

No. 776,072.

PATENTED NOV. 29, 1904.

R. KRAUSE.
WIRE DRAWING DIE.
APPLICATION FILED OCT. 15, 1903.

NO MODEL.

Fig. 1.

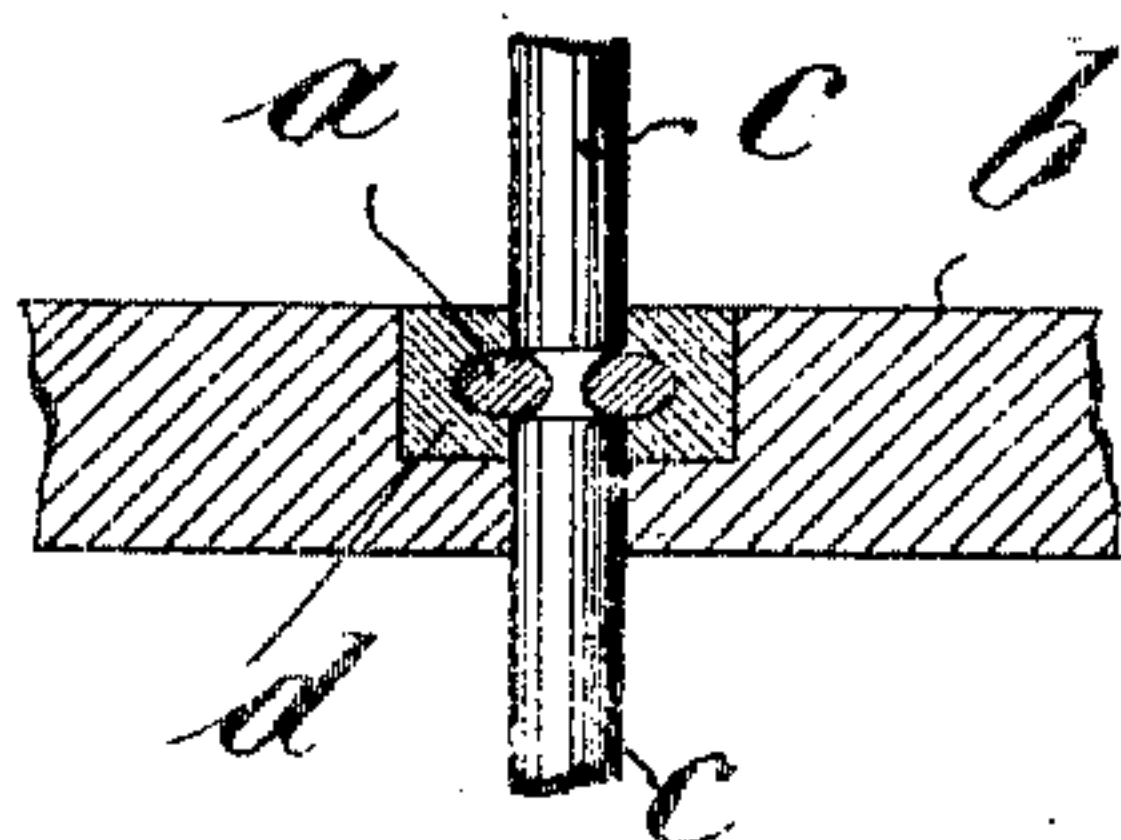


Fig. 2.

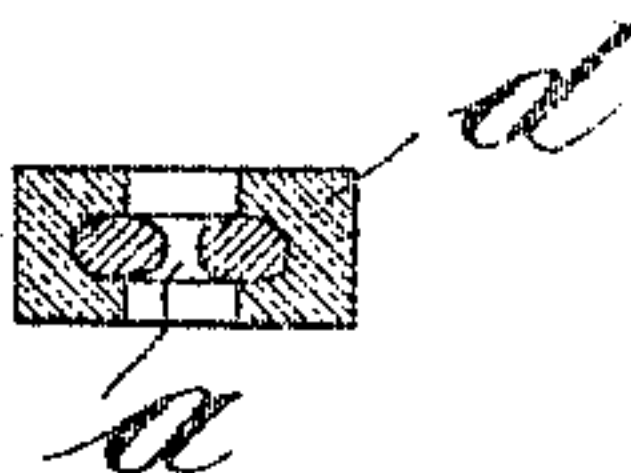


Fig. 3.

