No. 635,415. Patented Oct. 24, 1899.

H. AYLMER.

DRILL.

(Application filed Jan. 26, 1899.)

(No Model.)

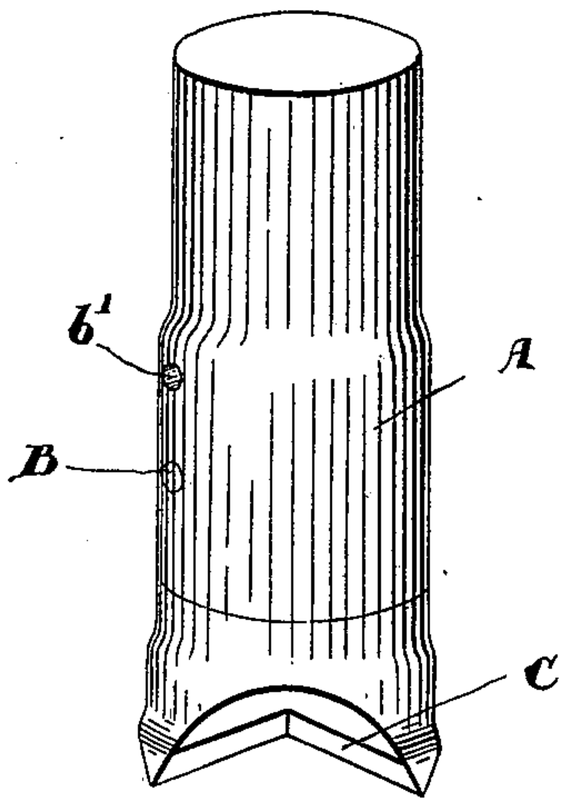

Fig. 1.

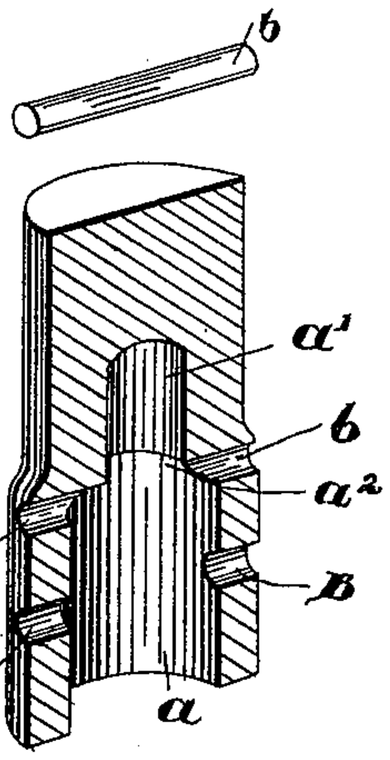

Fig. 2.

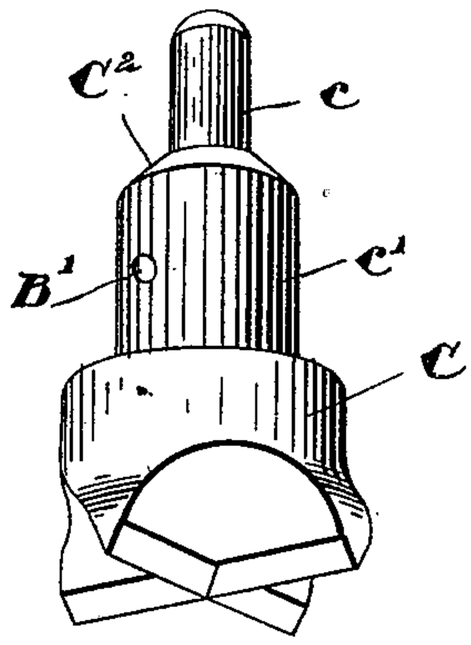

Fig. 3.

