

No. 848,478.

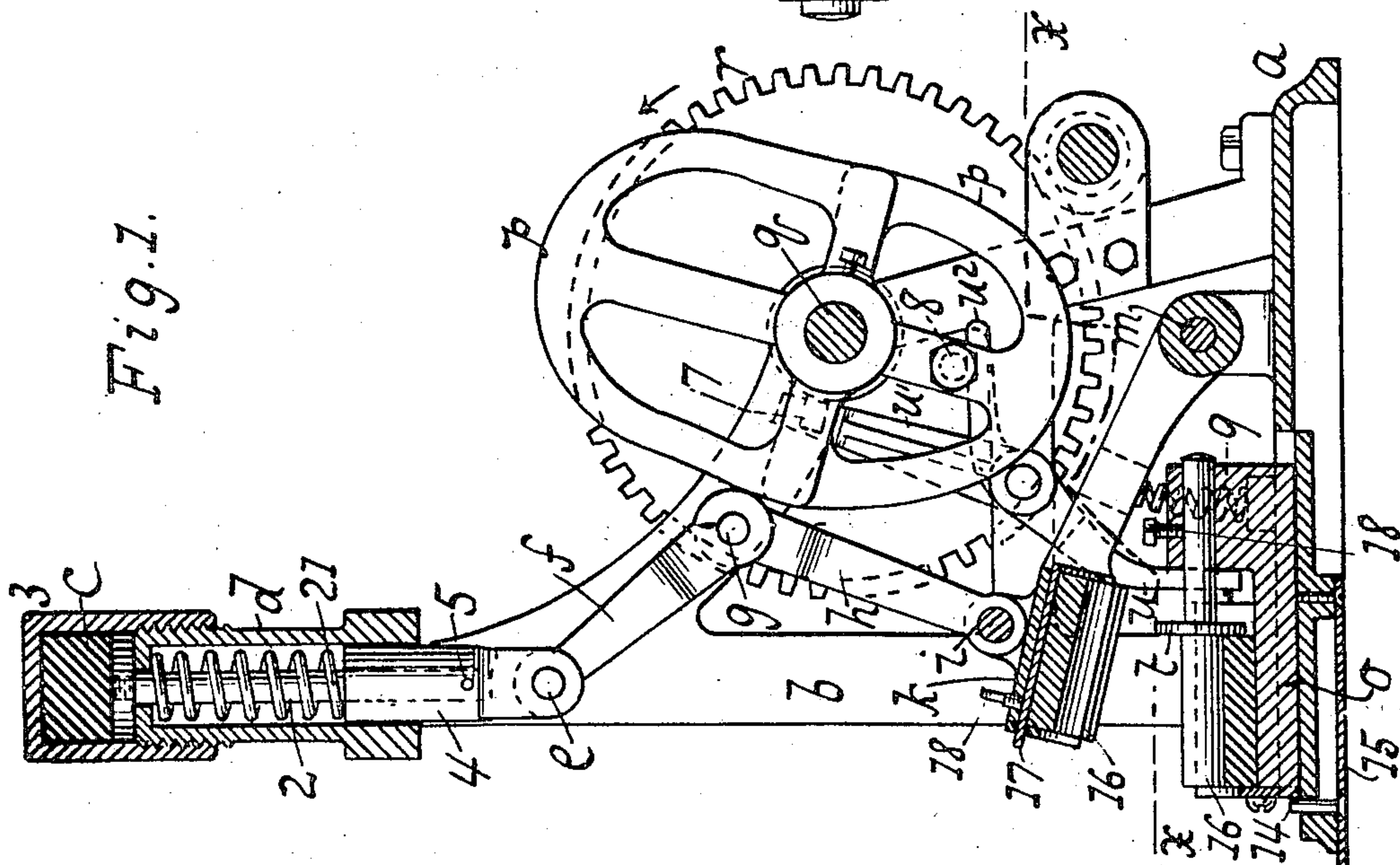
