

No. 822,233.

PATENTED JUNE 5, 1906.

J. S. ALSTON.

DIE.

APPLICATION FILED AUG. 20, 1904.

2 SHEETS—SHEET 1.

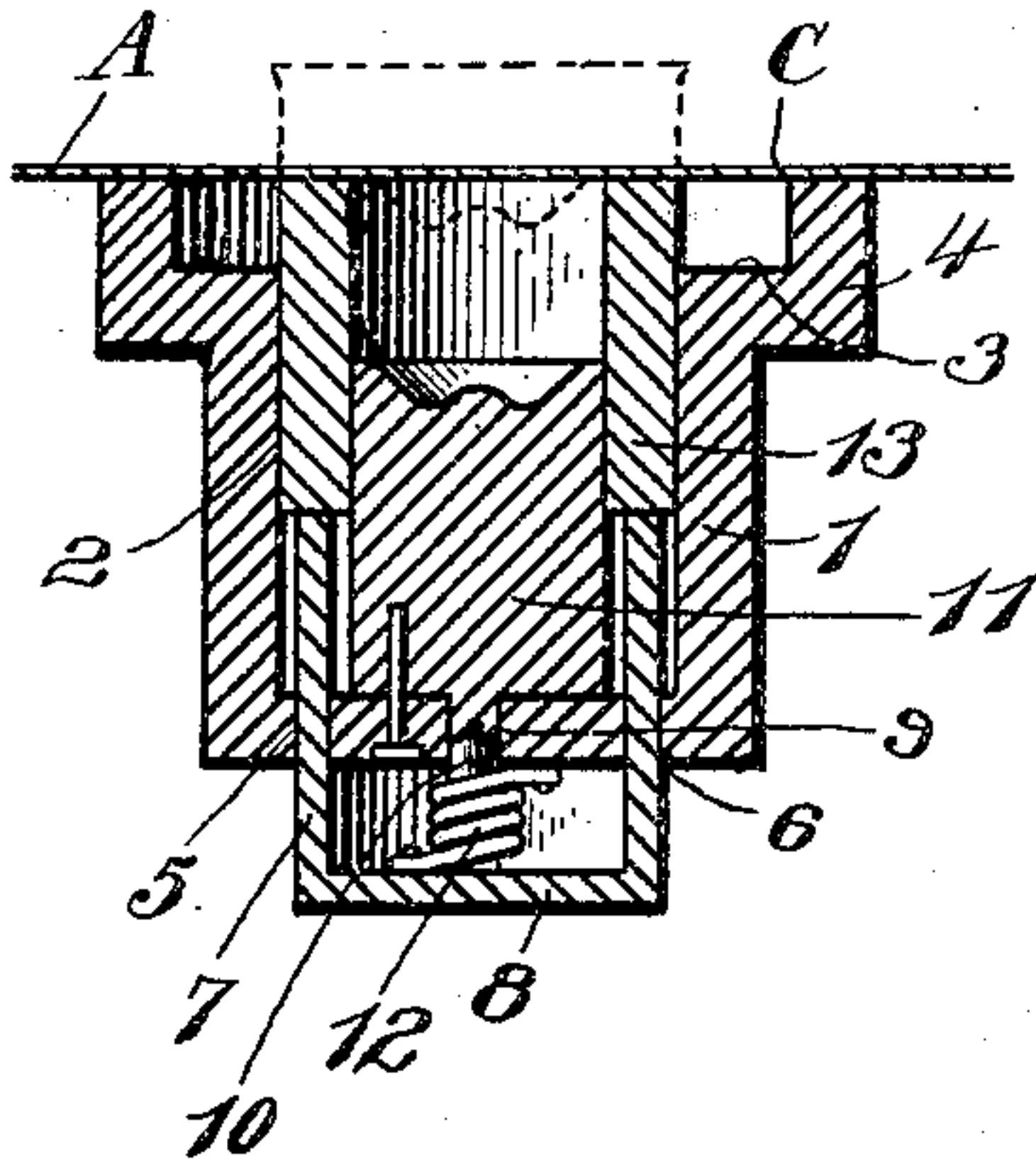
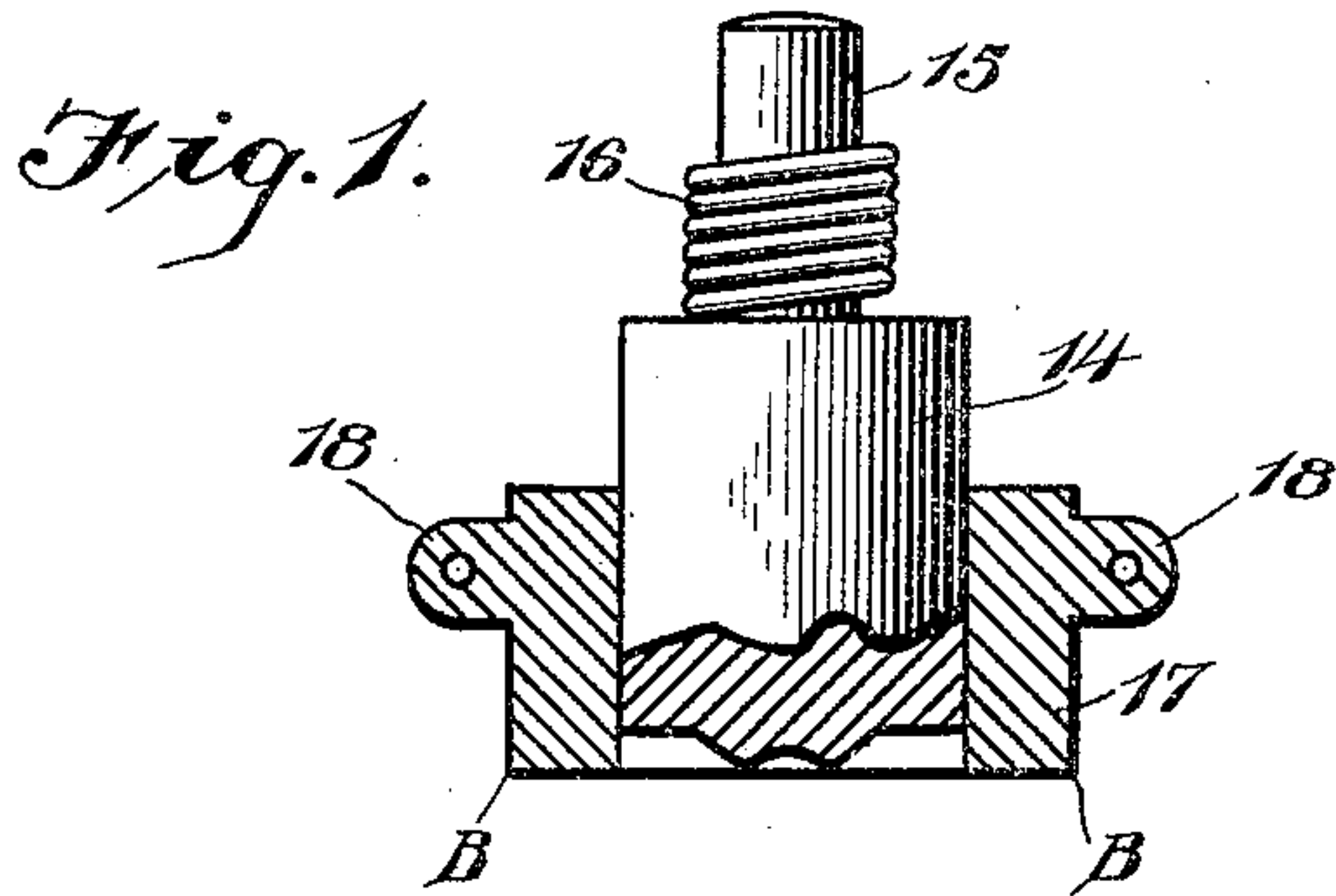


