

No. 677,193.

Patented June 25, 1901.

W. C. FISCHER.

TOOL FOR MANUFACTURING METALLIC CAPS, CUPS, OR SIMILARLY SHAPED ARTICLES.

(Application filed Apr. 17, 1900.)

(No Model.)

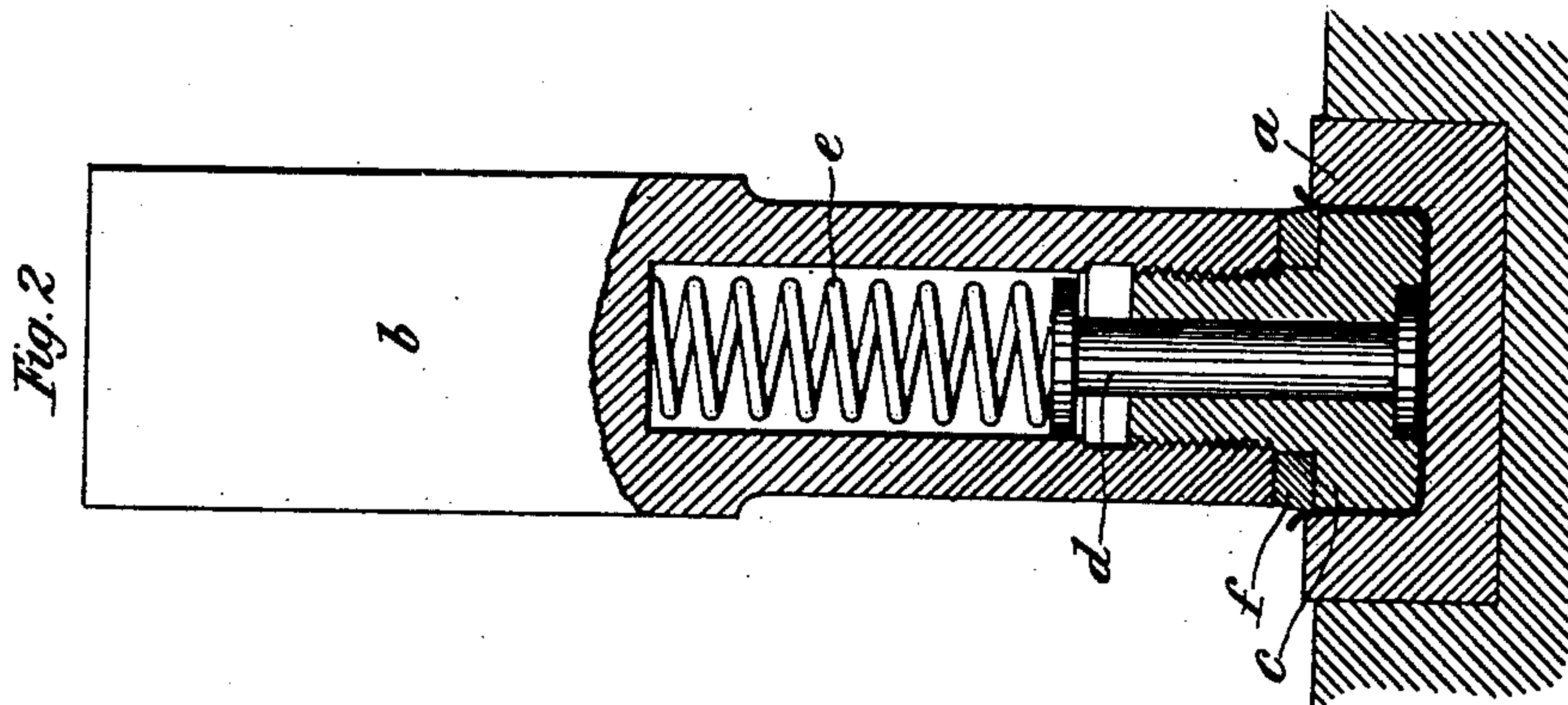
