

(No Model.)

J. B. SUFFERN.
SWITCH STAND.

No. 516,242.

Patented Mar. 13, 1894.

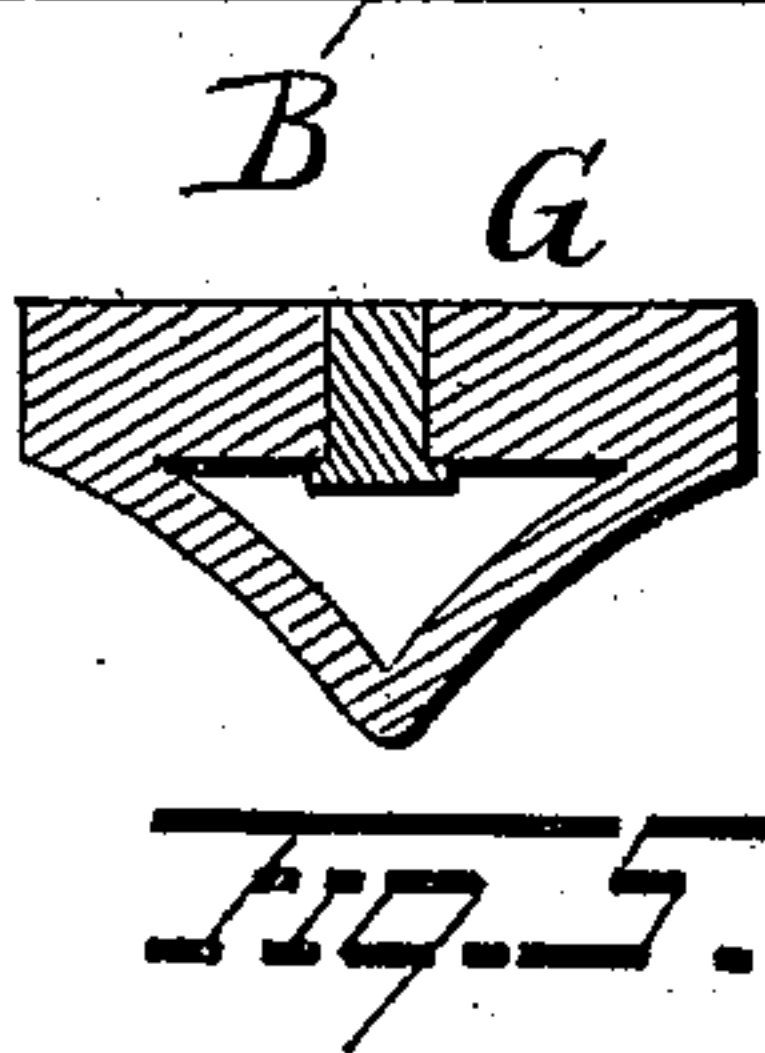
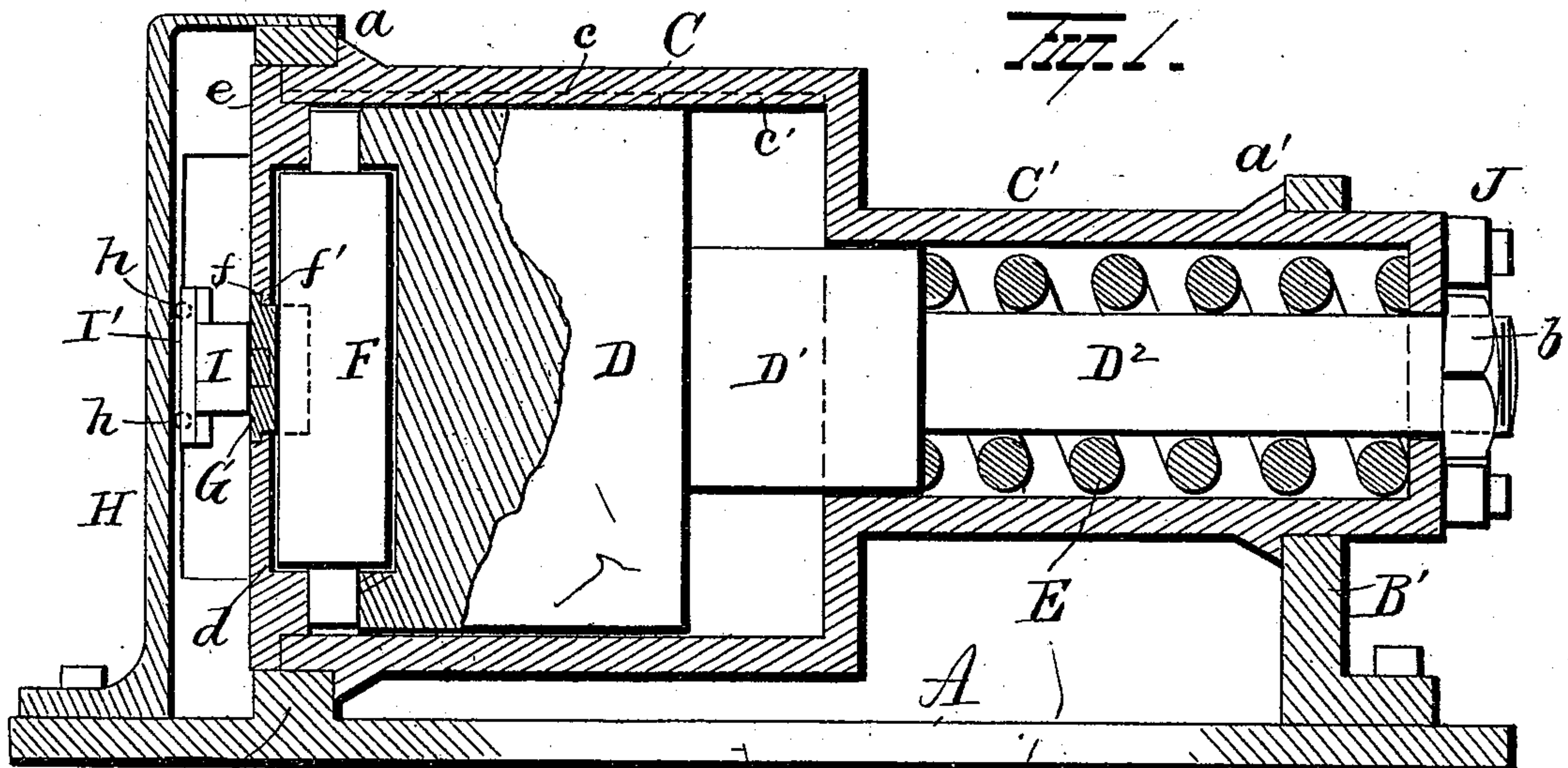
