

No. 655,001.

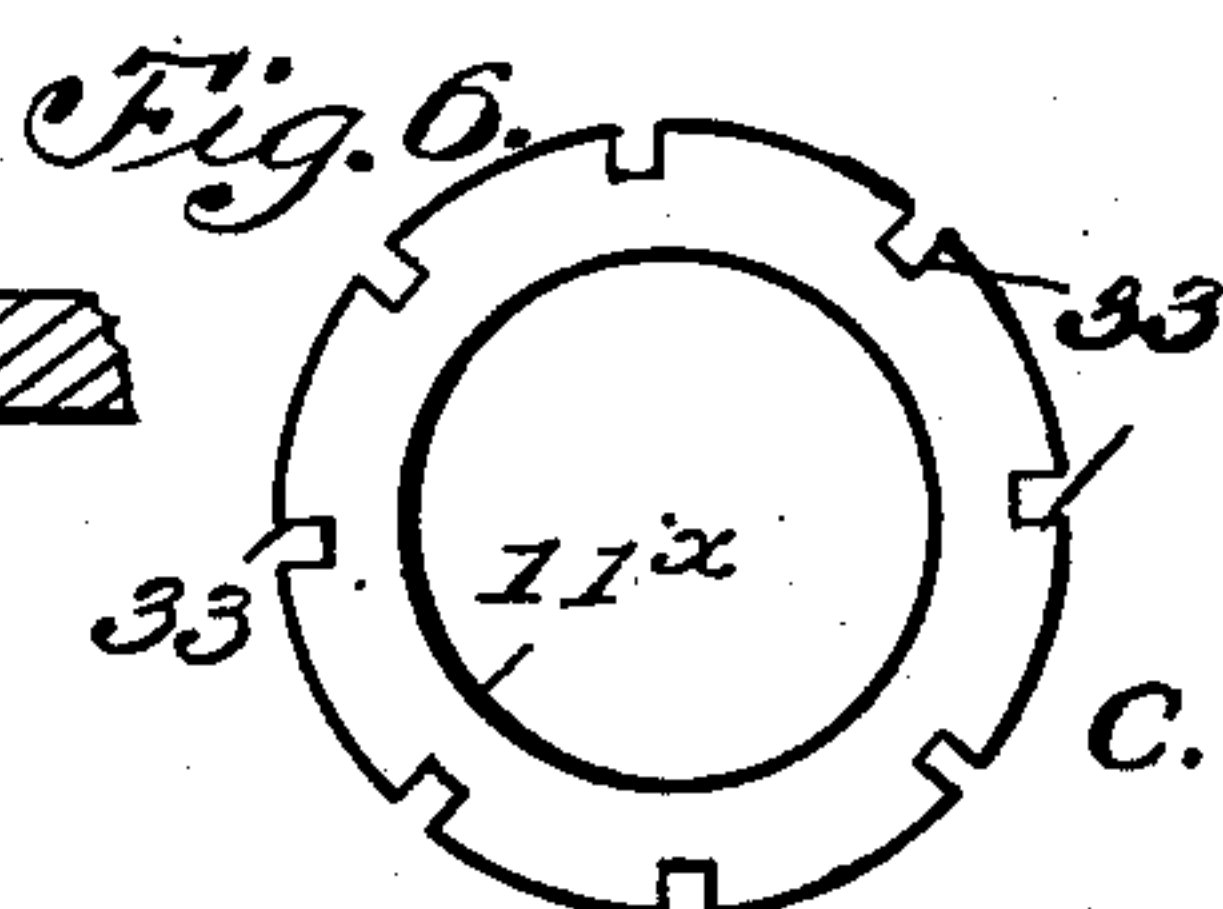
