

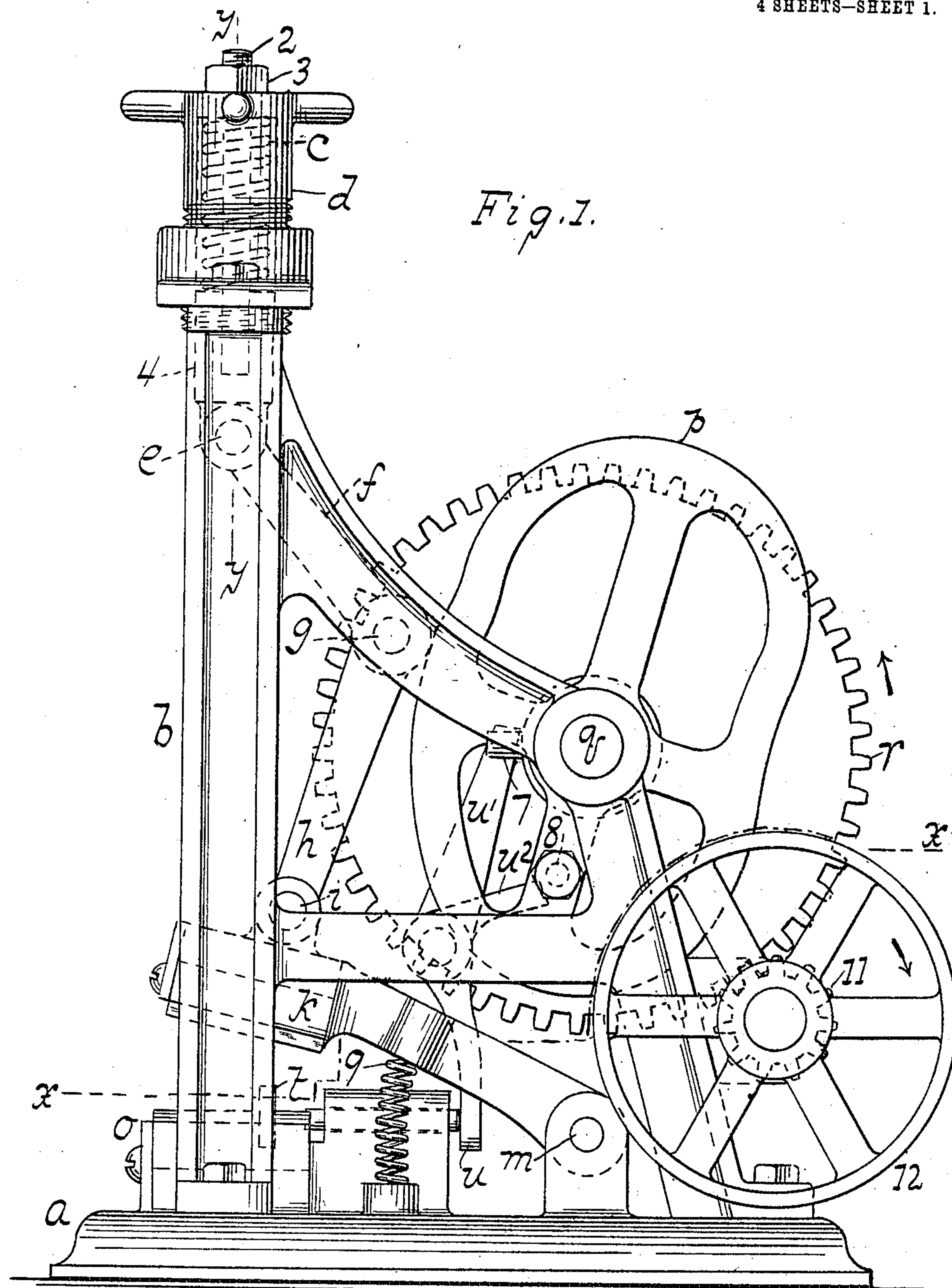
No. 812,068.

