

No. 777,784.

PATENTED DEC. 20, 1904.

G. H. GILLETTE.

HEAD FOR BOTTLE CAPPING MACHINES.

APPLICATION FILED SEPT. 30, 1902. RENEWED MAY 18, 1904.

NO MODEL.

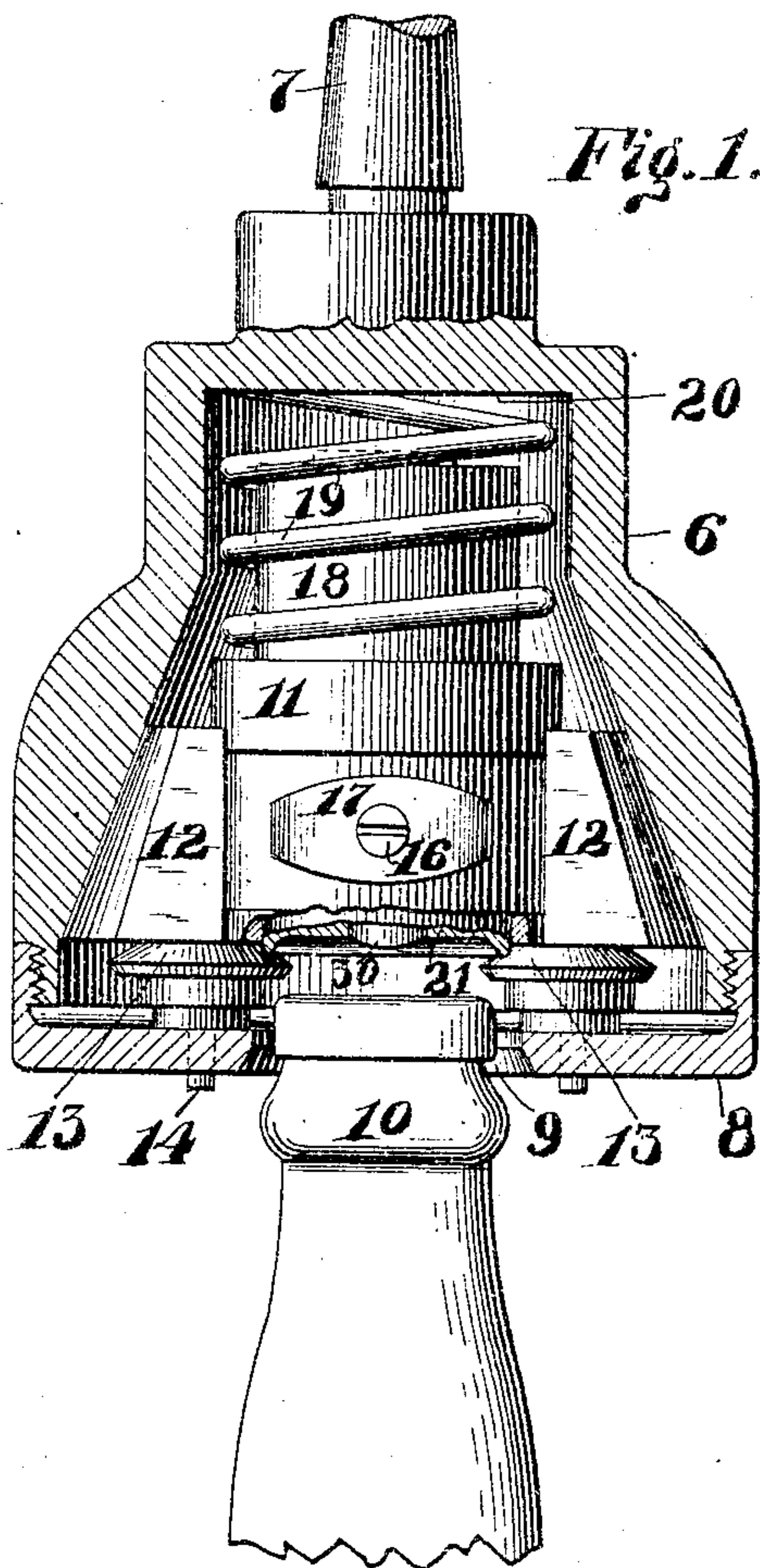


Fig. 1.