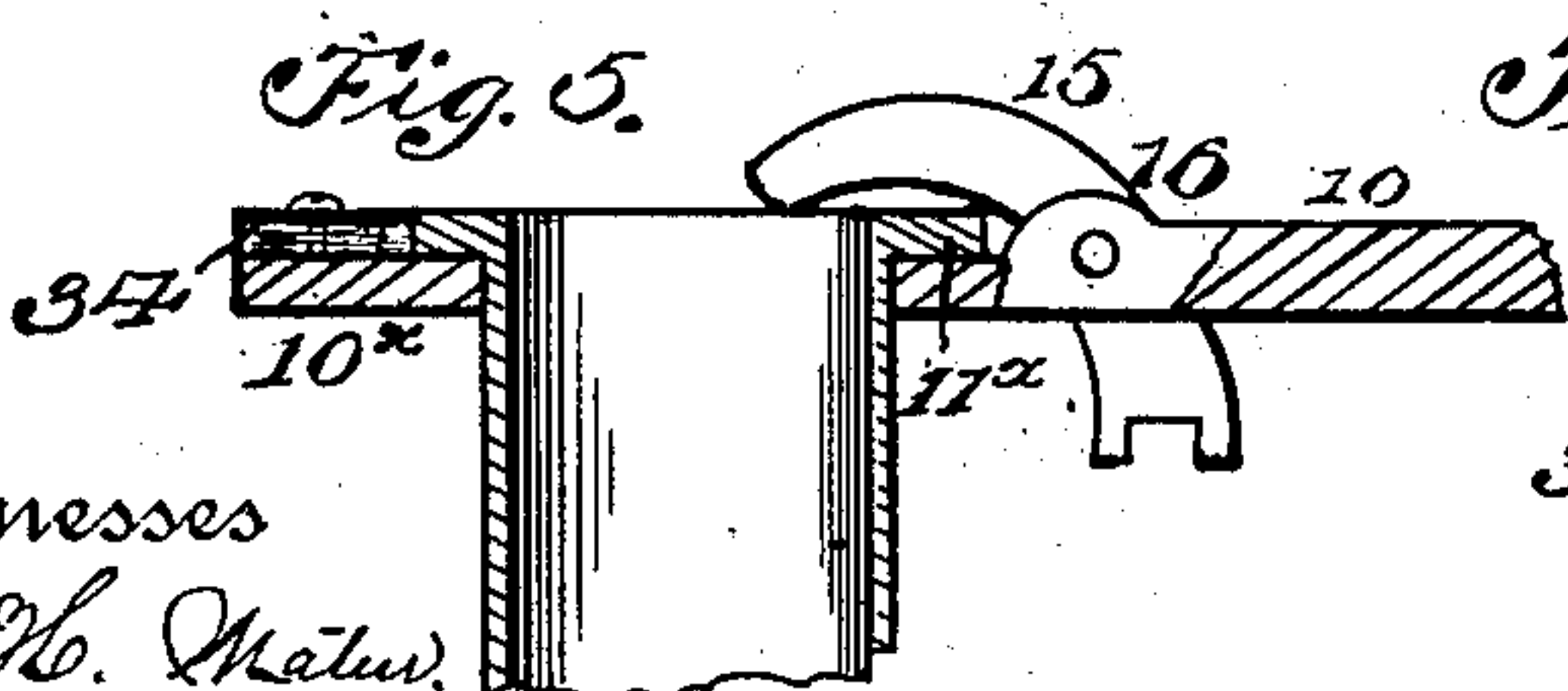