Fig. 2.

Fig. 3.

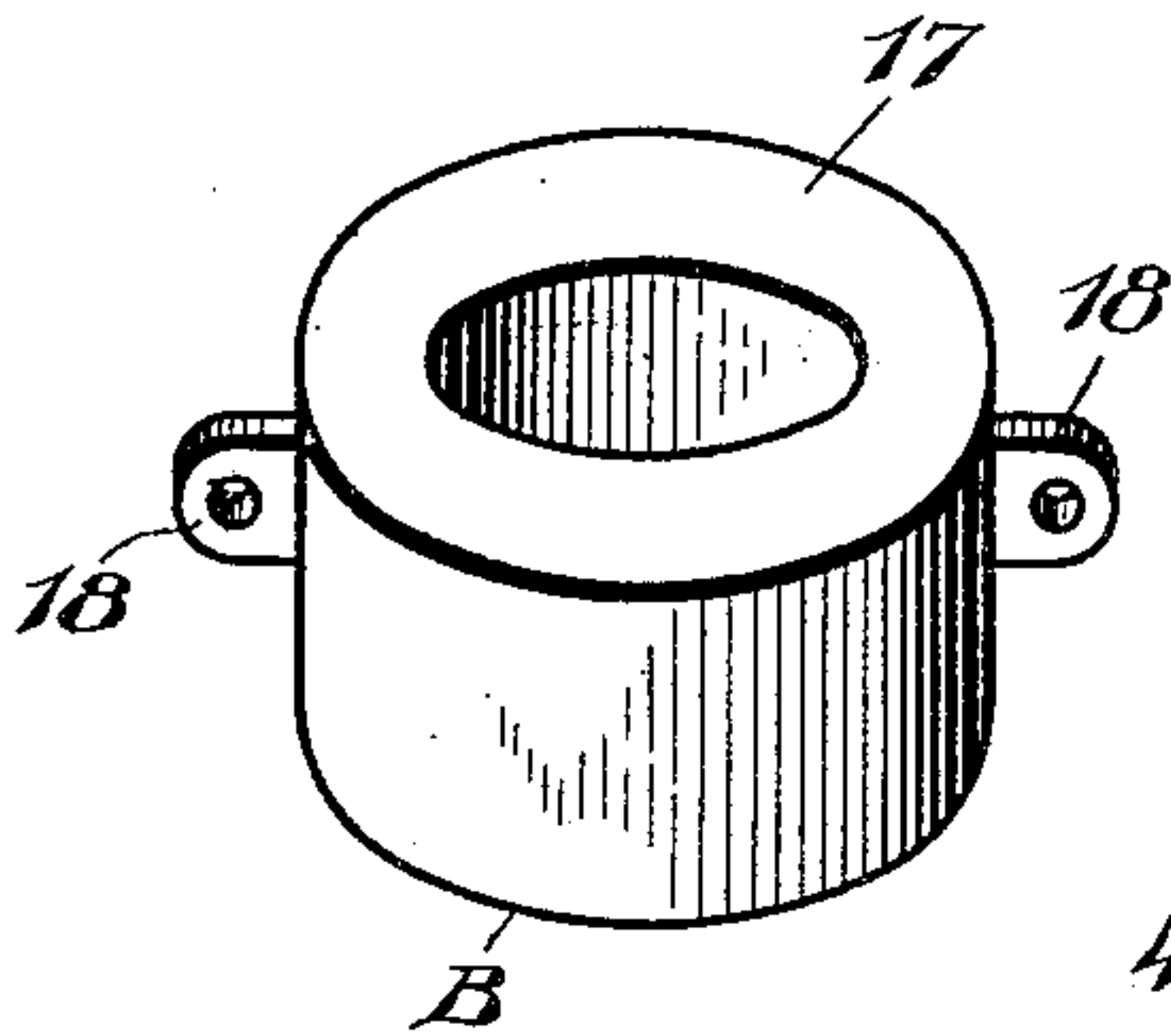
