No. 860,314. PATENTED JULY 16, 1907.

D. W. McLEOD.

STONEWORKING TOOL.

APPLICATION FILED APR. 1, 1907.

FIG. 5

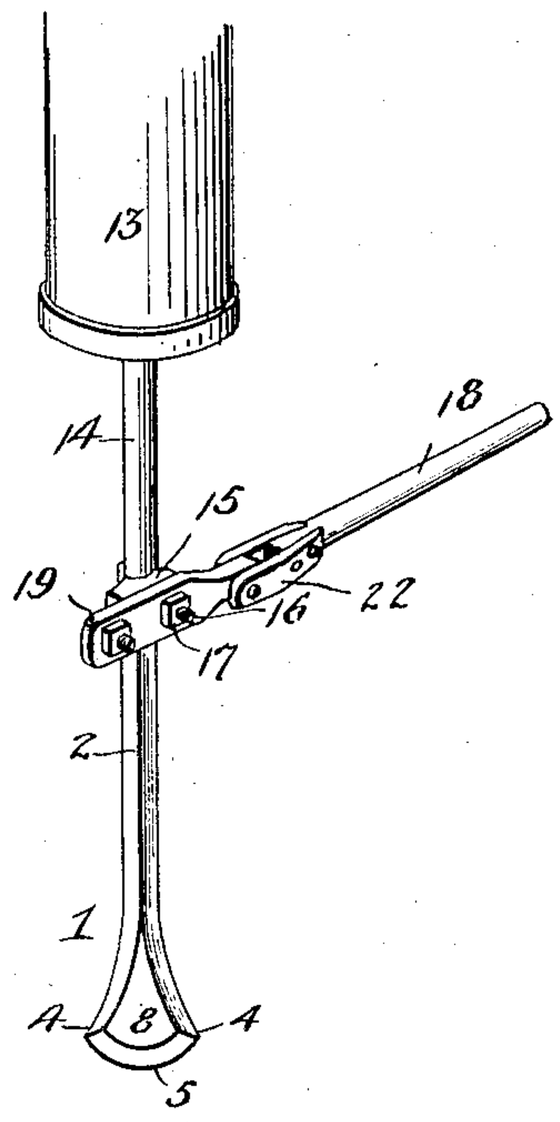


FIG. 6

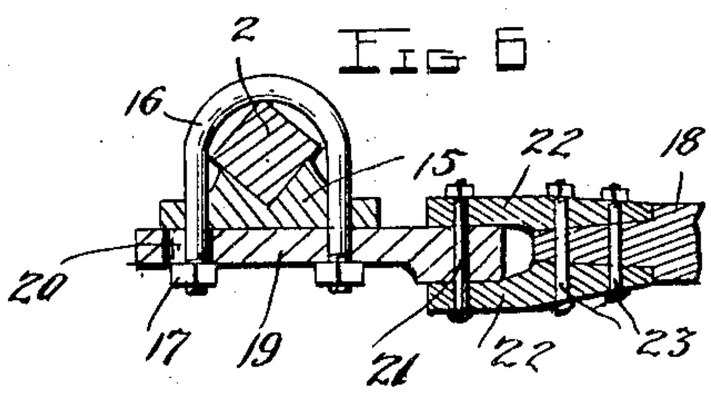


FIG. 4

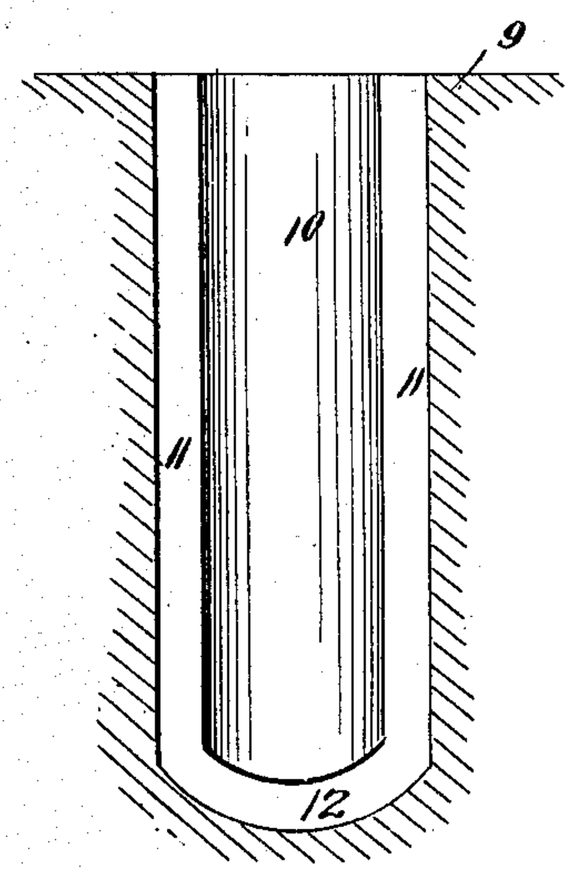