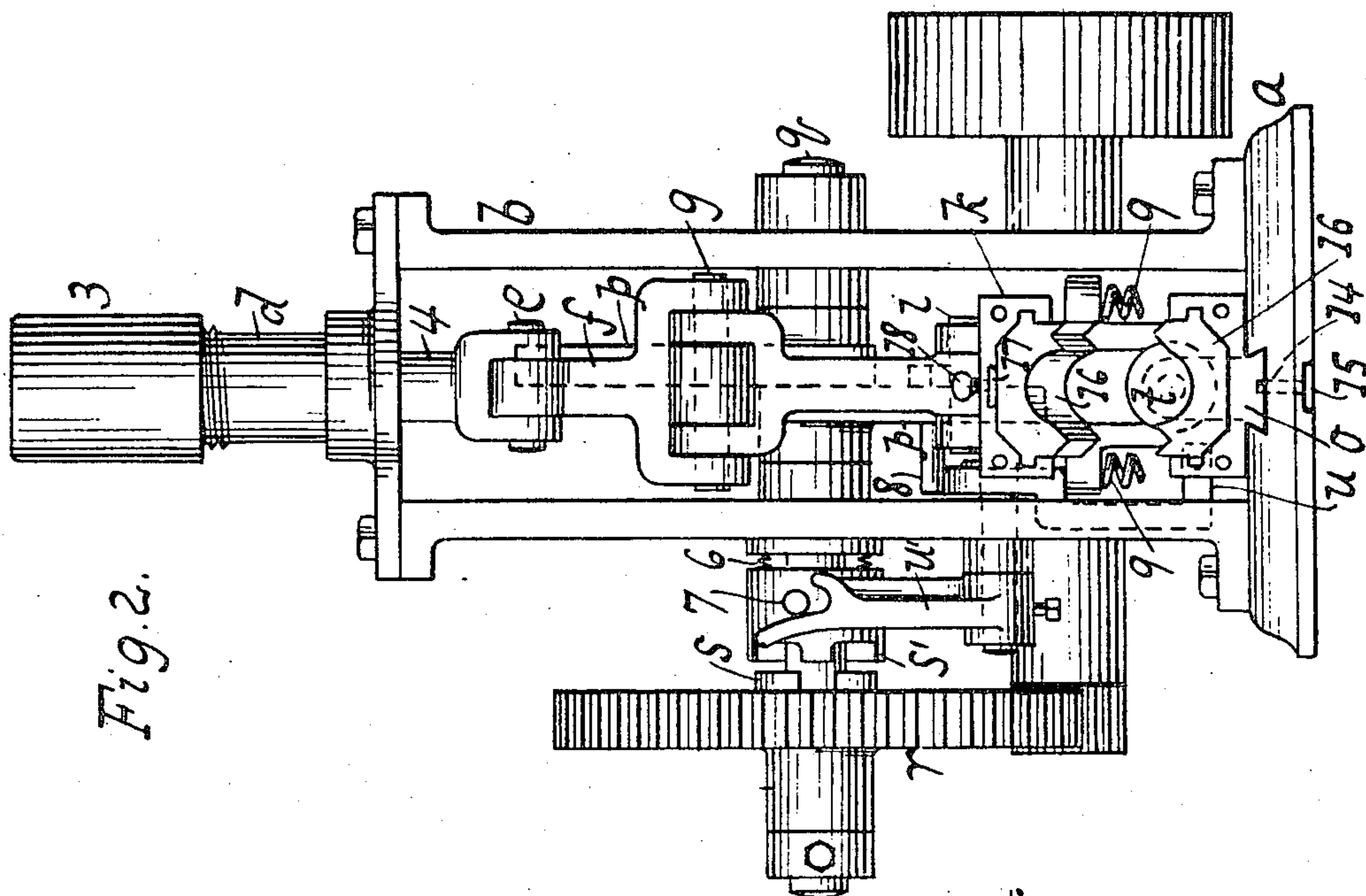
PATENTED MAR. 26, 1907.