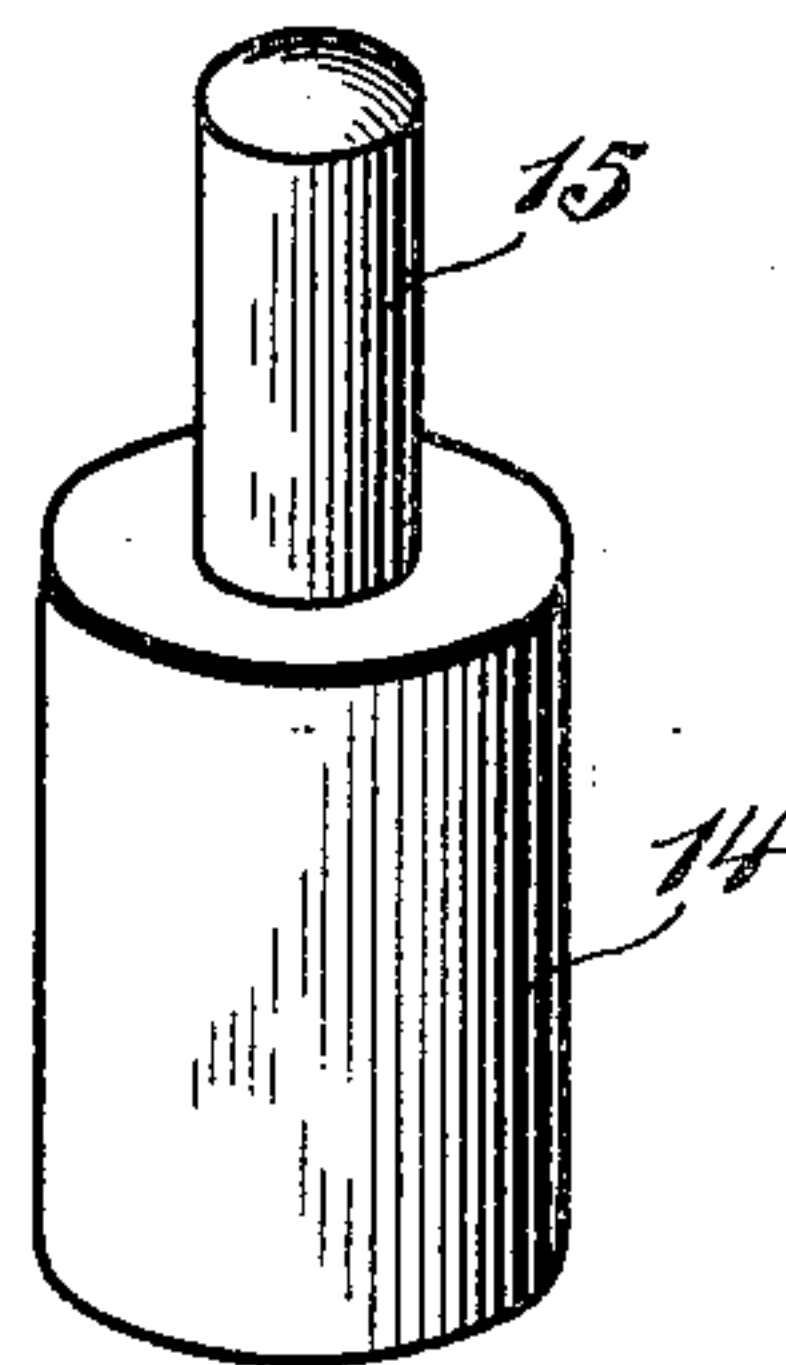
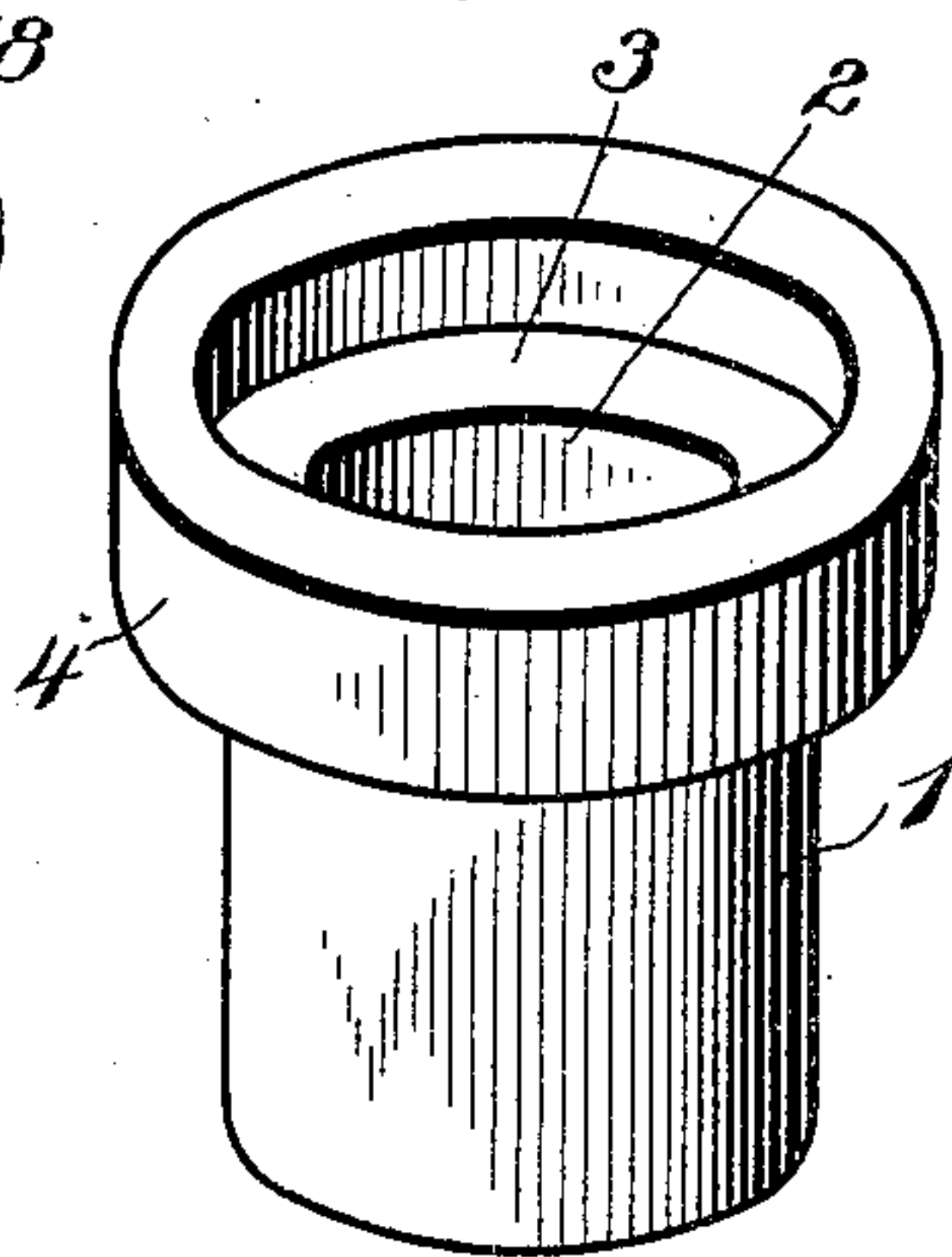