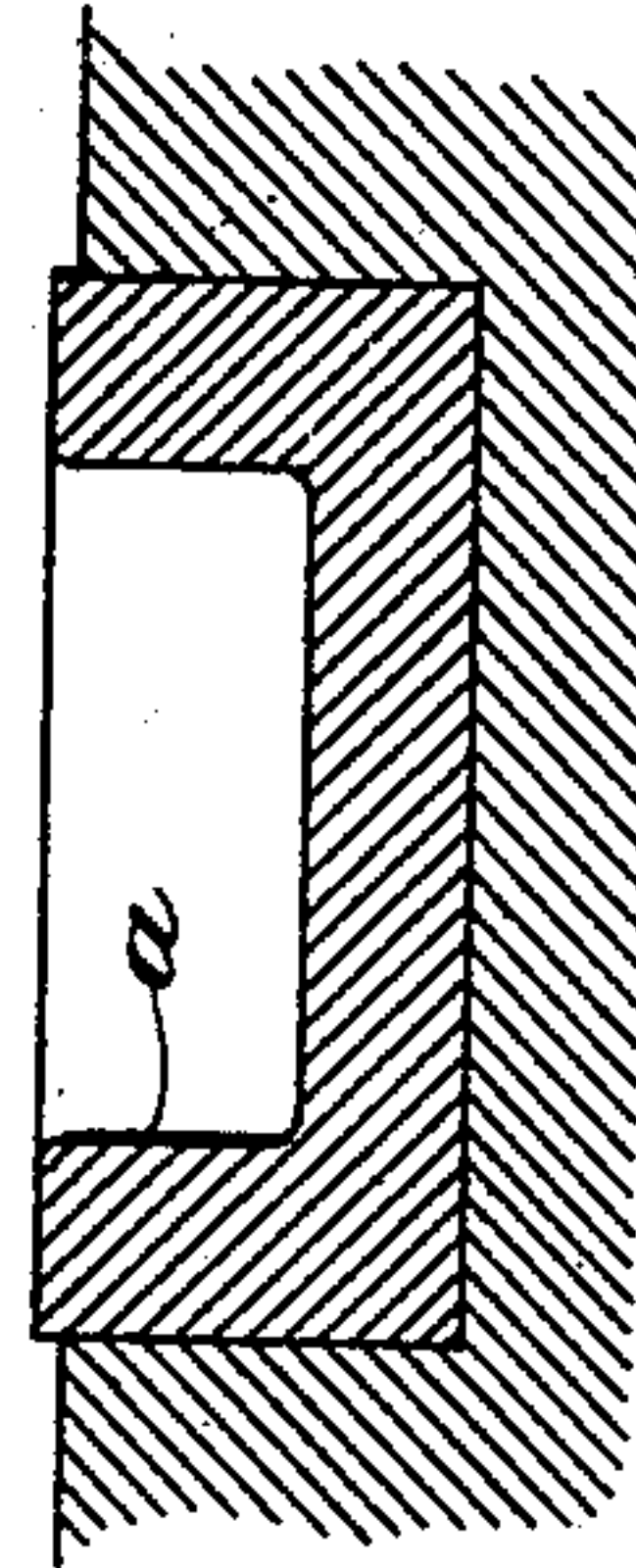
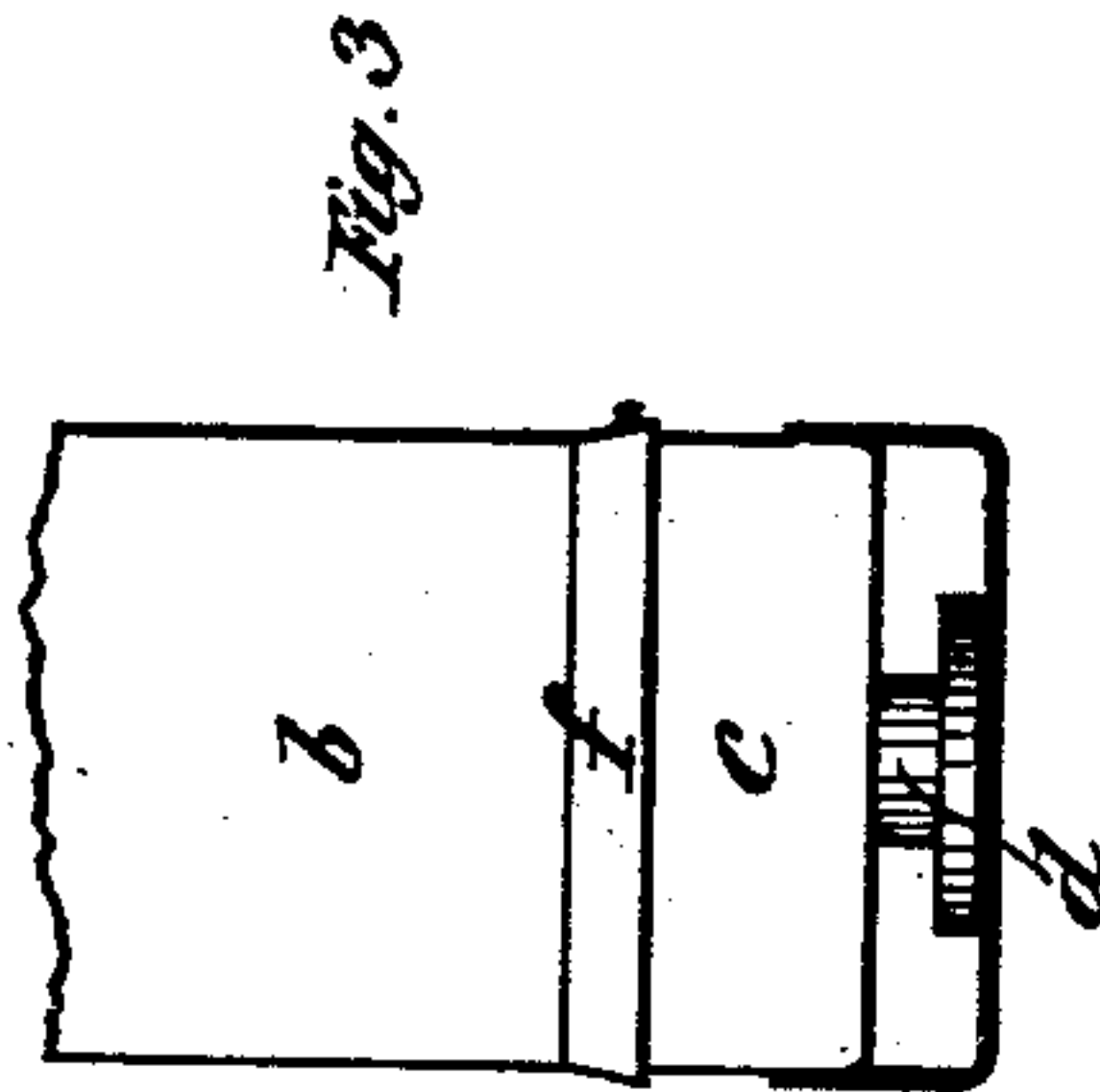
