

No. 626,573.

Patented June 6, 1899.

J. G. SORENSON.
AUTOMATIC GRAVITY LOCK FOR SWITCHES.

(Application filed Dec. 31, 1898.)

(No Model.)

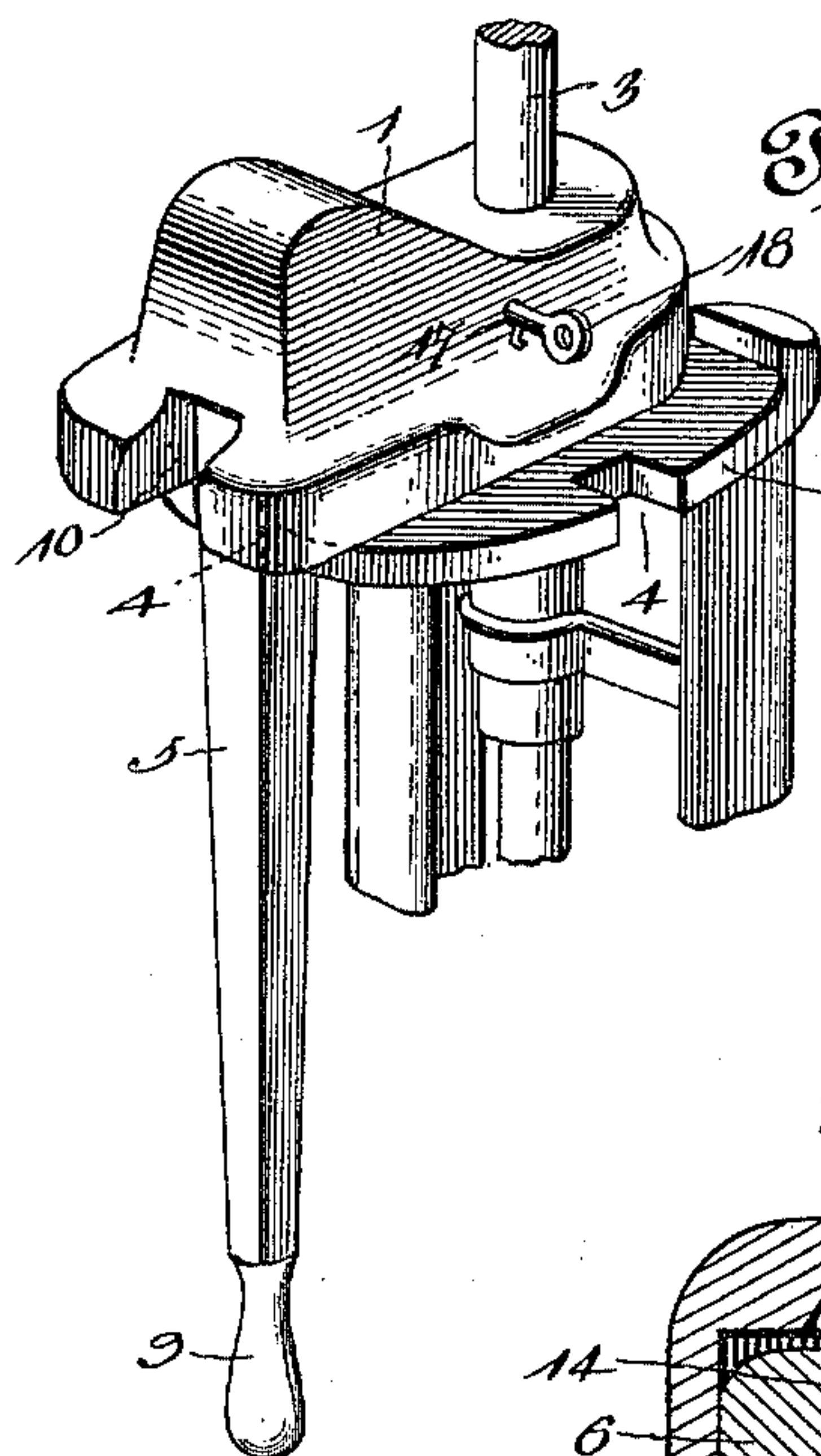


Fig. 1.

