

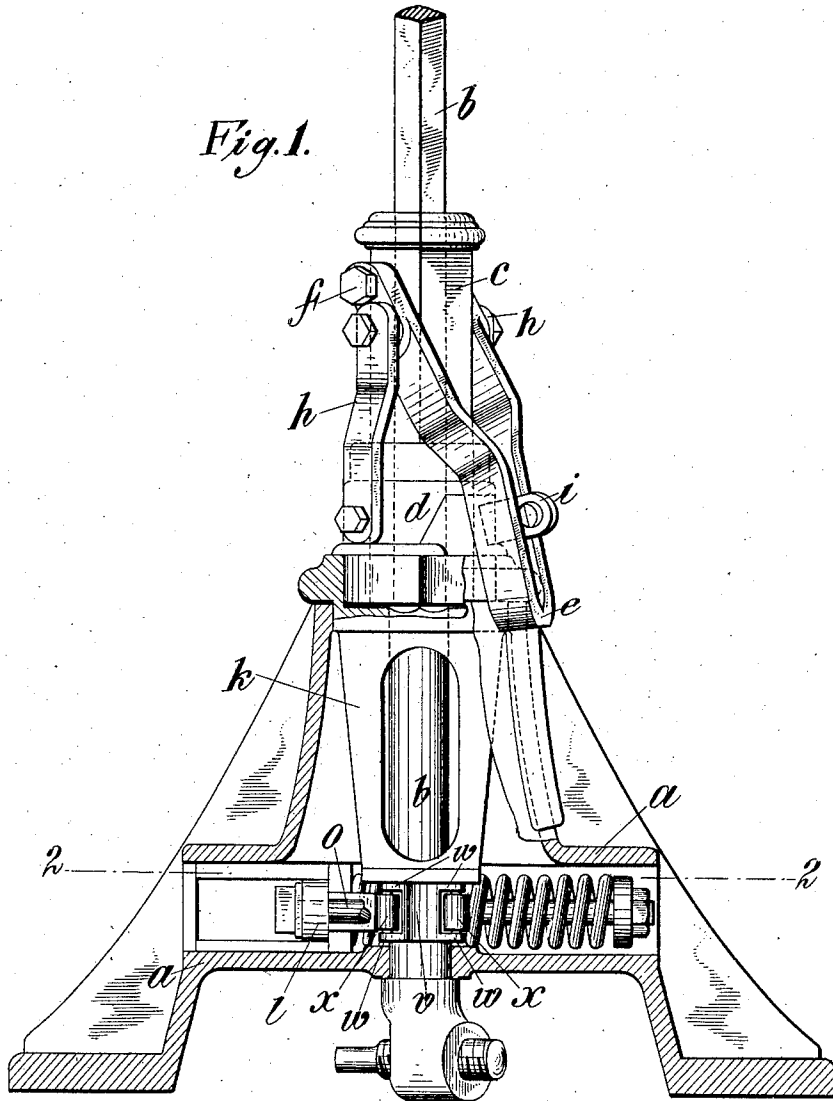
No. 846,063.

PATENTED MAR. 5, 1907.

F. W. SNOW.
SWITCH STAND.

APPLICATION FILED NOV. 10, 1906.

2 SHEETS—SHEET 1.



Witnesses
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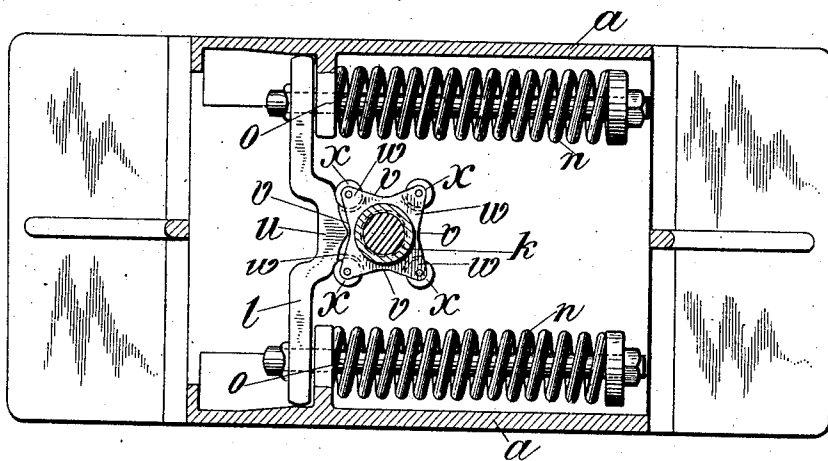
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