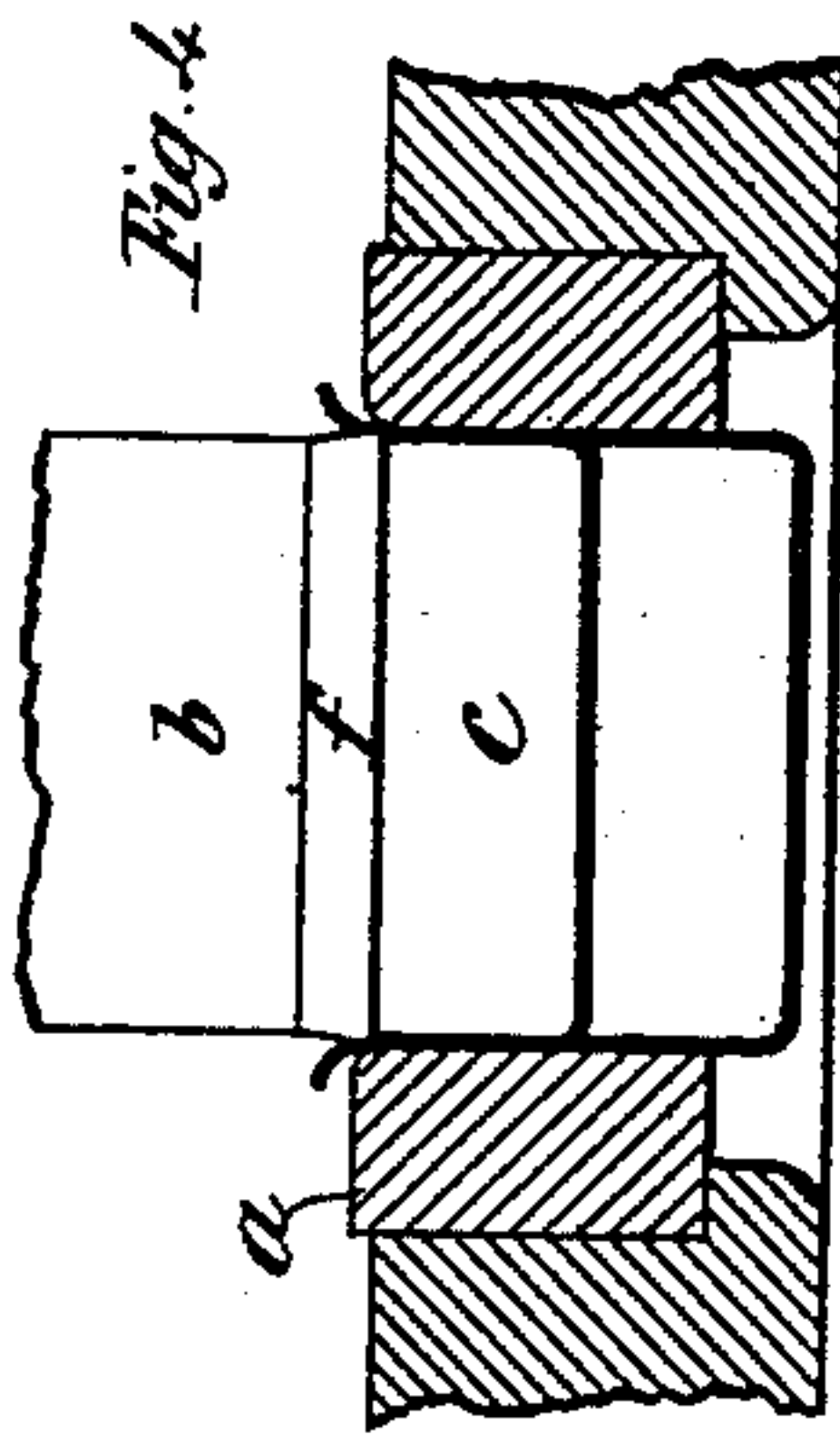
