O. M. FARRAND.

TOOL FOR REMOVING DIAMONDS FROM SETTINGS.

APPLICATION FILED FEB. 10, 1909.

943,530.

Patented Dec. 14, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

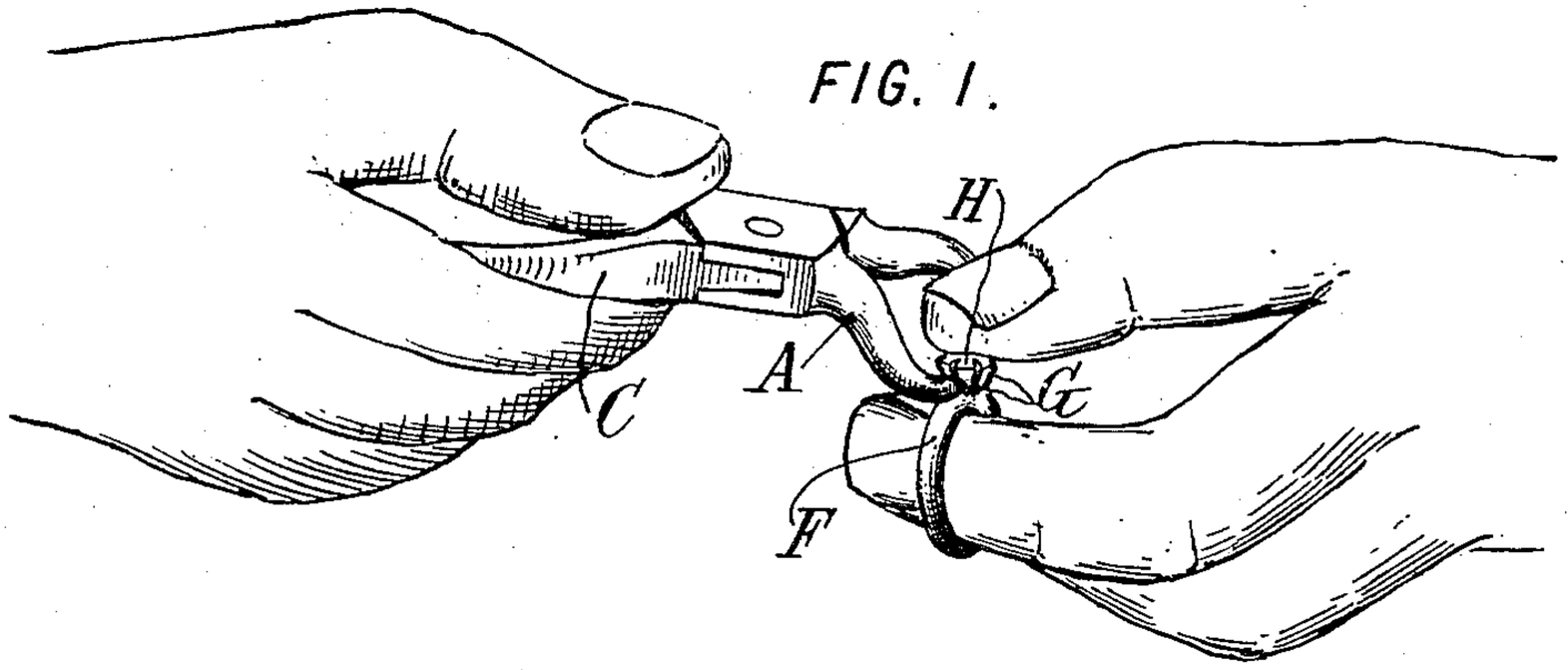


FIG. 2.

