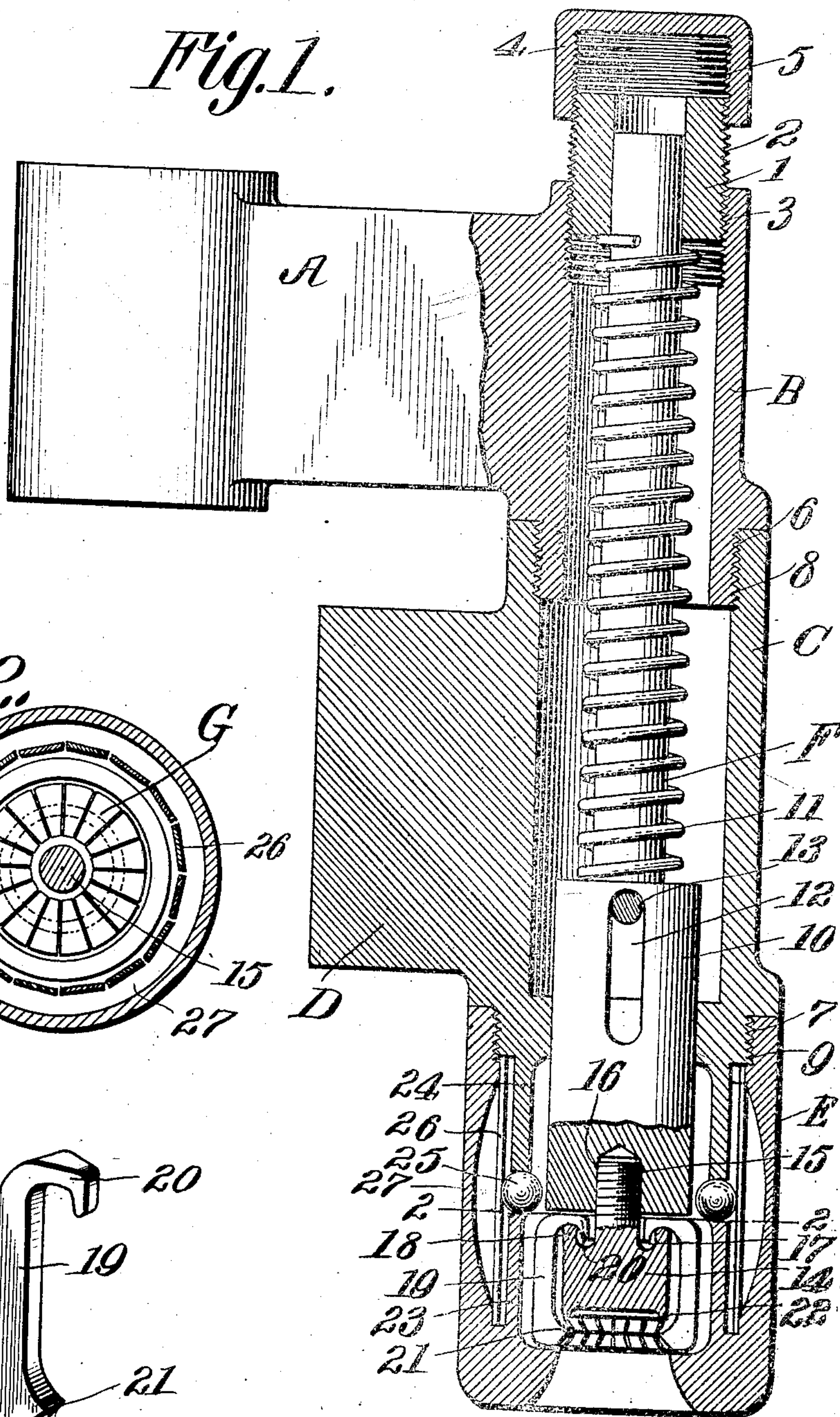


H. S. BREWINGTON.  
BOTTLE CAPPING MACHINE.  
