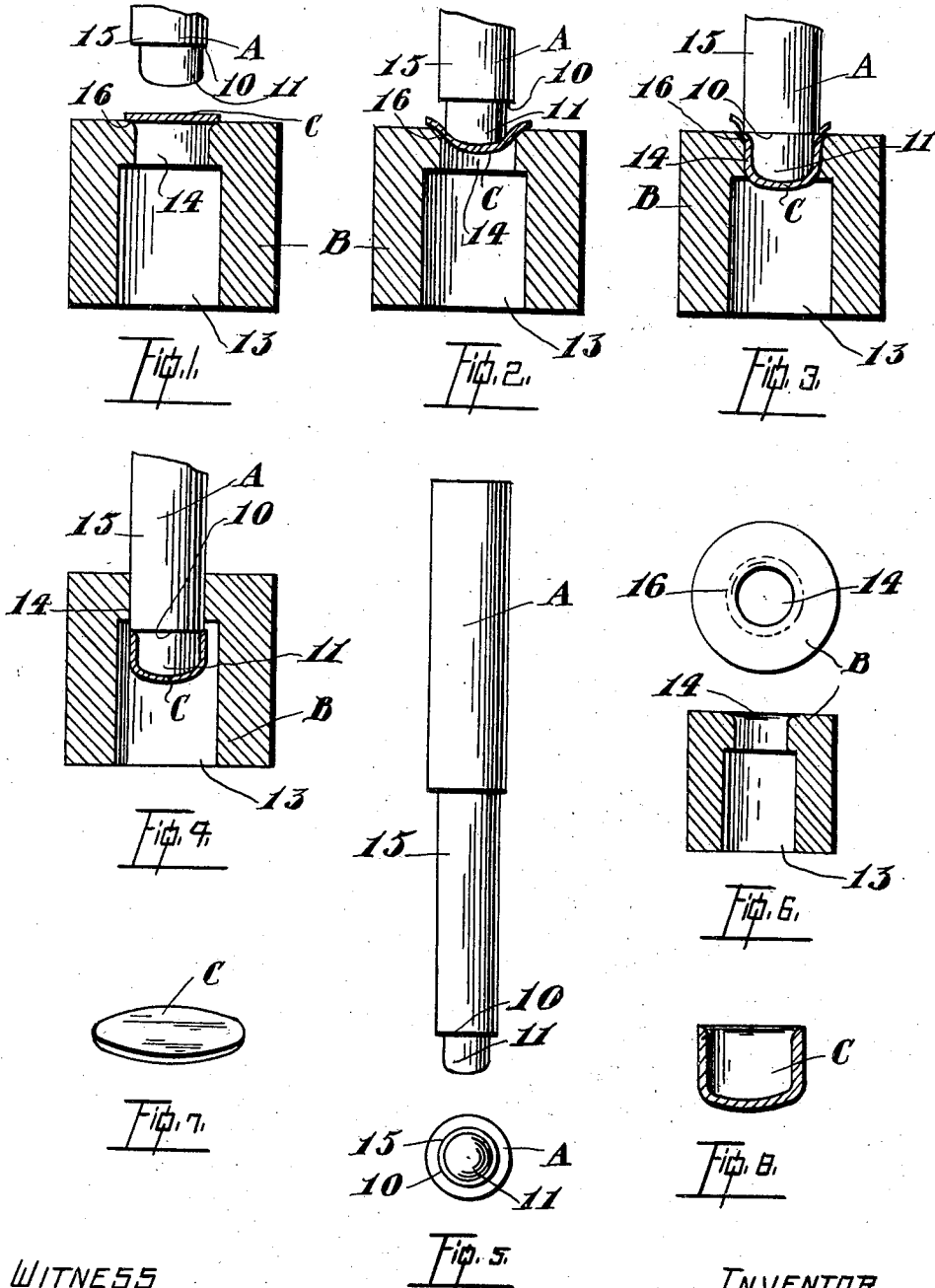


J. L. CURRIE.
DIE FOR MAKING CAPS.
APPLICATION FILED MAY 8, 1916.

1,200,593.

Patented Oct. 10, 1916.



WITNESS

BY

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DIE FOR MAKING CAPS.

1,200,593.

Specification of Letters Patent.

Patented Oct. 10, 1916.

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To all whom it may concern:

Be it known that I, JOHN LORNE CURRIE, a subject of the King of Great Britain, and resident of the town of Renfrew, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Dies for Making Caps, of which the following is the specification.

This invention relates to improvements in dies for making caps, and the objects of the invention are to provide a simple and effective device for manufacturing metal parts of percussion caps which will enable the caps to be completed from a disk of metal at a single operation without the necessity of subsequent trimming or turning, and it consists essentially of dies having means for simultaneously pressing the caps to shape from a disk and trimming the periphery thereof, all as hereinafter more fully set forth and described in the accompanying specification and drawings.

In the drawings, Figures 1, 2, 3 and 4 show enlarged sectional elevations of the punch and disk at various relative positions. Fig. 5 shows elevation and plan of the punch. Fig. 6 shows section and plan of the disk. Fig. 7 shows an enlarged perspective view of disk from which the cap is made. Fig. 8 shows an enlarged sectional view through the finished cap.

In the drawings like characters of reference refer to like parts in the several figures.

Referring to the drawings, A represents the punch manufactured of suitable hard steel provided with a cutting shoulder 10 below which is a portion 11 of reduced diameter and which is adapted to form or press the cap. This portion 11 is of substantially the same shape as the final interior of the cap.

B represents the die formed with a central orifice 13 which has a constricted portion 14 at the top forming a throat, which throat is of substantially the same diameter as the portion 15 on the punch. The upper edge 16 of the throat is formed with a slight roll, as shown.

In using the punch and die, a disk C of suitable metal such as copper is formed of

convenient size, slightly greater in diameter than the throat 14. This is placed by hand or mechanically over the throat. (See Fig. 1.) The punch is then caused to descend, being located conveniently in a suitable punch press. The disk will first be bent as shown in Fig. 2 and then the cutting shoulder 10 engaging the roll 16 and throat 14 will shear a narrow trimming from the outside of the disk as shown in Fig. 3. At the same time the portion 11 will force the disk downwardly through the throat and cause it to assume its final shape. It will be found that the roll 16 will cause the metal forming the edge of the cap to be drawn out slightly to form the shape shown in Fig. 8. The difference in diameter between the portion 11 and the portion 15 of the punch is substantially equal to twice the thickness of the cap. The cap is carried through the die as shown in Fig. 4, and on the return movement will be stripped by engagement with the lower side of the throat 14. It has been found that this stripping action will take place although the diameter of the throat is only equal to the diameter of the portion 15 of the punch.

The necessity for trimming the caps arose from the fact that it was practically impossible to center the disks prior to pressing and this caused the side walls of the cap to be of varying irregular height. For use in shells or cartridges it is necessary that the walls should be of uniform size to within one thousandth of an inch. In my invention the trimming operation produces a wall of uniform size and shape simultaneously with the pressing of the cap.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention, within the scope of the claims, constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:

1. In combination, a punch having a cutting shoulder and a portion below the shoul-

der adapted to shape the cap, and a die having a constricted throat through which the punch is adapted to pass.

2. In combination, a punch having a cutting shoulder and a portic below the shoulder adapted to shape the cap, and a die hav-

ing a constricted throat through which the punch is adapted to pass, the top of the throat being formed with a slight roll.

In witness whereof I have hereunto set my hand.

JOHN LORNE CURRIE.