponding in dimensions to the external grooves and holes in said grooved portion.

4. A bit comprising a tubular body having external and coincident internal spiral
10 grooves, and having triangular holes in the grooved portions, the bases of the triangular holes being at right angles to the axis of the

bit, substantially as and for the purpose set forth.

In testimony whereof we have signed this 15 specification in the presence of the subscribing witnesses.

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Witnesses:

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