J. B. STRONG.

SWITCH STAND.

APPLICATION FILED MAR. 25, 1911.

1,005,081. Patented Oct. 3, 1911.

Fig. 1.

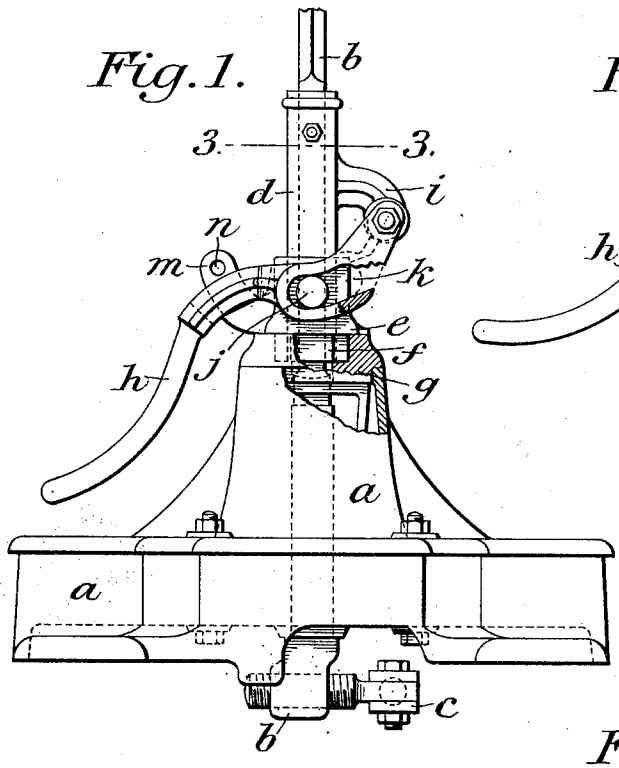


Fig. 2.

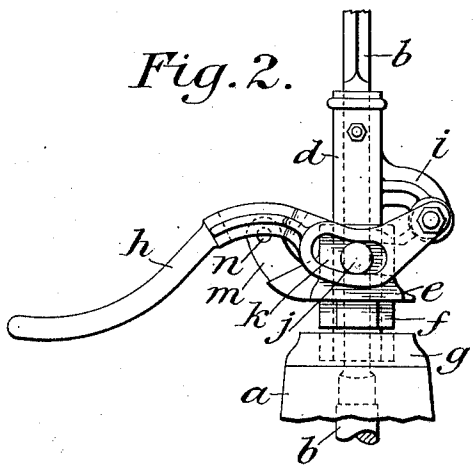


Fig. 3.

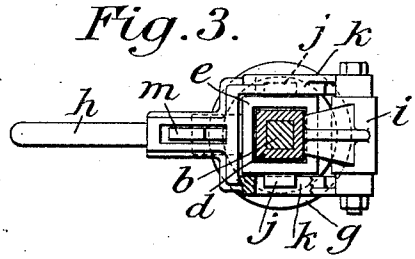


Fig. 4.

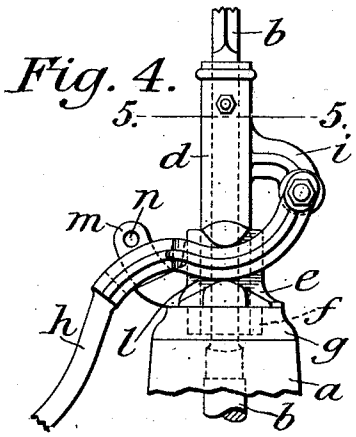
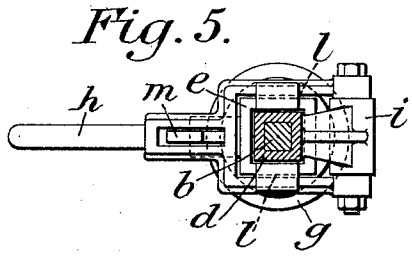


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SWITCH-STAND.

1,005,081. Specification of Letters Patent. **Patented Oct. 3, 1911.**

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To all whom it may concern:

Be it known that I, JAMES BOORMAN STRONG, 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, of which the following is a specification.

This invention relates to improvements in switch stands of the type commonly known as the "Ramapo" switch stand, but is applicable to any type of rigid or automatic switch stand in which the handle rotates with the spindle, and relates particularly to improved means for operating said switch stand whereby the same shall be more positive in operation, compact in construction, and economical to manufacture.

Heretofore the "Ramapo" switch stands have been provided with a handle for manually operating the switch, which was pivoted to the inner sleeve of the stand and operatively secured to the lock block by means of lifting straps which were secured to the handle and the lock block respectively by means of tap bolts. The constant use of the switches, and particularly the jars and shocks incident to their use in connection with trailing switches, frequently caused these tap bolts to become loose and to fall out, thus releasing the lifting straps and preventing the switch from being operated manually. The position of said tap bolts also permitted them to be removed maliciously, thus interfering with the operation of the switch and preventing the same from being actuated by hand.

The primary object of this invention is to eliminate the use of lifting straps and of the tap bolts which secured the lifting straps to the handle and the lock block respectively.