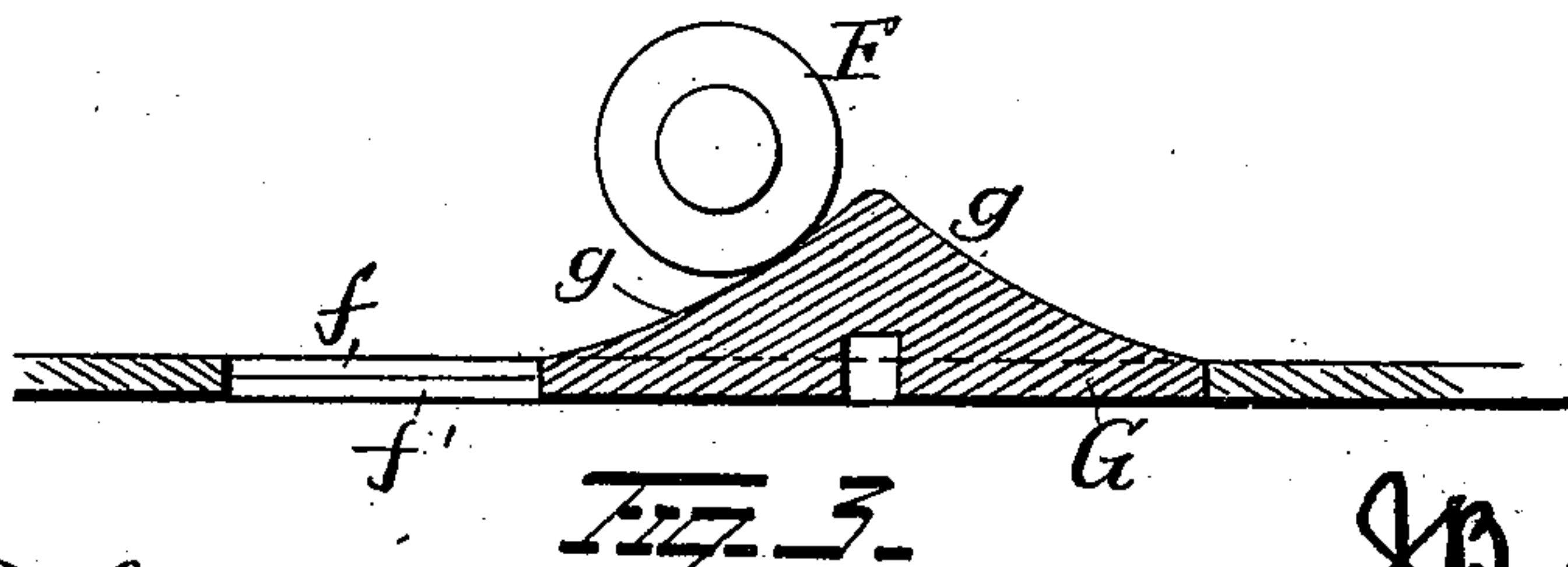
