

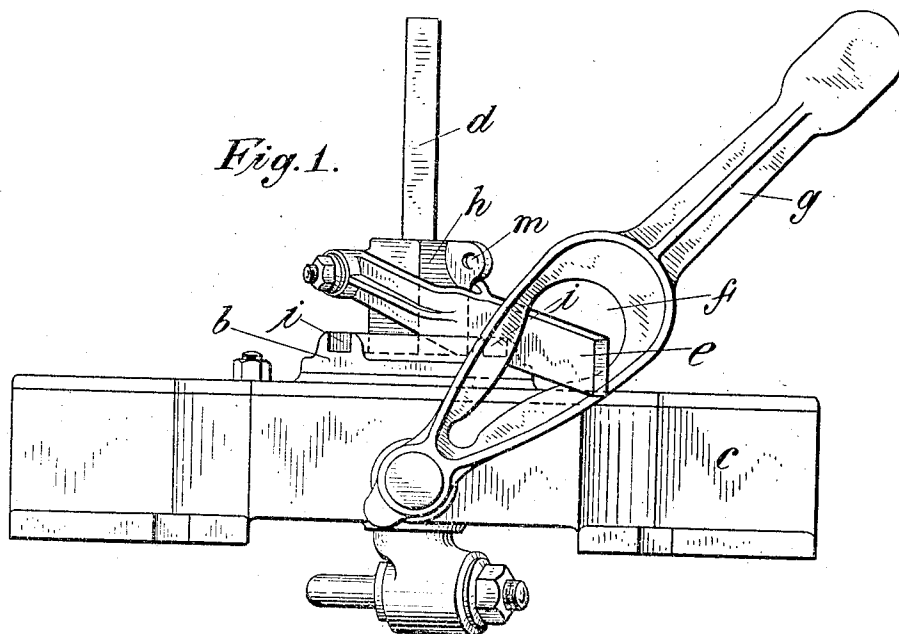
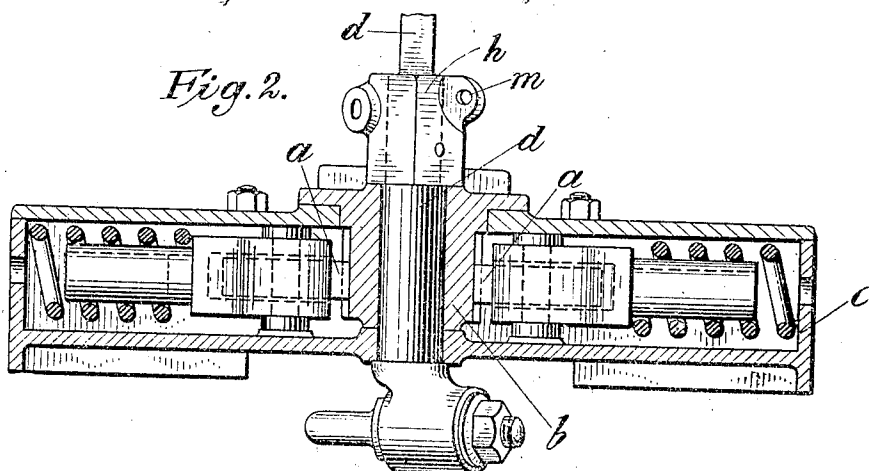
No. 882,024.

PATENTED MAR. 17, 1908.

F. W. SNOW & W. C. KIDD.
SWITCH STAND.

APPLICATION FILED DEC. 20, 1907.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

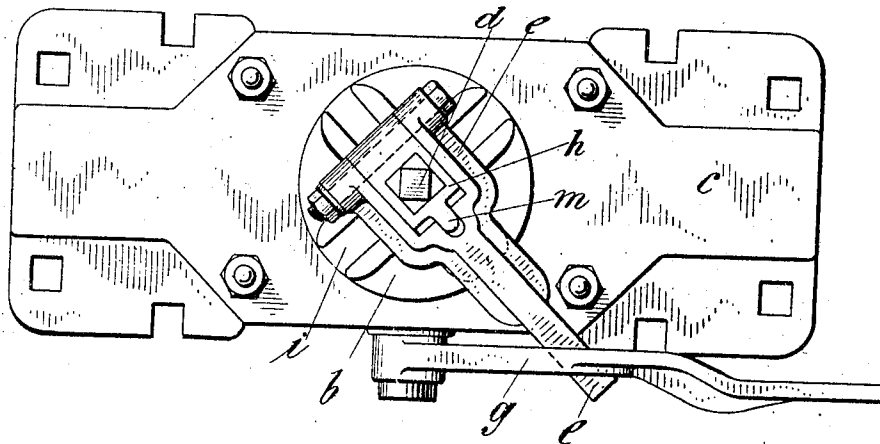
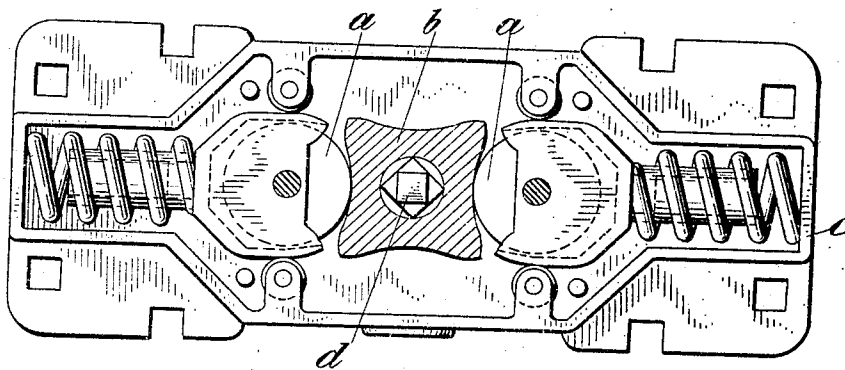


