

J. DICKINSON.

Mode of Inserting Diamonds into Stone Tools.

No. 154,025.

Patented Aug. 11, 1874.

Fig. 4

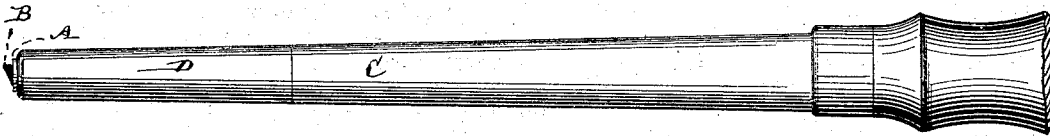


Fig. 5

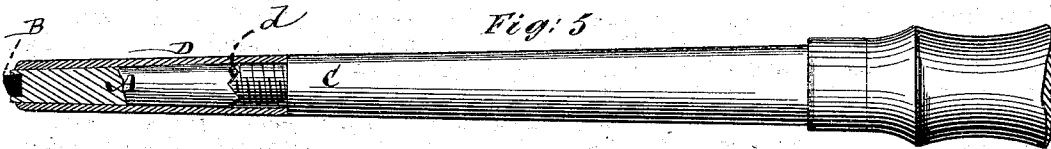


Fig. 1

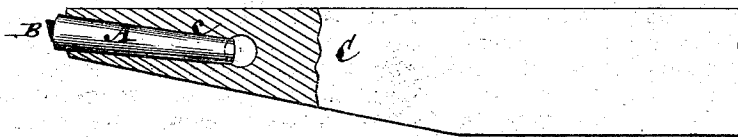


Fig. 2

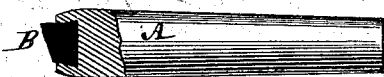
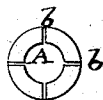


Fig. 3



Witnesses:

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JOHN DICKINSON, OF BAY RIDGE, NEW YORK.

IMPROVEMENT IN MODES OF INSERTING DIAMONDS INTO STONE TOOLS.

Specification forming part of Letters Patent No. **154,025**, dated August 11, 1874; application filed July 6, 1874.

To all whom it may concern:

Be it known that I, JOHN DICKINSON, of Bay Ridge, in the county of Kings and State of New York, have invented certain Improvements in Setting Diamonds or Mineral Carbons, of which the following is a specification:

This invention, which relates to holders of diamonds or mineral carbons for cutting, turning, and dressing stone, emery-wheels, and other hard substances, essentially differs from that patented to me June 15, 1869, in which the holder was made adjustable, and consisted of a metallic block provided with fixed and reversible jaws, notched at their ends and held in place by screws. Thus, instead of fitting the diamond or mineral carbon directly into the end of the holder, the same is set in an adjustable or removable conical stem inserted in the end of the tool or instrument, which stem is formed at its outer end with one or more saw-cuts that are afterward closed by hard-solder to hold the carbon, and said stem being made conical is not only held steady when in the holder, but is readily inserted or removed, as required. Hence, while setting these diamonds or mineral carbons permanently into the ends of the tools, as ordinarily done, which makes said tools, by reason of their bulk and weight, too costly for transmission to a distance when needing repair, in case of the diamonds being shifted when worn or otherwise, the necessary repairs or exchanges can be made by my improvement or invention by simply detaching and transmitting the stem which holds the carbon; also, one holder or shaft can have numerous stems with diamonds set therein for various kinds of work. The invention also consists in a detachable metallic screw-socket containing the conical carbon holding-stem, and corrugated or clutch-shaped surfaces on the back end of the latter and forward end of the tool for holding said stem from turning when in operation.

In the drawing, Figure 1 represents a partly sectional longitudinal view of a tool having the detachable carbon holding-stem fitted therein; Fig. 2, a partly sectional longitudinal view of said stem, and Fig. 3 an outer end view thereof before the insertion of the carbon. Fig. 4 is an exterior longitudinal view of a modification of the tool and stem;

Fig. 5, a partly sectional longitudinal view of the same; and Fig. 6, a face view of one of the corrugated or clutch-like surfaces for holding the stem from turning when in its place within the tool.

Referring, in the first place, to Figs. 1, 2, and 3 of the drawing, A is the conical stem, preferably made of a piece of taper-shaped wire or metal, and having a hole drilled or formed in its largest or outer end to receive the diamond or carbon B, which is inserted within said hole by first making one or more slits or saw-cuts *b* in said end of the stem, and after the carbon has been inserted, and the slit or saw-cut end of the stem forced, by clamp or otherwise, to firmly grasp the diamond, closing such cut end by hard-solder. This stem A, having the diamond in it, is then inserted in a taper hole, *c*, drilled obliquely or downward in a backwardly direction within the tool or holder C, or otherwise, as the shape of the tool may permit. This construction applies not only to machine but hand tools, or in the case of hand tools the construction may be as represented in Figs. 4, 5, and 6 of the drawing, in which the conical stem A is made tapering in a reverse direction, and is inserted in a taper hole drilled in a cap, D, which screws onto the end of the tool or holder C. The back end of the conical stem and forward end of the tool or holder, or in other words, the contiguous faces of the stem and tool or holder, are of corrugated or clutch-like construction, as shown at *d*, whereby the stem is prevented from shifting or turning when in the holder. The diamond is secured in said stem, as hereinbefore described with reference to Figs. 1, 2, and 3 of the drawing.

I claim—

1. The detachable conical stem A, formed with one or more splits or saw-cuts, *b*, which are afterward closed to hold the diamond or mineral carbon B, in combination with the tool or holder C, substantially as specified.
2. The combination, with the conical stem A, having the diamond or mineral carbon secured in it, as described, of the screw-cap D, the holder C, and the corrugated or clutch-shaped faces *d*, essentially as herein set forth.

Witnesses: JOHN DICKINSON.

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