PATENTED FEB. 6, 1906.

H. MÜLLER & E. ZIPPRICH.  
BOTTLE CAPPING MACHINE.

APPLICATION FILED JAN. 20, 1905.

4 SHEETS—SHEET 1.



WITNESSES:

William Miller  
Edward Wiesner

# INVENTORS

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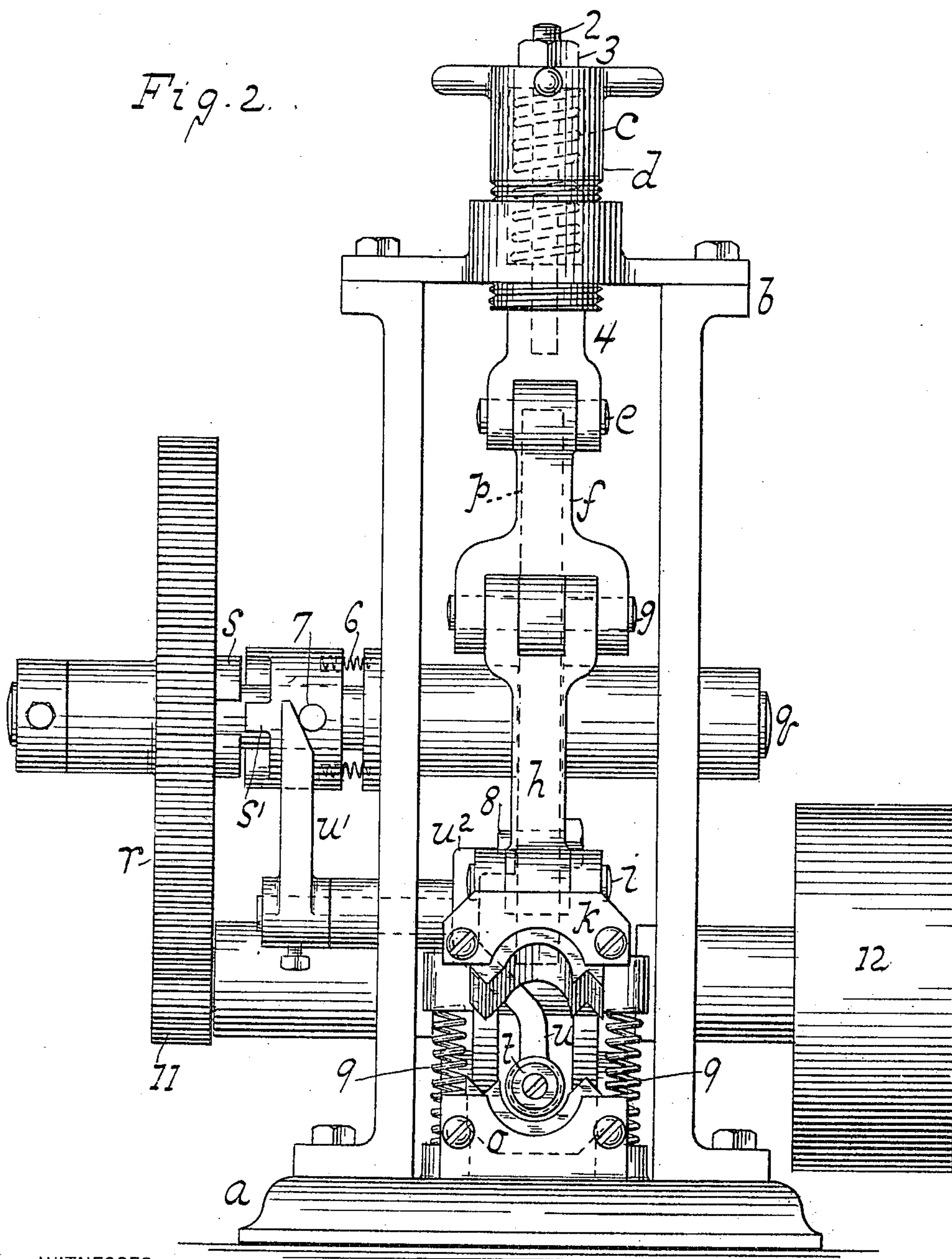
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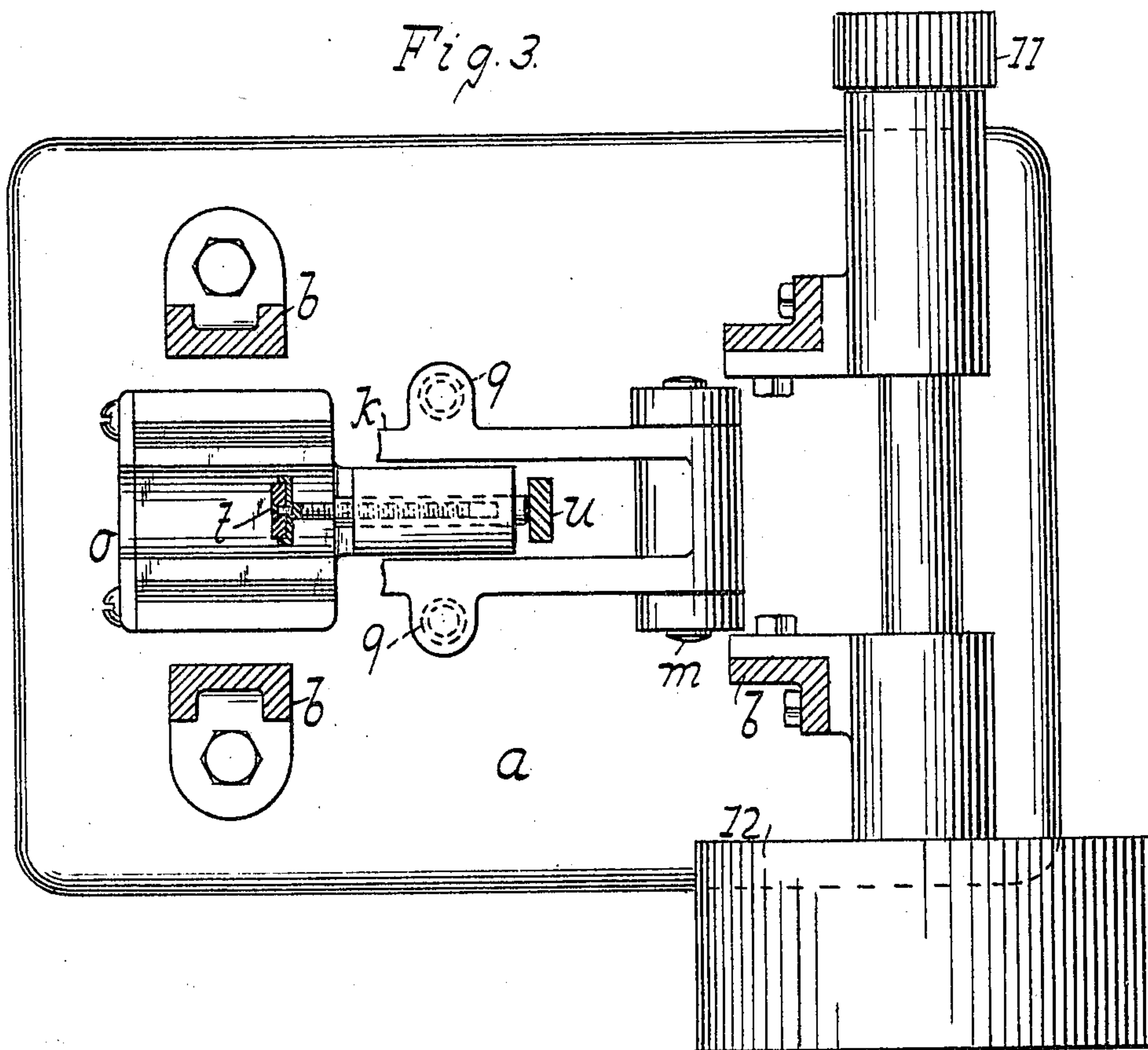
