

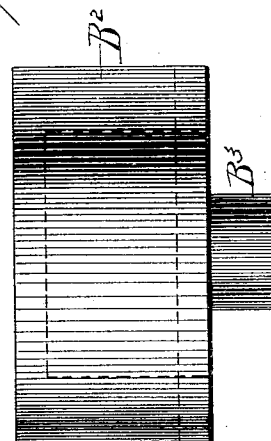
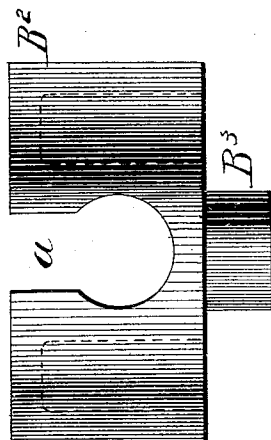
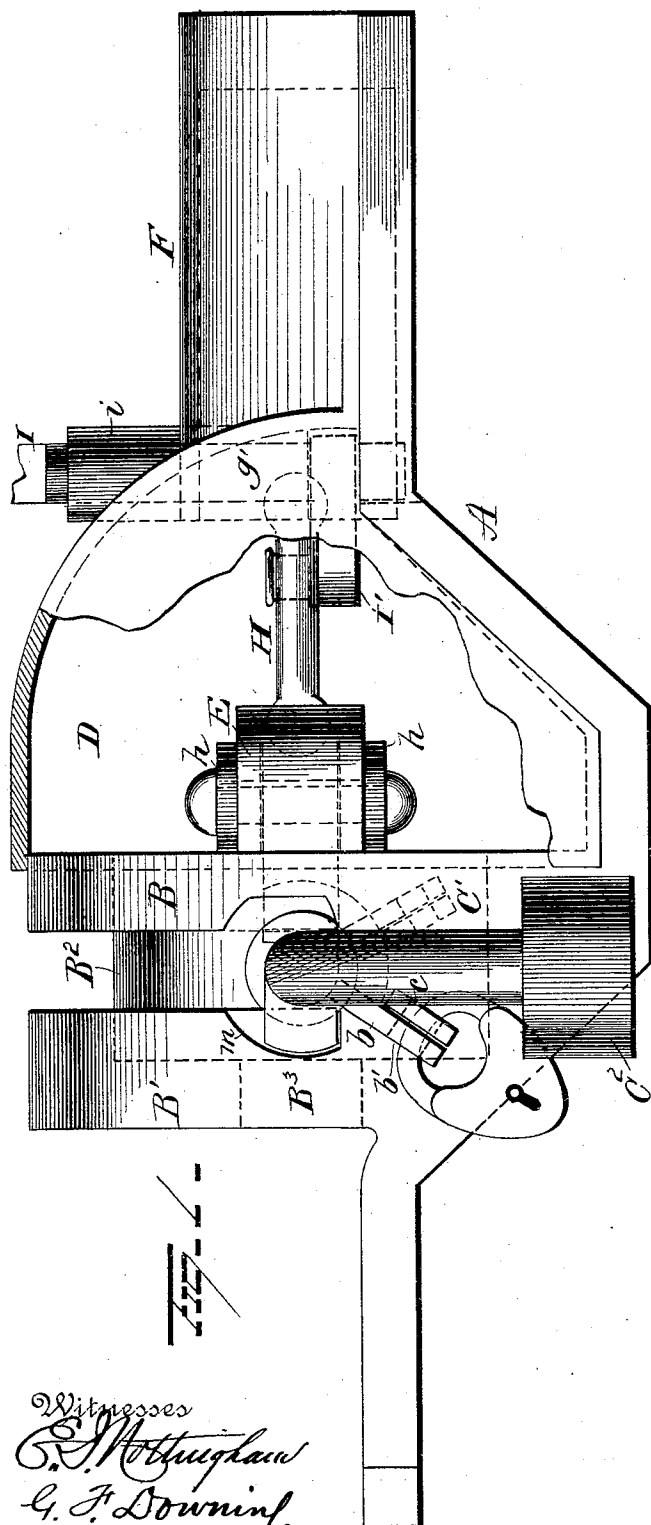
(No Model.)

3 Sheets—Sheet 1.

V. J. GOETZ.
SWITCH STAND.

No. 479,268.