H. MÜLLER &amp; E. ZIPPRICH.

## BOTTLE CAPPING MACHINE.

APPLICATION FILED SEPT. 15, 1908.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

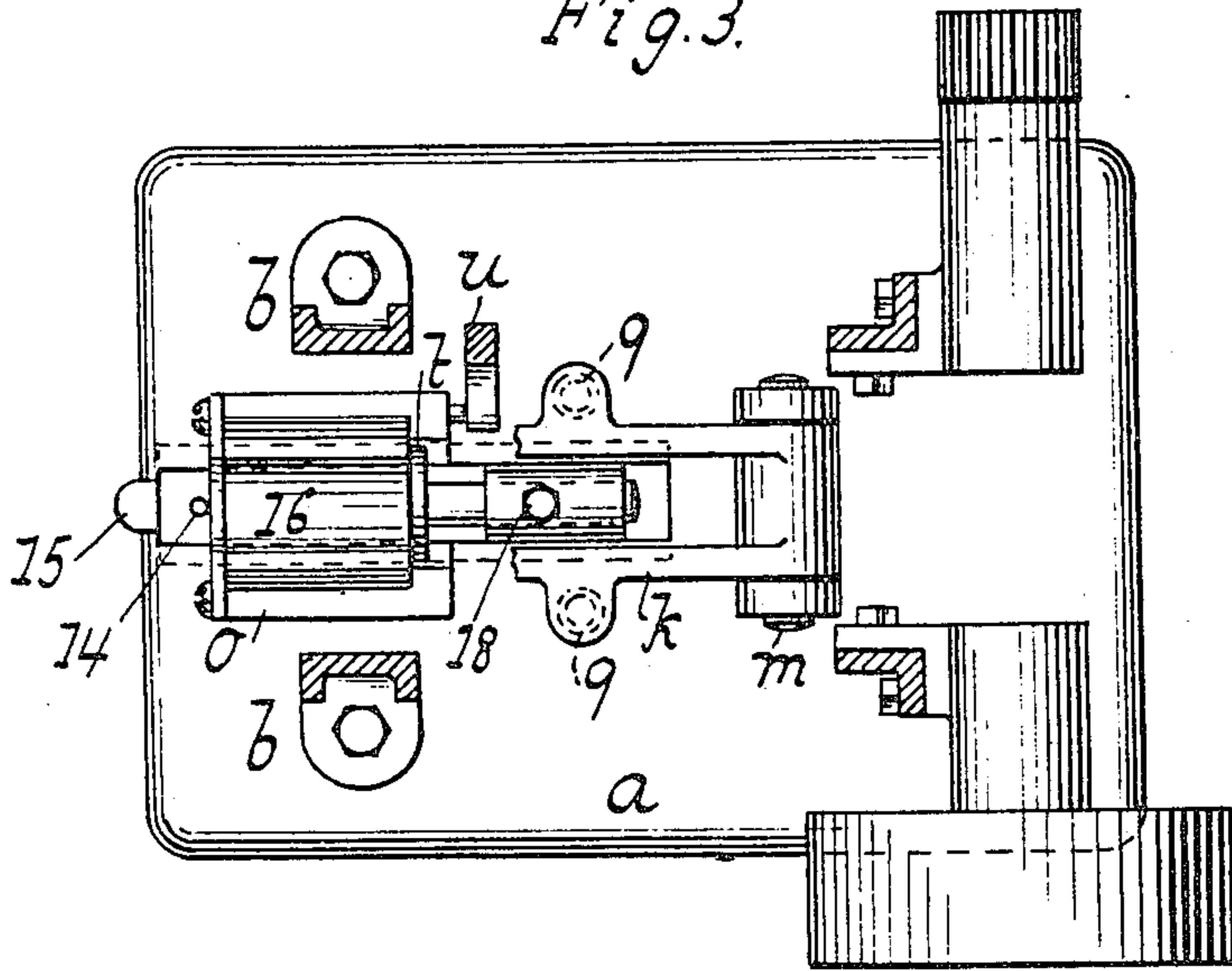


Fig. 4.