Fig. 4.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

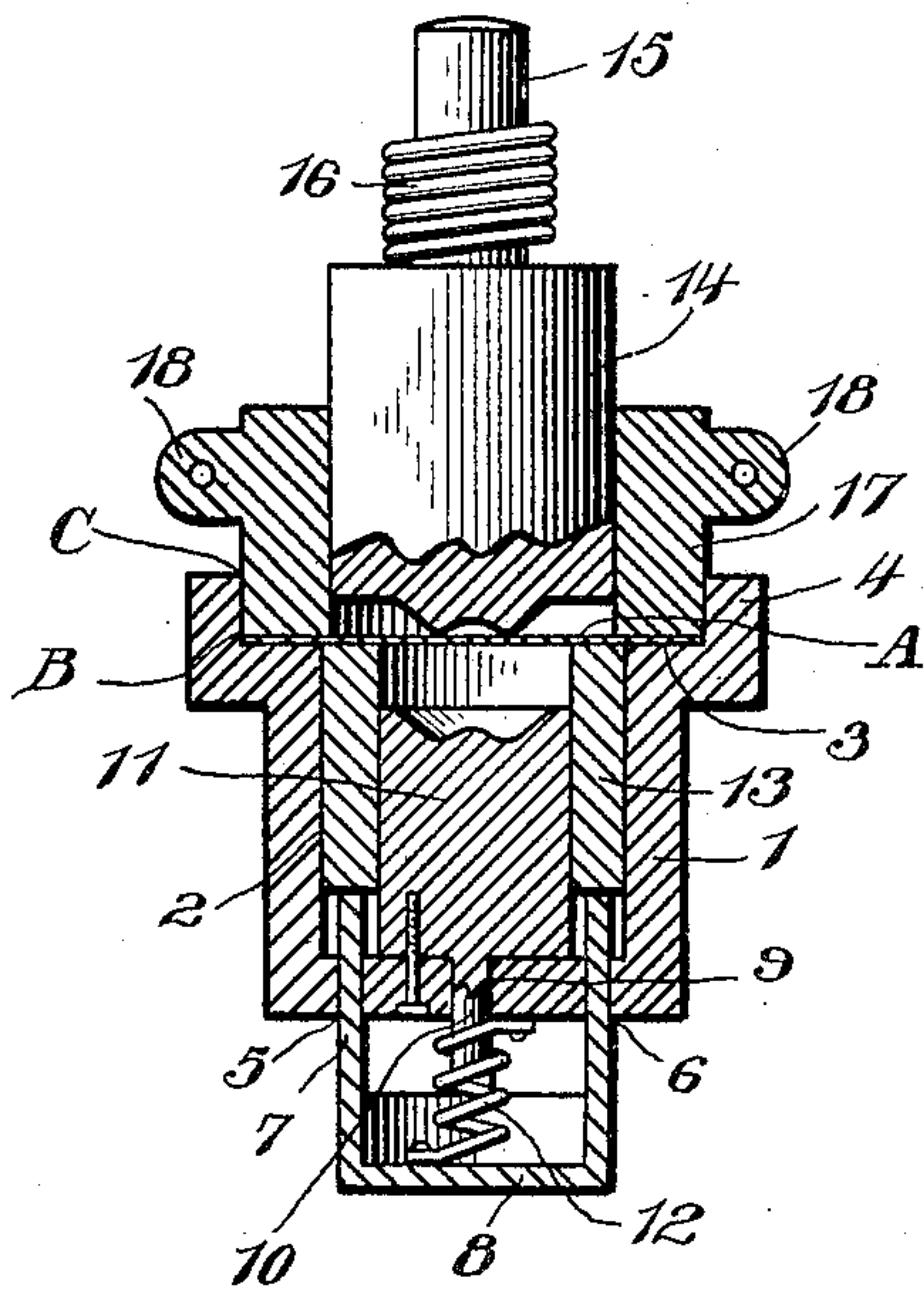


Fig. 6.