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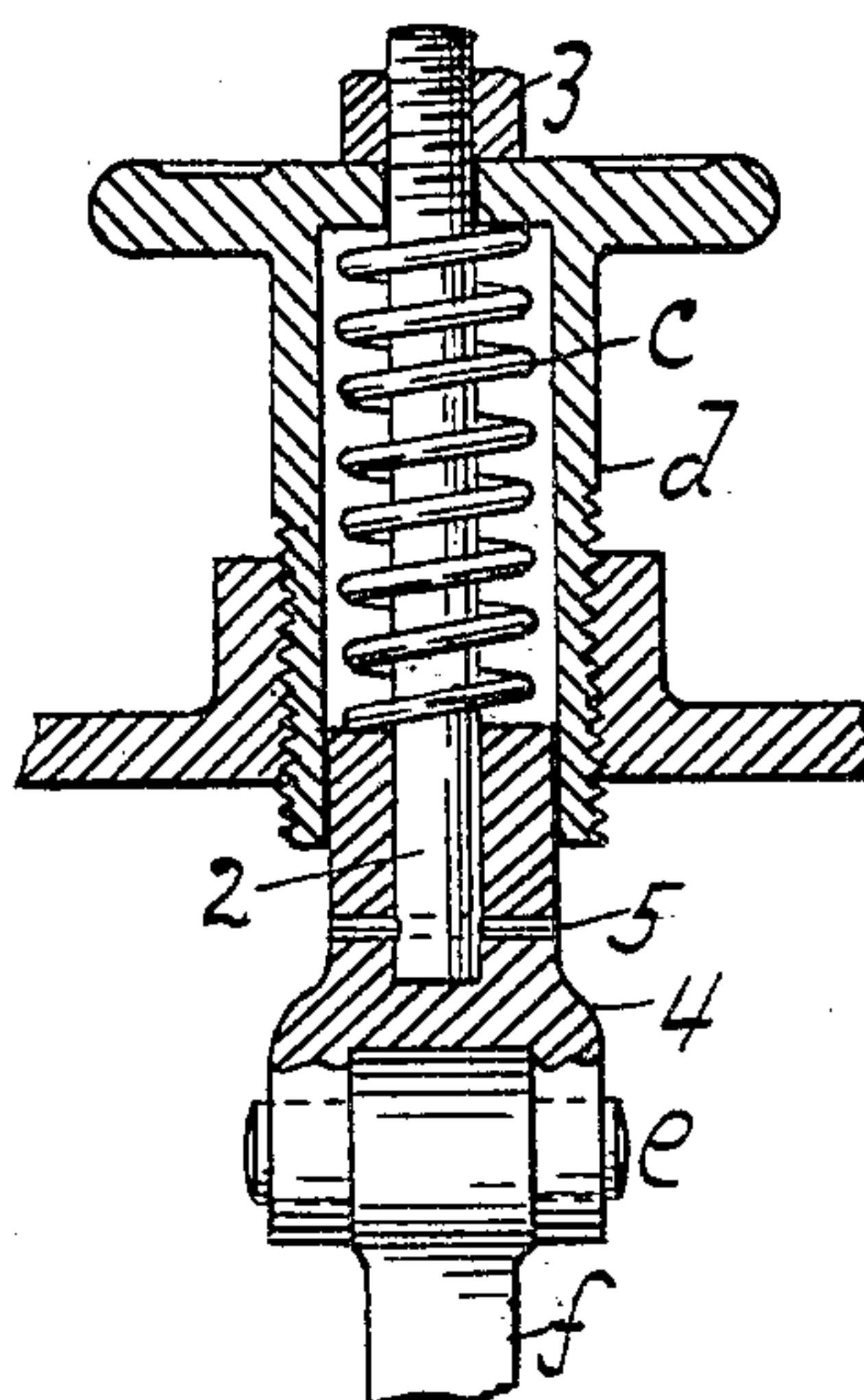
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4 SHEETS—SHEET 3.