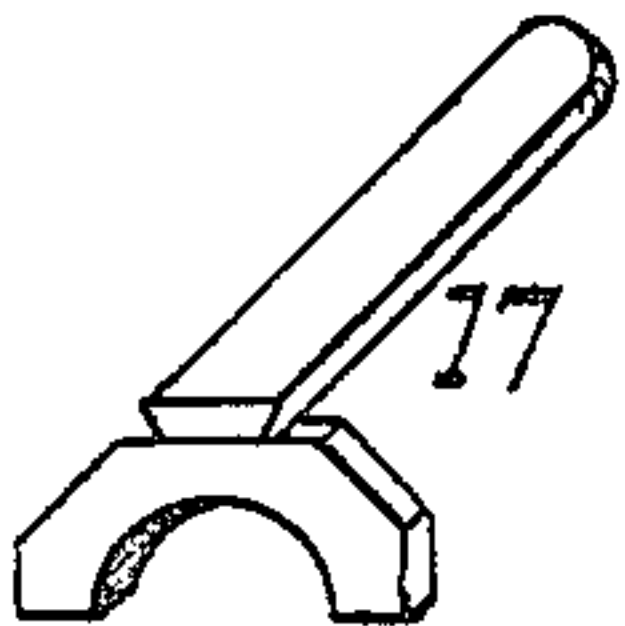


Fig. 5.

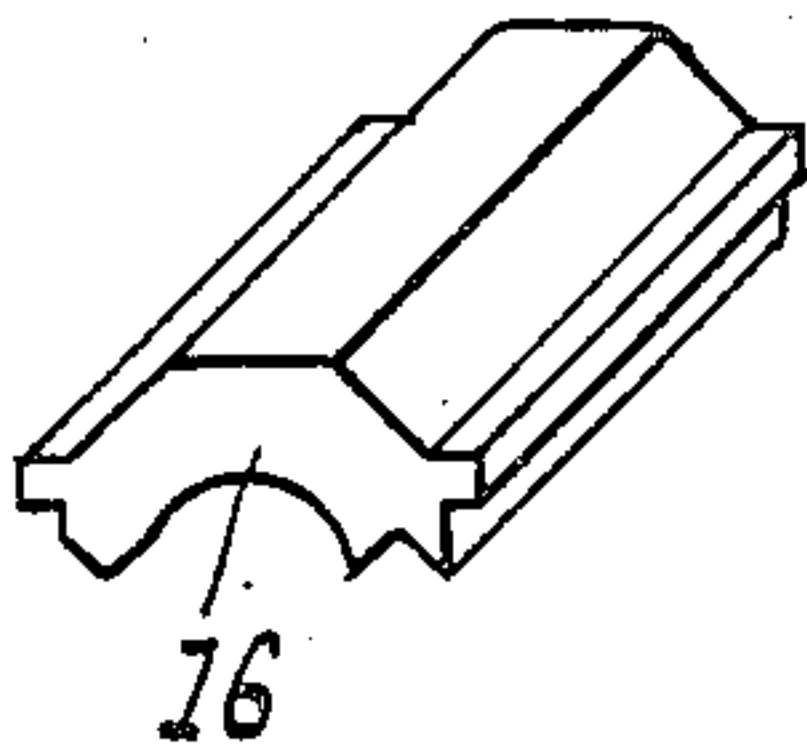


Fig. 6.