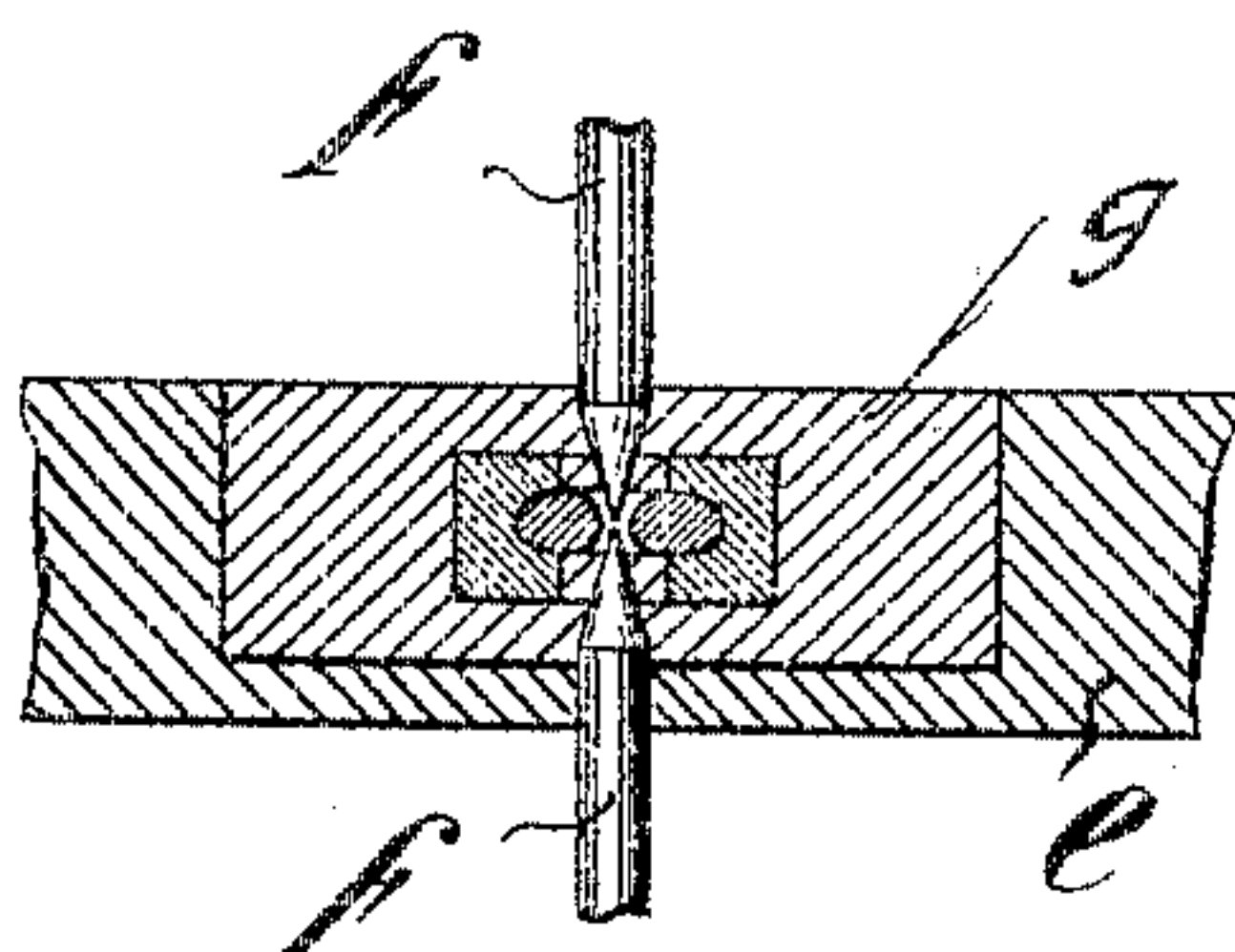
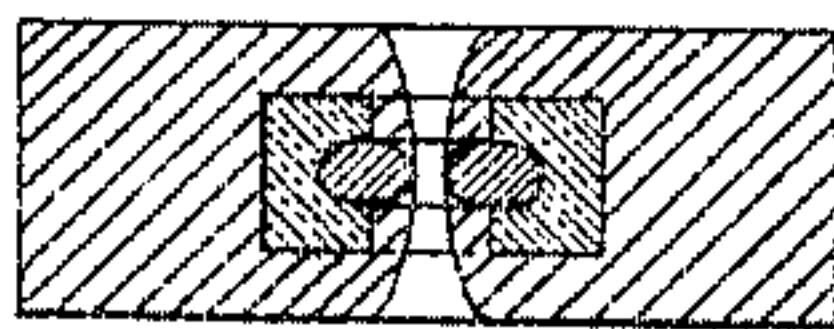


Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD KRAUSE, OF BERLIN, GERMANY.

WIRE-DRAWING DIE.

SPECIFICATION forming part of Letters Patent No. 776,072, dated November 29, 1904.

Application filed October 15, 1903. Serial No. 177,217. (No model.)

To all whom it may concern:

Be it known that I, RICHARD KRAUSE, manufacturer, a subject of the German Emperor, and a resident of 82 Steglitzerstrasse, Berlin, Germany, have invented certain new and useful Improvements in Wire-Drawing Dies, of which the following is a specification.

The enchasing of wire-drawing stones—that is to say, perforated diamonds such as used for wire-drawing—must be effected in a manner that they are protected as much as possible against getting broken—in other words, that the material encompassing the stone offers a sufficiently great resistance to the strain caused in the operation of wire-drawing. It is obvious that as a setting material cast-steel deserves the preference to all others, not only on account of its relatively great tenacity and hardness, but also because it greatly contracts after being cast and incloses the stone very firmly. In spite of these advantages of steel it has thus far not been used as a setting material for wire-drawing stones, although there are printed works in which the process of enchasing diamonds in steel is described. This is to be attributed to the fact that in making use of the enchasing processes hitherto in use the high melting temperature of the steel attacked the diamond to be enchased and made the smooth and polished bore rough and unsuitable.

In order to be able to use steel as a setting material for wire-drawing stones, it is necessary to remove the drawbacks resulting from the high melting temperature. According to the present invention this is attained by the arrangement shown in the drawings, in which similar letters refer to similar parts throughout the several views.

Figure 1 shows a mold with the diamond in position therein. Fig. 2 shows a diametrical section of the diamond surrounded by the steel body or ring. Fig. 3 shows the diamond and

steel body in a second mold. Fig. 4 shows a cross-section of the completed device.

The diamond *a* is placed in a mold *b* by means of bolts *c* or the like, and liquid metal is poured around the diamond to form a cast-steel body or ring *d*, as seen in Figs. 1 and 2. In consequence of the small quantity of steel it cools rapidly without damaging the stone *a*. The steel ring or body *d* thus formed contracts with an enormous force and uniformity and offers such a great resistance to the strains resulting from the wire-drawing that it is impossible for the stone to crack.

In order to handle the steel ring or body *d* more easily and to protect it against corrosive acids used in wire-drawing, the same is held, as shown in Fig. 3, in a mold *e* between the pins *f* and surrounded by a softer metal *g* and one which is indifferent against corrosive acids—such, for instance, as bronze—thereby forming a completed wire-drawing die, such as shown in Fig. 4.

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

1. In a wire-drawing die, the combination of a wire-drawing stone having a bore, a cast-steel body in which the stone is embedded, and a metal indifferent to corrosive acids covering all the parts of the steel that would otherwise be exposed to the said acids.

2. In a wire-drawing die the combination of a wire-drawing stone having a bore, a cast-steel body in which the stone is embedded, and bronze covering all the parts of the steel that would otherwise be exposed to acids used in wire-drawing.

The foregoing specification signed at Berlin this 2d day of October, 1903.

RICHARD KRAUSE.

In presence of—

WOLDEMAR HAUPT,
HENRY HASPER.