Patented July 19, 1892.



Witnesses
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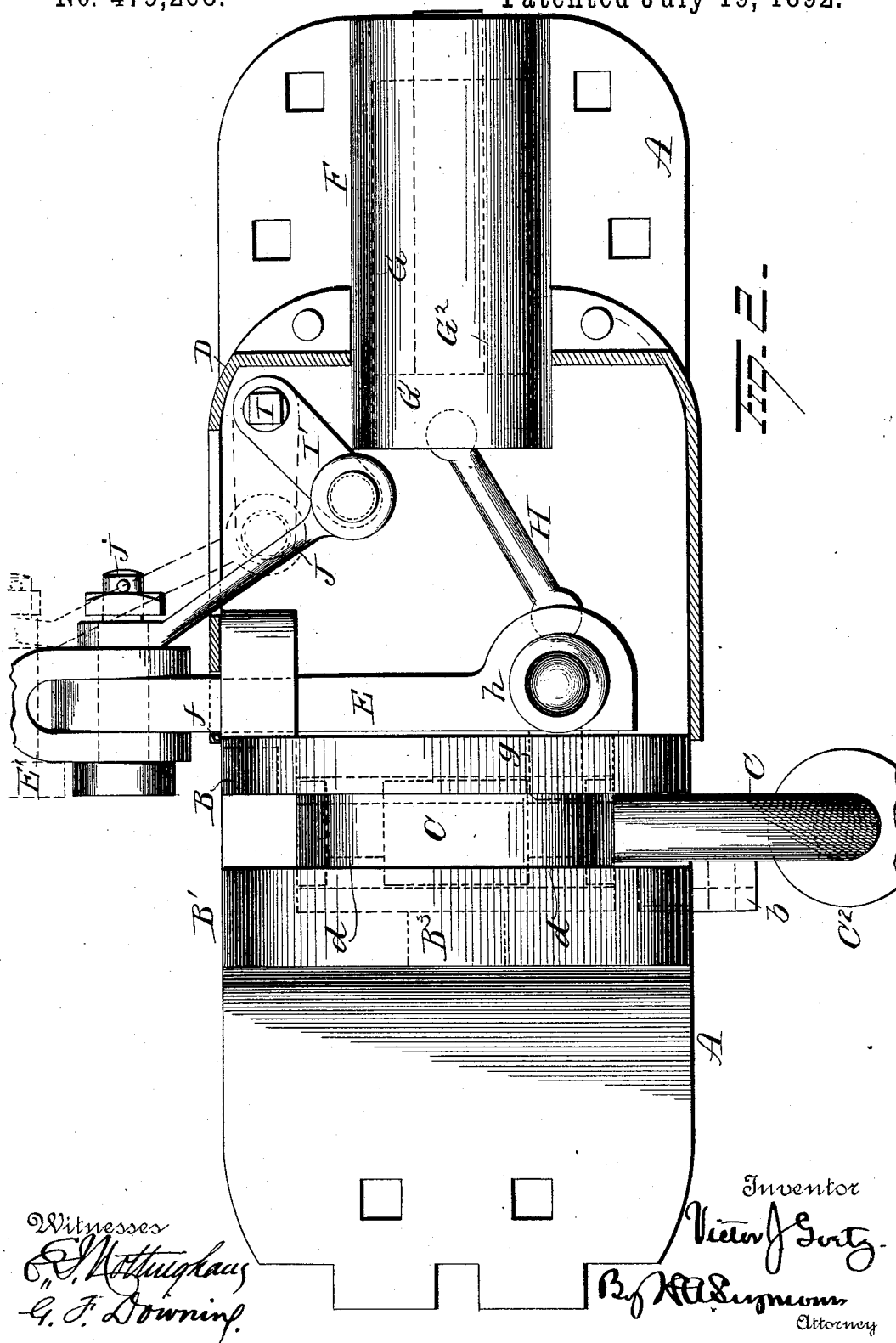
(No Model.)

3 Sheets—Sheet 2.

V. J. GOETZ.
SWITCH STAND.

No. 479,268.

Patented July 19, 1892.



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UNITED STATES PATENT OFFICE.

VICTOR J. GOETZ, OF HILLBURN, NEW YORK, ASSIGNOR OF ONE-HALF TO
W. C. KIDD AND J. B. SUFFERN, OF SAME PLACE.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 479,268, dated July 19, 1892.

