

G. FRISBEE.

Improvement in Rock-Drilling-Machines.

No. 115,187.

Patented May 23, 1871.

Fig. 1.

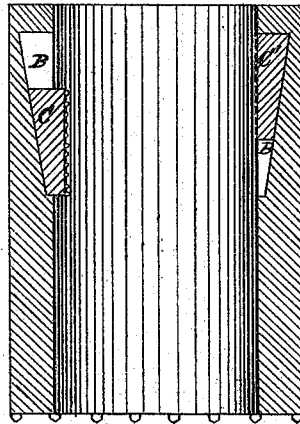
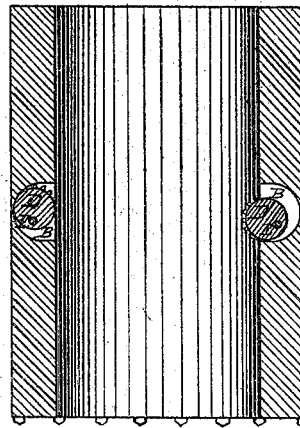


Fig. 2.



Witnesses. { *Wm. Wright*
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UNITED STATES PATENT OFFICE.

GIDEON FRISBEE, OF TITUSVILLE, ASSIGNOR TO HIMSELF AND SAMUEL E. GRISCOM, OF SHENANDOAH, PENNSYLVANIA.

IMPROVEMENT IN ROCK-DRILLING MACHINES.

Specification forming part of Letters Patent No. 115,187, dated May 23, 1871.

To all whom it may concern:

Be it known that I, GIDEON FRISBEE, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Drilling and Boring Machines; 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 my invention, reference being had to the accompanying drawing which forms a part of this specification, and in which—

Figure 1 is an axial vertical section of a tubular boring-head, showing one part of my improvement; and Fig. 2, a similar section, showing another part thereof.

A in the drawing represents a tubular or annular boring-head, armed with diamonds in the usual manner. The interior of the boring-head is constructed with grooves or recesses B B, within which are sliding wedges C C', whose faces are armed with diamonds, as shown in Fig. 1.

In the operation of these devices the boring-head is revolved and advanced in the usual manner, and thereby produces an annular excavation surrounding a solid cylindrical core of rock, the friction of whose surface against the faces of the wedges slides them into the position C'. When, however, the boring-head A is withdrawn, the same friction slides the wedges toward the position C, thereby clamping them firmly against the core; and as the withdrawal of the boring-head continues the core is detached from the solid rock and extracted.

This operation is well known, and constitutes no part of my invention. By facing the wedges with diamonds, however, as previously described, or with other hard substances, so that the core is clamped by the hard points, I not only increase the efficiency of the wedges, but also protect them from wear.

Another feature of my invention consists in substituting for the wedges, or employing in combination therewith, the eccentrics or cams D D', shown in Fig. 2. These cams are pivoted, as at E, to the walls of the recesses B. Their operation is somewhat similar to that of the wedges, as they yield to the pressure of the core while the boring-head is advancing, as at D, but clamp it firmly while the head recedes, tending toward the position shown at D'. The cams, however, clamp more powerfully than the wedges, and, being pivoted, are less liable to displacement, and are not liable, as the wedges are, to wear the recesses down, and thereby become inoperative.

I prefer to face the cams with diamonds or with other hard substances, in the same manner as the wedges C C' are faced.

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

1. The cams or eccentrics E, operating as described.
2. Facing the cams or wedges with diamonds or other hard substances, as and for the purpose described.

GIDEON FRISBEE.

Witnesses:

WM. R. WRIGHT,
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