R. A. SCHMIDT.

DRILL SHARPENER.

APPLICATION FILED AUG. 17, 1909.

969,081.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

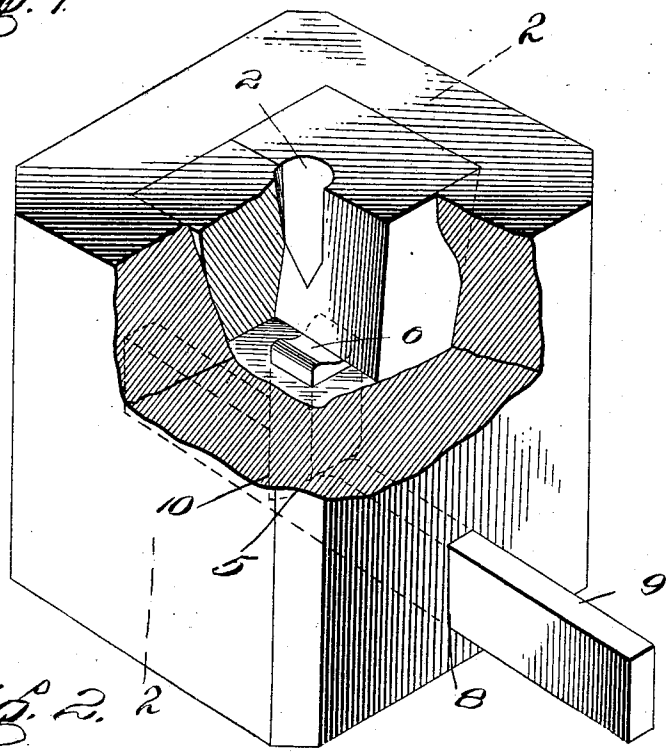
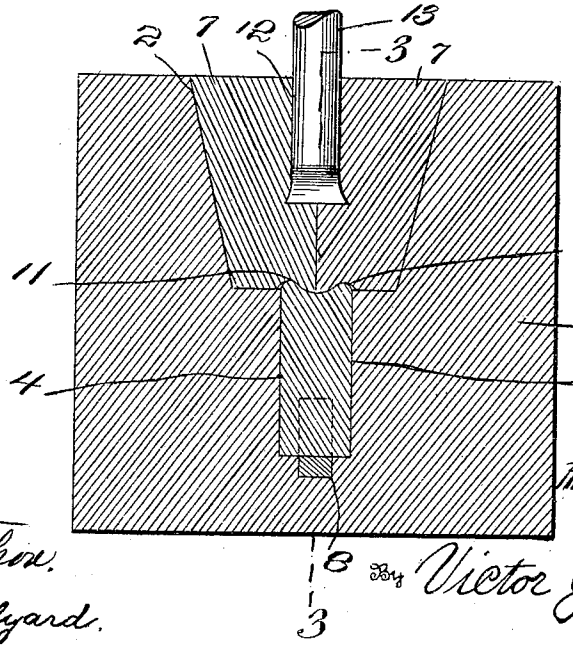


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

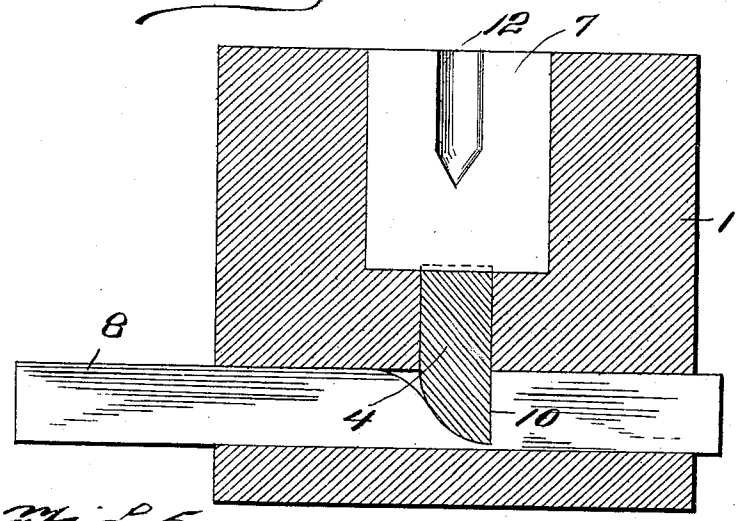


Fig. 5

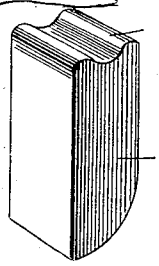


Fig. 4

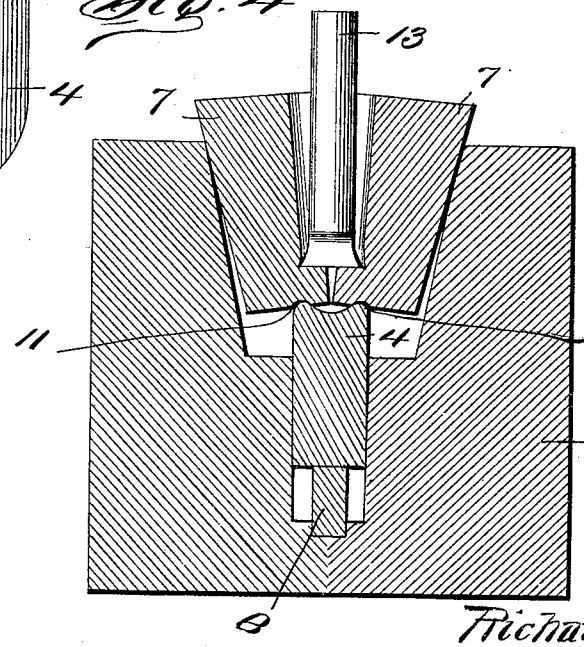
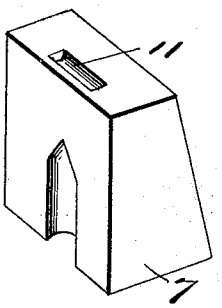


Fig. 6.