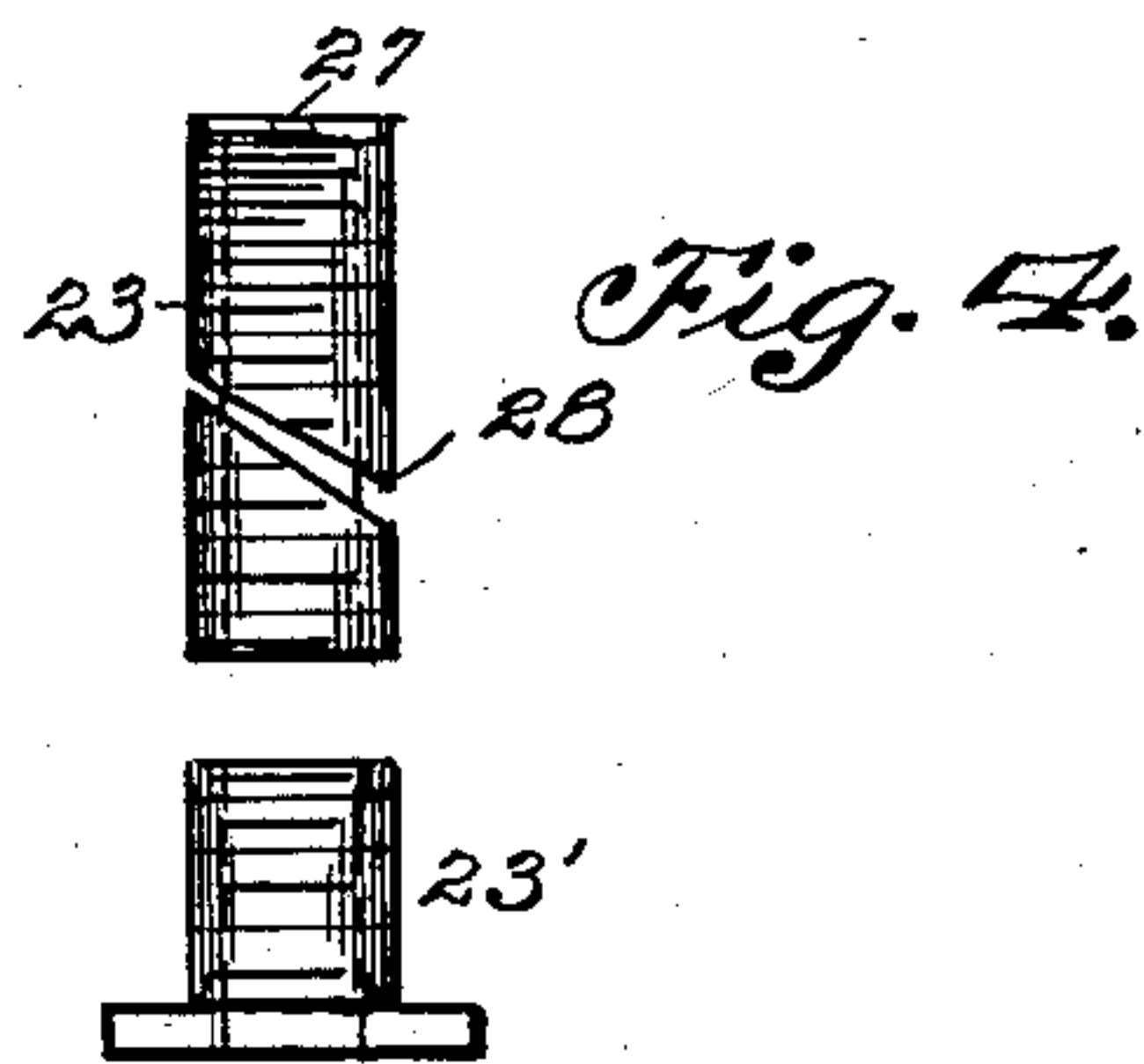
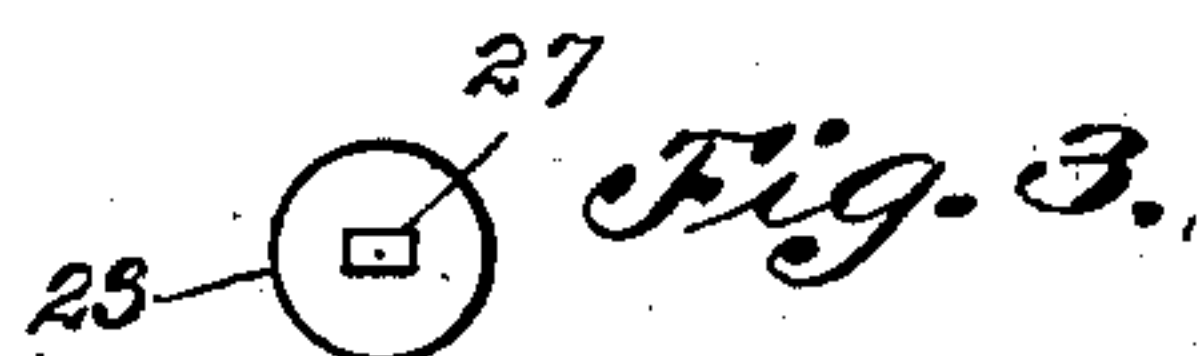
