

(No Model.)

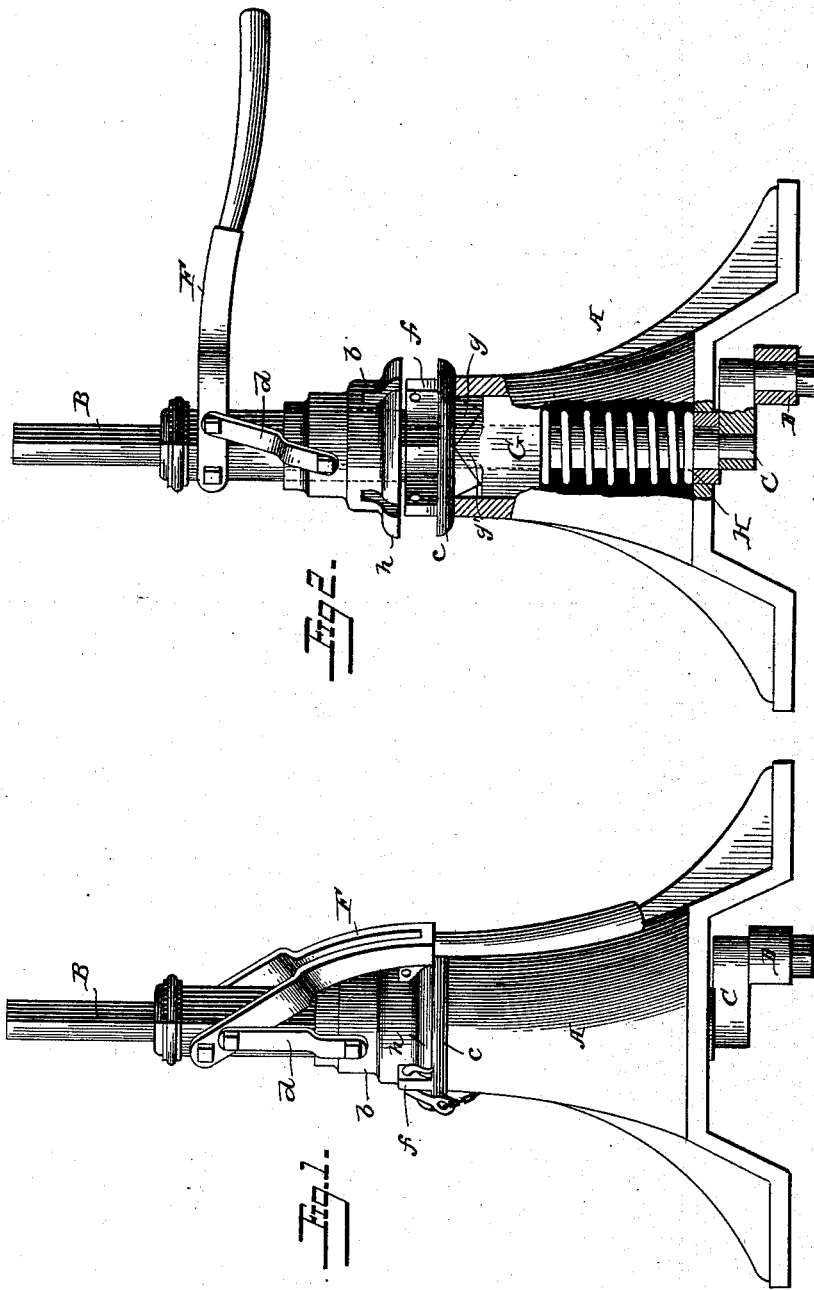
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W. A. REDDING.

SWITCH STAND.

No. 384,714.

Patented June 19, 1888.