Fig. 4.



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SWITCH-STAND.

No. 882,024.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed December 20, 1907. Serial No. 407,340.

To all whom it may concern:

Be it known that we, FRED WILLIAM SNOW, a citizen of the United States, and a resident of Hillburn, in the county of Rockland and State of New York, and WILLIAM CHARLES KIDD, also a citizen of the United States, and a resident of Suffern, in said county and State, have invented certain new and useful Improvements in Switch-Stands, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

The object of this invention is to provide an automatic switch stand in which the provisions for manually operating the switch shall be such as to permit the stand to be set up in a comparatively limited space and also to permit the switch to be thrown by a yardman or other attendant or from a distant signal tower with ease and despatch.

In a great many automatic switch stands, the handle and its associated parts through which the switch is manually thrown, are arranged to fold up whereby these parts are more or less compact and do not project out from the stand so as to be in the way of passing trains or the like; and therefore when any of these switches are manually operated, the handle and its associated parts have to be unfolded and the handle generally has to be lifted up and swung around in a horizontal plane. Moreover, the lifting of the handle usually serves to unlock the manually operating means from the automatically operating means so that the former can be brought into play independently of the latter. Thus in such stands, the manual throwing of the switch involves, besides the actual operation of throwing, at least that of the unfolding of these parts or that of the unlocking of the manually operating means from the automatically operating means. Accordingly, the manual throwing of the switches cannot be said so involve a single operation and moreover such switches are not adapted to be thrown conveniently through connections from a distant signal tower.

In accordance with the present improvements the manual operation of the switch is effected through the single movement of a lever or some such means which movement not only serves to throw the switch but also to release the manually operating means from the automatically operating means. In

the present case and preferably in most cases the lever will be arranged to swing in a substantially vertical plane so that its movement will be parallel with the adjacent track. Thus it will be seen that the operation of manually throwing the switch is an extremely simple one, that the lever does not project out from the stand so as to be in the way or so as to prevent the switch from being set up in a limited space, and that the operation of the switch may be accomplished from a distant signal tower by simply attaching a wire or cable to the lever and extending the wire or cable along the track parallel therewith to said signal tower.

The invention will be more fully described in connection with the accompanying drawings, in which,

Figure 1 is a view in front elevation of a switch embodying the improvements. Fig. 2 is a view, partly in elevation and partly in longitudinal section. Fig. 3 is a plan view, and, Fig. 4 is a plan view with the cover plate of the stand and the parts above the same removed.

The particular means for controlling the automatic throwing of the switch are immaterial to the present invention, as such means may assume many different forms without affecting the particular results which the present improvements are designed to secure. In the present case a low type of switch stand is illustrated in the drawings in which these automatic means consist of spring actuated rollers *a* and a block *b* which these rollers are adapted to bear against. These rollers, their springs and associated parts and the block *b* are all housed within a suitable frame or base *c*, and the block *b* surrounds the usual vertical target spindle or shaft *d* which is adapted to be operatively connected at its lower end to a switch. The shaft *d* is freely movable within the block *b* but is normally made to rotate therewith through the means for manually operating the switch which will now be referred to. These means comprise a lever *g* and an arm *e*, which is preferably horizontal, projecting from the shaft *d* and extending through a slot *f* in the operating lever *g*. This arm is pivotally secured to a block *h* upon a squared portion of the shaft *d*, being forked at one end in order to embrace this block, and its other end constitutes a projection which

tends through the slot *f* in the lever *g* and which also engages, by means of recesses *i*, the block *b*. It will thus be seen that every time the switch is moved and the shaft *d* is turned, the arm *e* will be swung around from one side of the stand to the other. As the arm *e* normally rests in one of the recesses *i*, the stand, when automatically operated by a passing train, will cause the block *b* to rotate against the action of the spring actuated rollers *a*. When however the arm *e* has been lifted from its engagement with either of the recesses *i*, the shaft *d* may be freely turned and the switch thrown independently of the automatic means, that is independently of the block *b* and the spring actuated rollers *a*. For lifting this arm *e* and manually throwing the switch, the lever *g* with the slot *f*, already referred to, has been provided. This lever *g* is pivoted near its lower end and arranged so as to swing in a practically vertical plane. The slot *f* is of such conformation as first to raise the arm *e* from its engagement with the recess *i* as the lever *g* starts to move, and then to cause said arm to be swung over and finally permitting it to drop again into the other recess *i*. For this purpose the slot may be made approximately pear shaped as illustrated in Fig. 1, said slot or a portion thereof obviously constituting a cam whereby the desired movement of the arm *e* is effected. The manual operation of such a stand will be seen to be extremely simple. All that is required is the swinging of the lever *g* in a single plane and in a single direction to change its position from one side of the vertical shaft to the other side, and involving an angular change of about ninety degrees. There are no projections from the stand which can possibly constitute any obstructions to passing trains and for this reason too the stand may be set up in a comparatively small space where it would be impossible to accommodate a stand having a horizontally swinging lever. Moreover, it will be easy to see how a wire or cable could be attached to the operating lever *g* whereby it could be operated from a distant signal tower as easily and conveniently as a semaphore.