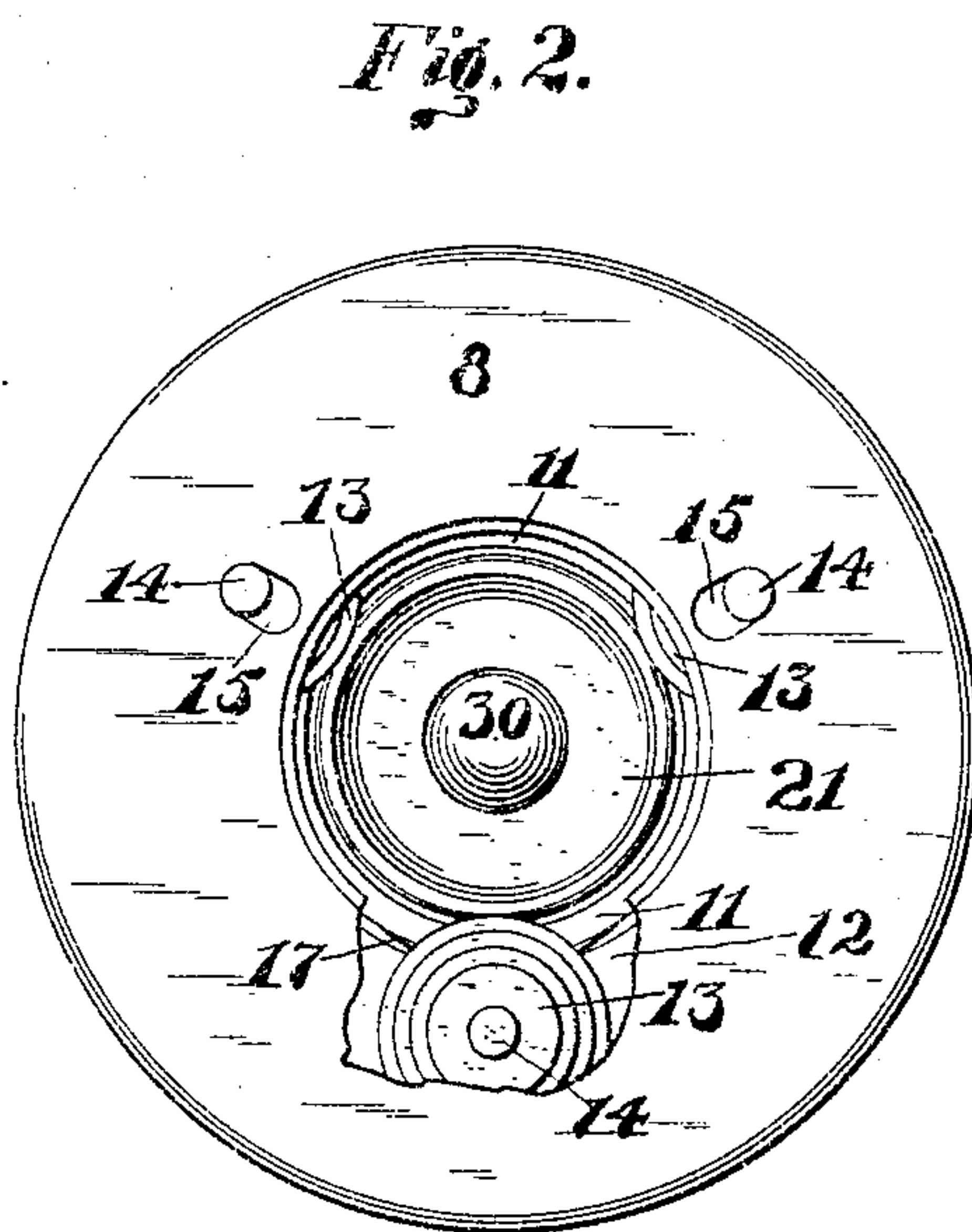


Fig. 2.

Fig. 5.