FRED WILLIAM SNOW, OF HILLBURN, NEW YORK, ASSIGNOR TO STANDARD EQUIPMENT COMPANY, OF MAHWAH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SWITCH-STAND.

No. 846,063.

Specification of Letters Patent.

Patented March 5, 1907.

Application filed November 10, 1906. Serial No. 342,810.

To all whom it may concern:

Be it known that I, FRED WILLIAM SNOW, a citizen of the United States, and a resident of Hillburn, in the county of Rockland, in the State of New York, 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.

In automatic switch-stands which are designed to be operated from the switch itself by the passage of a train therethrough it is desirable that the friction between the parts be reduced to a minimum, so as to prevent sticking, which might result in the partial operation of the stand and the leaving of the switch in an intermediate position, and as well to prevent excessive wear upon the parts. At the same time the mechanism must be such as to hold the switch firmly in either of its limiting positions and to prevent any disturbance of the switch in either of these positions except through excessive force, such as that produced by the flange of a car-wheel passing between a rail and the switch-tongue adjacent thereto. To give both of these considerations due weight in the production of switch-stands has been no easy task, and it is the object of this invention to provide a structure in which both of these considerations find embodiment.

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

Figure 1 is a view, partly in elevation and partly in central section, of a switch-stand embodying the invention; and Fig. 2 is a sectional view of the same on a plane indicated by the line 2 2 of Fig. 1.

The switch-stand chosen for illustration is conventional in many respects, having a suitable base or frame *a*, in which suitable means are provided, such as the shaft *b*, for operative connection with the switch proper, which is not illustrated. The upper portion of the shaft *b* may be made square to receive a square sleeve *c*, around which a collar *d* fits, so as to have vertical motion with respect to the sleeve. A handle *e* may be provided to turn the shaft *b*, and thereby turn the switch, the connections between the switch and the shaft *b* being preferably such as will move the switch from one of its limiting positions

to the other of its limiting positions by turning the shaft *b* through a quarter of a revolution. In this way the yardman may operate the switch at pleasure. Normally, however, the switch is held firmly in one of its limiting positions by means of mechanism presently to be described, the collar *d* being squared on its lower end to engage a correspondingly-squared portion of said mechanism, and therefore before the shaft *b* can be turned by the yardman the collar *d* must be raised from engagement with said mechanism.

The handle *e*, which may be bifurcated and secured to the sleeve *c* by means of a bolt *f*, is provided for this purpose with depending links *h*, which are secured to the collar *d* and serve to withdraw the same from its engagement with the other mechanism referred to upon the raising of said lever *e*. The latter is normally held fastened down by means of any suitable device, such as a projection *i*, through which a suitable padlock may be passed. In this position the squared portion of the collar *d* engages a correspondingly-recessed portion of a block *k*, provided upon the lower end of the shaft *b* and being rotatable in the frame *a* of the switch-stand. This block *k* constitutes a part of the mechanism for normally holding the rotatable shaft *b*, and therefore the switch, in a stationary position—that is, in one of its limiting positions—and for permitting the same to be moved automatically by the application of excessive force upon the switch or switch-tongue. This mechanism includes a suitable member or projection *u*, formed upon a bar *l* and adapted to press against the block *k* to hold the same stationary until excessive force is applied to turn the shaft *b*. The bar *l* is movably mounted in the frame *a* of the stand, and springs *n*, also mounted in said frame, cooperate to hold the projection *u* on the bar *l* firmly against the block *k*. The block *k* is provided with recesses *v*, in which the projection *u* is adapted substantially to fit when the block is in such a position as to bring the switch or switch-tongue into one of its limiting positions, there being preferably four of such recesses which are separated by projections *w* on the block substantially ninety degrees apart. Each of the projections *w* is provided with a roller *x* or other rotatable member in order to reduce friction