Application filed August 13, 1891. Serial No. 402,577. (No model.)

To all whom it may concern:

Be it known that I, VICTOR J. GOETZ, a citizen of the United States, residing at 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 single-throw switch-stands, the object of the invention being to produce a switch-stand which may be operated either automatically or by hand, and the operation of which shall be easy, sure, and effective.

A further object is to construct a switch-stand in a simple and efficient manner, and to connect a target therewith in such manner that the operation of the moving rod of the stand will automatically operate the target.

A further object is to provide an improved locking device for the operating-lever.

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 an elevation of my improved switch-stand and operating devices. Fig. 2 is a plan view of the same. Fig. 3 is an end view. Figs. 4 and 5 are views of the operative lever. Figs. 6 and 7 are separate views of the moving rod. Fig. 8 is a detached view of the hub. Fig. 9 is a sectional view on the line *xx* of Fig. 5, and Fig. 10 is a similar view on line *yy* of the same figure.

A represents the base of the stand, from which two castings or bearings B B' project upwardly. Mounted in the bearings B B' is a hub B², said hub being preferably provided with an annular projection B³, adapted to enter and rotate in a suitable opening or perforation in the bearing B'. The hub B² is provided with an elongated slot *a*, adapted to receive the body portion of an operating-lever C, said lever being made with an L-shaped arm C', carrying at its free end a weight C². The arm C' of the lever C is provided with

an arm or projection *b*, having a slot or perforation *b'* therein, said arm or projection being adapted when the lever C is rotated slightly to lie against a projection *c* on the stand, said projection *c* being also provided with a perforation *b²*, adapted to align with the perforation *b'* of the projection *b* and receive the shackle or bow of a padlock or other lock, and thus lock the operating-lever and consequently the parts connected thereto in normal position. In order that the stand may be thus locked, it is necessary that the switch be thrown to its full extent, so that should anything get between the parts of the switch the operator would be notified of that fact by the failure of the locking parts to align, and, further, by this construction of operating-lever the parts will be compelled to assume their positions at the extremity of throw by the weight C², and the lever or arm C' being made L-shaped and the weight at the end of said arm the arm or projection *b* will be made to assume its proper normal position.

The body portion of the lever C is made with annular grooves *d d'* in proximity to the ends of said body portion and with elongated slots *e e* at opposite sides of said body portion, one of said elongated slots being adapted when the lever is operated to align with the slot *a* of the hub B². Bolted to the base A is a hood D, adapted to inclose the moving parts of the device, said hood being provided with a slot or opening *f* for the accommodation and guidance of a moving rod E, to the free end of which is pivotally connected the switch-rod E'. The moving rod E extends inwardly parallel with the face of the bearing B, and is provided near its rear end with a pin *g*, adapted to enter one of the annular grooves *d d'* when the device is operated by hand, and one of the elongated slots *e* when the device is operated automatically through the medium of any suitable track devices.

A casing or box F is located on the base A, and within this casing or box a spring G is located, for which a suitable follower G' and follower-rod G² are provided. Connecting the follower G' and the moving rod E is a toggle or link H, which is connected with the moving rod at a point diametrically opposite the pin *g*. At opposite sides of the pin *g*,

where the greater part of the pressure of the spring G is exerted, said moving rod is provided with rollers *h h*, which bear and run on the hub B³, this construction also serving to maintain said hub in place. Mounted in a perforated boss *i* and adapted to project into the hood D is a target-shaft I, having a suitable target at its upper end a crank-arm I' at its lower end. Pivottally connected at one end to the crank-shaft I' is a rod J, the other end of said rod being loosely connected with the bolt or pin *j*, which unites the moving rod and switch-rod. The connection between the rod J and the bolt or pin *j* is sufficiently loose to permit the proper movement of said rod J.