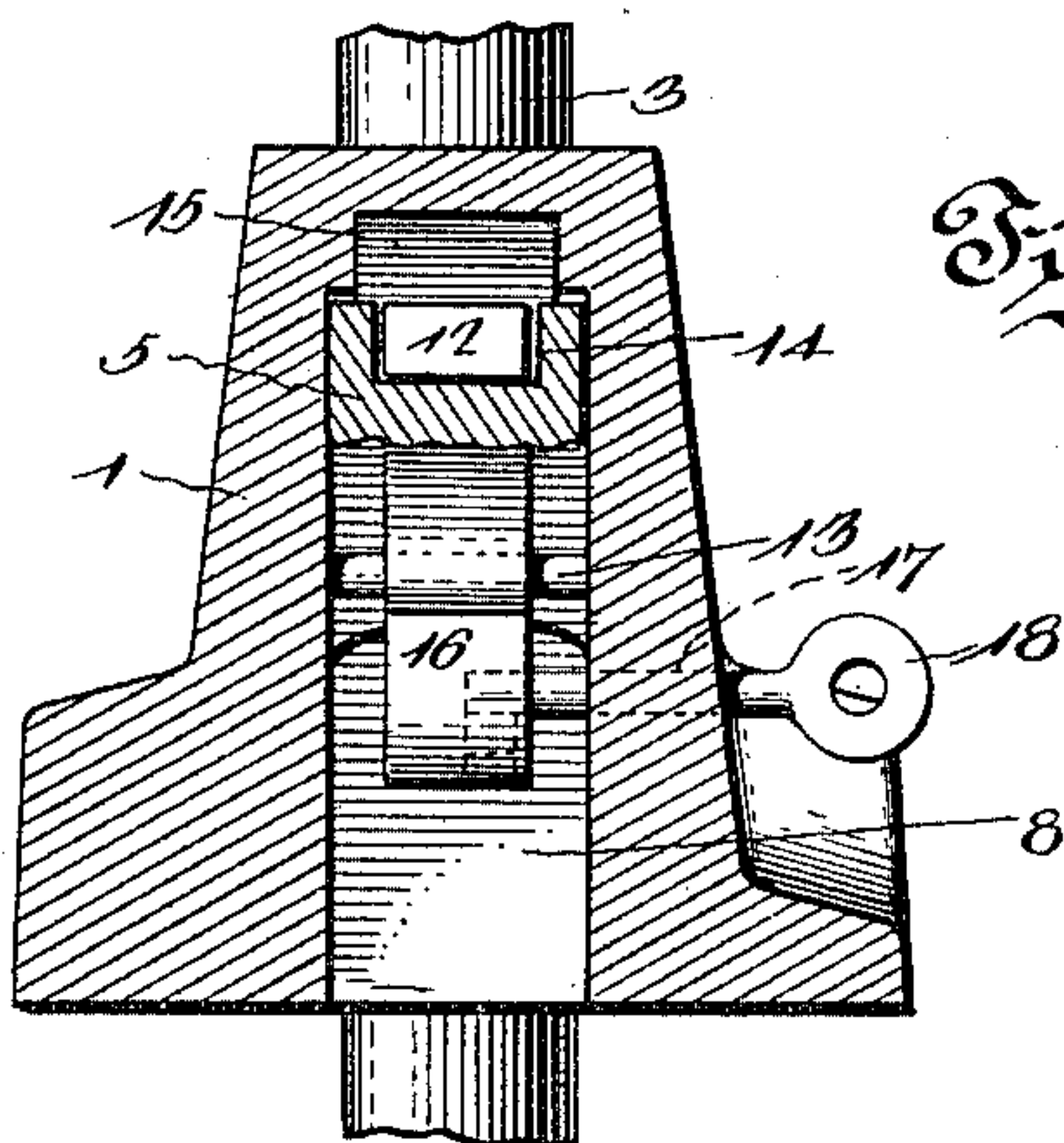


Fig. 3.