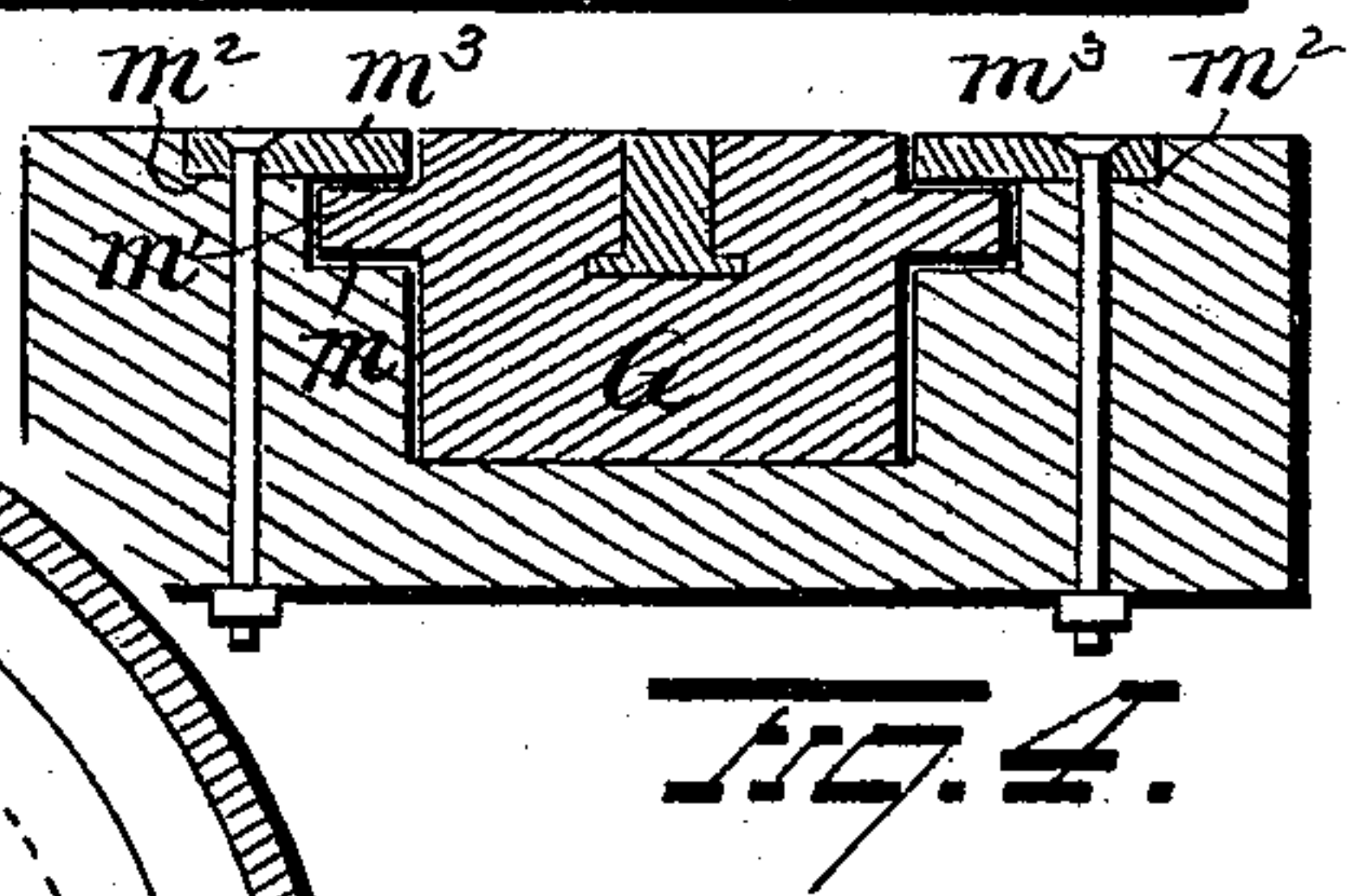
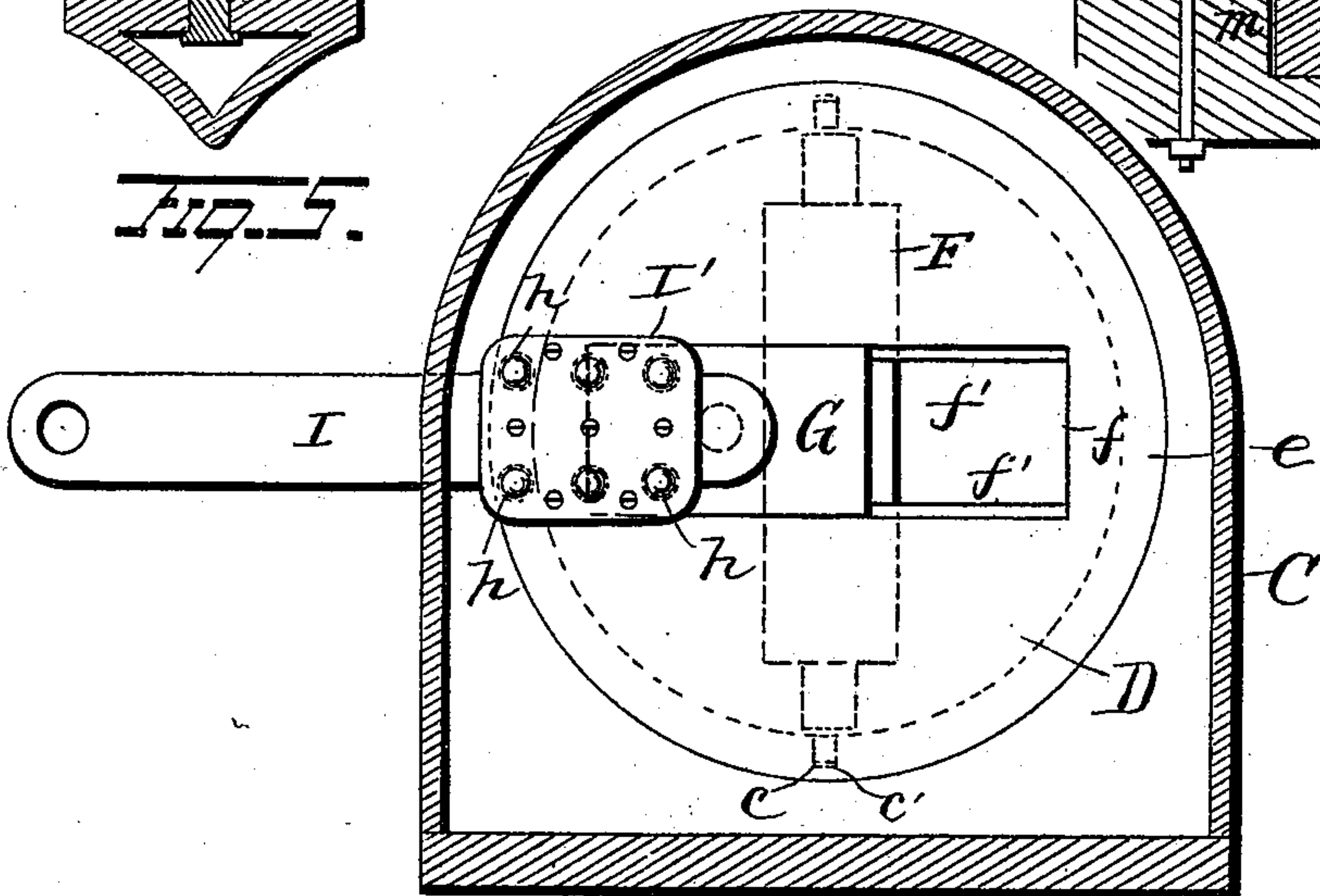