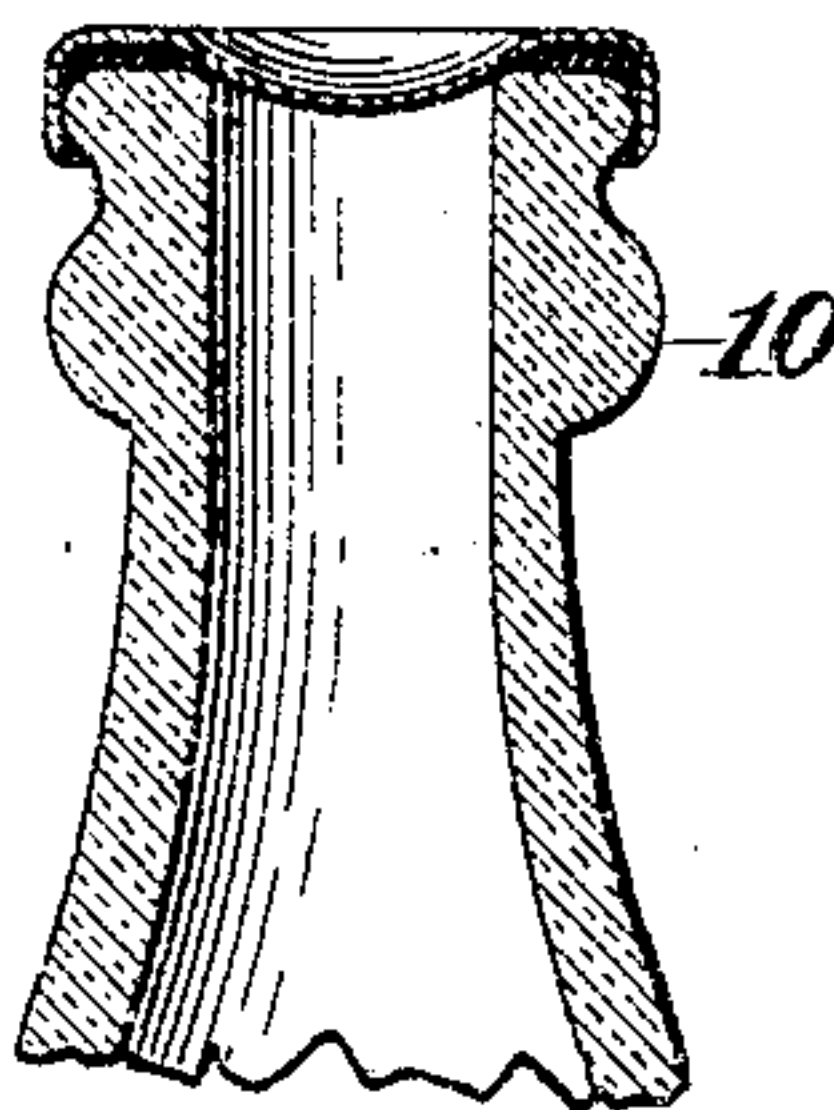


Fig. 4.