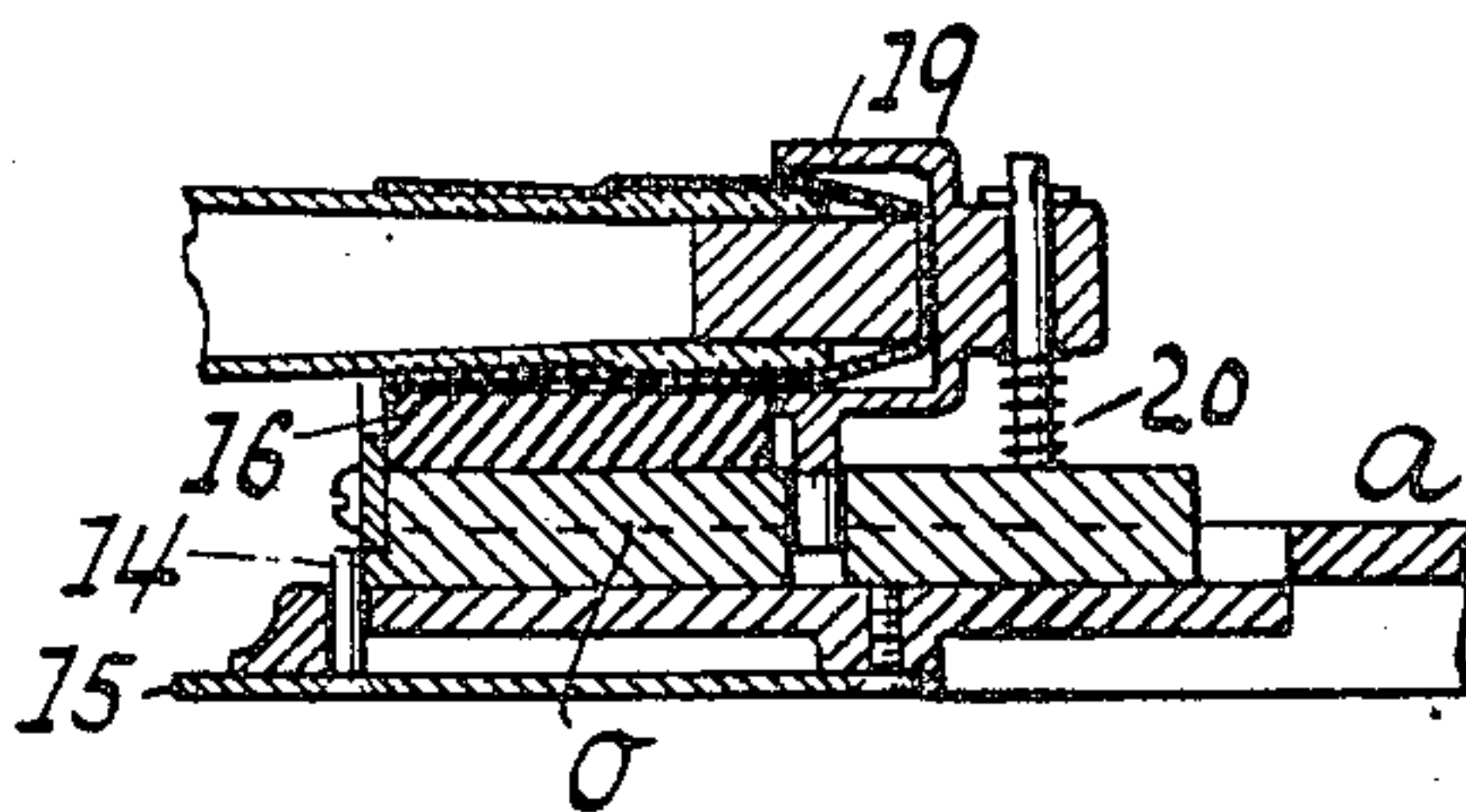