Fig. 2.



Witnesses
C. DeVottingham
G. F. Downing

Inventor
J. B. Suffern
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

JAMES B. SUFFERN, OF HILLBURN, NEW YORK.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 516,242, dated March 13, 1894.

Application filed June 21, 1893. Serial No. 478,399. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. SUFFERN, of Hillburn, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Switch-Stands; 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 appertains to make and use the same.

My invention relates to an improvement in switch stands,—the object of the invention being to so construct a switch stand that the switch can be operated automatically or manually,—and so that the setting of the devices to adapt the stand to be operated by hand, will be obviated.

A further object is to so construct a switch stand that a switch can be operated automatically or manually without changing the relative positions of any of the parts in order to adapt the stand to be operated manually, and to produce a switch stand which shall be simple in construction, cheap to manufacture, sure and accurate in operation and effectual, in every respect, in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a sectional view of my improved switch stand. Fig. 2 is an end view, partly in section. Fig. 3 is a detail view. Figs. 4 and 5 are views illustrating a modification.

A represents a base, on which bearings B, B' are located and adapted to support a revolvable cylinder or drum C, the bearing B being so located as to receive the forward end of said cylinder or drum and the bearing B' being so located as to receive said cylinder or drum in proximity to its inner end, and the cylinder or drum is prevented from longitudinal movement by means of flanges *a*, *a'* which bear, respectively against the bearings B, B'. The drum C is made with a contracted portion C', and in said drum a piston D is located and provided with a shank D' adapted to enter the contracted portion C' of the

drum. A stem D² projects from the shank D' and extends through the contracted end of the drum C, and at its extremity is provided with a nut *b*. A spring E encircles the stem D² and bears at its respective ends against the shank D' and the end of the contracted portion of the drum, said spring tending to normally force the piston forward. The piston D is adapted to have a reciprocating movement in the drum C but is prevented from rotating therein by means of a spline *c* projecting from the piston into a groove *c'* in the drum. In the forward end of the piston D, a roller F is mounted and is adapted to project into a countersunk portion *d* in the head *e* of the drum, so as to bring said roller as near as possible to the outer face of the head *e* when the parts are in their normal positions. The head *e* of the drum C is provided with an elongated slot *f* which extends across the same at right angles to the axis of the roller F, the walls of said slot being recessed to produce seats *f'*, for a slide G which is adapted to travel from end to end of said slot. The slide G is made V-shaped in cross section, and is of such size and shape that when it is in its normal position, one end of the slide will bear against one end of the slot *f*, and one of the diagonal faces *g* of the slide will bear against the roller F. In proximity to the forward end of the drum C, a guard H is located, and between said guard and the drum, the moving bar I, to which the switch rod is connected, projects, and at its inner end is pivotally connected to the slide G. The back of the moving rod I has a plate I' secured thereto and adapted to carry a series of balls *h* which bear against the inner face of the guard H, and thus retain the slide G in proper position in the slot *f*.