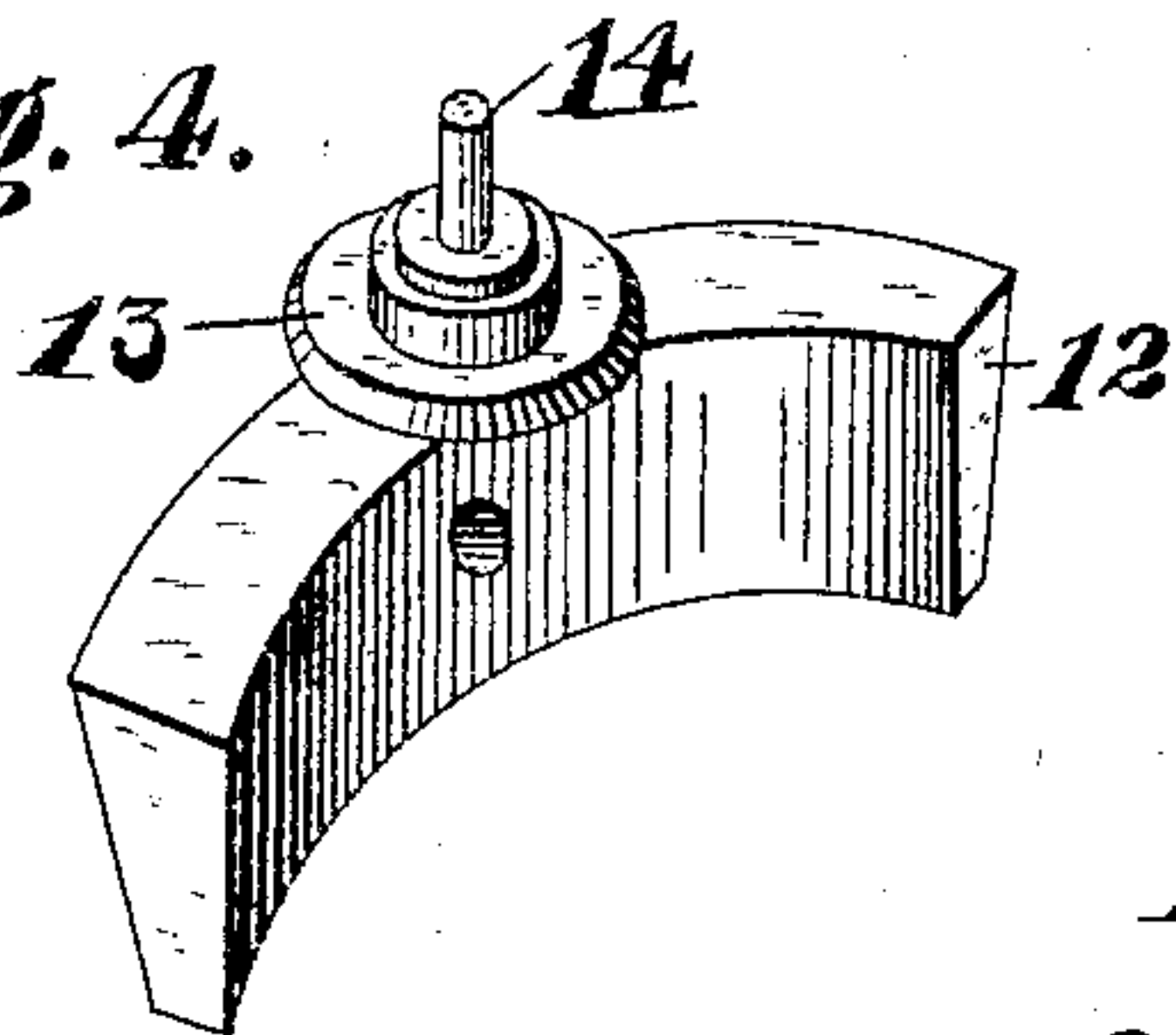
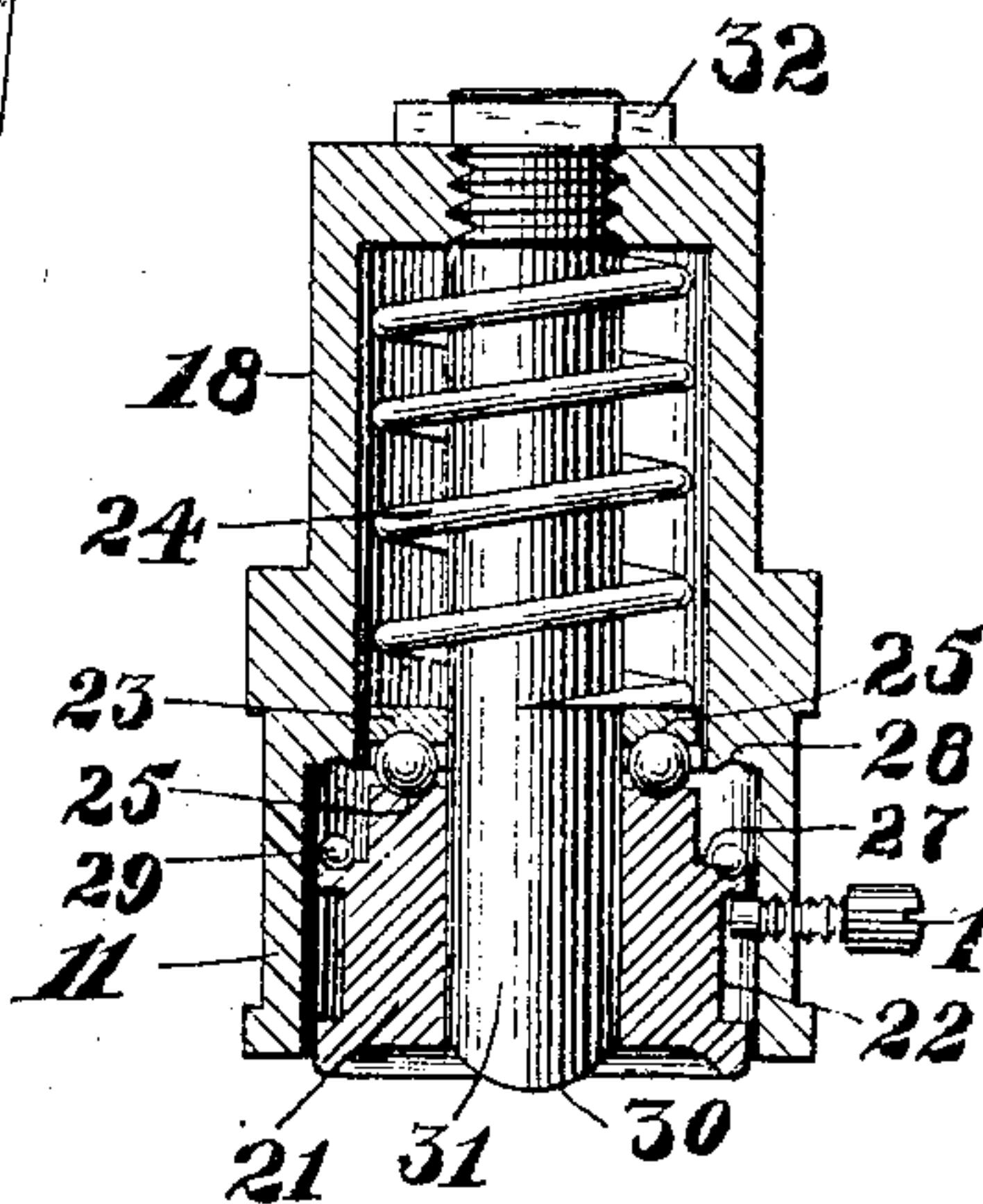