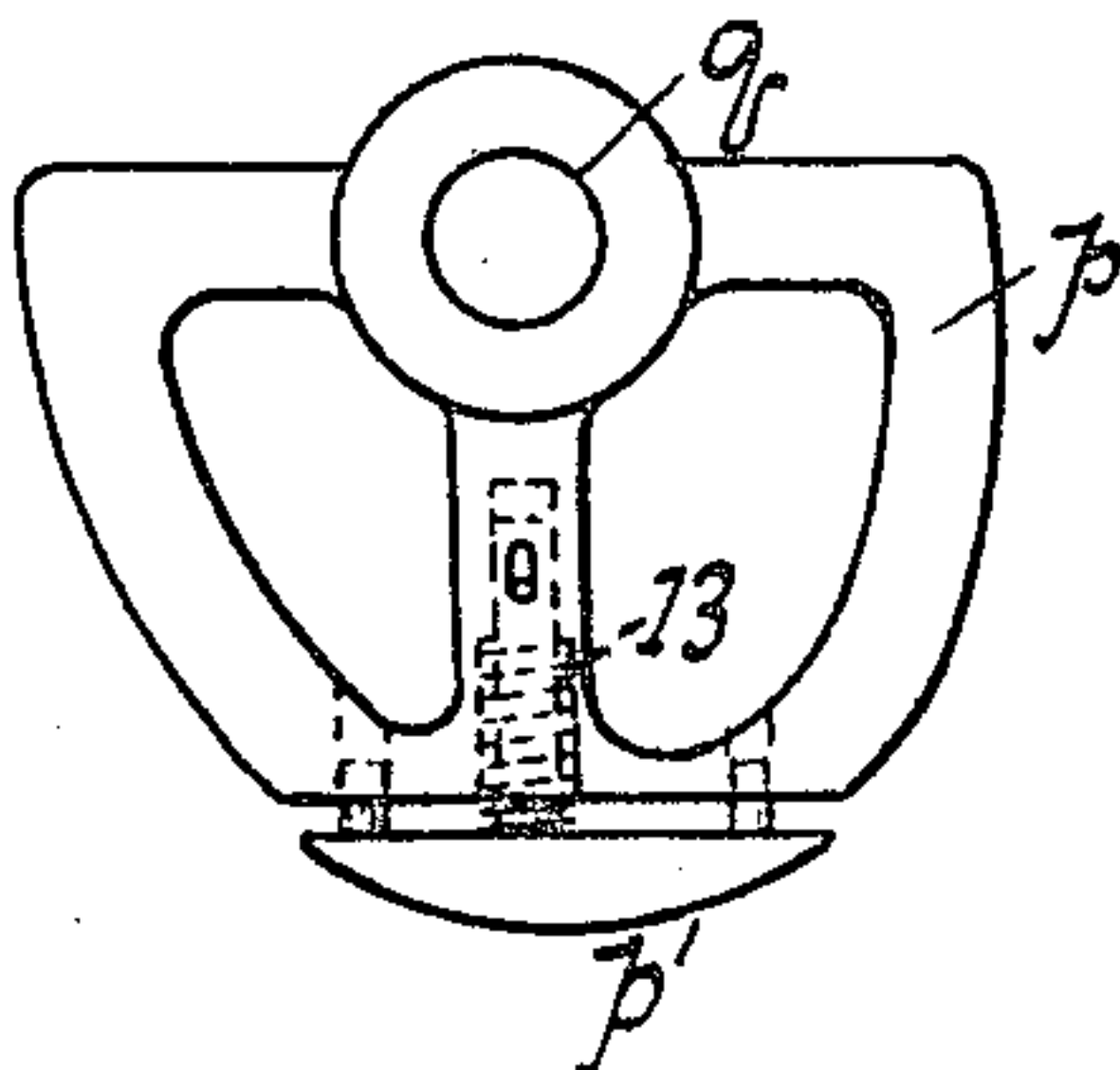