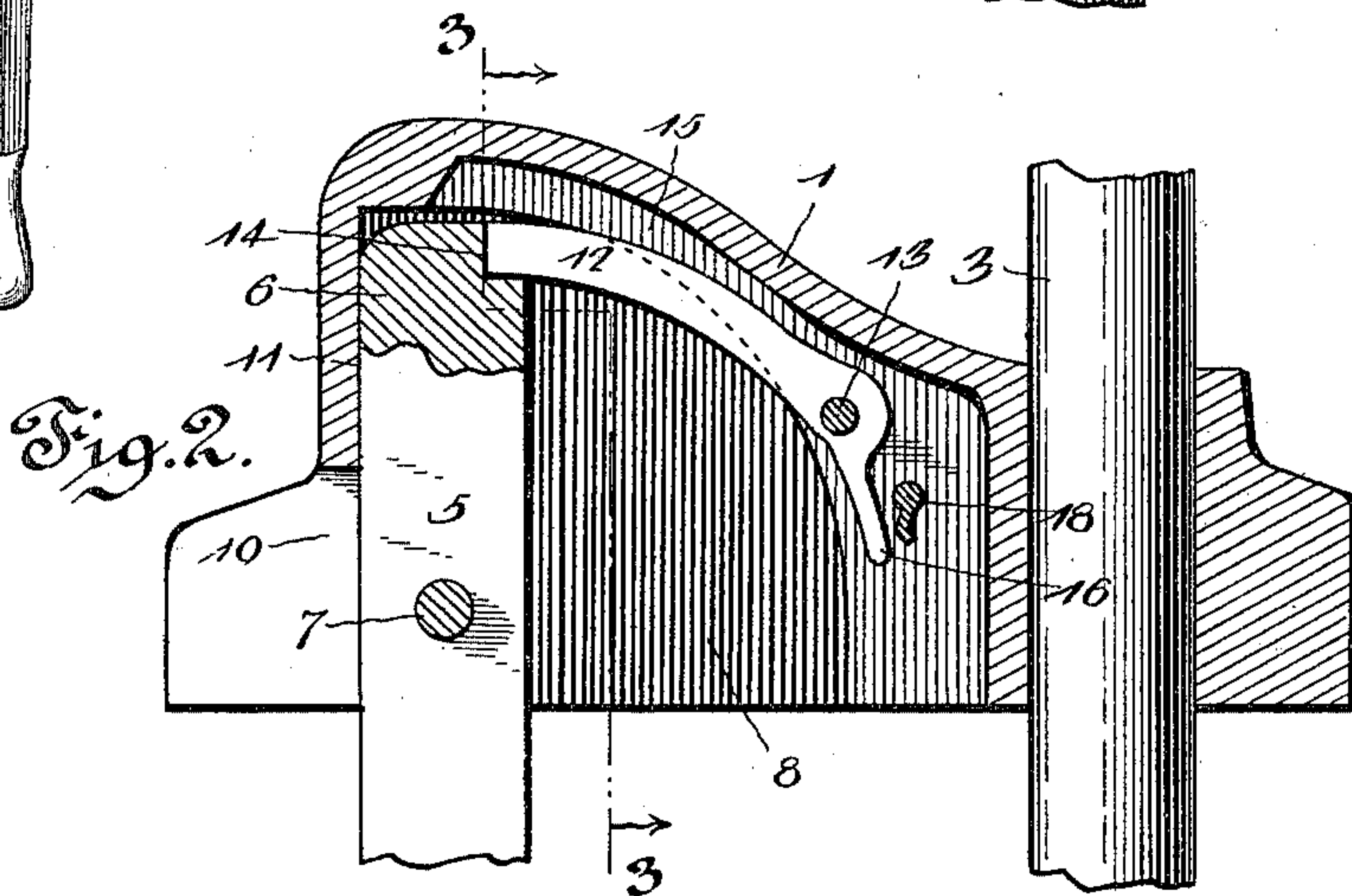


Fig. 2.