With the stand constructed and arranged as above set forth, when the switch, with which the moving rod or bar I is connected, is operated automatically, the slide G will be moved from end to end of the slot *f*, the slide bearing against the roller F and forcing the piston back to permit its passage through the slot. Should the switch not be moved sufficiently to complete its throw, it will be seen that as soon as the apex of the slide passes

the roller, the spring E will force the piston D forward and, the roller now bearing against the opposite inclined face of the slide, will force the slide and the switch connected therewith to complete its movement. A lever J is secured to the contracted end of the drum whereby to operate the device by hand. When the stand is to be operated by hand it is simply necessary to grasp the lever J and throw it to the opposite side of the stand, thus causing a half rotation of the drum C, and reversing the slot *f* end for end. During this movement of the drum, the slide will be retained at one end of the slot by the pressure of the roller against it and therefore the moving rod or bar to which the switch rod is attached, will be moved to the end of its throw and operate the switch. From this construction and arrangement of parts it will be seen that the stand will always be set to permit the automatic operation of the switch and that it will also be ready to be operated manually without the necessity of setting it for that purpose, it being simply necessary, when the stand is to be operated manually, to throw the lever J from one side to the other.

In the form of the invention shown in Fig. 4, the walls of the slot *f* in the head *e*, are made with recesses or ways *m* for the reception of flanges *m'* projecting from the slide G, which latter may be made hollow as shown in Fig. 5. Other recesses *m*² are made in the head of the drum C and in these latter recesses, plates *m*³ are bolted and adapted to project at their edges over the flanges *m'* of the slide and serve to prevent the escape of said slide from the slot *f*.

My improvements are very simple in construction, will permit the ready operation of the switch automatically, can be operated manually without setting the parts therefor, is cheap to manufacture and effectual, in every respect, in the performance of its functions.

Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to limit myself to the precise details of construction herein set forth, but,

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

1. In a switch stand, the combination with an oscillatory yielding piston, of a moving bar operating in connection with the piston and having a sliding connection with the piston, substantially as set forth.

2. In a switch stand, the combination with an oscillatory yielding piston, of a moving bar operating in connection with the piston and having a sliding pivotal connection with the piston, substantially as set forth.

3. In a switch stand, the combination with a drum, of a yielding device carried thereby, a slide adapted to bear against and to de-

press said yielding device, and a moving bar connected with said slide, substantially as set forth.

4. In a switch stand, the combination with a drum, of a yielding device carried thereby, a slide adapted to bear against and to depress said yielding device, a guard in proximity to said drum, and a moving rod interposed between said guard and drum and connected with said slide, substantially as set forth.

5. In a switch stand, the combination with a drum, of a yielding device carried thereby, a slide adapted to bear against and to depress said yielding device, a guard in proximity to said drum, a moving rod interposed between said guard and drum and connected with said slide and anti-friction balls carried by said rod and adapted to bear against said guard, substantially as set forth.

6. In a switch stand, the combination with an oscillatory drum having a slot in its head, of a yielding device in said drum, a slide in said slot adapted to bear against and to depress said yielding device, and a moving rod connected with said slide, substantially as set forth.

7. In a switch stand, the combination with a drum having an elongated slot therein, of a yielding device in said drum, a slide in said slot adapted to bear against and to depress said yielding device, and a moving rod connected to said slide, substantially as set forth.

8. In a switch stand, the combination with a drum having an elongated slot in its head, of a yielding device in said drum, a slide in said slot having inclined faces adapted to bear against and depress said yielding device, and a moving rod connected to said slide, substantially as set forth.

9. In a switch stand, the combination with an oscillatory drum, of a piston therein, a spring to normally force said piston forward, a roller mounted in said piston, a slide adapted to engage said roller, and a moving rod connected to said slide, substantially as set forth.

10. In a switch stand, the combination with an oscillatory drum having an elongated slot in its head, of a piston adapted to have a longitudinal movement therein, a roller mounted in said piston, a spring adapted to normally force said piston forward, a slide located in the slot in the drum and having inclined faces to bear against said roller, a moving rod connected to said slide, and a lever secured to said oscillatory drum, substantially as set forth.

11. In a switch stand, the combination with a drum, of a yielding device carried thereby, a slide adapted to bear against and to depress said yielding device, a moving bar connected to said slide and means for guiding said slide, substantially as set forth.

12. In a switch stand, the combination with

an oscillatory drum having a slot in its head,
of a yielding device in said drum, a slide in
said slot adapted to bear against and to de-
press said yielding device, a moving rod con-
5 nected to said slide, and means for prevent-
ing the escape of said slide from the slot in
the drum, substantially as set forth.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

JAMES B. SUFFERN.

Witnesses:

JOHN J. HOGAN,
A. W. WRIGHT.