Fig. 3.



WITNESSES:

C. H. Bertholf
Loretto Ungerer.

INVENTOR

George H. Gillette

BY

Harry P. Van Wye

ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE H. GILLETTE, OF NEW YORK, N. Y., ASSIGNOR TO THE CROWN CORK AND SEAL CO. OF BALTIMORE CITY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

HEAD FOR BOTTLE-CAPPING MACHINES.

SPECIFICATION forming part of Letters Patent No. 777,784, dated December 20, 1904.

Application filed September 30, 1902. Renewed May 18, 1904. Serial No. 208,559.

To all whom it may concern:

Be it known that I, GEORGE H. GILLETTE, a citizen of the United States, residing at New York, in the county and State of New York, have invented a new and useful Head for Bottle-Capping Machines, of which the following is a specification.

My invention relates to machines for mounting the caps upon bottles, and especially to that class in which the cap is crimped or spun upon the bottle; and the object of my invention is, first, to provide a head for spinning the cap upon the bottle in a simple and efficient manner; second, to provide a head of the character described with a spring-controlled pressure-block whereby the requisite amount of pressure may be placed upon the cap without danger of breaking the bottle, and, third, to provide means to depress the center of the cap into the mouth of the bottle while the cap is being secured in place.

I accomplish the objects of my invention by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a head constructed according to my invention, a part of the interior parts being removed and parts of the others being broken away. Fig. 2 is a bottom plan view thereof, a part being broken away. Fig. 3 is a view of the pressure-block in section. Fig. 4 is a perspective view of one of the segmental blocks inverted carrying a spinning-wheel, and Fig. 5 is a section of the neck of the bottle with the cap in place. In the accompanying drawings like numerals of reference refer to the same parts in each of the views.