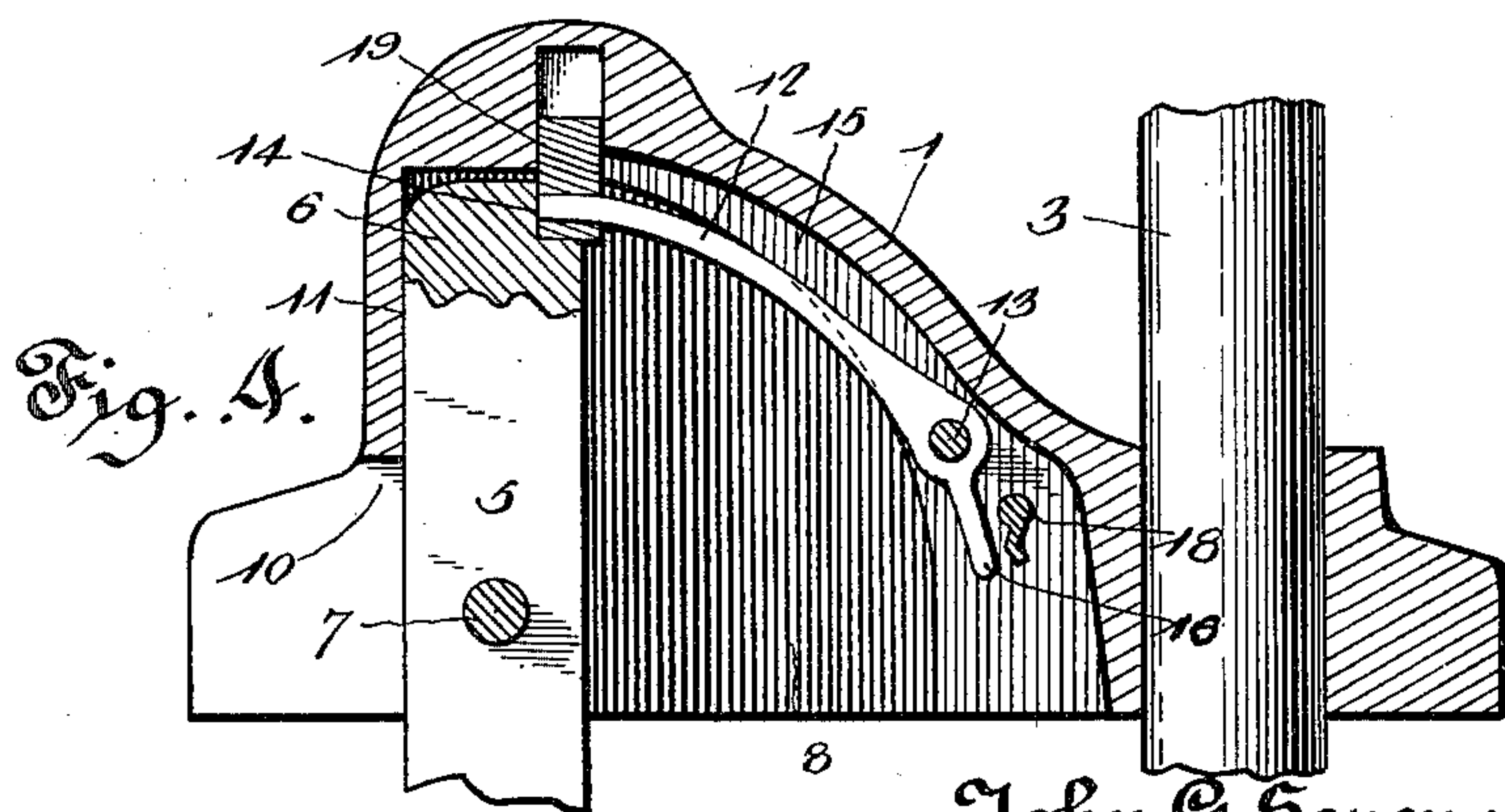


Fig. 4.

Witnesses
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN G. SORENSON, OF DAVENPORT, IOWA.

AUTOMATIC GRAVITY-LOCK FOR SWITCHES.

SPECIFICATION forming part of Letters Patent No. 626,573, dated June 6, 1899.

Application filed December 31, 1898. Serial No. 700,790. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. SORENSON, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful Automatic Gravity-Lock for Switches, of which the following is a specification.

The invention relates to improvements in automatic gravity-locks for switches.

The object of the present invention is to improve the construction of locks for switch-stands, more especially that shown and described in Patent No. 609,473, granted to me August 23, 1898, and to provide a simple, inexpensive, and efficient lock adapted to dispense with springs and capable of automatically locking the lever when the same is swung downward to one of its adjusted positions.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a portion of a switch-stand provided with an automatic gravity-lock constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a similar view taken transversely of the switch-stand on the line 3 3 of Fig. 2. Fig. 4 is a vertical sectional view similar to Fig. 2 and showing a slight modification of the dog.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a cap or head arranged upon a horizontal table 2 and adapted to be oscillated or partially rotated thereon to operate a switch-shaft 3, which is connected with the switch mechanism in the usual manner. The table, which is supported by a suitable frame, is provided with notches 4, adapted to be engaged by a lever 5, which is fulcrumed near its end 6 on a suitable pivot 7 in a cavity 8 of the cap or head. The lever, which operates similar to that in the patent above referred to, is normally locked in a pendent vertical position in engagement with one of the notches of the table and is adapted when unlocked to be swung upward to horizontal

position, and its outer end 9 is formed into a handle and is adapted to be grasped to operate the switch.