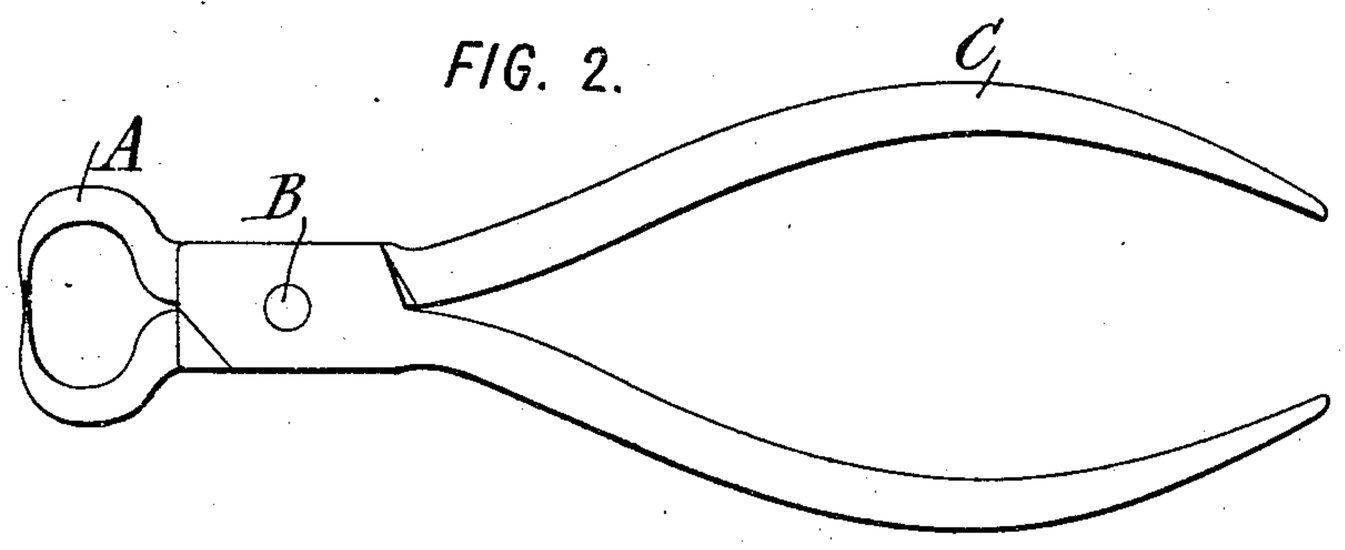


FIG. 3.

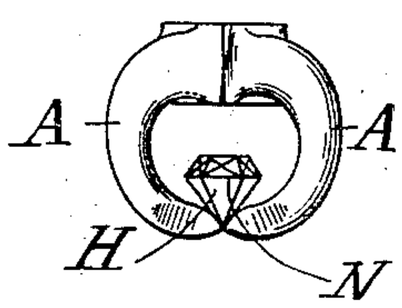
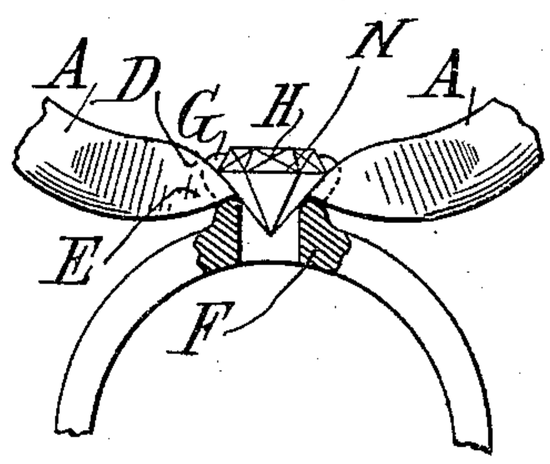


FIG. 4.



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2 SHEETS—SHEET 2.

FIG. 5

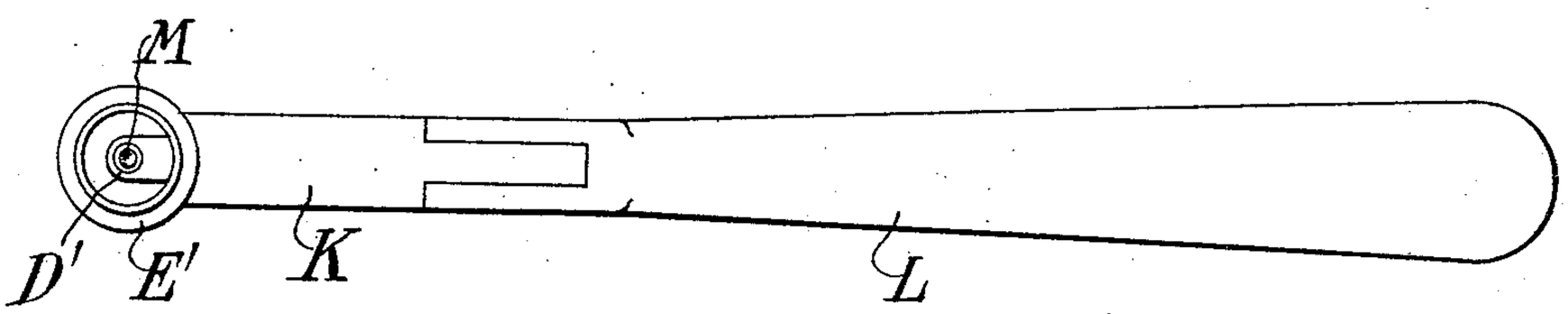


FIG. 6.

