

D. SHOEMAKER.
Bits for Boring Minerals.

No. 142,949.

Patented September 16, 1873.

Fig. 1.

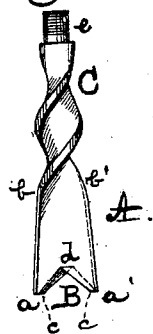


Fig. 2.



Witnesses:

C. P. Piersol.

Moillard F. Walters,

Inventor:

David Shoemaker.

by John A. Diederichsen & Co.
attys.

UNITED STATES PATENT OFFICE.

DAVID SHOEMAKER, OF KITTANNING TOWNSHIP, ARMSTRONG COUNTY,
ASSIGNOR OF ONE-HALF HIS RIGHT TO G. A. REICHERT, JR., OF MANOR-
VILLE, AND JOHN H. REICHERT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BITS FOR BORING MINERALS.

Specification forming part of Letters Patent No. **142,949**, dated September 16, 1873; application filed
July 18, 1873.

To all whom it may concern :

Be it known that I, DAVID SHOEMAKER, of Kittanning township, county of Armstrong, State of Pennsylvania, have invented a new and useful Improvement in Bits for Boring Minerals; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation of the device embodying my invention. Fig. 2 is a face view of the point thereof.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a bit for boring coal and other minerals; and consists in a flat plate formed with cutting-edges, a triangular cutting recess and tapering sides, and with a spiral and twisted portion, as hereinafter set forth.

Referring to the drawings, A represents a flat steel plate, whose sides begin at the cutting points or edges *a a'* and taper from said points to the points *b b'*, so that, owing to the tapering or conical shape of said sides, there is prevented all binding against the periphery of the hole or opening which is bored by the points *a a'*. A triangular recess, B, is formed in the forward portion of plate A, and the edges *c d* of said recess are chamfered so as to form, with the cutting-edges *a a'*, the cutter *a c d c a'*. The bit is continued from the plate A by a twist or spiral, C, which de-

creases in diameter as it extends from the plate, and at its termination or back carries a screw-collar, *e*, for attachment to the socket or outer end of the shaft or screw, which carries and operates said bit. As the bit is advanced the points *a c a' c* are pressed against the coal, and owing to the triangular recess B the mineral is cut in such a manner as to leave a conical-shaped core, which is broken off or away by the chamfered edges of the triangular recess in plate A. In some cases the coal which forms a partition between the bores is broken off, and the borings with the broken coal thrown into the hole previously cut. If the partition is not broken down the spiral portion of the bit forces or conveys the borings outwardly or to the rear, in which case the partitions are broken away by a proper tool. After the coal has been bored in, it is necessary that the whole mass be thrown down. To this end I bore a hole in a proper portion of the bed of the coal and apply a proper tool or blasting apparatus.

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

The plate A, tapering on its sides, as at *a b a' b'*, and formed with the cutting-edges *a a'* and triangular recess B, and with the spiral or twisted part C, substantially as and for the purpose set forth.

DAVID SHOEMAKER.

Witnesses:

W. J. WRIGHT,
G. W. COOK.