A further object of the invention is to provide a direct connection between the handle and the lock block which will be positive in its operation, and which cannot be displaced or disconnected through any cause whatever except by dismantling the switch stand.

The various further objects of the invention will be more fully set forth in the following description of a switch stand embodying my invention, which consists in the new and novel features of construction and combinations of parts hereinafter set forth and claimed.

In the accompanying drawings—Figure 1 is a side elevation of my improved switch stand showing the casing broken away in part to more clearly disclose the construction. Fig. 2 is a detailed view showing the lock block in its raised position. Fig. 3 represents a section on the line 3—3 of Fig. 1. Fig. 4 is a side elevation showing a modified form of connection between the lock block and the handle. Fig. 5 represents a section on the line 5—5 of Fig. 4.

The casing *a* may be of any well known form, preferably of the type commonly employed in the "Ramapo" switch stands. The spindle *b* is attached to the connecting rod *c* in the usual manner for operating the switch rails which are not illustrated. The upper portion of the spindle is preferably squared to receive a sleeve *d*, which is movably secured to the spindle. A lock block *e* is movably mounted on the sleeve and is provided with a preferably squared shoulder *f* adapted to engage in a corresponding recess provided in a safety block *g* which is rotatably mounted in the casing. The safety block may be held in its operative position and prevented from remaining in a non-operative position by suitable safety mechanism of any preferred or well known construction which is not illustrated herein.

A handle *h* is provided for lifting the lock block out of engagement with the safety block, and thus permit the switch to be operated manually. Instead of being pivoted directly to the sleeve and operating the lock block through lifting straps, however, the handle *h* in my improved construction is pivoted to an arm or projection *i* secured to or formed integral with the sleeve *d* and extending outward so that the pivotal point will be spaced a suitable distance from the sleeve. The handle *h* adjacent to its pivotal point is curved so as to form a reverse or ogee curve and engages directly with the locking block, which is provided with trunnions or projections *j* that engage in a cam groove *k* provided in the handle. It will be obvious, however, that the trunnions may be provided on the handle and engage in grooves formed in the locking block, or that the handle may seat directly in the groove *l* as shown. Preferably the portion of the handle adjacent to the pivotal point is bifurcated and the two parts are similarly constructed. A lug *m* provided with an eye *n* projects between the forks in the handle's non-operative position, so that the handle may be locked in its non-operative position.

By means of this construction the handle is brought directly into engagement with the locking block or other part such as the stand base and the use of lifting straps is avoided. As the handle is raised it cams the locking block out of engagement with the safety block, thus permitting the spindle to be rotated independently of the safety block or stand base. When the handle is lowered the locking block is again cammed into its non-operative or locked position, so that the action of the handle upon the locking block is positive both when being raised and lowered. By properly positioning the pivotal point of the handle and properly proportioning the cam groove and the cam surface on the handle, sufficient leverage can be obtained to raise the locking block with only slight exertion.

It is obvious that my improved construction can be used either with or without a safety attachment engaging a safety block, or a stand base. It is obvious, also, that the safety block and the stand base or casing may be made integral with each other, and squared in section. It is also obvious that various other modifications within the skill of the mechanic may be made in the details of the mechanism herein set forth without departing from the spirit of the invention, provided the means set forth in the following claims be employed.

I claim as my invention:—

1. In a switch stand, the combination of a spindle, an arm secured to said spindle and rotatable therewith, a locking block for normally holding said spindle in its adjusted position, and a handle pivoted to said arm and engaging directly with said locking block for operating said locking block.

2. In a switch stand, the combination of a spindle, a locking block movable on the spindle, a separate part normally engaging said locking block to hold the spindle against rotation, and a handle carried by said spindle and directly connected with the locking block to disengage same.

3. In a switch stand the combination of a spindle an arm secured to said spindle and rotatable therewith, a locking block movable on said spindle, a safety block normally engaging said locking block, a handle pivoted to said arm and engaging directly with the locking block to disengage same from the safety block.

4. In a switch stand, the combination of a spindle, a locking block mounted on the spindle and rotatable therewith, a relatively stationary part normally engaging the locking block to hold the spindle against rotation, and a handle supported by the spindle and engaging directly with the locking block to disengage same from said relatively stationary part.

5. In a switch stand comprising a spindle, a safety block, a locking block mounted on the spindle and normally engaging the safety block to hold the spindle against rotation, the combination of a curved handle having a cam surface formed thereon engaging with the locking block to disengage same from the safety block.

6. In a switch stand the combination of a spindle, a locking block movable on the spindle, means normally engaging said locking block to hold same and the spindle against rotation, a handle fulcrumed on said spindle and engaging the locking block, and a cam surface on one of said parts operatively engaging the other part, whereby the locking block may be released and the spindle rotated.

7. In a switch stand comprising a spindle, a safety block and a locking block movable on the spindle normally engaging said safety block to hold the spindle against rotation, the combination of an arm projecting from the spindle, and rotatable therewith, and a handle pivoted to said arm, said handle engaging directly with the locking block to disengage same from the safety block.

This specification signed and witnessed this 17th day of March, A. D., 1911.

JAMES BOORMAN STRONG.

Signed in the presence of—
AMBROSE L. O'SHEA,
W. F. WHITTAKER.