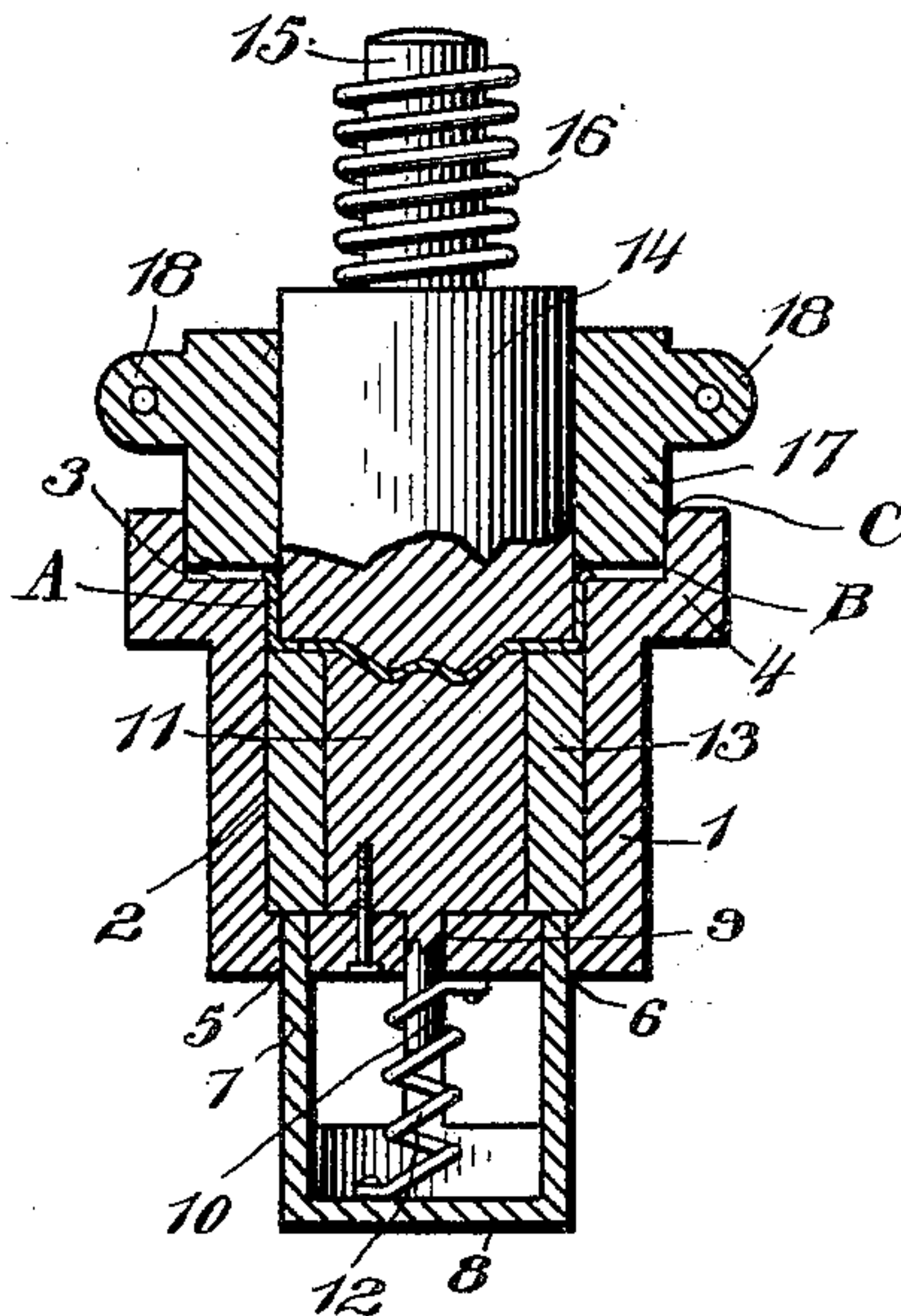


Fig. 7.