FIG. 1

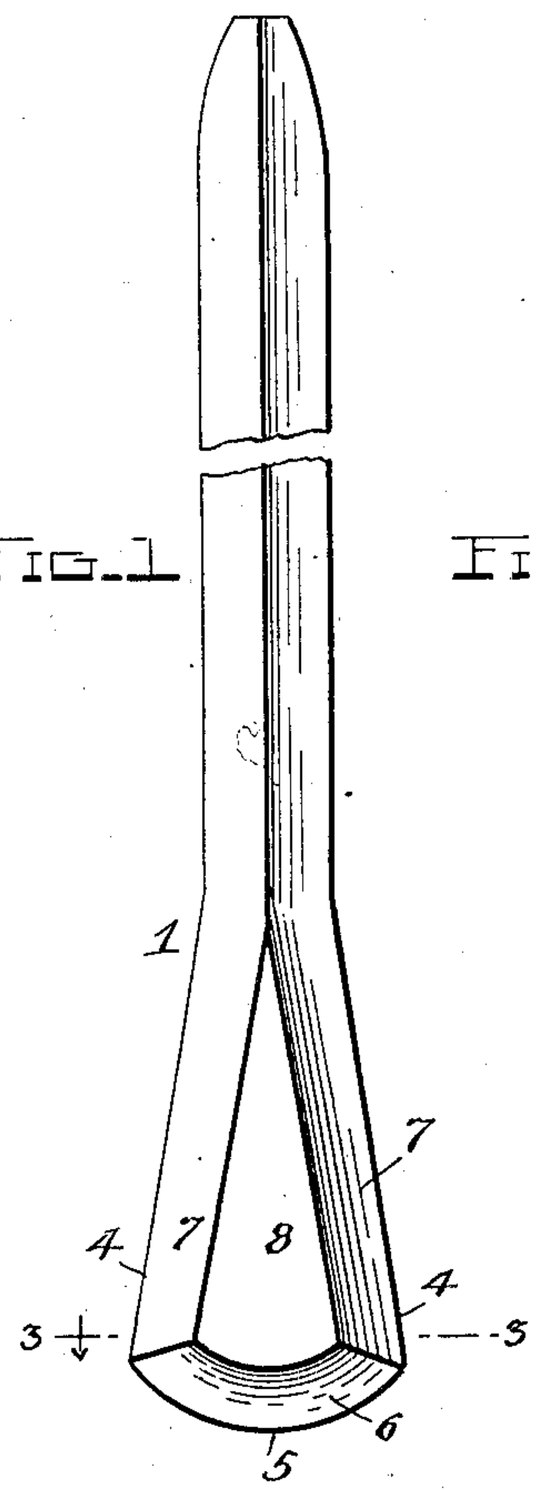


FIG. 2

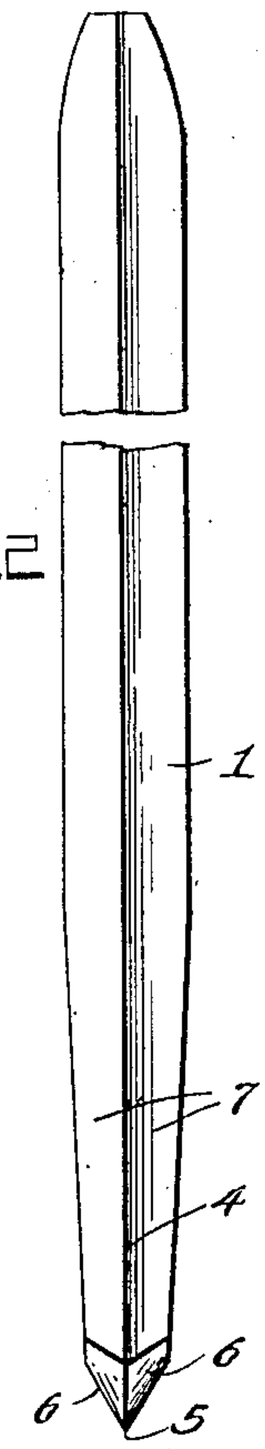
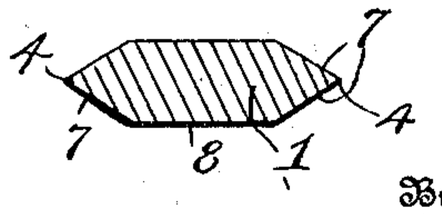


FIG. 3



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STONEWORKING TOOL.

