No. 740,874. PATENTED OCT. 6, 1903.

F. KRAUSE.

METHOD OF FORMING DIAMOND DRAW PLATES IN IRON OR STEEL ALLOYS.

APPLICATION FILED JULY 29, 1903.

NO MODEL.

Fig. 1.

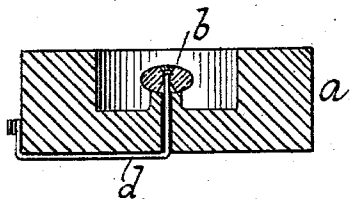


Fig. 2.

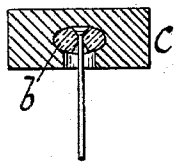


Fig. 3.

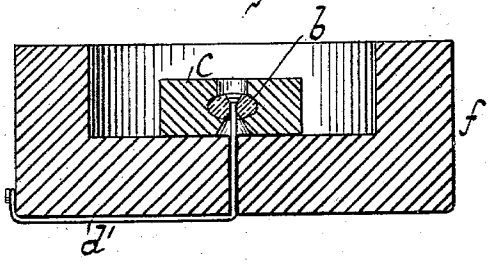


Fig. 4.

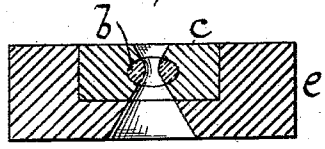
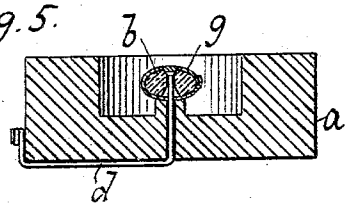


Fig. 5.



WITNESSES:

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No. 740,874. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

FRIEDRICH KRAUSE, OF JERSEY CITY, NEW JERSEY.

METHOD OF FORMING DIAMOND DRAW-PLATES IN IRON OR STEEL ALLOYS.

SPECIFICATION forming part of Letters Patent No. 740,874, dated October 6, 1903.

Application filed July 29, 1903. Serial No. 167,512. (No specimens.)

To all whom it may concern:

Be it known that I, FRIEDRICH KRAUSE, a subject of the German Emperor, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Methods of Forming Diamond Draw-Plates in Iron or Steel Alloys, of which the following is a specification.

This invention relates to the formation of diamond draw-plates; and it consists in the details set forth in the following specification and claims and illustrated in the amended drawings, in which—

Figure 1 shows a mold with a diamond held therein. Fig. 2 shows the diamond incased or cast about with steel or iron. Fig. 3 shows the method of enlarging or casting further material about the article. Fig. 4 shows the enlargement cast about the article. Fig. 5 shows a modification.

In the drawings is shown a mold or form *a* with perforated bottom. A perforated diamond *b* is placed into the mold, and a wire *d* is extended through the diamond and form and made to hold the diamond in place. Molten steel or iron is then poured into the mold and surrounds the diamond, the latter sitting on a slight elevation or raised seat extending from the bottom of the mold. When set or cold, the steel or iron, with the incased diamond, is removed from the mold, as indicated in Fig. 2. At the under face or side of the stone, which rests on the raised seat in the mold, the iron or steel casing or shell *c* is interrupted or leaves the diamond's hole exposed or accessible. At the opposite side the casing *c* is bored or cut to form an opening to or communicating with the perforation in the diamond. The device can then be used as a draw-plate or a wire run through from one side of the casing through the stone and out at the other side or perforation of the casing, as customary in drawing wire. The wire *d*, which serves to hold the diamond in place while being cast about with metal, is removed when the casing is bored.

If the device is to be enlarged—as, for example, to facilitate its handling in use—a casting *e* can be formed about the casing *c*. This enlargement can be cast about the casing by placing the article of Fig. 2 into a mold or form *f* and holding it in place by a wire *d'* passed therethrough, as previously mentioned.

In order to prevent the metal when forming the steel casing *c* from flowing into the perforations in the diamond, the latter after the wire *d* is in place are plugged with suitable material, such as graphite, clay, or the like.

When the enlargement *e* is completed, it is suitably bored or cut on the enlargement becoming set or cold.

When casting the steel or iron *c* in place, the heat may injure the diamond. To shield the latter, it is wrapped with sheet metal, as indicated at *g*, Fig. 5, and the wire *d* applied as before. The wire has a head or enlarged end which cannot slip through the perforation in the diamond when passed therethrough and through the wrapping. During the casting of the casing *c* the wrapping *g* shields the diamond from the immediate contact with the molten steel, and said wrapping becomes alloyed or fused with the casing, so that when the article is complete the incased diamond appears as shown in Fig. 2.

What I claim, and desire to secure by Letters Patent, is—

1. A process for forming wire-drawing dies which consists in placing a perforated diamond into a perforated mold or form, extending a wire through the diamond and form to hold the diamond in place, pouring molten steel or iron into the form and when set or cold removing the steel or iron with the incased diamond and boring or opening the steel or iron to the perforations in the diamond.

2. A process for forming wire-drawing dies which consists in placing a diamond into a perforated mold or form, extending a wire through the diamond and through the form, pouring molten steel or iron into the form and when cold removing the same with the inclosed stone, and casting an enlargement about the steel casing.

3. A process for forming wire-drawing dies which consists in wrapping a diamond in sheet metal, placing the wrapped diamond into a perforated mold or form, extending a

wire through the diamond and wrapper and through the perforation in the mold and pouring molten steel or iron into the mold to incase the diamond, said wrapping protecting the diamond from heat during the pouring of the steel or iron and alloying with the molten metal.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRIEDRICH KRAUSE.

Witnesses:
E. F. KASTENHUBER,
W. C. HAUFF.