G. A. JOYCE.

DIAMOND TOOL MOLD.

APPLICATION FILED NOV. 6, 1915.

1,174,073. Patented Mar. 7, 1916.

Fig: 1.

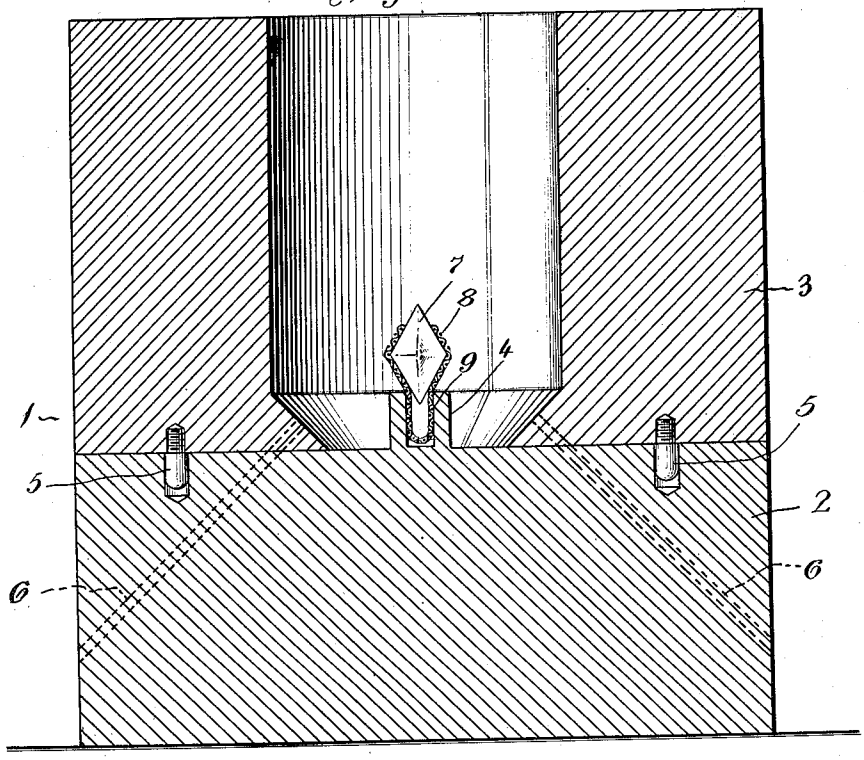


Fig: 2.

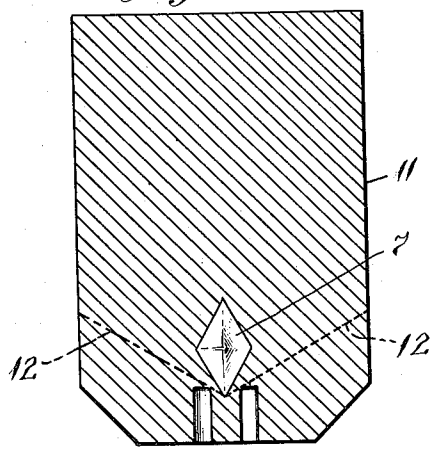
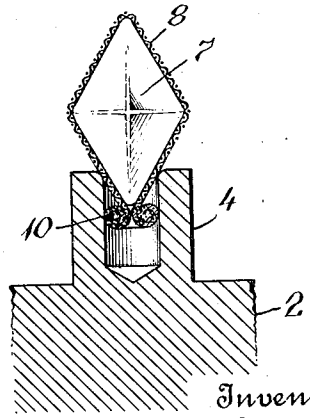


Fig: 3.



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DIAMOND-TOOL MOLD.

1,174,073. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed November 6, 1915. Serial No. 59,937.

To all whom it may concern:

Be it known that I, GEORGE A. JOYCE, a subject of the King of England, and resident of London, England, have invented certain new and use Improvements in Diamond-Tool Molds, of which the following is a specification.

The present invention relates to molds for setting diamonds or the like to be used for industrial purposes in metal mounts.

