

(No Model.)

W. H. SAWYER.
WIRE DRAWING DIE.

No. 406,671.

Patented July 9, 1889.

Fig. 1.

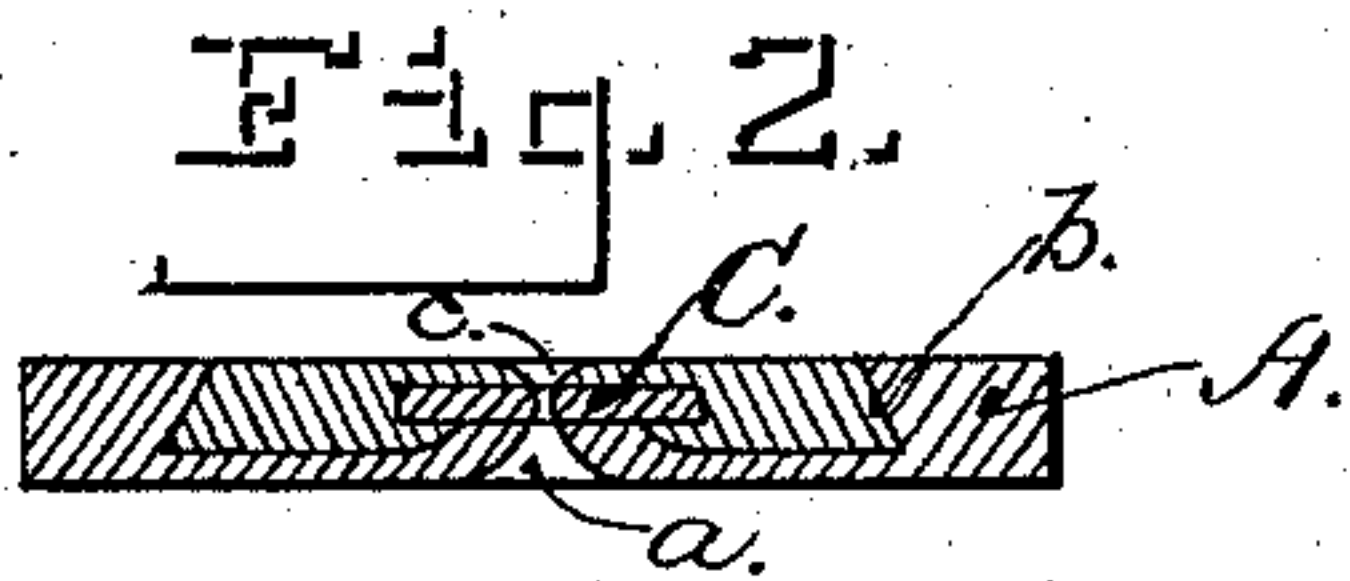