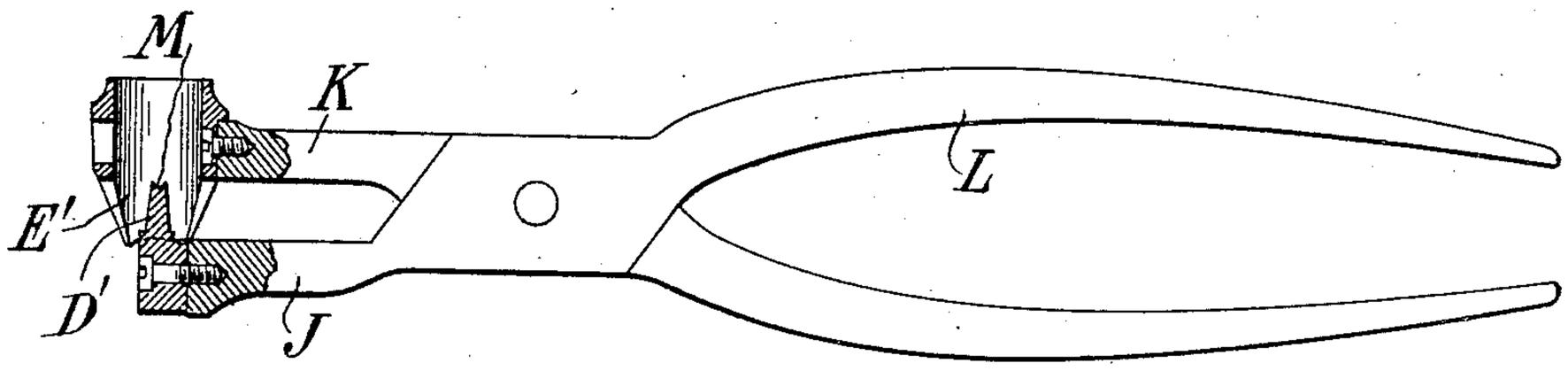


FIG. 7.

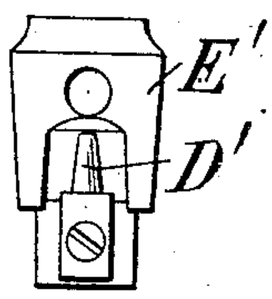
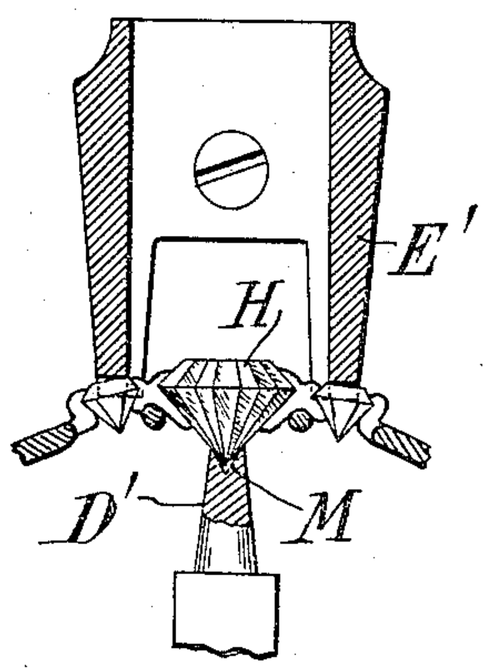


FIG. 8.



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UNITED STATES PATENT OFFICE.

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TOOL FOR REMOVING DIAMONDS FROM SETTINGS.

943,530. Specification of Letters Patent. Patented Dec. 14, 1909.

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To all whom it may concern:

Be it known that I, OLIVER M. FARRAND, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Tools for Removing Diamonds from Settings, of which the following is a specification.

This invention aims to provide a certain improved tool or apparatus especially designed for removing diamonds from settings of the usual types which are bent or swaged over the top of the diamond and adapted to the extraction of various similar articles such as stones whose hardness or the weakness of whose setting will permit the use of the tool without injury to the stone, or where it is not important to avoid scratching or injuring the stone.

The tool of my invention engages the diamond and forcibly extracts it from its setting, springing the setting open by forcing the claws or other holding parts of the setting aside by the movement of the diamond and preferably bearing or reacting upon the portion of the setting surrounding the diamond in order to secure the force necessary to extract it and to press the holding claws aside.

The accompanying drawings illustrate tools of plier type embodying the invention.

Figure 1 is a perspective view of a tool in use. Figs. 2 and 3 are respectively a plan and an end elevation of the same. Fig. 4 is a sectional view of a diamond in a setting with the extracting members of the tool in operative position. Fig. 5 is a plan of another style of tool embodying the invention. Fig. 6 is a side elevation of the same, partly in section. Fig. 7 is an end elevation of the same. Fig. 8 is a sectional view of a setting with the engaging parts of the tool in operative position.