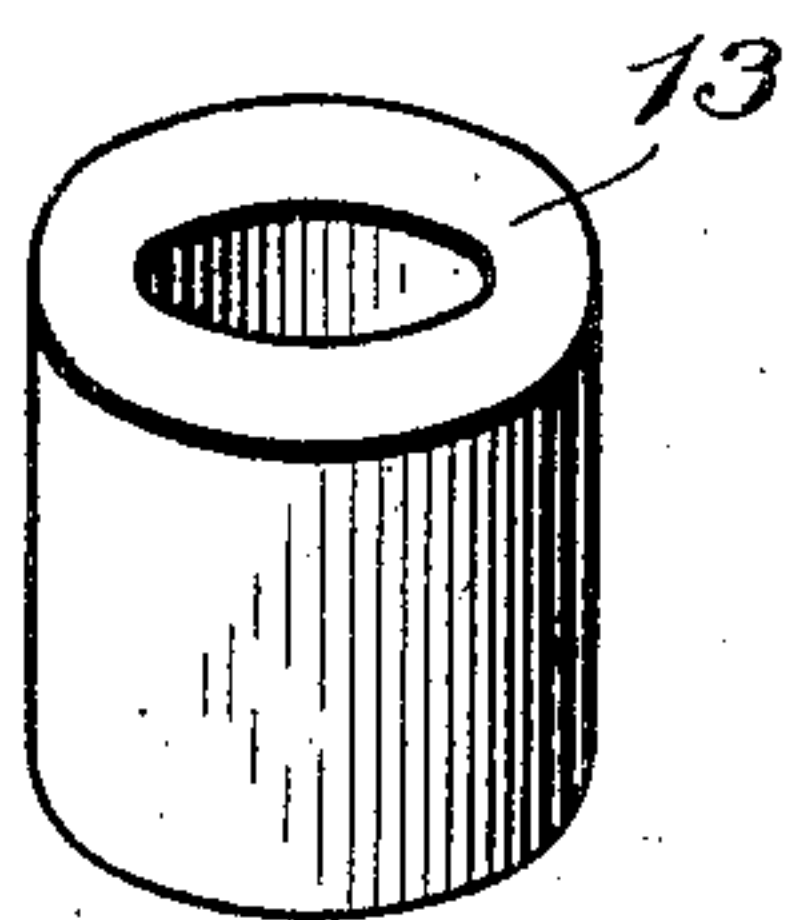


Fig. 8.

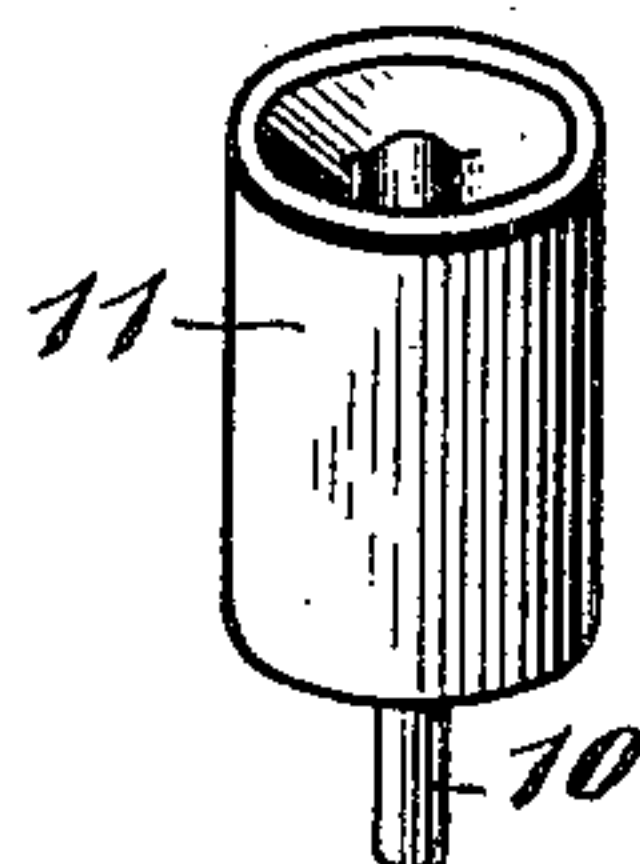
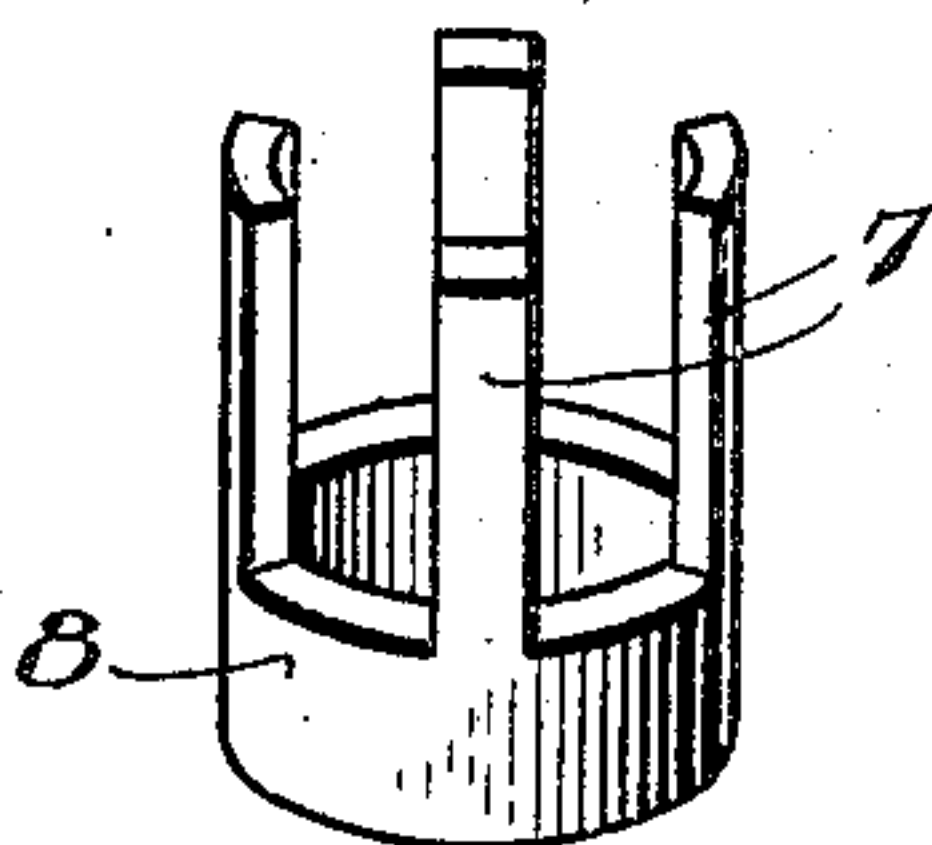


Fig. 9.