The front wall of the cavity 8 is recessed at its bottom to provide a slot 10, through which the lever extends when arranged in a horizontal position, and the end 6 of the lever abuts against the front wall 11 of the cavity 8 when the switch is locked, and it is secured in such position by an automatically-operating gravity-latch, consisting of a dog 12, arranged at the top of the cap or head, as clearly illustrated in Fig. 2 of the accompanying drawings. The front wall or portion 11, against which the lever abuts, extends downward from the top of the head to a point below the center thereof, the arrangement of the locking mechanism permitting such extension of wall 11. The dog 12, which is fulcrumed near its inner end on a pivot 13, extends along the top of the cap or head, and its front end is adapted to engage a recess 14 of the end 6 of the lever, whereby the latter is securely held in a vertical position in engagement with the table. The shoulder formed by the recess 14 of the end of the lever is adapted to support the dog in engagement with the latter, and the upper wall of the cap or head is provided with a groove or recess 15, arranged to receive the inner or rear portion of the dog and adapted to permit the engaging end thereof to swing upward and backward for releasing the operating-lever. When the outer portion of the lever is swung downward to a vertical position, the inner end 6 moves upward and forward and the dog automatically drops into engagement with the same. The dog 12 is curved substantially concentric with the pivot of the lever, and when it is disengaged from the latter it is supported by the same and is adapted to drop readily into the recess 14 when the lever is brought to a vertical position.

The rear arm 16 of the dog is arranged adjacent to a keyhole 17 and is adapted to be engaged by a key 18, which swings the dog out of engagement with the operating-lever. When the rear arm 16 of the dog is moved away from the keyhole by the key, the upper or front end of the dog is lifted out of engagement with the recess 14 of the lever 5.

In Fig. 4 of the accompanying drawings

the engaging end of the dog is provided with a head or bolt 19, disposed vertically with its lower portion engaging the recess of the lever 5, and the upper portion of the bolt extends 5 above the dog and is received in a suitable recess or way of the cap.

The invention has the following advantages: The automatic gravity-latch, which locks the lever in engagement with the table 10 and secures the switch in the desired position, is exceedingly simple and inexpensive in construction, and it is capable of engaging the inner end of the lever and of locking it firmly against the front wall of the cap or 15 head. It dispenses with springs, and it is adapted to be readily operated by a key in the usual manner.

Changes in the form, proportion, and minor details of construction may be resorted to 20 without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. In a device of the class described, the combination of a head provided at its front 25 with a lower slot and having a wall or solid portion located above the said slot, and extending downward from the top of the head to a point below the center thereof, a switch-lever pivoted to the head, arranged to swing 30 through the slot thereof and adapted to abut against the front wall of the same, and a catch mounted within the head independently of the lever for locking the same against the said front wall, substantially as described.

35 2. In a device of the class described, the combination of a head provided at its front with a slot and having a wall or solid por-

tion above the slot, a lever pivoted within the head and arranged to abut against the front wall of the same, and a dog mounted at the 40 top of the head and engaging the lever to lock the same against the said front wall, said dog being curved substantially concentric with the pivot of the lever, whereby it is adapted to rest upon and be supported by the 45 same, when out of engagement therewith, substantially as described.

3. In a device of the class described, the combination of a switch-head having a keyhole, a switch-lever, a dog pivoted between 50 its ends and having its inner end arranged adjacent to the keyhole, and a vertically-reciprocating bolt mounted on the outer end of the dog and arranged to engage the switch-lever, substantially as described. 55

4. In a device of the class described, the combination of a head provided at its front with a wall or solid portion, a lever pivoted within the head and arranged to abut against 60 the front wall or portion, and a dog mounted within the head at the top thereof and engaging the lever to lock the same against the front wall, said dog being arranged to rest upon and be supported by the lever when out of engagement with the same, substantially 65 as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN G. SORENSON.

Witnesses:

D. R. BOYDSTON,
GEO. E. HUBBELL.