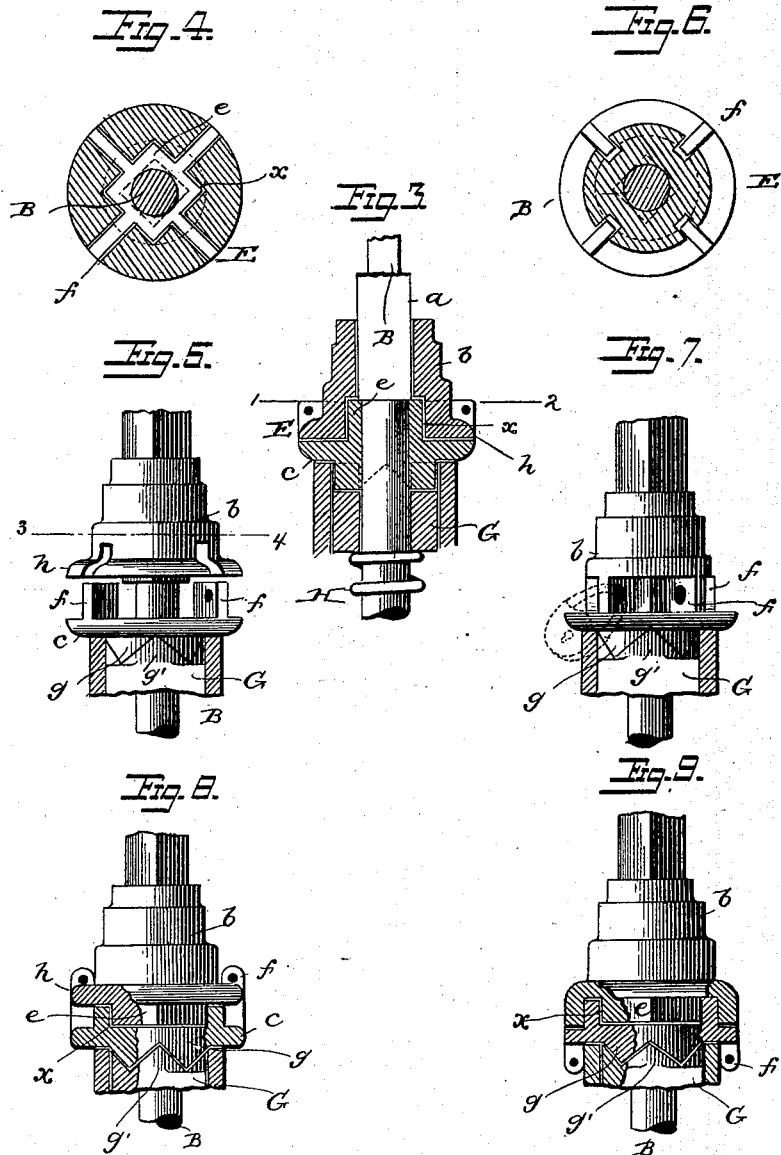
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# UNITED STATES PATENT OFFICE.

WILLIAM A. REDDING, OF NEW YORK, ASSIGNOR TO FRED W. SNOW, OF HILLBURN, NEW YORK.

## SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 384,714, dated June 19, 1888.

Application filed March 1, 1888. Serial No. 265,830. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. REDDING, a citizen of the United States, and a resident of the city of New York, in the county of New York, and State of New York, have invented certain new and useful Improvements in Switch-Stands, of which the following is a specification.

My invention relates to that class of switch-stands illustrated in the Letters Patent granted to F. W. Snow, May 27, 1884, No. 299,176, and June 23, 1885, No. 320,507, in which the crank target-shaft can be set by hand to any desired position and locked without interfering with the partial movement thereof when the position of the switch-rail is changed by the pressure of a car-wheel, while a spring-actuated cam-block completes the movement of the shaft begun by the action of the switch-rail; and my invention consists in constructing the parts of the stand, as fully set forth hereinafter, so as to facilitate the operation and secure increased efficiency.

In the accompanying drawings, Figure 1 is a side elevation of my improved switch-stand. Fig. 2 is a sectional elevation of part of the stand. Fig. 3 is a vertical section of Fig. 5. Fig. 4 is a sectional plan upon the line 1 2, Fig. 2; Figs. 5, 7, 8, and 9, partly sectional views illustrating modifications of parts of the stand; Fig. 6, a section on the line 3 4, Fig. 5.