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UNITED STATES PATENT OFFICE.

RICHARD A. SCHMIDT, OF BAYARD STATION, TERRITORY OF NEW MEXICO.

DRILL-SHARPENER.

969,081. Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed August 17, 1909. Serial No. 513,224.

To all whom it may concern:

Be it known that I, RICHARD A. SCHMIDT, a citizen of the United States, residing at Bayard Station, in the county of Grant and Territory of New Mexico, have invented new and useful Improvements in Drill-Sharpeners, of which the following is a specification.

The purpose of this invention is to provide novel means for sharpening drills and like tools used in mining and quarrying operations whereby the point of the drill or tool may simultaneously be sharpened and spread so as to insure clearness when drilling into stone, coal, ore or the like.

The invention contemplates a recessed anvil, a pair of dies fitting the recess of the anvil, and having depressions in their meeting faces which unitedly form an opening for receiving the point of the drill to be sharpened and swaged, a fulcrum support for said dies, and means for moving the fulcrum support vertically to admit of the dies separating so that the drill or tool after it has been sharpened and swaged may be readily removed.

The invention consists of the novel features, details of construction and combinations of parts which hereinafter will be more particularly set forth, illustrated in the accompanying drawings and pointed out in the appended claims.

Referring to the drawings forming a part of the specification: Figure 1 is a perspective view, parts being broken away, of drill sharpening means embodying the invention. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2, the drill being omitted. Fig. 4 is a sectional view similar to Fig. 2, the dies being recessed and separated so as to release the drill after the sharpening and swaging operation. Fig. 5 is a perspective view of the fulcrum support for lifting the dies and upon which the same may tilt. Fig. 6 is a perspective view of one of the dies inverted.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The anvil 1 consists of a block of metal, having a recess 2 in its upper face, said recess being upwardly flared. An opening 3 is formed vertically in the lower portion of the anvil and communicates centrally with the bottom of the recess 2 and receives a fulcrum support 4 which consists of a short bar of angular formation in horizontal section and having its lower end beveled as indicated at 5 and having its spaced ribs 6 at its upper end forming fulcra upon which the dies 7 are adapted to tilt. A transverse opening 8 extends through the lower portion of the anvil 1 and receives an operating bar 9 in which a notch or depression 10 is formed. The notch or depression 10 forms a seat in which the lower end of the fulcrum support 4 is fitted. One wall of the notch or depression 10 is straight whereas the opposite wall is inclined to correspond to the bevel 5 at the lower end of the fulcrum support. Upon moving the operating bar 9 inward, the inclined wall of the notch or depression 10 rides upon the beveled end 5 of the fulcrum support and causes the latter to rise and lift the dies 7 which latter separate and tilt upon the ribs 6.

The dies 7 have their outer sides tapered to conform to the inclination of the walls of the recess 2. The meeting faces of the dies are straight and vertical. The dies 7 when assembled snugly fit the recess 2 and rest upon the bottom of said recess. A depression 12 is formed in the inner face of each die and these depressions unitedly form an opening corresponding to the shape of the point of the drill or tool when sharpened and swaged. The lower end of the tool receiving opening is tapered and widened to conform to the beveled sides of the drill or tool and the spread thereof due to the swage to provide clearness for the drill or tool when in operation.

When the parts are in operative position, the dies 7 are lowered into the recess 2 of the anvil and the fulcrum support 4 is at its lowest position. The tool or drill to be sharpened is indicated at 13 and is heated preferably to a cherry red so as to soften the metal after which the point is inserted into the opening 12 formed between the dies and sufficient pressure is brought to bear upon the tool to cause the point thereof to fill the lower end of said opening 12 whereby the point is both sharpened and spread or swaged. The tool may be driven into the opening 12 or forced therein in any manner. After the tool has been sharpened and swaged the operating bar 9 is forced inward thereby causing the dies 7 to rise and at the

same time to open thereby releasing the tool and admitting of its removal from between the dies when it is tempered in the usual manner and ready for use.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what is claimed is—

1. In combination, an anvil having a recess in its upper side, which recess is upwardly flared, tapered dies fitting within said recess and having a tool receiving opening formed in their meeting faces, said dies having notches in their lower ends adjacent their meeting faces, a fulcrum support mounted in the anvil and having spaced ridges forming fulcra to enter the recesses of the dies, and means for moving said fulcrum support upwardly to effect a simultaneous lifting and spreading of the dies.

2. In combination, an anvil having a recess in its upper side, complemental dies fitting within said recess, a fulcrum support for said dies mounted to move vertically within the recess and having its lower end beveled, an operating bar transversely movable within the die and having a notch to receive the lower end of the fulcrum support and having one wall of the notch inclined to correspond to the beveled end of the fulcrum support whereby upon moving said operating bar, the fulcrum support is elevated and the dies simultaneously raised and spread.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD A. SCHMIDT.

Witnesses:

J. T. MURRAY,

W. W. PAGE.