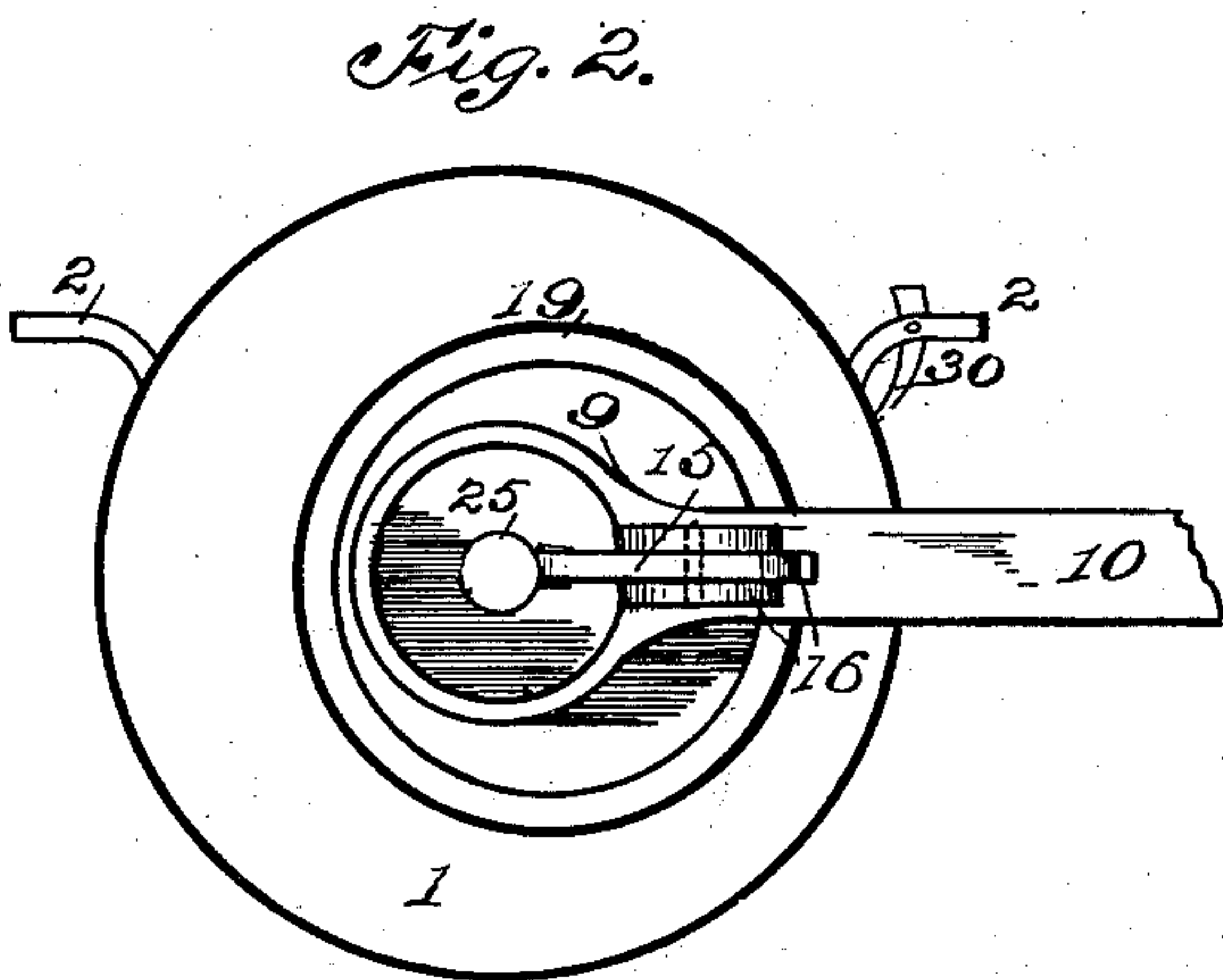