No. 860,314. Specification of Letters Patent. Patented July 16, 1907.

Application filed April 1, 1907. Serial No. 365,791.

To all whom it may concern:

Be it known that I, DANIEL W. McLEOD, a citizen of the United States, residing at Graniteville, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Stoneworking Tools, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in tools or instruments for working in stone and more particularly to one for cutting longitudinal grooves or leaders in blasting holes formed in blocks of granite or other stone, so that the line of fracture of the stone will be caused to take the direction of such grooves or leaders when the blasts in said holes are exploded.

The object of the invention is to provide a tool of this character having a peculiar shaped cutting bit so that the grooves or leaders will be cut not only in the side walls of the blast hole but also in the bottom of the same in order that the line of fracture of the stone will be directed from the bottom of the blast hole to the opposite face of the block.

With the above and other objects in view, the invention consists in the features of novelty hereinafter described and claimed, and illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of my improved groove cutting tool; Fig. 2 is an edge view of the same; Fig. 3 is a cross section on the line 3—3 in Fig. 1; Fig. 4 is a sectional view through a portion of the block or stone, showing the shape of the groove or leader cut in the blast hole by the improved tool; Fig. 5 is a view showing the application of the tool to a power drill; and Fig. 6 is a detail section showing the manner in which the tool is fastened to the piston rod of the power drill and the hand lever for guiding the tool.

Referring to the drawings by numerals, 1 denotes my improved tool which is preferably constructed of steel and has a body or shank 2 of square or diamond shape in cross section. Its upper end is flat so that it may be struck by a hammer or the like, and its lower end is enlarged and beveled in a peculiar manner to provide an improved cutting bit 3. The latter is flattened and flares outwardly from its inner to its outer end, and it has V-shaped side cutting edges 4 and a similar shaped longitudinally curved bottom cutting edge 5. The edge 5 is formed by beveling the rounded lower end of the bit, as shown at 6, and the edges 4 are similarly formed by beveling the corners of the bit in opposite directions to provide the inclined faces 7 which converge at their upper ends into the flat faces of the body or stem 2 and at their lower ends into the beveled faces 6. The beveled faces 6 and 7 form upon the opposite sides of the drill substantially triangular shaped flat side faces 8 which converge and give the bit its outward or downward taper, as will be seen upon reference to Fig. 2.

It will be understood that the cutting bit of the tool is of greater width than the blast hole which is drilled or otherwise formed in the block of stone to be split so that the cutting edges 5 and 4 will form at opposite points in the side wall and also in the bottom of the hole a V-shaped groove which will serve as a leader to direct the line of fracture of the stone upon the explosion of the blast.

Referring to Fig. 4, the numeral 9 denotes a portion of a block of granite or other stone having a cylindrical blast hole 10 formed in it and the numerals 11, 12 denote the V-shaped grooves formed in the side walls and bottom of the hole 10. By providing a tool with the rounded V-shaped cutting edge or end 5, the groove or leader 12 will be formed in the bottom of the hole, and this is exceedingly advantageous since it serves to effectively direct the line of fracture of the stone from the bottom of the hole to the opposite face of the block.

In use, the tool may be held in one hand and struck upon its upper end by a hammer or other instrument and in this way driven into the hole 10, but it may also be used upon a steam or other power drill, as illustrated in Figs. 5 and 6. Referring to said figures, the numeral 13 denotes a steam drill having its reciprocating piston rod 14 provided at its lower end with a suitable chuck or clamping device for securing drills or other tools thereto. As shown, this device consists of a chuck 15 and a U-shaped clamping bolt 16. The latter clamps the shank or stem 2 of the tool in the chuck 15 and its threaded ends are provided with clamping nuts 17. In order to prevent the piston 14 from turning when the tool 1 is applied to it, I preferably provide a hand lever 18 which carries a pivoted link 19 apertured to receive the threaded ends of arms of the bolt 16. One of the apertures 20 in said link is elongated so that the link may receive chuck bolts of any size. The link 19 is pivoted upon a bolt 21 between two plates 22 which are bolted or otherwise detachably secured, as at 23, to the end of the lever 18. It will be seen that by means of the lever, the tool may be readily guided as the piston rod 14 recipro-

cates and the point of the tool will be caused to cut straight through the hole 10, thus forming straight grooves or leaders.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

A stone working tool for grooving blasting holes, comprising a body terminating at one end in a flattened enlargement having the flat side faces 8, the side edges 4 formed by the beveled faces 7 and the rounded bottom edge 5 formed by the beveled faces 6, substantially as shown and described.

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

DANIEL W. McLEOD.

Witnesses:
ROSWELL MILES,
THOMAS BRADY.