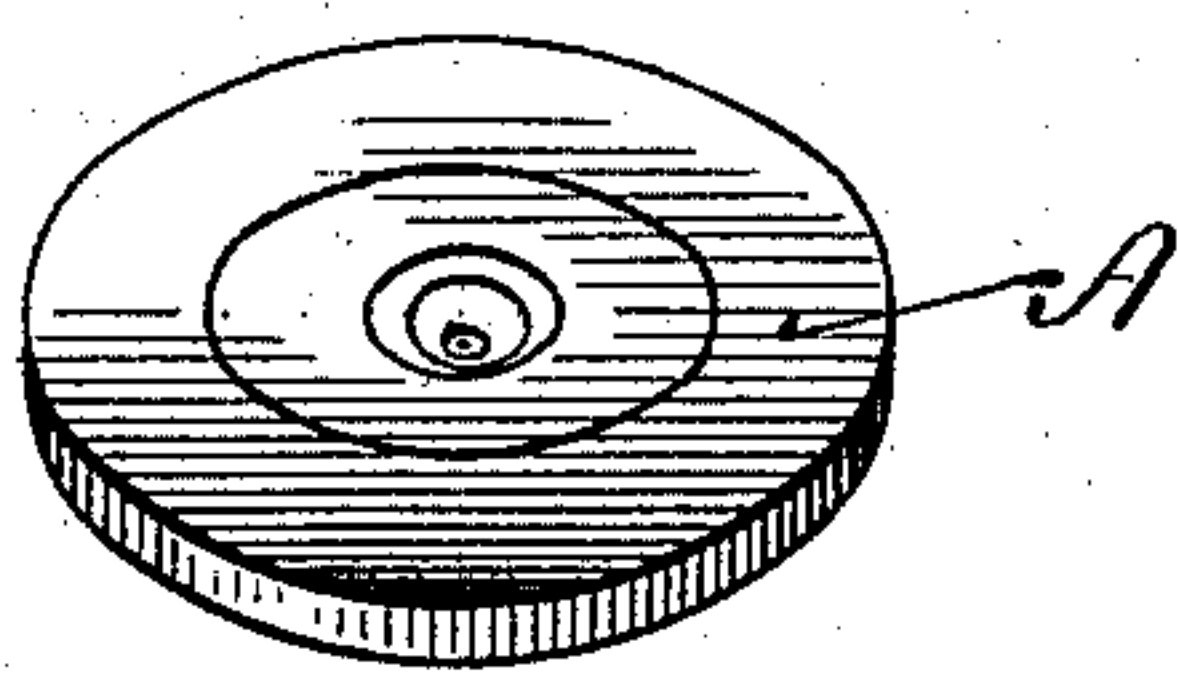
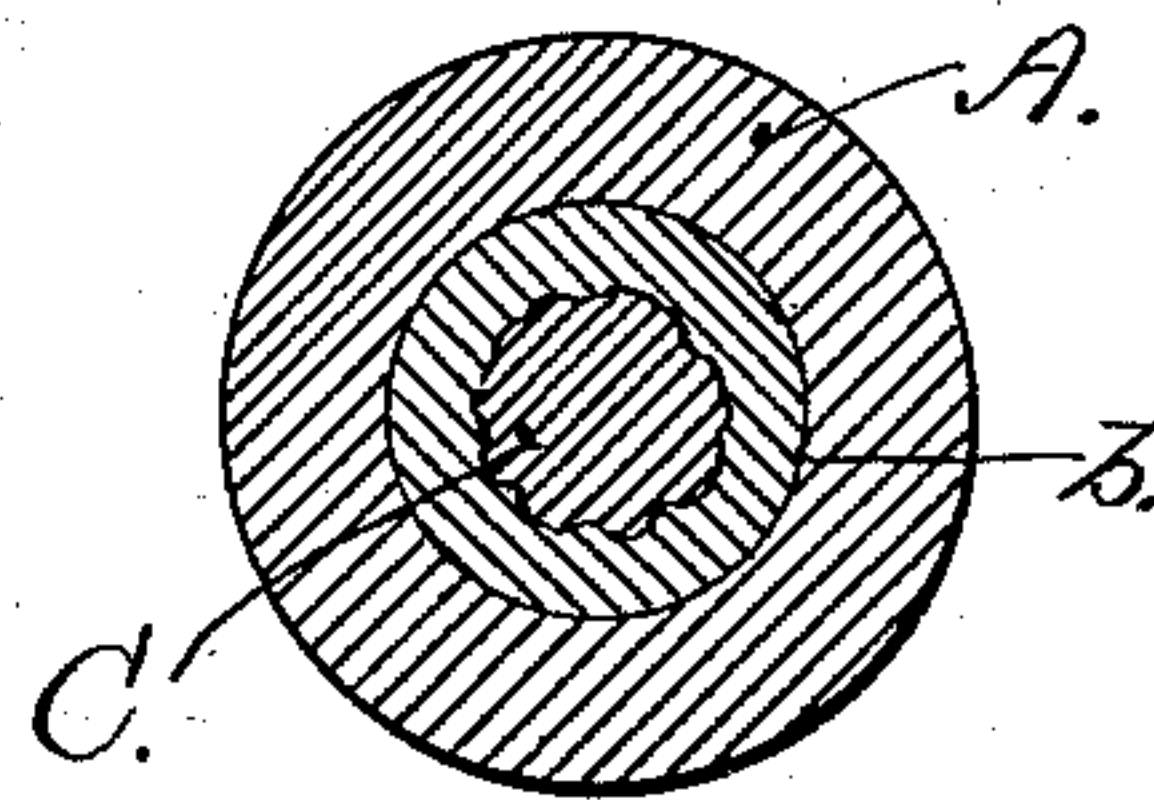


Fig. 3.



