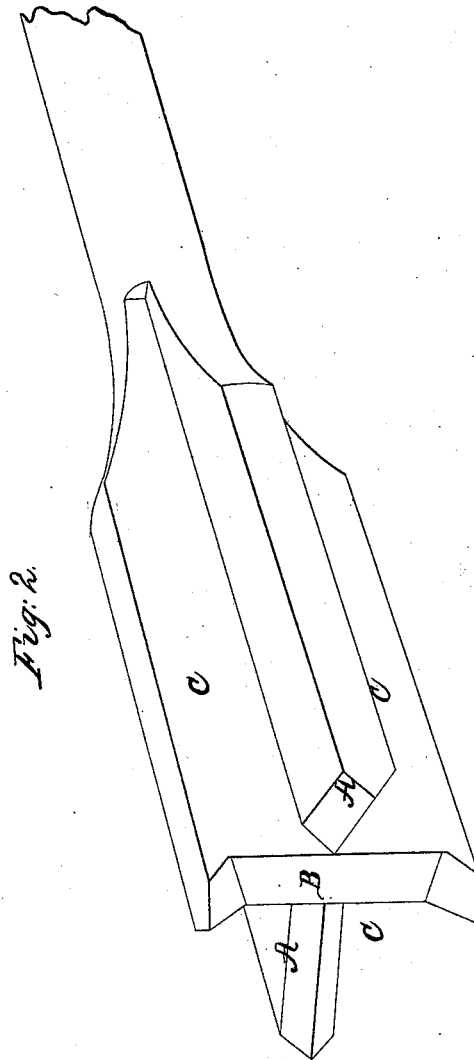
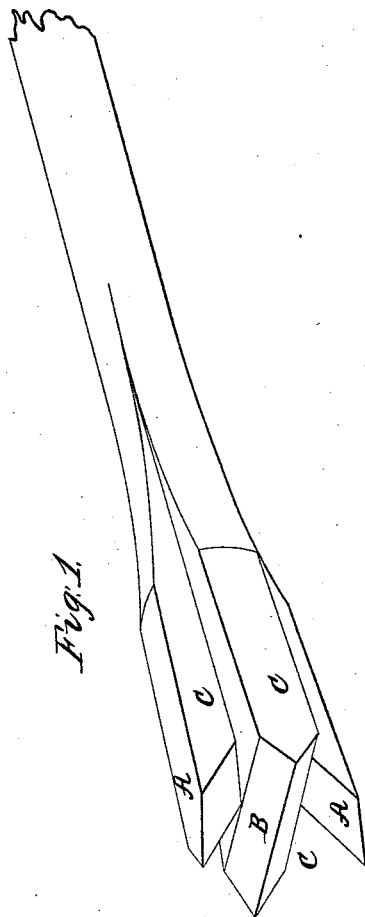


W. Bickel.
Rock Drill.

N^o 48,785.

Patented July 18, 1865.



Witnesses.

C. D. Smith
John A. Bickel

Inventor.
Wm. Bickel
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UNITED STATES PATENT OFFICE.

WM. BICKEL, OF POTTSVILLE, PENNSYLVANIA.

IMPROVED DRILL FOR BORING ROCKS, &c.

Specification forming part of Letters Patent No. 48,785, dated July 18, 1865.

To all whom it may concern:

Be it known that I, WILLIAM BICKEL, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful improvement in drills for the drilling and boring of rocks, coal, or other substances and for the sinking of Artesian, oil, or other wells; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Similar letters refer to like parts in the different figures.

Figures 1 and 2 are perspective views.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

B represents a bit or chisel.

A and A represent bits or picks, which are attached in Fig. 1 at right angles to and upon opposite sides of the bit or chisel B, these bits or picks A and A extending in length and projecting over the bit B.

In Fig. 2 a pick is represented at each end of the chisel.

C represents the grooves or openings through which water and excavated material may escape.

The object is to combine the action of the pick and the chisel or drill. These picks may

vary in number, shape, and position and be adapted to rocks of different hardness. The points of the picks extend in length beyond the end of the bitted portion.

It will be seen that the small bits or picks A and A will cut so as to leave a core in the center of the hole, which core will be reduced by the large bit or chisel B, thus rapidly penetrating the substance bored.

This improvement may be constructed in one solid mass or piece of iron or steel, or the several bits A A and B may be separately constructed and afterward united. The latter plan will facilitate the operation of sharpening or repairing.

The action of the drill as a whole may be compared to that of mortising lumber, keeping the margin of the hole lowest, cutting round the outside first and then reducing the core left.

Having described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination of pick and chisel described, the points constituting the former extending longitudinally beyond the latter, for the purpose set forth.

WM. BICKEL.

Witnesses:

CHAS. D. HIPPLE,
E. A. DOBBINS.