APPLICATION FILED NOV. 11, 1908.

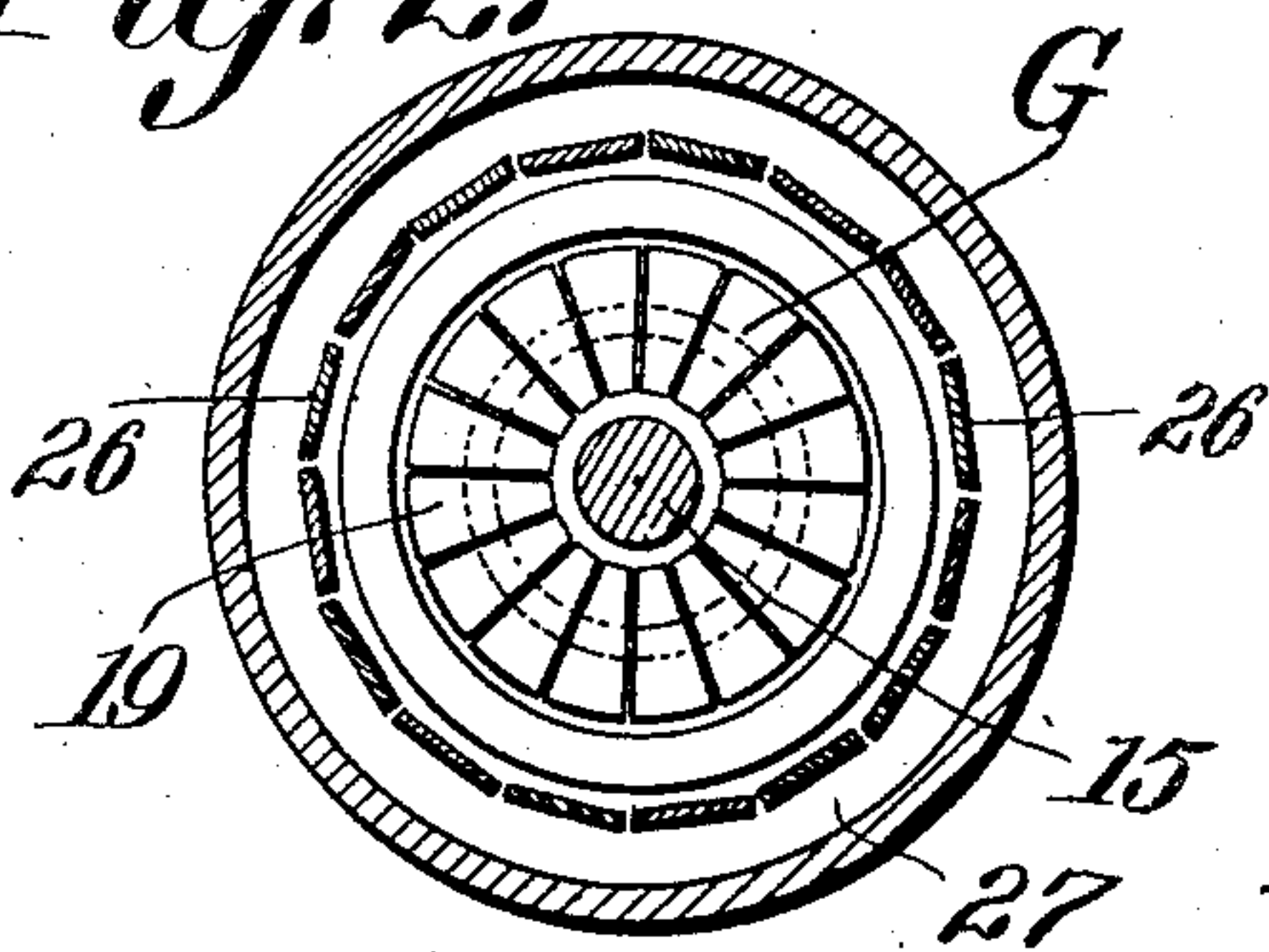
930,145.