In the practice of my invention I provide a head comprising a casing 6, provided with a shank 7, by means of which the head may be secured to a bottle-capping machine in such a manner that the entire head may be rotated. A cap 8 is secured to the bottom of the casing 6, whereby the contents or interior parts are held in position, the said cap being provided centrally with an aperture 9, through which the neck 10 of a bottle may be inserted. Within the casing 6 is mounted the pressure-

block 11, having segmental blocks 12, carrying the rotatable wheels 13, which are mounted on spindles 14, one end of each of which is secured in the segmental block 12, and the other end passes through an elongated orifice 15 in the cap 8. The segmental blocks 12 are loosely mounted upon spindles 16 and are normally held away from the pressure-block 11 by springs 17, which are also mounted on said spindles. The pressure-block 11 is made less in length than the interior of the casing 6 and is provided with a shank 18, on which is mounted a spring 19, which bears against the top wall 20 of the interior of the casing 6 and normally holds the pressure-block adjacent to the bottom of the casing.

The pressure-block 11 is provided with a dish-shaped contact-block 21, adapted to receive the top of the cap and which is held in the end of the pressure-block 11 by the spindles 16, which are provided with slotted ends, so that they may be adjusted with a screw-driver, and the inner ends of the said spindles engage an annular groove 22, proportioned in width so that the block 21 is free to move vertically within certain limits. Above the contact-block 21 is a plate 23, pressed downward by a spring 24, and a ball-race 25 is formed between the block 21 and plate 23. The block 21 is provided with a reduced portion forming a shoulder 27, and a corresponding shoulder 28 is formed in the interior of the pressure-block, and a number of balls 29 are mounted between these shoulders and form a ball-race when the contact-block is elevated.

Passing centrally through the pressure-block is a plunger 30, which is provided with a rounded end 31, and the opposite end is screw-threaded and screwed into the end of the pressure-block casing, while a lock-nut 32 serves to secure the shaft in the desired position.

The operation is as follows: A bottle having a suitable groove in the neck thereof, and a cap with a flange long enough to be turned into said groove is pressed into my improved capping-head through the orifice 9 in the cap 8 and comes in contact with the contact-block 21 and is then pressed on into said head, car-

rying the pressure-block with it, against the action of the spring 19. The lower part of the interior wall of the casing 6 is conical, as clearly shown in Fig. 1, and the outer surface of the blocks 12 are conical, so that as the pressure-block is forced upward the blocks 12 are forced inward and carry with them the wheels 13 until they come in contact with the lower part of the flange of the bottle-cap and force the same into the groove in the neck of the bottle, the rotation of the head assisting in this operation as the flange is spun into the groove of the bottle by the rapid rotation of the head, and the wheels 13 are rotated by frictional contact with the cap while the spinning is taking place. The contact-block 21 being loosely mounted on a ball-race will remain stationary, while the other parts of the pressure-block will rotate, and as the contact-block is pressed downward by the spring 24 the said contact-block will be forced upward until the shoulders 27 and 28 are adjacent to each other, at which time the balls 29 form a ball-race between the shoulders, leaving the block 21 still stationary, while the other parts rotate; but as the block 21 is forced upward the plunger 30 remains fixed against vertical movement and forces the central part of the cap into the mouth of the bottle to a greater or less degree, according to the length of the plunger, as clearly shown in Fig. 5, and as the plunger 30 is rotating rapidly it not only presses the central part of the cap into the mouth of the bottle, but also practically spins the cap into the mouth, so that a smooth and even depression is formed and the interior of the cap is forced into direct contact with the glass within the mouth of the bottle inside of the line of the gasket.

It will thus be seen that I accomplish the objects of my invention in a simple and efficient manner. It is evident, however, that many changes may be made in the details of construction without departing from the spirit of my invention, and I reserve the right to make such changes.

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

1. A head for a bottle-capping machine comprising a non-rotary contact-block, a spring-controlled pressure-block, means for clamping the cap to the bottle carried by the said pressure-block, and a casing having a conical interior which conical interior actuates the said means, substantially as described.

2. A bottle-capping machine comprising a rotary casing having a conical interior surface, a non-rotary contact-block within the same and means for clamping the cap to the bottle actuated through the said conical interior of the casing, substantially as described.

3. In a bottle-capping machine, a rotary casing having a conical interior, a spring-controlled pressure-block within the casing, a non-rotating contact-block also within the casing

and means for clamping the cap to the bottle, said means being carried by the pressure-block and being actuated by the conical interior of the casing, substantially as described.