Witnesses
Harry S. Bokren
Parker & Smet, Jr.

Inventor
William H. Sawyer,
By his Attorney
Fred W. Royce

UNITED STATES PATENT OFFICE.

WILLIAM H. SAWYER, OF PROVIDENCE, RHODE ISLAND.

WIRE-DRAWING DIE.

SPECIFICATION forming part of Letters Patent No. 406,671, dated July 9, 1889.

Application filed July 8, 1886. Serial No. 207,412. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SAWYER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Wire-Drawing Dies; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of wire-drawing dies which are composed of hard costly stones or metals having a hole drilled through their centers and secured to a supporting-plate provided with a central hole or wire-passage, the object of my present improvements being to provide a wire-drawing die that will be simple in construction, durable and efficient in its action, and which can be furnished at much less cost than those hitherto employed for the same purpose.

To these ends my invention consists, essentially, of the novel details of construction and general arrangement of parts, all as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of a wire-drawing die constructed according to my invention; Fig. 2, a vertical longitudinal section of the same, and Fig. 3 a vertical transverse sectional view thereof.

Similar letters of reference indicate like parts in the several figures.

It may be observed that drilled jewels for dies, known in the trade as "slabs," are usually furnished in irregular exterior shapes to the wire-makers, and in order to secure such a jewel to a supporting-plate it is necessary to turn the jewel down to a circular shape to adjust it in a corresponding recess in the center of a suitable supporting-plate, and to secure it therein by burnishing the surrounding metal over its edge.

The method of preparing and setting the dies above described is very laborious and

expensive, and after the hole in the central part of the same becomes worn too large or out of proper shape it cannot be drilled in a new place or adapted for use again. By means of my improvements the jewel or die can be drilled with a new hole and reset a number of times after the first hole or series of succeeding holes becomes worn too large or out of proper shape, thus effecting a considerable economy, as the dies are quite costly.

In carrying out my invention, the jewel-supporting plate A, which is preferably circular in shape, is provided with a hole or wire-passage *a* through the central part of the same, while upon one side of the said plate is formed a recess *b* around the wire-passage *a*, the said recess having its surrounding wall preferably undercut, as shown. The jewel or slab C, drilled for use as a wire-drawing die, is adjusted in the recess *b* of the plate A, with its hole concentric with the wire-passage *a*, the diameter of said recess being much greater than that of any jewel-slab to be used, so that such slab may be readily adjusted therein with its hole in line with the wire-passage and leaving an ample surrounding space in the recess to receive an easily-fusible alloy or other suitable retaining material to securely hold the die in position therein. After the jewel has been secured in the desired position within the recess *b* through the medium of the alloy or other retaining material overlapping upon the same, the surplus alloy or material is turned off by a suitable tool and a flaring passage *c* formed around the central hole, as shown. The wire-passage *a* upon the opposite side of the supporting-plate A is also preferably countersunk, as shown in Fig. 3. The wall of the hole in the jewel is then polished with a fine wire and diamond-dust to render the die ready for use.

When the die-hole becomes worn too large or out of proper shape, the supporting-plate A is heated to melt the alloy and release the jewel, which can then be drilled in a fresh place and reset in the said supporting-plate in the manner already above described.

Having thus described my invention, I claim as new and useful and desire to secure by Letters Patent—

1. The herein-described wire-drawing die,

consisting of the supporting-plate A, having a wire-passage, and the drilled jewel or die C, having its die-hole in line with the wire-passage, and secured upon the plate by a surrounding and overlapping mass of cement or readily-fusible metallic alloy, substantially as described.

2. The wire-drawing die composed of the recessed supporting-plate A, having a wire-
10 passage through the bottom of its recess, the jewel or die C, arranged upon the bottom of

said recess with its hole in line with the wire-passage, and the jewel-embedding alloy or cement surrounding and overlapping said jewel in the recess, substantially as specified. 15

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. SAWYER.

Witnesses:

GILMAN E. JOPP,
W. A. HATHAWAY.