Patented Aug. 3, 1909.

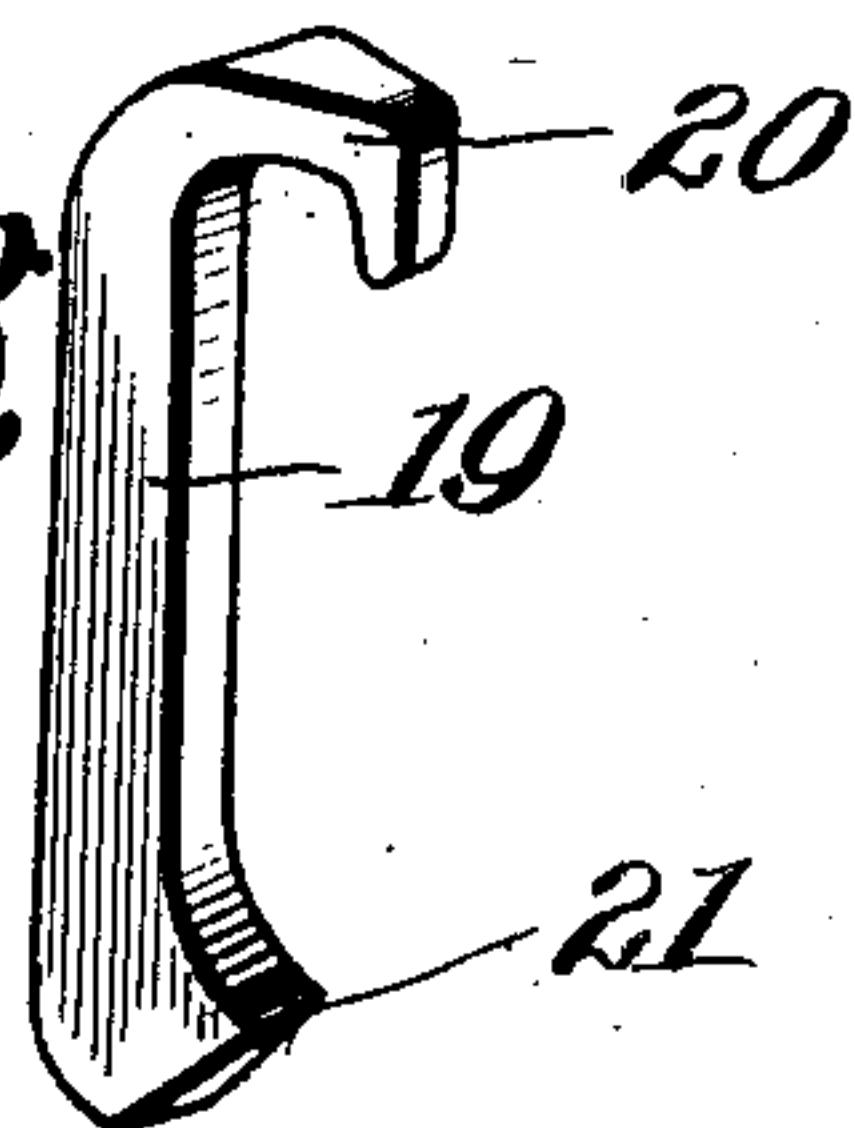
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses

Frank B. Wooden.

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# UNITED STATES PATENT OFFICE.

HENRY S. BREWINGTON, OF BALTIMORE, MARYLAND.

## BOTTLE-CAPPING MACHINE.

No. 930,145.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed November 11, 1908. Serial No. 462,032.

*To all whom it may concern:*

Be it known that I, HENRY S. BREWINGTON, a citizen of the United States, residing at Baltimore city, State of Maryland, have  
5 invented certain new and useful Improvements in Bottle-Capping Machines, of which the following is a specification.