When it is desired to operate the switch by hand, the operating-lever is released by the removal of the lock and the operating-lever turned to bring a projection *l* in line with the space between the bearings B B'. The lever is then thrown to the opposite side of the stand, the weight C' impelling it to the full extremity of its throw. Another object of the weight is to prevent the lever from being wrongly placed after throwing, for if this were done and the stand should be thrown automatically the pin of the moving rod would be broken off, so that if the party operating the device has neglected to turn the operating-lever its proper distance the weight will do the work and bring the slot in the operating-lever in line with the pin of the moving rod. The pin *g* on the moving rod will engage one of the annular grooves *d d'*, and as the hub and operating-lever rotate the moving rod E will be thrown to the outward extremity of its throw, carrying with it the switch-rod E'. During this movement of the rod E the toggle or link H will move in the arc of a circle without contracting the spring G. As the moving and switch rods move outwardly to throw the switch the target-shaft will be rotated in an obvious manner and display a danger-signal.

When the switch is operated automatically by means of suitable track-instruments, the operating-lever C will of course remain locked, and consequently the moving rod must move in a straight line. For this purpose the elongated slots *e* in the body of the operating-lever are provided. As the moving rod E moves outwardly the pin *g* will travel in one of the slots *e* (according to the position of the operating-lever) and the spring G will be compressed until the link H passes alignment with the center of said spring, said spring then assisting in throwing the switch. The reverse of these movements occur when the switch is thrown the other way.

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 a hub mounted therein, of a grooved lever carried by said hub, a weighted arm project-

ing from said grooved lever, and a moving rod having a pin adapted to enter the grooves of said lever, substantially as set forth.

2. In a switch-stand, the combination, with a hub mounted therein, of a grooved operating-lever carried by said hub, a weighted arm projecting from said grooved lever, a projection on said lever, a projection on the stand, and means for locking said projections together to lock the stand, a moving rod, and a pin carried by said moving rod and adapted to enter the grooves in the operating-lever, substantially as set forth.

3. In a switch-stand, the combination, with a hub mounted therein, of a lever carried by said hub and made with grooves therein, a moving rod, a pin projecting from said moving rod and adapted to enter the grooved lever, and rollers carried by said moving rod and adapted to run on one side of the hub, substantially as set forth.

4. In a switch-stand, the combination, with a hub mounted therein, of a grooved lever mounted in said hub, a moving rod, a pin carried by said moving rod and adapted to enter the grooved lever, a spring, and a link or toggle connecting said moving rod with the spring, the connection of said toggle or link with the moving rod being diametrically opposite the pin in said rod, substantially as set forth.

5. In a switch-stand, the combination, with a hub mounted therein, of a lever mounted in said hub and provided with grooves, a moving rod, a pin carried by said moving rod and adapted to enter said grooved lever, rollers carried by said rod at opposite sides of the pin, a spring, and a link connecting said moving rod and spring, the connection of said link with the moving rod being at a point diametrically opposite the pin and rollers, substantially as set forth.

6. In a switch-stand, the combination, with suitable bearings, of a hub mounted therein, said hub being provided with an elongated slot or groove, a grooved lever mounted in said hub, a moving rod, and a pin carried by said moving rod and adapted to enter said grooved lever, substantially as set forth.

7. In a switch-stand, the combination, with a hub mounted therein, of a lever located in said hub, said lever having elongated slots, a moving rod, and a pin projecting from said moving rod and adapted to enter one of said elongated slots when the device is operated automatically, substantially as set forth.

8. In a switch-stand, the combination, with a hub mounted therein, of a lever located in said hub, said lever being provided with annular grooves, a sliding rod, and a pin projecting from said sliding rod and adapted to enter one of said annular grooves when the device is operated by hand, substantially as set forth.

9. In a switch-stand, the combination, with a hub mounted therein, of a lever located in

said hub, said lever being provided with annular grooves near the ends of its body portion, and elongated slots or grooves in its body portion, a moving rod, and a pin carried by said moving rod and adapted to enter said grooves, substantially as set forth.

10. In a switch-stand, the combination, with a revoluble operating-lever, of a projection thereon, said projection being adapted to be secured to the stand at an angle, substantially as set forth.

11. In a switch-stand, the combination, with a revoluble operating-lever, of a projection thereon, a projection on the stand, said projections being so arranged that they may be

secured together at an angle to the axis of the lever, substantially as set forth.

12. In a switch-stand, the combination, with a hub mounted therein, of a weighted operating-lever having an elongated slot or groove, a moving rod, and a pin projecting from said rod and adapted to enter said elongated slot or groove, substantially as set forth.

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

VICTOR J. GOETZ. [L. S.]

Witnesses:

W. STUART ROE,
GEO. W. CONKLIN.