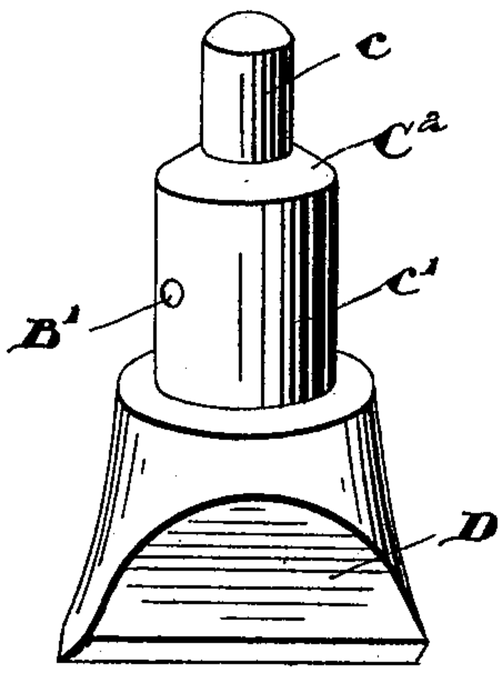

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

HENRY AYLMER, OF RICHMOND, CANADA, ASSIGNOR OF ONE-HALF TO JAMES HENRY PLUMMER, OF TORONTO, CANADA.

DRILL.

SPECIFICATION forming part of Letters Patent No. 635,415, dated October 24, 1899.

Application filed January 26, 1899. Serial No. 703,439. (No model.)

To all whom it may concern:

Be it known that I, HENRY AYLMER, a subject of the Queen of Great Britain, residing at Richmond, in the county of Richmond, in the Province of Quebec, Canada, have invented new and useful Improvements in Drills, of which the following is a specification.

My invention relates to improvements in drills; and the object of the invention is to design a convenient form of drill in which the sharpened point may be readily changed when it becomes dull and a new sharpened point be substituted, thereby furnishing miners and others with drill-points of a first-class quality and temper to be used especially with steam-drills, and also being very useful for miners and others in handwork, the point of the bit of course being fashioned to suit the particular work in which it may be employed; and it consists, essentially, of a circular hole made in the center of the drill-stock and having a reduced inner end, the bit being made with a corresponding stem to fit into the orifice in the drill-stock and fastened by a pin which extends through the stock and bit, thereby retaining the bit securely in the stock, as hereinafter more particularly explained.

Figure 1 is a perspective view of a portion of the drill, showing my improved bit. Fig. 2 is a sectional perspective view of a portion of the drill-stock and the pin. Fig. 3 is a perspective view of a bit for a steam-drill. Fig. 4 is a perspective view of a hand-drill bit to fit into the same stock.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the stock of the drill, which is provided at the outer end with a center circular orifice a. This orifice has a reduced inner end a', leaving an inclined shoulder at a^2. Holes B B are bored through the walls of the orifice in the stock directly opposite each other and also a hole B′ in the bit C for the insertion of the pin b. The bit C is shaped so that the upper portions of it, c and c', fit closely and securely into the orifice a' and a, respectively, and firmly against the inclined shoulder a^2, where the stock A has another hole b' made in the wall of the orifice at the shoulder a^2, whereby if the bit becomes jammed an instrument may be inserted to loosen the bit, which has a tapered shoulder c^2 formed as shown. The bit C shown is the regular cross-bit as applied to steam-drills.

D is a bit which is made with a single point for handwork. (See Fig. 4.)

In order to understand the advantage of my device, it must be remembered that instead of sharpening and tempering the drill-stock down to a point all that is necessary is to knock out the pin b, and if the bit is in any way jammed any instrument inserted in the hole b' will ascend the tapered portion c^2 and will immediately loosen the bit from the stock and leave the orifice ready for the insertion of a fresh bit. A number of bits may be manufactured of a superior quality of steel to the ordinary stock and tempered to a greater nicety.

Although I show the reduced inner end a' of the orifice a as bored perfectly smooth, it will be understood that I may have this threaded so as to receive the upper end c of bit C correspondingly threaded; but this is not essential to the successful working of the drill, as the reduced inner end of the orifice a even when bored smooth tends greatly to steady the drill when in motion.

What I claim as my invention is—

In a drill the combination with the stock having the receiving-socket therein, of a bit having a shank with an inwardly tapering or inclined portion, said stock having an opening leading therethrough to the inclined portion of the shank whereby an instrument can be inserted in said opening and brought to bear on said incline portion to dislodge the bit, substantially as described.

Signed at Richmond, Quebec, Canada, this 20th day of January, 1899.

HENRY AYLMER.

Witnesses:

JNO. EWING, Jr.,

W. J. EWING.