My invention relates to an improvement in capping heads as applicable to bottle  
10 capping machines and machines of like character, the object being to automatically secure a sealing cap on the head or mouth of a bottle.

The particular kind of bottle which I employ as the most applicable, is that which  
15 has an exterior locking shoulder or a bead on the head thereof, and the kind of cap which is more particularly desired to be used and for which the crowning head is most applicable is a metallic cap having a depending  
20 flange, the flange adapted to be locked under the shoulder or bead on the bottle head, thereby securing the cap on the bottle, by the use of the crowning head now about to  
25 be described.

With the foregoing object in view, my invention consists in certain novel features of construction and combinations of parts,  
30 which will be hereinafter described and pointed out in the claims.

In the accompanying drawings Figure 1 is a view of the sealing head in vertical section. Fig. 2 is a cross section on line 2—2  
35 of Fig. 1, and Fig. 3 is a perspective view of one of the closing fingers.

A, represents an arm carried by any suitable machine imparting to the said arm a reciprocating movement. B, the sealing head  
40 which is centrally bored throughout its entire length and is carried by the said arm.

1, is a hollow plug exteriorly threaded throughout its entire length at 2, and secured in the upper threaded end 3 of the  
45 head; 4, is a cap inwardly threaded at 5 and secured on the upper threaded end of the said plug for the purpose to be hereinafter explained.

C, is a sleeve inwardly threaded at its upper end 6 and exteriorly threaded on its lower  
50 end portion 7, the said sleeve being provided with a guide arm D, and is secured to the lower threaded end 8 of the head B. Secured on the threaded end portion 7 of the sleeve C is a guide E inwardly threaded at 9.

55 F, is a plunger provided with an enlarged lower end portion 10. 11 is a spiral spring

surrounding the said plunger the lower end of which is supported by the enlargement 10, the upper end of which abuts against the lower end of the plug 1. The lower enlarged  
60 end portion 10 of the plunger is provided with a slot 12 extended therethrough, through which is fitted a pin 13, which pin extends through the sleeve C and is secured stationary therein. The slot 12 reciprocates relative  
65 to the pin 13, and limits the reciprocation of the plunger F, and also prevents the mechanism within the head from falling out thereof.

On the lower enlarged end 10 of the plunger F is a carrier 14, provided with a threaded  
70 stem 15 and it is secured on the end of the said plunger by means of the end being threaded at 16, into which the said stem is screwed. The said carrier at its upper end  
75 portion is provided with a groove 17 and a shoulder 18 into which is suspended a series of closing fingers 19; these fingers being substantially C shaped, the upper ends 20 being  
80 fitted in the groove 17 and surrounding the said carrier forming an annular closing die G. The lower ends of the said fingers extend below the said carrier and are substantially wedge shaped as designated at 21, the  
85 lower end of the said carrier being concaved as indicated at 22, for the purpose to be hereinafter explained.

Within the walls of the guide E is provided a vertical extension 23, conforming with the  
90 extension 24 on the lower end of the sleeve F; these extensions support between their adjacent free ends, a series of ball-bearings 25, back of which are secured a series of vertically extended spring metal strips 26, the  
95 wall of the said guide being provided with a concavity 27 to permit of the said strips being bent or bowed therein, in the manner to be hereinafter described.

My device is operated as follows: A cap (not shown) is placed in the die G under the  
100 carrier 14 and held therein by the series of teeth 21 on the closing fingers 19. A bottle (not shown) is then placed and supported below the cap in the die, and the head B is then reciprocated (by any suitable machine not  
105 shown); the concave face 22 of the carrier centers the cap on the bottle and as the head descends, contact of the bottle is made with the carrier thereby, causing the plunger F on which it is carried to ascend. As the carrier  
110 on the plunger ascends, the bearings 25 backed by the spring strips 26 behind them,



the bearings are caused to press against the closing fingers, thereby forcing the wedge shape ends 21 of the fingers against the flange of the cap, and pressing the flange into locking contact under the bead on the bottle mouth. As the head ascends, the pressure on the bottle is released and the spring around the plunger causes the plunger to descend and force the bottle head from within the die with the cap secured thereon.