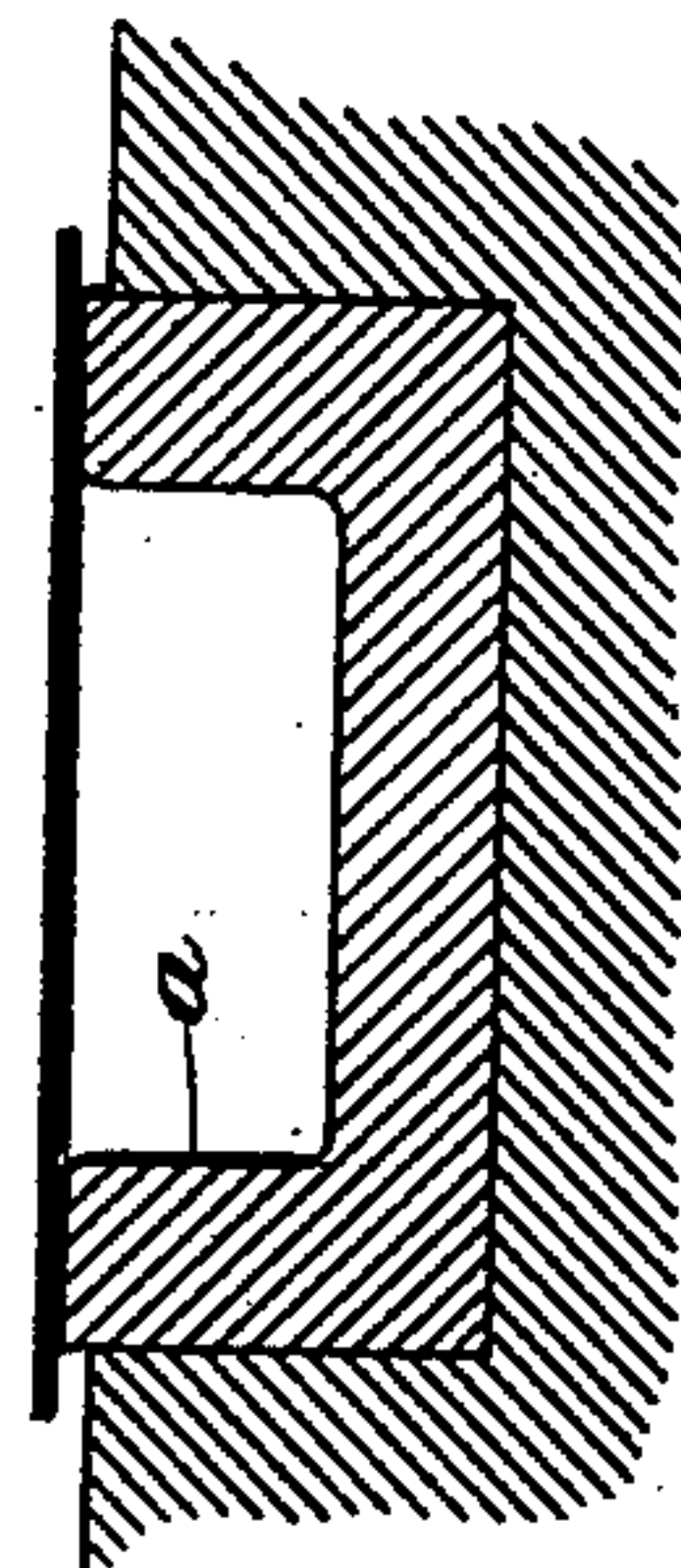
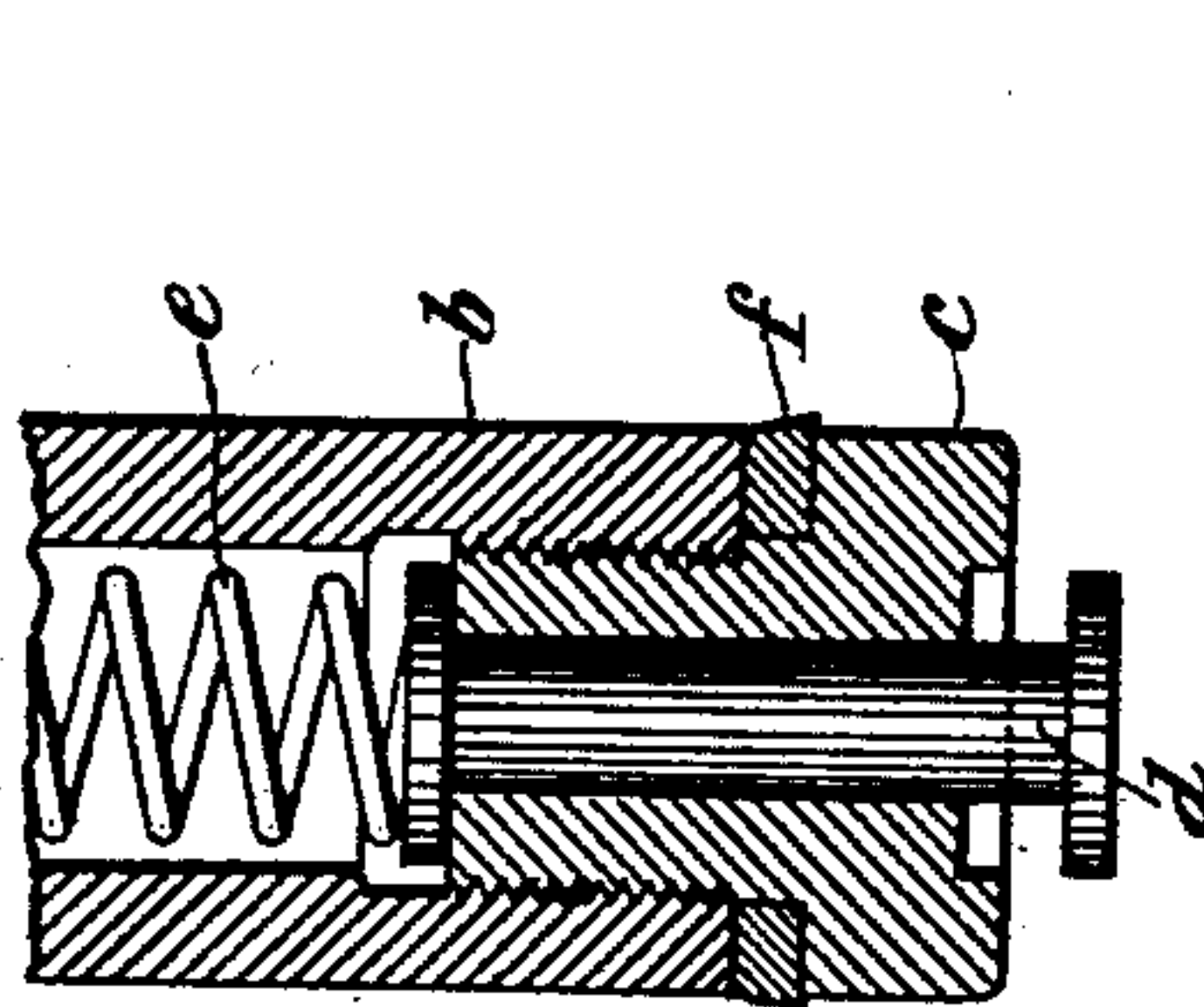