Fig. 7.



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# UNITED STATES PATENT OFFICE.

HERMAN MÜLLER, OF ASTORIA, AND EUGENE ZIPPRICH, OF NEW YORK, N. Y., ASSIGNORS TO BUDDE & WESTERMANN, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## BOTTLE-CAPPING MACHINE.

No. 848,478.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed September 15, 1906. Serial No. 334,765.

*To all whom it may concern:*

Be it known that we, HERMAN MÜLLER, a citizen of the United States, residing at Astoria, Queens county, New York, and EUGENE ZIPPRICH, a citizen of the United States, residing at New York city, New York, have invented new and useful Improvements in Bottle-Capping Machines, of which the following is a specification.

10 The object of this invention is to provide a machine by which caps will be compressed to or clasped about the bottle-necks and the wrinkles taken out or the caps smoothed so that they will sit neatly in place.

15 This invention relates to certain details set forth in the following specification and claims and illustrated in the annexed drawings, in which—

20 Figure 1 is a sectional side elevation of a bottle-capping machine embodying this invention. Fig. 2 is a front elevation of the machine shown in Fig. 1. Fig. 3 is a section along the line  $x x$ , Fig. 1. Fig. 4 shows a slide for adjusting a jaw lining or pad. Fig. 5 shows a jaw lining or pad. Fig. 6 shows a cap-protector. Fig. 7 shows a cam with a yielding or spring-pressed part.

25 The base  $a$  supports a frame  $b$  with housing or thimble  $d$ , in which is a yielding plug or bumper  $c$ , such as a block of rubber. As presently explained, this bumper-pad  $c$  serves as a yielding support for a bearing point or pivot  $e$  of link  $f$ , jointed at  $g$  to link  $h$ , jointed at  $i$  to movable jaw  $k$ , which can swing about pivot  $m$ .

30 The jaw  $o$  is fixed, so far as movement toward or from the other jaw is concerned; but jaw  $o$  can slide for a purpose hereafter set forth.

40 A cam or eccentric  $p$  engages pivot  $g$  and actuates the links or toggle-joint to reciprocate jaw  $k$ . The eccentric is mounted on rotary shaft  $q$ , which can be coupled or uncoupled with the driving pulley or motor  $r$ . The clutch is indicated at  $s s'$ .

45 The jaw  $o$  has secured thereto a stem  $t$ , the forward part of which is in form of a disk. When a bottle with cap is passed into the jaw, the head of the bottle-cap presses against the disk or stem  $t$  and slides the jaw inward. This movement is imparted to lever  $u$ , abutting against a part or shoulder of jaw  $o$  or against a pin thereon. The lever  $u$  is

thus actuated to allow the clutch to couple, as presently explained. The eccentric actuating the links to move jaw  $k$  to the bottle on jaw  $o$  the tin-foil or cap which has been placed on the bottle is compressed about the bottle or neck. The eccentric is shown composed of sections or parts, and the two high parts of the cam are unequal or one not quite so high as the other. These two cam-sections  $p p$  can be set as required, and when one is broken or defective it can be replaced irrespective of the other.

55 When the bottle, with its cap, is put on the fixed or lower jaw, the movable jaw is actuated by the highest part of the cam, and this movable jaw then comes to the fixed jaw with sufficient force to fold the tin-foil or cap about the bottle. A low part of the cam then allows the jaws to open. The bottle being released is then turned by the attendant on the fixed jaw to smooth the folds of the tin-foil or cap. The succeeding high part of the cam then coming to the joint  $g$  actuates the links or toggle-joint  $f h$  to again close the jaws, and the cap is caused to snugly clasp or sit about the bottle or its neck. The following low part of the cam then releases or opens the jaws. The capped bottle is now taken out or off the jaw, and the clutch-arm  $u$ , moving to unclutching position, leaves the cam  $p$  stationary or free from the motor or driving-wheel  $r$ .

60 The pivot  $e$  (before mentioned) is carried by or connected to a stem 2. The thimble  $d$  has a nut or cap 3, and in the thimble and abutting against the nut is the elastic pad or disk  $c$ . By inserting a thicker or thinner pad the stem 2 is set farther out or allowed to sink farther into the thimble. This elastic or yielding pad prevents breakage, but still is rigid enough to compel the pivot  $e$  and its toggle to suitably press the capsule or cap the bottle. The connection between stem 2 and pivot  $e$  can be made by a sleeve 4, sitting on the stem and having a pin 5 connecting the sleeve and stem.