The frame A is of any suitable construction, and in bearings therein turns, without sliding, the target-shaft B, having at the lower end a crank, C, to which is connected the switch-rod D, so that by turning the shaft B the switch-rail is changed from one position to another, as usual. A portion, *a*, of the shaft B is angular or otherwise constructed to carry with the shaft in rotating one section, *b*, of a clutch, E, consisting of said section *b*, and another section, *c*, in which the shaft can turn, and a lever, F, is connected by a link, *d*, or otherwise to the clutch-section *b* and to the shaft B, and serves to raise and lower said section on the shaft.

The sections *c b* are constructed to engage or interlock when together. Different clutching bearings may be used, as shown in Figs. 1 to 4. The section *c* has an angular hub, *e*, that

enters an angular socket, *x*, in the section *b*, and ears *f* on the section *c* also enter radial slots in the section *b*.

In Fig. 6 the hub *e* is dispensed with.

In Fig. 7 there are ears *f'* on the section *b* coinciding with those on the section *c*. In Figs. 8 and 9 the hub *e* is shown as being on the section *b* and the socket *x* in the section *c*. The section *c* is provided at its under side with a circular rack having double-beveled teeth adapted to and engaging with a similar rack, *g'*, on a block, G, sliding in a suitable guide in the frame A and resting on a stiff spring, H, having its lower bearing on the frame or on a collar on the shaft.

When the switch is to be set by the operator, he raises the lever F until the clutch-sections are disengaged, as shown in Fig. 2, and then turns the shaft B until the switch is in the desired position. He then lowers the lever and clutch section, thereby engaging the two sections, as shown in Figs. 1 and 3. If after the switch-rail is thus set in position any unauthorized person attempts to move it, the shaft B will remain in its position, as any pressure or thrust on the crank C tending to turn the shaft and the clutch now locked thereto will be resisted by the interlocked racks *g g'*. Should a powerful pressure, like that of a car-wheel, be applied to swing the switch-rail, as results when a car moves onto the switch wrongly set, this pressure will be sufficient to turn the shaft, clutch, and rack *g*, the teeth of which, acting on those of the rack *g'*, will depress the block G against the resistance of the spring H, and as the points of the teeth on one rack pass those of the other the upward pressure of the spring will cause the lower rack-teeth to act as cams or wedges and aid in rotating the clutch and shaft, carrying the switch-rail fully over into its opposite position, toward which it was partly thrown by the action of the car-wheel. To prevent unauthorized manipulation of the switch-stand, I provide means for locking the two parts of the clutch together. Thus the ears *f f'* of the two parts may have coincident openings to receive the bolt or tongue of a lock, as shown in Fig. 7. I prefer, however, to perforate one or more of the ears *f* above a flange, *h*, or other

part of the clutch-section *b*, as shown in Figs. 1 to 6 and Figs. 8 and 9, and to pass the tongue of the lock through such perforation. By this means I avoid the necessity of locking the lever and of making the latter strong enough to resist attempts to break it to unlock the switch, while the locked parts, being of cast metal, can be cheaply made of any requisite strength.

Each of the ears *f* may be perforated, so that the locking-bolt may be passed through any one of them; but the perforation of a single ear only will suffice, and it is essential to use but a single ear; but as in this case there must be a number of slots, I prefer to use a corresponding number of ears, as they close the slots when the clutch-section *c* is down, and thereby prevent the said slots from becoming clogged with ice, &c. In Fig. 9 the ears are on the upper section, *b*, and project through slots in the lower section.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, in a switch-stand having a target-shaft and sliding toothed block, of a clutch, one section provided with teeth engaging those of the block, and a lock directly engaging the two sections of the clutch, substantially as described.

2. The combination of the stand-frame, sliding toothed block resting on a spring, target-shaft, and clutch, one section sliding on and turning with the shaft, the other with teeth engaging those of the block, and a lock directly engaging with the two sections, substantially as described.

3. The combination of the stand-frame, target-shaft, spring, and sliding toothed block, a clutch, one section sliding on the shaft and a lever for sliding it, the other section having teeth engaging with those of the block, and a projection on one section fitting a slot in the other and recessed to receive a locking-bolt, substantially as set forth.

4. The sections of the clutch upon the target-shaft, one section having a series of slots and the other section a series of ears extending through and beyond the slots, substantially as and for the purpose described.

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

WILLIAM A. REDDING.

Witnesses:

LOUIS F. GOLDMANN,  
EDWD. K. ANDERTON.