Fig. 1



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UNITED STATES PATENT OFFICE.

WILLIAM CHARLES FISCHER, OF PIMLICO, LONDON, ENGLAND.

TOOL FOR MANUFACTURING METALLIC CAPS, CUPS, OR SIMILARLY-SHAPED ARTICLES.

SPECIFICATION forming part of Letters Patent No. 677,193, dated June 25, 1901.

Application filed April 17, 1900. Serial No. 13,196. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHARLES FISCHER, foreman, of 29^a Gillingham street, Pimlico, in the county of London, England, have invented a certain new and useful Improvement in Tools for Manufacturing Metallic Caps, Cups, and Similarly-Shaped Articles, of which the following is a specification.

In the accompanying drawings, Figure 1 is a vertical section of a die and punch before striking a blow. Fig. 2 is a similar view after striking the blow, and Fig. 3 shows the punch withdrawn with the article partly thrown off. Fig. 4 shows a die with an open bottom.

This invention relates to the manufacture of metallic caps, cups, and similarly-shaped articles by striking up or drawing them from sheet metal, such articles being used for various purposes in the arts; and the object of the invention is to facilitate the manufacture of said caps, cups, or other articles. Hitherto articles of this character have been drawn by the aid of a die and plunger, and besides some irregularities in the size of the articles due to various causes—for instance, irregularity in the thickness of the metal employed—they required to be subjected to a finishing or trimming process in order to remove the bur from the lip or the ragged edge of the article. According to the present invention these two operations of drawing and trimming are effected at one time by means of a special tool, which forms the subject of the invention, and thus a great saving of time and labor results, and a better and more regularly-sized article is produced.

a is a die of the usual form, which is fixed in a block or securely held in any other convenient manner. The diameter of the die will correspond to the external diameter of the article to be produced.

b is a plunger of a suitable press or other machine, to which is adapted a punch *c*. The size of this punch *c* corresponds to the internal diameter and depth of the article to be produced.

The attachment of the punch *c* to the plunger *b* is, as shown in the drawings, by means of a screw-thread; but it is obvious that it may be effected in any other convenient manner.

In the drawings the punch *c* is shown as provided with a central pin or stud *d*, which

is elastically yielding by means of the spring *e*, contained in a recess of the plunger *b*. The object of this pin or stud *d* is to throw off the finished cap from the punch so soon as it is withdrawn from the die. The use of this pin or stud is not, however, absolutely necessary, as any other known method for effecting the same object may be employed.

Between the punch *c* and the plunger *b* I insert an annular steel cutter *f*, the diameter of the cutting-head of which corresponds with the external diameter of the article to be produced and the internal diameter of the die *a*. This cutter *f* will just enter within the die *a*, so that it will nip or shear off any excess of metal on the edge of the cap, which will thus be trimmed as well as drawn at one operation.

By means of this tool the size of the caps will be carefully gaged notwithstanding any difference in the thickness of the metal sheet from which the blanks are cut, as the drawing operation will reduce the metal to its proper thickness, and the cutter will remove the excess of metal, whatever it may be, thus producing articles of the same gage absolutely without any necessity for submitting the article to a finishing or trimming operation in a lathe or otherwise. The finished cap may be delivered through the bottom of the die, as shown in Fig. 4, or it may be lifted out of the die by the plunger when the said die has a closed bottom, as shown in Figs. 1 and 2.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A tool for producing caps, cups, and similarly-shaped articles, by drawing a metal blank in a die, consisting of a plunger, a punch of a size equal to the internal dimensions of the article to be produced, and secured to the plunger in any convenient manner, and a removable annular steel cutter placed between the punch and the plunger, for shearing off any excess of metal, and having an external diameter equal to that of the article to be produced, all as herein shown and described.

2. A tool for producing caps, cups and similarly-shaped articles by drawing a metal blank in a die, consisting of a plunger, a punch having parallel sides and of a size equal

- to the internal dimensions of the article to be produced and secured to the plunger in any convenient manner, and a removable annular steel cutter placed between the punch and the
5 plunger to coact with the internal face of the die to shear off any excess of metal and having an external diameter equal to that of the article to be produced, all as herein shown and described.
- 10 3. The combination with a die for forming caps, cups and similarly-shaped articles from a metal blank, said die having parallel sides and a flaring mouth, of a tool consisting of a plunger, a punch having parallel sides and of
a size equal to the internal dimensions of the
15 article to be produced and secured to the plunger in any convenient manner, and a removable steel cutter placed between the punch and the plunger to coact with the internal face of the die to shear off any excess
20 of metal and having an external diameter equal to that of the article to be produced, all as herein shown and described.

London, April 4, 1900.

WILLIAM CHARLES FISCHER.

Witnesses:

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