*Fig. 3.*



*Fig. 4.*



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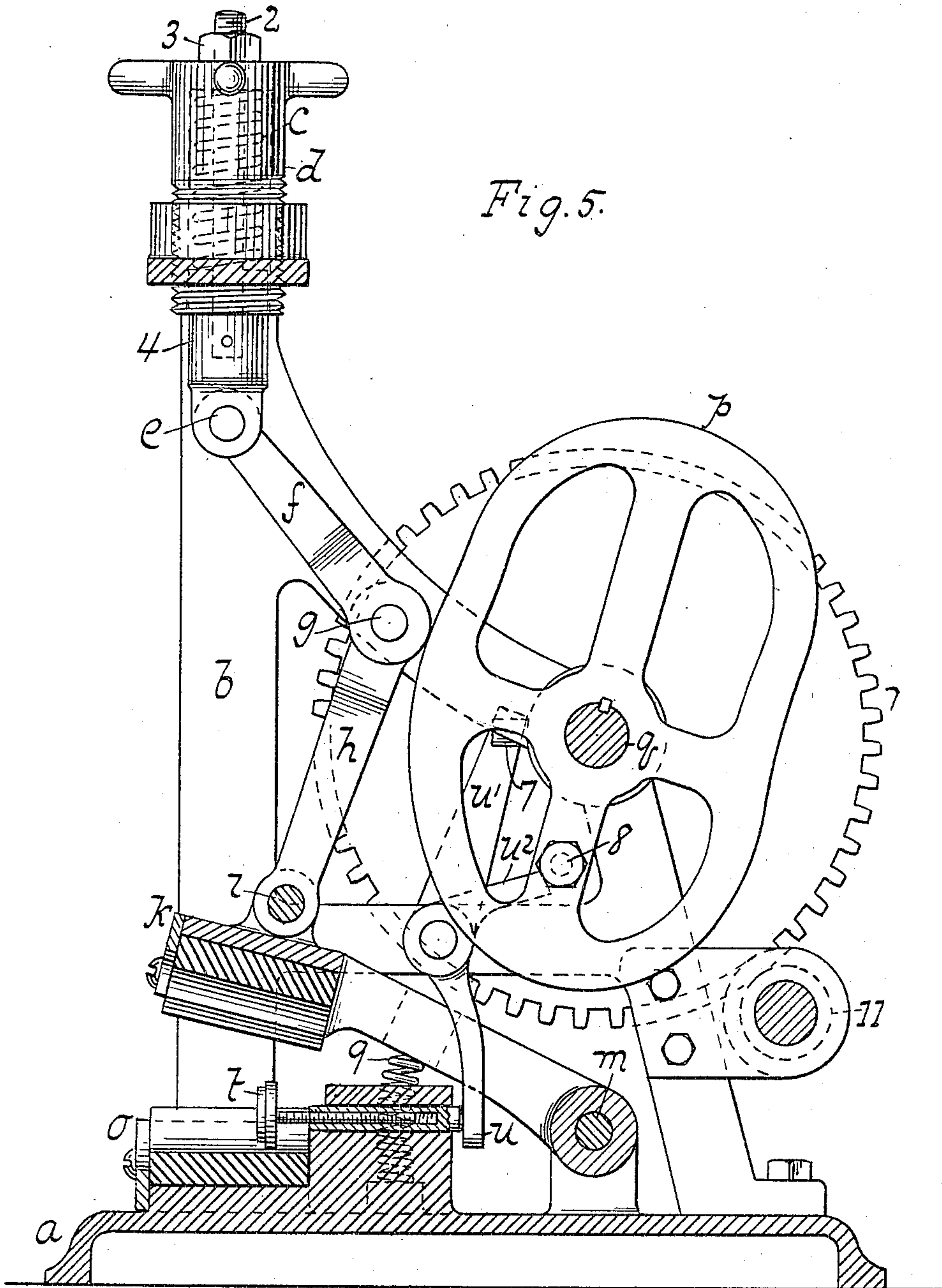
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# UNITED STATES PATENT OFFICE.