Heretofore it has usually been the practice to hold the diamond in position during casting by a fusible element extending up through a slit or recess in the base of the mold, or in other ways to so support the diamond that its point protrudes from the casting in which it becomes embedded. The fusible element when utilized has been in the nature of an imperforate metallic sheet. Serious objections are incident to such practice due to various causes. For instance, the contraction of the metal mount from the base of the mold, due to cooling, will frequently expose an undue proportion of the stone and as a consequence the latter will be held imperfectly in the mount. Also when an imperforate metallic sheet is utilized for the fusible mount, the metal when poured first has to melt this sheet with the result that the metal may not actually reach the entire surface of the stone to be set. In this way air holes will form in the mount and the stone will not be securely held.

The object of this invention is to so mount the stone that it will be substantially completely incased in the mount, care being also taken that the molten metal will reach every part of the surface of the stone in such a way that the "skin" or surface layer thereof is not destroyed.

In carrying out the above and other objects of the invention, I employ supporting means which hold the stone in spaced relation from the base of the mold and for permitting metal to flow to substantially entirely surround the stone. Such supporting means here take the form of a holder extending above the imperforate base of the mold, together with a fusible supporting element of imperforate character, such as wire mesh, between the holder and the stone, which permits the metal to make a "hit and miss" contact with the stone to reach all parts of the surface thereof without destroying the "skin" and to entirely incase the stone.

In the accompanying drawings the invention is disclosed in a concrete and preferred form.

In said drawings: Figure 1 is a vertical sectional view of a mold embodying the invention. Fig. 2 is a vertical sectional view of the mount showing the stone embedded. Fig. 3 is a sectional view showing a modified form of the invention.

Similar characters of reference indicate corresponding parts in the different views.

1 indicates a mold consisting of the imperforate base 2 and upper portion 3.

4 is a holder extending up from the base.

5 are dowels by means of which the base 2 and upper portion 3 are connected.

6 are air vents of the usual type.

7 indicates the stone and 8 is the fusible element interposed between the stone and the holder.

In Fig. 1 the fusible supporting element 8 is wrapped around the stone and its middle portion 9 formed into a tail which is inserted in the holder 4. In Fig. 3 the element 8 is also wrapped around the stone and the free ends 10 thereof are rolled up into coils or the like which then are inserted in the holder 4. When the metal is poured it not only fills the mold chamber, but also passes into the holder 4 with the result that the stone is substantially entirely incased in the metal. In so doing, the fusible element is melted by the metal. Owing to the perforate or mesh character of this fusible element, the entire surface of the stone is reached by a "hit and miss" contact with the molten metal, and the stone becomes firmly embedded in the holder without destroying its "skin".

In Fig. 2 is shown the casting. Here the stone 7 is shown completely embedded in the mount 11. The metal is then cut away to expose such part of the stone as may be desired, the cuts being substantially along the dotted lines 12.

What is claimed is:

1. An apparatus of the character set forth comprising: a mold, and a hollow supporting means for the stone to be set for holding said stone in spaced relation from the base of the mold and for permitting metal to flow into the hollow supporting means to substantially entirely surround the stone.

2. An apparatus of the character set forth comprising: a mold, a hollow holder for supporting the stone to be set above the base

of the mold and into which the stone projects, and a fusible supporting element interposed between the holder and the stone for permitting metal to flow into the hollow holder to substantially entirely surround the stone.

3. An apparatus of the character set forth comprising: a mold, and a fusible, perforate supporting element for the stone to be set to permit molten metal to make "hit or miss" contact with the stone.

4. An apparatus of the character set forth comprising: a mold, a holder for supporting the stone to be set above the base of the mold, and a fusible perforate supporting element interposed between the holder and the stone for permitting metal to flow to substantially entirely surround the stone, the molten metal making a "hit and miss" contact with the stone.

Signed at London, England, this 18th day of October, A. D. 1915.

GEORGE ALBERT JOYCE.

Witness:
A. A. HAGGER.