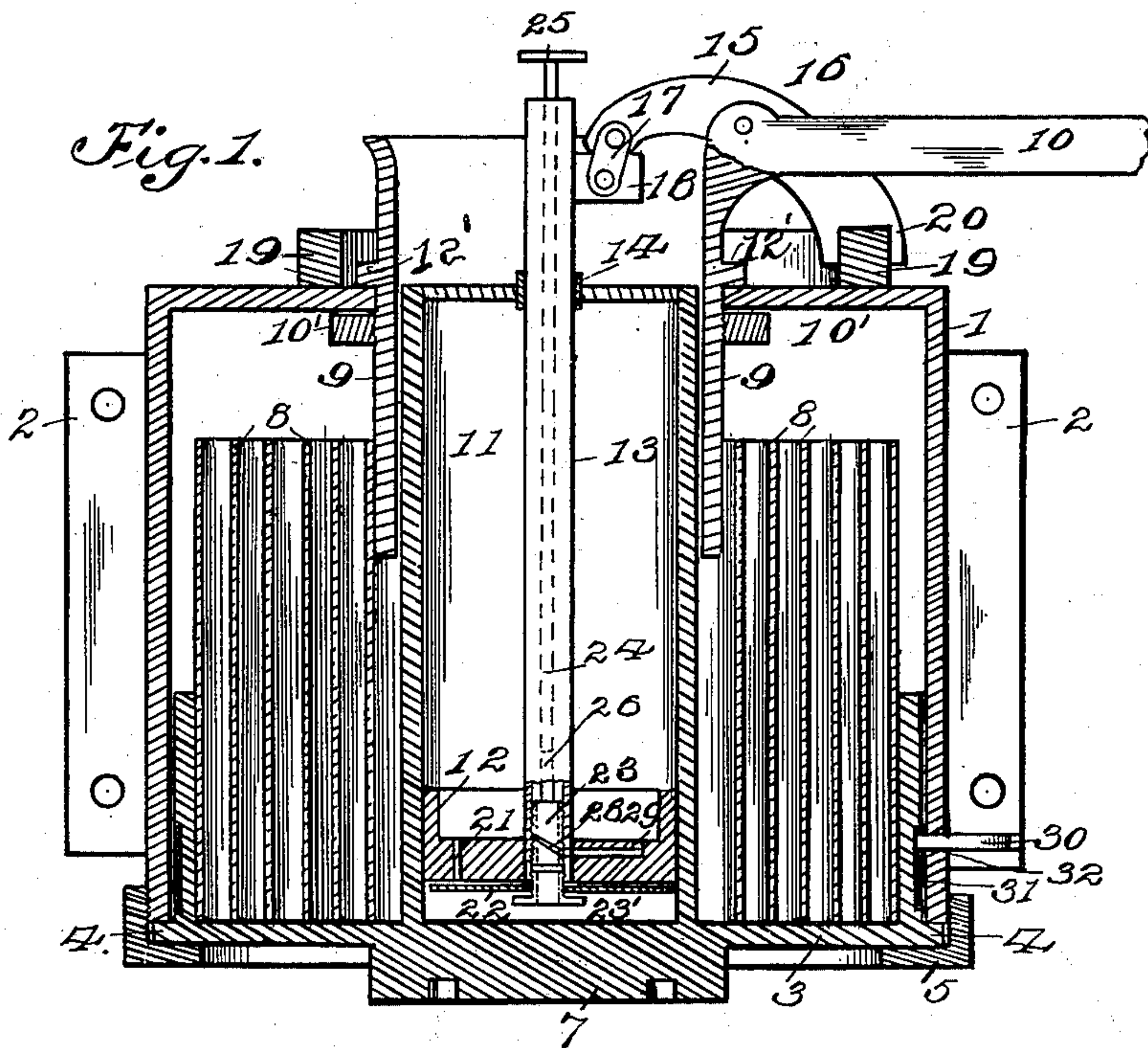
Patented July 31, 1900.