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. 812,068.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed January 20, 1905. Serial No. 241,974.

*To all whom it may concern:*

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

10 This invention resides in certain novel features adapted to provide a machine by which smooth or neat work can be rapidly or effectively accomplished.

15 This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a side elevation of a bottle-capping machine embodying this invention. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is a horizontal section on the line  $x x$  of Fig. 1, with the movable jaw, the jaw-actuating cam or eccentric, and the driving-gear for the shaft carrying such eccentric removed. Fig. 4 is a section along  $y y$ , Fig. 1. Fig. 5 is a side elevation like Fig. 1, but partly in section.

25 The base  $a$  supports a frame  $b$ , and the spring  $c$  in housing or thimble  $d$  can be adjusted or have its tension varied, as explained later on. This spring  $c$  forms a yielding support for a bearing point or pivot  $e$  of link  $f$ , jointed at  $g$  to a link  $h$ , which is jointed at  $i$  to a movable jaw  $k$ , which can swing about pivot  $m$ . A fixed jaw is shown at  $o$ . These jaws are lined with rubber or felt or soft material to avoid breaking or crushing a bottle or neck therebetween. A cam or eccentric  $p$  engages the pivot  $g$  and actuates the links to reciprocate jaw  $k$ . The eccentric is fixed to rotary shaft  $q$ , which can be coupled or uncoupled with driving pulley or motor  $r$ . The clutch is indicated at  $s$  and  $s'$ . When a bottle is slid onto fixed jaw  $o$  and presses on slide  $t$ , the lever  $u$  is actuated to allow the clutch to couple, as presently explained.

45 As the eccentric actuates 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 its neck. This

eccentric is shown with two high parts, one 50 part not quite so high as the other. When the bottle with its cap is put on the fixed 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 55 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 60 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 65 then releases or opens the jaws. The capped bottle is now pushed out or off the jaw by clutch-arm  $u$ , which, moving to unclutching position, leaves the cam  $p$  stationary or free from the motor or driving-wheel  $r$ .

70 The pivot  $e$  before mentioned is carried by or connected to a stem 2. A nut 3 allows this stem to be adjusted in the thimble  $d$ . As the nut is tightened or loosened the spring  $c$  is more or less compressed. The stem 2 is extended through thimble  $d$  and is held from falling through or out of the thimble by the nut 3, Fig. 4. The thimble  $d$  has a screw-thread on its exterior to screw into or be adjusted in the frame  $b$  or in a cross-piece secured to or forming part of such frame, as seen in Fig. 2. This adjustment of the thimble will carry the pivot  $e$  one way or another to obtain proper adjustment, while by nut 3, as before mentioned, the tension of the spring 75 can be varied. The stem 2 is of course freely movable in the thimble, except as its movement is opposed by spring  $c$ . The connection between stem 2 and pivot  $e$  can be made by suitable means—as, for example, by a sleeve 80 4 sitting on the stem and secured or pinned thereto, as indicated at 5, Fig. 4. The spring  $c$  before mentioned is seated on this sleeve 4 and abuts or braces against the interior of the top of the thimble.

95 The clutch members  $s$  and  $s'$  normally tend to engage as the springs 6, Fig. 2, tend to move member  $s'$  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  $t$  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  $u^2$ , 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 operation is as follows: A bottle with a cap has its neck or mouth portion passed between the open jaws to slide  $t$ , which latter is moved to actuate lever-arm  $u$  and carry arm  $u'$  from the stud 7, so that the clutch can couple. The cam then makes one revolution. During this revolution the highest part of the cam is brought to the toggle-joint  $f h$ , the jaws are firmly compressed, and the cap is laid about the bottle-neck. A low part of the cam then coming to the joint  $g$  the toggle-links can bend, and the jaw  $k$  opens under the influence of spring 9. The bottle can then be turned between the jaws, so that any wrinkles in the cap or tin-foil will be smoothed or flattened by the next closure of the jaws. The succeeding part of the cam, not quite so high as the highest part, coming to the pivot  $g$  the jaws are again compressed, not so firmly as before, but to give a finished and smooth appearance to the cap. The cam  $p$  now completing one revolution brings pin 8 to arm  $u^2$  to bring arm  $u'$  to stud 7. The latter, as explained, passing onto the incline of this arm, the clutch member  $s'$  is released, and the cam  $p$  is now at rest. The capped bottle being removed and a new one inserted the cam makes another revolution, and so on.