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UNITED STATES PATENT OFFICE.

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No. 822,233.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 20, 1904. Serial No. 221,562.

To all whom it may concern:

Be it known that I, JOHN S. ALSTON, a citizen of the United States, residing at Atlantic City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in 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 dies for making caps for bottles and jars, and has for its object to provide a device of this class which will at one operation cut the metal for the cap from a sheet and form the cap.

With this object in view my invention consists in the novel construction of the dies.

Referring to the accompanying drawings, Figure 1 is a view, partly in section, of the upper male die and the combined male and female die and also showing the lower male and female die with the metal sheet in position. Fig. 2 is a perspective view of the upper cutting-die. Fig. 3 is a perspective view of the upper male die. Fig. 4 is a perspective view of the lower female die. Fig. 5 is a view, partly in section, showing the dies brought partially together and illustrating the metal forming the cap cut from the metal sheet. Fig. 6 is a like view showing the dies brought entirely together and the cap formed. Fig. 7 is a perspective view of the cap forming and ejecting ring. Fig. 8 is a perspective view of the lower cap-forming die. Fig. 9 is a perspective view of the ring-actuating cup.

Like characters of reference indicate the same parts throughout the several figures, in which—

1 indicates the lower female die, which is constructed as shown, having the cylindrical portion 2, the flat head portion 3, and the flange portion 4. The bottom 5 of said die is provided with perforations 6, through which the arms 7 of the spring-actuated member 8 pass, and a central opening 9, through which the post 10 of the lower cap-forming die 11 passes, said post 10 acting as a guide for the spring 12, which is of compression strain and which normally tends to hold the member 8 in a raised position.

13 indicates the cap forming and ejecting ring, and as shown it surrounds the lower

cap-forming die 11 and operates within the lower female die 1.

14 indicates the upper male cap-forming die provided with a post 15, around which is a spring 16 of an extension strain, and 17 indicates the upper cutting-die having ears 18, by means of which the die is secured to a machine.

Having thus described the several parts of my invention, its operation is as follows: As shown in Fig. 1, a suitable sheet of metal A is placed on the lower female die, and the upper male die 14 and upper cutting-die 17 are carried down upon the metal sheet. The cutting edge B of the cutting-die 17 coacts with the cutting edge C of the lower female die 1 and cuts the cap-blank from the metal sheet and carries the same down into position shown in Fig. 5. The upper male die continues downward, pressing the cap before it until it reaches the lower cap-forming die 11, which lower die has its face formed as shown and corresponding to the face of the upper male die 14. Thus the cap is formed, and as the upper dies are carried up after forming the cap the cap forming and ejecting ring 13 is forced up by the member 8 raising the cap out of the lower dies into position shown in dotted lines in Fig. 1, so that the cap may be readily removed and another sheet of metal placed in position for the following operation. As shown in Fig. 6, after the die 14 has arrived at the end of its stroke and the metal forced toward the center of the dies 17 and 1 and the cap formed the extreme edge of the metal forming the cap is still held between the dies 17 and 1, which gives the edge of the cap a slight flare, as shown.

The particular construction of the faces of the cap-forming dies is designed to form a cap having a central projection in the top of the cap and a slight depression in said projection. However, any modifications in this regard can be made without departing from my invention, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a device for forming metal caps, the combination of a lower female die, a cap forming and ejecting ring yieldingly held within said lower female die, a lower male die rigidly secured to said lower female die within said cap forming and ejecting ring, an upper cutting-die arranged to coact with said

lower female die to cut the metal, and an upper male die within said cutting-die arranged to impinge said cap forming and ejecting ring and said lower male die to form the cap.

- 5 2. In a device for forming metal caps, the combination of a lower die, an upper die arranged to coact with said lower die to cut and hold the metal, a die arranged to subsequently engage the metal and draw the outer
10 portion thereof toward the center of the dies

to shape the cap, the said upper and lower dies engaging the extreme outer edge of the metal to form a slight flare to the cap, substantially as described.

In testimony whereof I affix my signature 15
in presence of two witnesses.

JOHN S. ALSTON.

Witnesses:

JOSEPH LYNN,
LOUIS GERNER.