65 The clutch members  $s$  and  $s'$  normally tend to engage as the springs 6, Fig. 2, tend to move the members  $s'$  to the member  $s$ . On the member  $s'$  is a stud 7. When the inclined end of arm  $u'$  is moved into the path of stud 7, the latter in moving along this inclined face will, with member  $s'$ , be moved



against the tension of springs 6 to uncoupling position. The driver *r* will then rotate idly and the cam *p* will stand still. When a bottle presses on slide-jaw *o* and swings arm *u* backward, the arm *u'* will swing forward or away from stud 7, so that the springs 6 can couple the clutch, and cam-shaft *q* will then rotate. As the cam in its rotation brings stud 8 against arm *u'*, connected to lever *u* or to its shaft, the arm *u'* is swung against clutch member *s'*, and stud 7, running on the inclined face of arm *u'*, will uncouple the clutch members.

The free or inclined end of arm *u'* has a forked or shoulder portion, and after the stud 7 has made a revolution such fork arrests the stud to prevent repeating or the accidental passage of the stud 7 past the stopping or starting point.

The lower one of the high cam-sections can have a yielding portion *p'*, Fig. 7, which under the influence of a spring 13 tends to exert a yielding pressure on the knee-joint *g* or the swinging jaw *k*.

Such parts of the device as the return or opening spring 9 need no special description. The return of the lever *u* is caused by stud 8 acting on arm *u'* to bring arm *u'* to stud 7. This forward movement of arm *u* slides the lower jaw *o* back to its starting-point. A stop 14 prevents the jaw sliding out or being lost. This stud is on a spring-blade 15, so that it can be pressed down or out of the way if the jaw is to be removed. The jaws *k o* have each a way or grooves to allow the linings 16 being inserted or slid into place. The lower lining can be adjusted by setting the stem *t*, against the head of which the lining or rubber of jaw *o* sits. The lining of the upper jaw *k* also sits against a sliding abutment or stem 17, with forked tail, so as to be capable of adjustment in or out. The set-screws 18 for the abutments 17 and *t* will hold the parts fixed as needed. A thicker or thinner lining can be used according to the size of the bottle-neck.

In case of capping a bottle where the cork projects, Fig. 6, a protector 19 is employed, which sits over the cap or tin-foil at the projecting cork portion, but allows such tin-foil or capsule to be crimped about the bottle-neck back of the mouth swell. A spring 20 allows the protector to yield as the upper jaw comes down.

In addition to elastic pad *c* is shown a spring 21, which is braced against the perfo-

rated top of thimble *d*, through which the stem 2 extends.

The rubbers or cushions 16 can be selected of greater or less length according to requirement. Such rubbers being confined in the jaws at both front and rear as well as on top and sides are prevented from spreading or compelled to exert all their pressure onto the bottle-neck or capsule, so that no force or pressure is wasted.

We claim—

1. A capping-machine having jaws, an actuating toggle-joint therefor, a bearing or pivot for one link of the toggle-joint, a stem for the pivot, a compression-spring surrounding the stem, an elastic block for the stem, and an adjustable cap or thimble for the pad.

2. A capping-machine having lined jaws and jaw-actuating means, and a disk forming an abutment for the lining and for an inserted bottle, said disk having a stem and the respective jaw having a seat with screw for adjustably mounting the stem and disk.

3. A pair of bottle-capping jaws, an actuating-cam therefor, a driver or pulley for the cam, a clutch for connecting the driver and the cam, a lever for freeing or uncoupling the clutch and allowing it to engage, a stud on the cam to actuate the lever for uncoupling the clutch, and means for setting the lever to allow the clutch to engage, said lever having an arresting-shoulder for the lug to prevent repeating or improper engagement of the clutch.

4. In a machine for capping bottles and the like the combination with jaws, of actuating-cams and suitable connections for conveying motion from the cam to one of the jaws, one of the cams having a yielding portion.

5. In a machine for capping bottles and the like the combination with jaws of actuating-cams and driving-clutch connection for the cams one of the jaws being made slidable to actuate the clutch connection and a spring-pressed or releasable stop for the sliding jaw.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

HERMAN MÜLLER.  
EUGENE ZIPPRICH.

Witnesses:

OTTO HUBER,  
EDWARD WIESNER.