The plug 1 regulates the tension of the spring 11, and the cap 4 regulates the reciprocation of the plunger within the limit afforded by the slot 12 and pin 13, whereby the variations of the height of bottles are overcome and a tight sealing contact is effected in the securing of the cap on the bottles.

Slight changes and alterations might be resorted to in the form and arrangement of the several parts herein described, without departing from the spirit and scope of my invention, hence I do not wish to limit myself to the exact construction as herein set forth, but:

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

1. A bottle capping machine of the character described, comprising a reciprocating arm, a head carried thereby, a sleeve carried by the head, a guide carried by the sleeve, a reciprocating plunger secured within the head, means limiting the reciprocation thereof, a carrier secured on the lower end of the said plunger, a plurality of substantially C shaped closing fingers carried thereby, means for reciprocating the said plunger and means for forcing the said fingers inwardly toward a common center, substantially as described.

2. A bottle capping machine of the character described, comprising a reciprocating arm, a hollow head carried thereby, a plunger secured within the head, a spiral spring secured around the plunger, means limiting the reciprocation of the said plunger, a guide arm, a sleeve carried thereby, means securing the sleeve to the said head, a guide, means securing the guide to the said sleeve, a vertical extension provided within the said guide, a plurality of ball bearings supported by the said extension, a plurality of vertical extended metal strips secured within the said guide rearwardly of the said vertical extension and bearings, a carrier secured on the lower end of the said plunger, a plurality of substantially C shaped individual closing fingers suspended from the said carriers, means for reciprocating the said head, thereby forcing the said fingers inwardly toward a common center, substantially as described.

3. A bottle capping machine of the charac-

ter described, comprising a reciprocating arm, a hollow head carried thereby, a sleeve carried by the head, a guide carried by the sleeve, a reciprocating plunger secured within the said head, means limiting the reciprocation thereof, a plurality of substantially C shaped individual closing fingers, means supporting the said fingers on the lower end of the said plunger, a plurality of ball bearings, means within the guide for securing the bearings therein, a plurality of spring strips secured within the said guide rearwardly of and adjacent to the said bearings, means for reciprocating the said plunger, thereby causing the said bearings to engage the said fingers and force them inwardly toward a common center, substantially as described.

4. A bottle capping machine of the character described, comprising a reciprocating head, a reciprocating plunger secured within the head, a closing die carried by the said plunger, a guide secured around the closing die, a plurality of ball bearings secured within the guide, a plurality of vertical spring strips secured in the said guide rearwardly of the said bearings, means for reciprocating the said plunger thereby causing the said bearings to engage and close the said die, substantially as described.

5. A bottle capping machine of the character described, comprising a closing die composed of a plurality of substantially C shaped individual closing fingers, a guide secured around the said fingers, a plurality of ball bearings secured within the said guide, a plurality of spring metal strips secured within the said guide rearwardly of the said bearings, substantially as described.

6. A bottle capping machine of the character described, comprising a closing die composed of a plurality of substantially C shaped individual closing fingers, a guide secured around the said fingers, a plurality of ball bearings secured within the guide, yielding means secured in the said guide, rearwardly of the said ball bearings, substantially as described.

7. A bottle capping machine of the character described, comprising a closing die composed of a plurality of individual closing fingers, a guide secured around the said fingers, a plurality of ball bearings secured within the guide, yielding means secured in the said guide, rearwardly of the said ball bearings, substantially as described.

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

HENRY S. BREWINGTON.

Witnesses:

MARY M. MAGRAW,  
JUSTUS RIEHL.