S. T. SKEEN.

DRILL.

APPLICATION FILED FEB. 24, 1915.

1,166,943. Patented Jan. 4, 1916.

Fig. I.

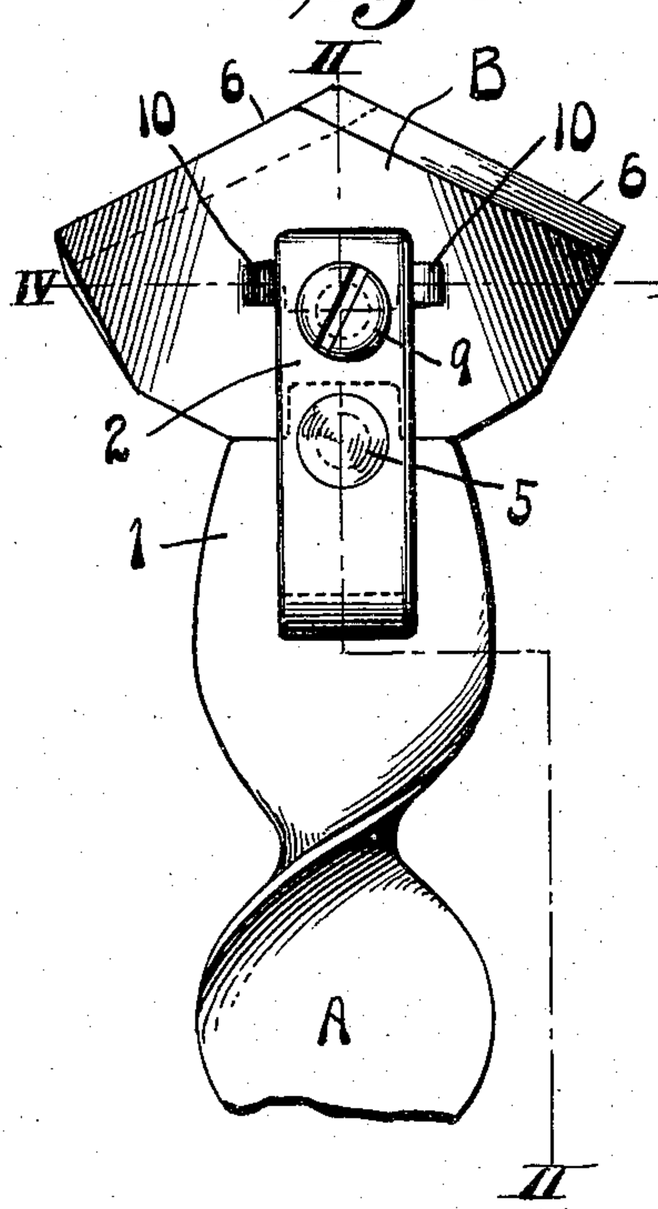


Fig. II.

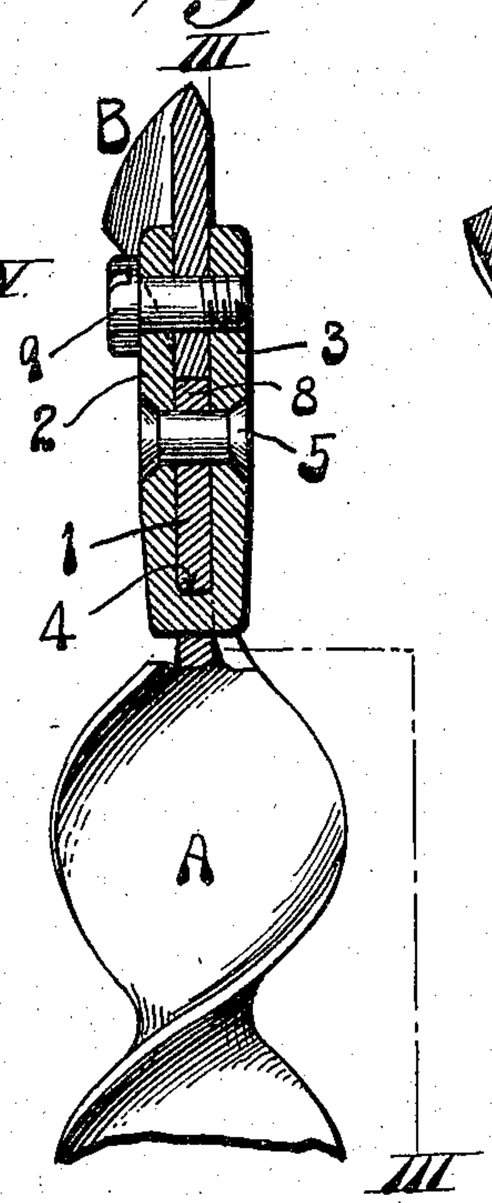


Fig. III.