C. H. OCUMPAUGH.

DOOR CHECK.

(Application filed Mar. 29, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES HERBERT OCUMPAUGH, OF BRIGHTON, NEW YORK.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 655,001, dated July 31, 1900.

Application filed March 29, 1900. Serial No. 10,704. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HERBERT OCUMPAUGH, residing at No. 11 Allen street, Brighton, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Door-Checks; and I do hereby 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 pertains to make and use the same.

The invention relates to door-checks, and has for its object to simplify and cheapen such devices and increase their durability and efficiency.

It consists in the construction hereinafter described and pointed out.

In the accompanying drawings, Figure 1 is a central section of the device. Fig. 2 is a plan. Figs. 3 and 4 are respectively a plan and elevation of a thimble-valve. Fig. 5 is a partial section of a modified detail, including a plunger-tube; and Fig. 6 is a plan of said tube.

Numeral 1 denotes a shell provided with flanges 2 for its attachment to a door-casing. The bottom of the shell is closed by a spring-cup 3, which is entered in the shell and rotatably held by a screw-ring 5. The cup has a flange 4, situated between the bottom edge of the shell and a flange of the ring 5. The cup can be rotated within the ring by the use of a spanner applied to a suitably-formed hub 7 on the bottom of the cup, with the effect to vary the tension of a coiled spring 8, fixed at one end to the cup and at the other to a rotating sleeve 9.

In using the device the spring is put under tension by an arm 10, either integral with sleeve 9 or fixed thereto, by the opening of a door connected in any desired manner to said arm. When the door is released, the spring closes it, as usual in this class of devices. The sleeve 9 is rotatably held in the top of the shell. 10' is a screw-nut which limits its movement upwardly. Its downward movement is prevented by the shoulder 12'.

To the bottom of the spring-cup is fixed integrally by preference a plunger cylinder or tube 11 for holding a liquid, such as an oil.

12 denotes a plunger, and 13 its stem, which is freely movable through a packing 14, situ-

ated between the stem and the closed cover of the plunger-cylinder.

15 denotes a lever having its fulcrum at 16 and connected by a link 17 or the like to the plunger-stem. In the present instance the link is pivoted to an arm 18, connected to the periphery of the plunger-stem. It is also pivoted to the lever 15. Said lever has a fork 20, which loosely embraces one side of a track 19, fixed to the shell and eccentrically disposed with respect to the plunger and plunger-cylinder. The track is raised to avoid as far as practicable the accumulation of dust and to obviate the friction incident to the use of a block traveling in a groove, as heretofore practiced. The construction is such that when the door is opened and the arm 10 moved and its connected sleeve 9 rotated the forked end of the lever will be forced inwardly and the plunger raised and the spring put under tension. An opposite or closing movement of the door carries the forked end of the lever 15 outwardly and forces the plunger down, this movement ordinarily being effected by the uncoiling of the spring. The described movements of the plunger are necessarily accompanied by the passage of the liquid in the cylinder through the plunger in opposite directions, the object being, as usual in door-checks, to obviate noise and jar by the closing of the door.

21 denotes a port through which the liquid passes downwardly when the door is opened. When the plunger descends, this port is closed by pressure against a valve 22, loosely seated on a thimble-valve 23', which is screwed into the open end of the plunger-stem. 23 is a regulating-valve adjustable in the stem by means of a key 24, having a milled head 25 and an angular portion 26, engaged with a similarly-shaped opening 27 in the valve. The latter has a slot 28, which communicates with a port 29, that permits the liquid to escape upwardly when the door is closing. The rapidity of this escape can be regulated by adjusting the valve to put its slot in operative situation with respect to port 29, said slot being suitably varied in its width.

