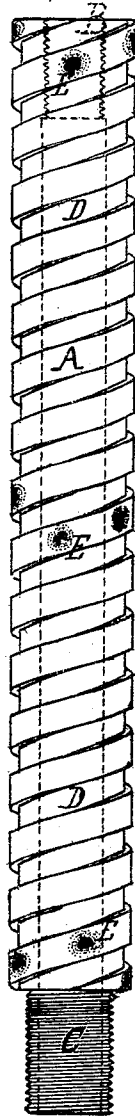


G. FRISBEE.

Guides and Core-Barrels for Revolving Rock-Drills.

No. 140,357.

Patented July 1, 1873.



Witnesses:

Wm. R. Wright.
J. Bonnell Taylor.

Inventor.

Gideon Frisbee,
by his Atty,
Horace Binney, Jr.

UNITED STATES PATENT OFFICE.

GIDEON FRISBEE, OF POTTSVILLE, PENNSYLVANIA.

IMPROVEMENT IN GUIDES AND CORE-BARRELS FOR REVOLVING ROCK-DRILLS.

Specification forming part of Letters Patent No. **140,357**, dated July 1, 1873; application filed May 26, 1873.

To all whom it may concern:

Be it known that I, GIDEON FRISBEE, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improved Guide and Core-Barrel for Revolving Rock-Drills; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing which forms a part of this specification, and represents my invention in perspective.

This invention consists in a tubular guide and core-barrel for a revolving rock-drill, the outer surface of which guide is grooved and armed with diamonds or other hard substances, as hereinafter explained.

A in the drawing represents the tubular guide and core-barrel, in whose upper end is a female screw, shown in dotted lines at B, by which it is attached to the drill-rod or pipe. On its lower end is a male screw, C, to which is screwed the boring-tool, preferable the Les-chot diamond-bit. The outer diameter of the guide A is greater than that of the bit, the difference being the distance which the clearance-diamonds project from the bit. The guide will therefore fit closely the hole made by the boring-tool. D D are grooves on the outer surface of A. They may be spiral, as shown, or straight, or of any form which will permit the upward passage of water and borings from the rock. E E are diamonds set in the outer surface of A to protect the same from wear. Some of them are arranged at the lower end of A, and others at various

points along its surface. I prefer to set them even with the said surface, and not projecting therefrom. Instead of diamonds, other hard substances may be used, such as corundum, sapphire, or pieces of hardened steel; but I consider diamonds preferable.

The operation of this device is as follows: The guide, fitting closely in the hole bored by the bit, prevents deflection of the bit, and keeps it in the true direction as it advances through the rock. The tubular form of the guide permits the passage of water through it to lubricate the bit, and, when an annular bit is employed, receives the cylindrical core. The water, cuttings, sediment, &c., pass upward through the grooves D to the mouth of the hole. The diamonds E protect the surface of the guide from wear, and those which are set at the lower end thereof enable the guide to act as a reamer, and keep the hole to its full size in case the bit should wear.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The above-described revolving rock-drill guide and core-barrel, forming a part of the drill-rod, and constructed with external grooves, substantially as and for the purpose set forth.

2. The above-described revolving rock-drill guide and core-barrel, whose outer surface is armed with diamonds, substantially as and for the purpose set forth.

GIDEON FRISBEE.

Witnesses:

LESLIE GRISCOM,
LEWIS GRISCOM.