when the shaft rotates. These rollers are suitably mounted in the projections, there being four of such rollers to correspond with the number of projections. When the switch or switch-tongue is in one of its limiting positions, the block *k* embraces the projection *u* upon the shaft *l*, as will be obvious, and the two rollers, which are then situated one on each side of the projection, may also be said to embrace said projection.

In operation the switch-stand is located beside the switch in the usual manner and, as was pointed out hereinbefore, the yardman may operate the same at will by raising the handle *e* to disengage the collar *d* from the block *k*. When, however, the handle *e* is locked by means of its engagement with the projection *i*, the shaft *b* can only be rotated with the block *k*. This will be effected when sufficient force is imparted to the switch-tongue, as by a train passing over the switch in the right direction so that the flanges upon the car-wheels will pass between the switch-tongue and its adjacent rail. Before the train passes over the switch the mechanism is in its normal position. (Indicated in Fig. 2.) When the excessive force is imparted to the switch-tongue and from the switch-tongue through the shaft to the block *k*, the shaft and block will be rotated. When this takes place, as is obvious, one of the rollers on the corresponding projection *w* will be moved across the surface of the projection *u* upon the bar *l*, thus moving the bar away from the shaft, as will be clear, against the action of the springs *n*.

It will be clear that the projection *u*, embraced, as it always is in its normal position, by the block *k* and by two of the rollers thereon, will tend to hold the shaft *b*, together with the switch, securely in their proper positions and will prevent the same from being turned, moved, rotated, or otherwise disturbed except through the application of excessive force, and it will also be clear that when such force is applied to operate the stand automatically the parts will move upon each other without excessive friction and the disadvantageous consequences which result therefrom.

Modifications in the construction and operation of the parts may be made without departing from the spirit of the invention, which is therefore not limited to the mechan-

ism shown and described herein for realizing the same.

I claim as my invention—

1. In a switch-stand, the combination of connecting means for operatively connecting a switch thereto, resisting means to oppose the movement of the connecting means, and friction-reducing means embracing the resisting means.

2. In a switch-stand, the combination of rotatable means, connecting means for operatively connecting the rotating means with the switch, resisting means to oppose the rotation of the rotating means, means upon the rotating means embracing the resisting means and including friction-reducing means.

3. In a switch-stand, the combination of a rotatable shaft, a bar having a projection to resist the rotation of the shaft, and means on the shaft embracing the projection and cooperating with the projection to resist the rotation of the shaft and to reduce friction when the shaft rotates.

4. In a switch-stand, the combination of a rotatable shaft, a projection to resist the rotation of the shaft, and means on the shaft embracing the projection and including friction-reducing members on each side of the projection.

5. In a switch-stand, the combination of a rotatable shaft, and means to oppose the rotation of the shaft including a bar having a projection, means embracing the projection and rollers mounted upon the last-named means on each side of the projection.

6. In a switch-stand, the combination of a rotatable shaft, a block upon said shaft, a spring-actuated projection cooperating the said block to resist the rotation of the shaft, and rollers upon the block upon each side of the projection.

7. In a switch-stand, the combination of a rotatable shaft, a spring-actuated projection, a block having four recesses and four projections, and a roller upon the block at each projection, each recess being adapted to fit substantially the projection.

This specification signed and witnessed this 23d day of October, A. D. 1906.

FRED WILLIAM SNOW.

In presence of—

ALFRED W. KIDDLE,
JULIUS E. VARNEY.