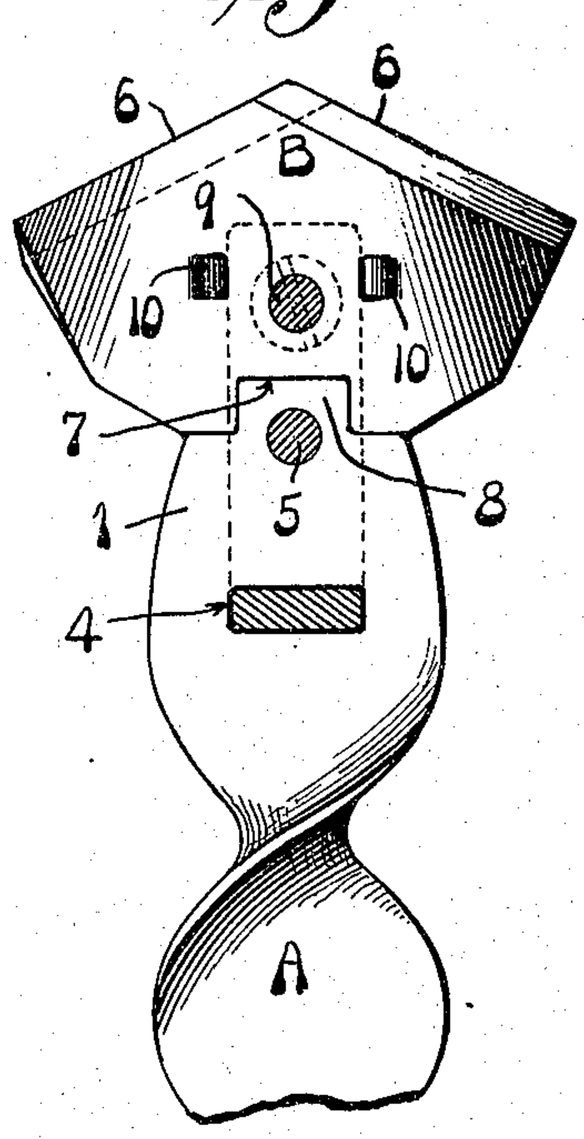
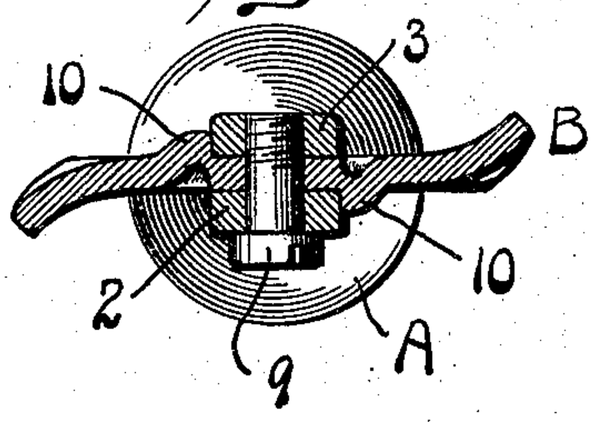


Fig. IV.



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DRILL.

1,166,943. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed February 24, 1915. Serial No. 10,195.

To all whom it may concern:

Be it known that I, SAMUEL T. SKEEN, a citizen of the United States of America, residing at Sandoval, in the county of Marion, State of Illinois, have invented certain new and useful Improvements in Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a drill particularly adapted for use in drilling into coal deposits, one of the objects being to provide a very simple and inexpensive miners' drill having a blade or bit which may be easily detached from the blade holder. The blade is preferably a single piece of metal rigidly secured to the end of a long spiral stem, and since the blade is a small inexpensive article, it may be economically made of high grade material well adapted to withstand the service to which it is subjected.

An important advantage in my drill is that the drill blades being detachable from the drill stem, they may be removed and replaced by other blades whenever necessary without the necessity of taking the drill stems from a mine to sharpen their bits, as is ordinarily done, and a single drill stem may be used for years, owing to there being practically no wear thereon, the wear being received by the detachable blades.

The preferred form of my invention includes a number of specific details of construction whereby the blade is firmly interlocked with the drill stem and blade holder and retained in such interlocking engagement by a fastening device which may be easily removed from the drill.

Figure I is a top or plan view of an end portion of a drill embodying the features of my invention. Fig. II is a section taken approximately on the line II—II, Fig. I. Fig. III is a section taken approximately on the line III—III, Fig. II. Fig. IV is a transverse section taken on the line IV—IV, Fig. I.

A designates a drill stem in the form of a spiral conveyer having its end 1 flattened to receive a pair of blade holding jaws 2 and 3. The blade holder is preferably formed by inserting a single piece of metal through an elongated aperture 4 near the end of the stem A, and thereafter folding said single piece of metal onto the flattened end portion of the stem to produce the jaws 2 and 3 which extend from the end of the stem.

5 designates a rivet passing through the jaws 2 and 3, and also through the flattened end of the stem, to firmly secure the blade holder to the drill stem.

The blade B is preferably a single piece of metal having converging cutting edges 6 and provided with a recess 7 for the reception of a tongue 8 which projects from the end of the drill stem. The blade is preferably seated on the end of the drill stem and firmly interlocked with the tongue 8.

9 designates a fastening device, preferably a screw, passing through the jaw 2 and blade B, and screwed into the jaw 3. The blade is thus firmly secured between the jaws 2 and 3 and it may be easily removed by removing the screw 9.

10 designates abutment members projecting from the blade B and fitted to side edges of the jaws 2 and 3. These abutments are intended to prevent the screw 9 from being mutilated by the severe strains to which the drill is subjected in drilling into coal deposits. If the screw was not protected it would soon become so distorted that it could not be readily removed from the jaws.

It will be noted that the simple blade B is very firmly interlocked with the drill stem and also with the blade holder, and it is maintained in such interlocking engagement by the screw 9 which is protected from severe strain by the interlocking elements, and which may be easily removed for the purpose of substituting one blade for another.

I claim:—

1. A drill having a stem provided with an aperture near one of its ends, a blade holder comprising a single piece of metal passing through said aperture and secured

to said stem to provide a pair of jaws which project from an end of the stem, and a blade detachably secured to said jaws.

2. A drill having a stem provided with an aperture near one of its ends, a blade holder comprising a single piece of metal passing through said aperture and folded onto said stem to provide a pair of jaws which project from an end of the stem, a rivet passing through said stem and jaws, and a blade detachably secured to said jaws.

SAMUEL T. SKEEN.

In the presence of—
JOHN L. ROBERTSON,
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