Referring to the embodiments of the invention illustrated, the tool of Figs. 1 to 4 comprises a pair of engaging members A adapted to be separated or brought together forcibly, being connected to each other by a pivot B and provided with handles C the pressing of which together presses the engaging members A of the tool together. The engaging arms A are preferably bent down or offset from the plane of the handles C, and at their ends are made of substantial width in a plane perpendicular to that of the handles and thin enough to enter between the claws of ordinary settings.

Each of the engaging members A comprises at its point an upper portion D for engaging an under face of the diamond below the girdle N thereof, and a lower portion E which rests or reacts upon the setting at the point F. If the portion D of the tool be pressed upward against the under face of the diamond with sufficient force (utilizing the portion F of the setting as a fulcrum or resistance for the reaction) it will lift it out of its setting, the claws G yielding sufficiently to permit the complete removal of the diamond.

The manner of securing the upward pressure of the part D of the tool against the diamond H may be substantially varied. In the construction illustrated there are two engaging members A similarly shaped and adapted to engage the diamond on opposite sides so as to effect a symmetrical pressure and distortion of the claws or other parts of the setting, and the upward pressure is secured by pressing the two members toward each other so that they wedge up the inclined under face of the diamond, the engaging edge of the portion D being preferably of wedge shape, and also the engaging edge of the portion E. It is only necessary therefore to insert the points of the members A between two of the claws G of the setting in the manner indicated in Fig. 1, and to squeeze the handles together; whereupon the diamond will be forced out of the setting in an instant and with less injury to the setting and less danger of injury to the girdle N of the diamond than would be involved in the usual method of first bending back the claws G with a knife or similar tool to a distance somewhat greater than the minimum spread necessary for the passage of the diamond.

It is not essential that the handles C shall operate in a plane at any particular angle to the plane of the parts D E. The angular position however is advantageous in leaving room for the operator to hold his thumb over the diamond as in Fig. 1 to prevent its loss when it escapes suddenly from its setting and the tool.

In some cases, for example, where it is desired to remove a diamond in the center of a cluster, it is not convenient to get at the diamond from its side as in Fig. 4, and

in such cases the tool of Figs. 5 to 8 is preferably employed. In this case the lifting part D′ of the tool and the bearing part E′ are mounted on separate engaging members J and K respectively and are actuated in the proper relative direction by pivoted arms L. The lifting member D′ is provided with a socket M for centering it in engagement with the diamond and into which the apex of the diamond enters so that the edge of the socket engages the lower faces of the diamond, similarly to the tool of Figs. 1 to 4. The bearing part E′ of the tool is substantially or approximately annular so as to bear on the portions of the setting which surround the diamond H, so as to leave the latter free to escape from the prongs or flange which hold it, under the pressure of the part D′ of the tool.

The extending of the handles in a direction transverse to the axis of the diamond, similarly to the construction of Fig. 1, and the annular nature of the part E′ of the tool permit the operator to easily recover the diamond and to prevent its being lost, by placing his thumb over the top of the part E′. Or this part may be entirely closed to make a receptacle for the extracted diamond, although the substantially complete cylindrical receptacle shown is sufficient generally. Such a receptacle or a receptacle of any desired shape may also be applied to the device shown in Figs. 1 to 4.

What I claim is:—

1. A tool for removing diamonds from settings, said tool having a pair of members adapted to be pressed together, and having upon said members means for engaging the setting and means for engaging the diamond to force the same out of its setting by springing the setting open.

2. A tool of plier type for removing diamonds from settings having a pair of members pivotally connected to each other and provided with handles by which they may be pressed together, and having upon said members means for engaging the setting and means for engaging the diamond to force the same out of its setting by springing the setting open.

3. A tool of plier type for removing diamonds from settings having a pair of members pivotally connected to each other and provided with handles by which they may be pressed together, and having upon said members means for engaging the setting, and means for engaging the diamond to force the same out of its setting by springing the setting open, said handles extending in a direction transverse to the axis of the diamond when the tool is in operative position.

4. A tool for removing diamonds from settings, said tool being adapted to engage a set diamond upon opposite faces, and having wedge-shaped portions adapted to wedge the diamond forcibly out of its setting by springing the setting open.

5. A tool of plier type for removing diamonds from settings consisting of a pair of thin arms adapted to enter between the claws of a setting and pivoted to each other, and the ends of which are provided with portions E engaging parts of the setting and coöperating portions D adapted to engage the diamond and to force the same from its setting by springing the claws apart.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

OLIVER M. FARRAND.

Witnesses:

DOMINGO A. USINA,

THEODORE T. SNELL.