4. A head for a bottle-capping machine, comprising a non-rotary contact-block, means for clamping the cap on the exterior of the bottle, and rotary means for forming a depression in the center of the cap.

5. A head for a bottle-capping machine, comprising a non-rotary contact-block, a plurality of spinning-wheels, means to bring said wheels into contact with the flange of the bottle-cap, and rotary means for forming a depression in the center of the cap and depressing it into the mouth of the bottle.

6. A head for a bottle-capping machine, comprising a casing having a conical interior, a pressure-block mounted therein, segmental blocks mounted on said pressure-block, and carrying spinning-wheels, said segmental blocks being forced inward by said conical walls when the pressure-block is forced inward, and means to depress the center of the cap into the mouth of the bottle.

7. A head for a bottle-capping machine, comprising a casing having a conical interior, a pressure-block mounted therein, segmental blocks mounted thereon and having conical outer sides, spinning-wheels mounted on said segmental blocks, and means to depress the central part of the cap into the mouth of the bottle.

8. A head for a bottle-capping machine comprising a casing having a conical interior, a pressure-block mounted therein, segmental blocks mounted on said pressure-block, and having conical outer sides, spinning-wheels on said segmental blocks, and means to hold said segmental blocks in contact with the conical walls of said casing, as and for the purpose set forth.

9. The herein-described head for a bottle-capping machine comprising a casing and means to rotate the same, said casing having a conical interior, a spring-controlled pressure-block adapted to be forced upward in said casing, spindles on said block, segmental blocks mounted on said spindles, springs mounted on said spindles between the segmental blocks and the pressure-block, spinning-wheels carried by said segmental blocks, and a non-rotating contact-plate, as and for the purpose set forth.

10. A head for a bottle-capping machine, comprising a contact-block, means to clamp the cap upon the bottle, and a separate rotating plunger passing through said block and adapted to force the central part of the cap into the mouth of the bottle.

11. A head for a bottle-capping machine, comprising a pressure-block, means to clamp the cap upon the bottle, a non-rotating contact-block, and a rotating plunger adapted to pass through said contact-block, and means

to limit the vertical movement of said contact-block, for the purpose set forth.

12. A head for a bottle-capping machine comprising a spring - controlled pressure-block, means to clamp the cap upon the bottle while in engagement with said pressure-block, a non-rotating, spring - controlled contact-block, and a rotating plunger movable within said contact-block and means to limit the vertical movement of said contact-block, for the purpose set forth.

13. A head for a bottle-capping machine, comprising a spring - controlled pressure-block, spinning-wheels carried by said block, means to force said wheels into contact with the flange of the cap, a contact-block mounted on ball-races, a plunger movable within said contact-block, and shoulders on said contact and pressure blocks adapted to limit the vertical movement of the contact-block, as and for the purpose set forth.

14. The herein-described head for a bottle-capping machine, comprising a casing with a conical interior, a spring-controlled pressure-block adapted to be pressed upward in said casing, segmental blocks with conical exteriors mounted on said pressure-block, and in engagement with the said conical interior of the casing, spinning-wheels on said segmental blocks, a spring-controlled contact - block mounted on ball-races, a fixed plunger passing through said contact-block, and means to limit

the vertical movement of said contact-block, as and for the purpose set forth.

15. In apparatus for applying bottle-caps to bottles, means for locking the exterior flange of the cap beneath a shoulder on the outside of the bottle, and means for indenting the cap into the bottle-mouth approximately simultaneously with the locking action by a spinning action of said means upon the cap, substantially as described.

16. In apparatus for applying bottle-caps to bottles, means for locking the exterior flange of the cap beneath a shoulder on the outside of the bottle and means for indenting the cap into the bottle-mouth approximately simultaneously with the locking action, said locking of the flange and the indenting of the cap being each performed by a spinning action, substantially as described.

17. In apparatus for applying bottle-caps to bottles, means for locking the exterior flange of the cap beneath a shoulder on the outside of the bottle and means for indenting the cap into the mouth of the bottle by a spinning action on the said cap, substantially as described.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

GEORGE H. GILLETTE.

Witnesses:

LORETTO UNGERER,
HAROLD LETH.