30 denotes a holding-pawl pivoted in a slot made in a shell-flange 2 and adapted to en-

gage teeth 31 in the spring-cup, the shell 1 being cut away at 32 to permit the operation.

The spring-cup has an integral bottom that prevents leakage in case oil escapes at the top of the plunger-cylinder, and no packing is required for such bottom, as heretofore. The plunger-cylinder is entire at the bottom and has a cover in which is a packed opening that permits the play of the plunger-stem.

The cup which supports the spring, plunger, sleeve, and other connected parts is rotatably connected to the shell and supported by the screw-ring 5.

The eccentric track which operates the plunger-actuating lever is simple and is easy of construction and operation as compared with the rotating eccentric rings now in general use.

The situation of the valve-regulating key 24 avoids an opening in the bottom of the plunger-cylinder and is provided for by making the plunger-stem hollow and connecting the plunger-actuating lever to the periphery of the said stem.

The sleeve 9, which is interposed between the plunger-cylinder and the spring, constitutes a main connection between the spring and the door, and, combined with a rotatable plunger, avoids a large part of the friction incident to the connection of the spring to the plunger-cylinder, as heretofore practiced, and the plunger is made rotatable.

In the modification shown in Figs. 5 and 6 the arm 10 has an extension 10^x, which surrounds the plunger-tube immediately below a flange 11^x, provided with slots 33 to receive a pin 34, detachably supported on the arm extension 10^x. The tension of the spring 8 can be varied by disconnecting arm 10 and the plunger-tube and suitably rotating the latter.

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

1. In a door-check, a shell, a spring, a spring-cup having a central integral liquid-holding plunger-cylinder, and means of adjusting the tension of the spring independently of the cylinder.

2. In a door-check, a shell, a spring and a spring-cup having a central integral plunger-cylinder with a rotatable sleeve around said cylinder.

3. In a door-check, a spring-cup having a central integral plunger-cylinder, a rotatable sleeve around the cylinder, and a spring at-

tached at its inner end to the sleeve, and at its opposite end to the spring-cup.

4. In a door-check, a spring, a plunger-cylinder, a plunger, a plunger-actuating lever, and a shell containing a sleeve rotatable about the cylinder, the sleeve forming the connection between one end of the spring and the lever.

5. In a door-check, the combination of a shell containing a spring-chamber, a sleeve, a spring having one end connected to the sleeve, and a vertical plunger-cylinder with a rotatable vertically-moving plunger and plunger-stem.

6. In a door-check, the combination of a door-actuated arm, a plunger, a plunger-cylinder, a spring concentric with said cylinder, a part intermediate the arm and spring and fixed to both at their proximate ends, said part surrounding the plunger-cylinder, a device intermediate the arm and plunger to actuate the latter, and a shell inclosing the spring and cylinder.

7. In a door-check, the combination of a shell, a door-actuated arm, a spring, a sleeve connecting the arm and spring, and a locking device to limit the upper movement of the sleeve within the shell.

8. In a door-check, the combination of a shell having an eccentric track projecting above its top to avoid accumulation of dust and unnecessary friction, a plunger, a lever connected at one end to the plunger-stem and at the other end loosely embracing said raised track, and a door-actuated arm to move the lever on the eccentric track to operate the plunger.

9. In a door-check, the combination of a shell, a plunger-cylinder, a sleeve rotatably mounted in the shell, an arm fixed to the sleeve, a rotatably-adjustable spring-cup, and a spring connecting the sleeve and spring-cup independently of the cylinder.

10. In a door-check, the combination of an arm, a shell, a plunger, a plunger-cylinder, a spring, and a rotatable spring-cup having with the cylinder an integral closed end to obviate leakage.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES HERBERT OCUMPAUGH.

Witnesses:

E. C. HEMPEL,
A. M. ZIMMER.