It is, of course, possible to provide means as illustrated at *m* (Figs. 1 and 2) through which a padlock or the like may be passed in order to lock permanently the arm *e* in one or the other of the recesses *i* and therefore to lock the switch from any manual operation for an indefinite time. Moreover, other additions or changes may be made in the construction shown and described without departing from the spirit of the invention.

We claim as our invention:

1. In a switch stand, the combination of means to control the automatic throwing of a switch, manually operated means to throw the switch normally in engagement with the

automatic means, and means to disengage the manually operated means from the automatic means and throw the switch in a single operation.

2. In a switch stand, the combination of means to control the automatic throwing of a switch, manually operated means to throw the switch normally in engagement with the automatic means, and a lever adapted to move in a single plane and as it moves in said plane to disengage the manually operated means from the automatic means and throw the switch.

3. In a switch stand, the combination of means to control the automatic throwing of a switch, manually operated means to throw the switch normally in engagement with the automatic means, and a lever adapted to move in a vertical plane and as it moves in said plane to disengage the manually operated means from the automatic means and throw the switch.

4. In a switch stand, the combination of means to control the automatic throwing of a switch, an arm through which the switch may be manually thrown normally in engagement with the automatic means, and a lever adapted to move in a single plane and as it moves in said plane to disengage the arm from the automatic means and throw the switch.

5. In a switch stand, the combination of means to control the automatic throwing of a switch, a substantially horizontal arm through which the switch may be manually thrown normally in engagement with the automatic means, and a lever adapted to move in a vertical plane and as it moves in said plane to disengage the arm from the automatic means and throw the switch.

6. In a switch stand, the combination of means to control the automatic throwing of a switch, a substantially horizontal arm through which the switch may be manually thrown normally in engagement with the automatic means, and a lever adapted to move in a vertical plane and having a slot through which the arm extends whereby as the lever is moved in said plane it disengages the arm from the automatic means and swings it around to throw the switch.

7. In a switch stand provided with means to control the automatic throwing of a switch, the combination of a horizontal arm through which the switch may be thrown manually, means to lock the horizontal arm to the automatic means whereby the switch cannot be thrown independently of the automatic means until the arm is unlocked from the automatic means, and a lever adapted to move in a vertical plane and having a slot therein through which the arm extends, whereby the movement of the lever in either direction first unlocks the arm from the automatic means then swings the arm to throw the switch and

then permits the arm to become locked again to the automatic means.

8. In a switch stand, the combination of a vertical shaft adapted to be operatively connected to a switch, means to control the automatic throwing of the switch including a block adapted to be turned by the shaft when the switch is automatically thrown, manually operated means to throw the switch normally in engagement with the block, and means to disengage the manually operated means from the block and throw the switch in a single operation.

9. In a switch stand, the combination of a vertical shaft adapted to be operatively connected to a switch, means to control the automatic throwing of the switch including a block adapted to be turned by the shaft when the switch is automatically thrown, manually operated means to throw the switch normally in engagement with the block, and a lever adapted to move in a single plane and as it moves in said plane to disengage the manually operated means from the block and throw the switch.

10. In a switch stand, the combination of a vertical shaft adapted to be operatively connected to a switch, means to control the automatic throwing of the switch including a block adapted to be turned by the shaft when the switch is automatically thrown, a

substantially horizontal arm through which the switch may be manually operated normally in engagement with the block, and a lever adapted to move in a vertical plane and as it moves in said plane to disengage the arm from the block and throw the switch.

11. In a switch stand, the combination of a vertical shaft adapted to be operatively connected to a switch, means to control the automatic throwing of the switch including a block adapted to be turned by the shaft when the switch is automatically thrown, a substantially horizontal arm pivotally connected with the shaft through which arm the switch may be manually operated, whereby the arm and block normally engage, and a lever adapted to move in a vertical plane and having a cam slot through which the arm extends whereby as the lever moves in said plane, the arm is first lifted so as to disengage it from the block and then swung around to throw the switch independently of the automatic means.

This specification signed and witnessed this 30th day of November, A. D. 1907.

FRED WILLIAM SNOW.
WILLIAM CHARLES KIDD.

Signed in the presence of:
SCHUYLER C. PEW,
JEAN S. MACGREGOR.