The gear  $r$  can be driven by suitable means. For example, a transmission-gear 11 on the shaft of a pulley 12 will serve as a motor. The slide  $t$  can be composed of two stem-sections, as seen in Figs. 3 and 5, which can be telescoped or screwed more or less into one another to shorten or lengthen the slide and compensate for varying lengths or sizes of bottles or bottle-necks.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a machine for capping bottles and the like a pair of jaws and a jaw-actuating means comprising a cam with actuating portions of unequal height separated by low or inactive portions.

2. In a machine for capping bottles and the like the combination with jaws of a jaw-actuating cam having actuating portions of

varying eccentricity with low or inactive portions therebetween to variously actuate or compress the jaws and open or release the same a number of times during one rotation of the cam.

3. In a machine for capping bottles and the like the combination with a stationary jaw, a movable jaw, and an actuating-cam and suitable connections for conveying motion from the cam to the movable jaw, said cam having unequal jaw or actuating parts with intermediate low or releasing parts.

4. In a machine for capping bottles and the like, the combination with jaws and actuating means thereof, of a clutch and clutch engaging and releasing means actuated by the bottles and the actuating means for respectively engaging and releasing the clutch.

5. In a capping-machine the combination with jaws and jaw-actuating means of a clutch, a lever for the clutch, a stud on the actuating means and a slide at the jaws said stud and slide being made to actuate the lever to release and engage the clutch.

6. A pair of jaws and an actuating-cam for one of the jaws, 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 a slide in the jaws in the path of a bottle introduced therebetween and actuated thereby for setting the lever to allow the clutch to couple or engage.

7. A pair of bottle-capping jaws, an actuating-cam therefor, a pulley or driver, a clutch for connecting the driver and cam, a releasing-arm for the clutch, a lever for setting the arm, a stud on the cam for setting the lever one way, and a slide at the jaws actuated by an inserted bottle to set the lever in the opposite direction.

8. A capping-machine having a jaw-actuating toggle-joint and a cam made to act against the links of the joint to straighten the same.

9. A capping-machine having jaws, a toggle-joint having one link connected to the jaws, a bearing-point for the other link and a cam made to engage the links to compress the jaws.

10. A capping-machine having jaws, an actuating toggle-joint therefor, and a spring-pressed or yielding bearing-pivot for the toggle-joint.

11. A capping-machine having jaws, an actuating toggle-joint therefor, a bearing or pivot for one link of the toggle-joint, an adjustable stem for the pivot, a spring made to act on the stem, and an adjustable cap or thimble for supporting the stem.

12. A capping-machine having jaws and an actuating toggle-joint therefor, a bearing

or pivot for the toggle-joint and provided with a stem, an adjustable thimble in which the stem is adjustable, and a spring for the stem.

- 5 13. A capping-machine having jaws and jaw-actuating means, and a bottle-actuated slide for bringing the actuating means into operation, said slide being composed of adjustable sections for lengthening or shortening the same.

10 In testimony whereof we have hereunto

set our hands in the presence of two subscribing witnesses.

HERMAN MÜLLER.  
EUGENE ZIPPRICH.

Witnesses as to Müller:

GEORGE HULSBERG,  
EDWARD WIESNER.

Witnesses as to Zipprich:

OTTO HUBER,  
OTTO W. VON WERNEWITZ.