

P. H. McCOOE.
SWITCH STAND.

APPLICATION FILED AUG. 25, 1910.

1,052,937.

Patented Feb. 11, 1913.

2 SHEETS-SHEET 1.

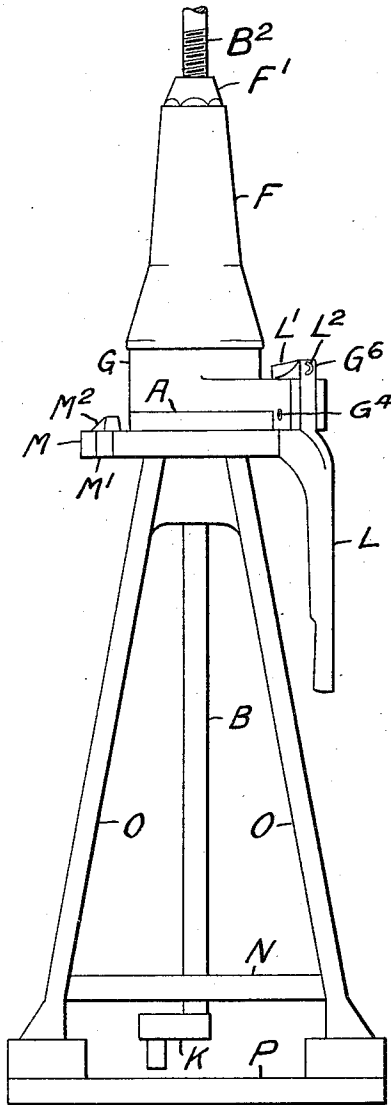


Fig. 1.

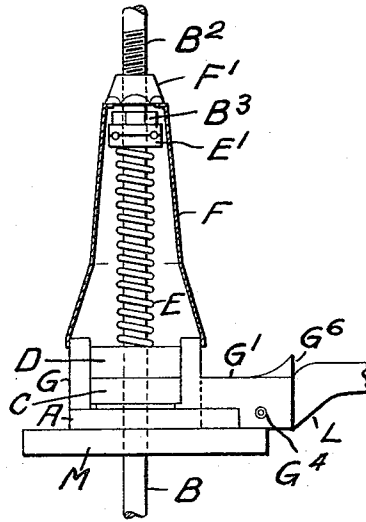


Fig. 2.

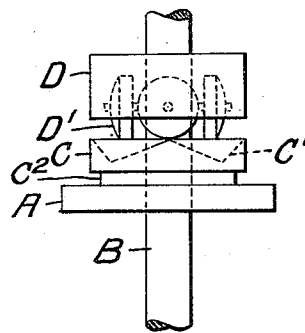


Fig. 3.

Witnesses
Stuart R. Waller
M. E. E. Hail

Inventor
Patrick Henry McCoe
By *Hansbury & Snodden*
his Attorney

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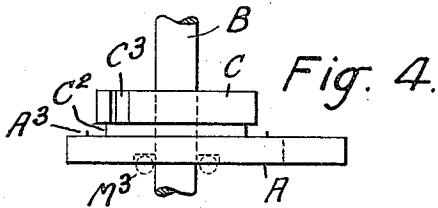


Fig. 4.

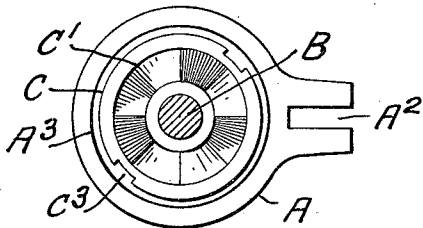


Fig. 5.

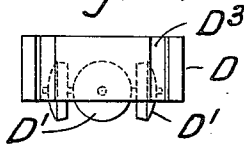


Fig. 6.

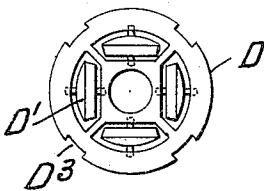


Fig. 7.

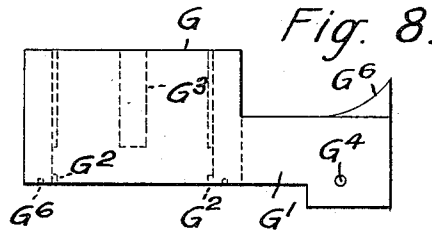


Fig. 8.

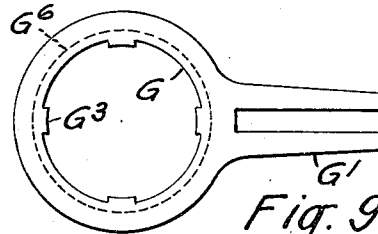


Fig. 9.

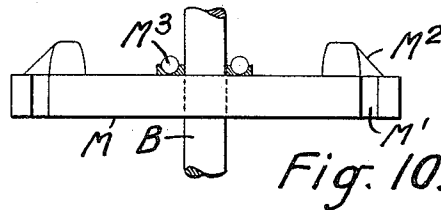


Fig. 10.

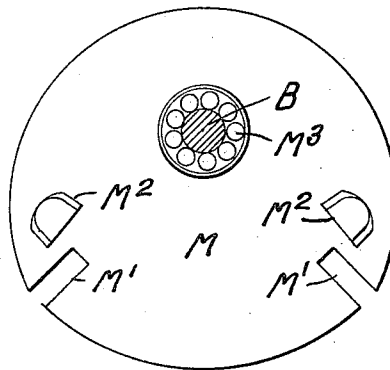


Fig. 11.

Witnesses.
Stuart R. Waller
M. E. E. Hail

Inventor
Patrick Henry McCoe
 By *Hambury A. Budson*
 his Attorney

UNITED STATES PATENT OFFICE.

PATRICK HENRY McCOOE, OF INDIANA HARBOR, INDIANA.

SWITCH-STAND.

1,052,937.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed August 25, 1910. Serial No. 578,919.

To all whom it may concern:

Be it known that I, PATRICK HENRY McCOOE, a citizen of the United States of America, residing at Indiana Harbor, Lake county, State of Indiana, United States of America, have invented a new and useful Switch-Stand, of which the following is a specification.

My invention relates to switch stands provided with locking devices which prevent the movement of the switch points except when considerable force is applied, such as in the case of the wheels on the rails in trailing through, when the points are shifted to certain specified positions and there locked.

The object of my invention is to provide a switch stand of simple substantial construction which can be readily operated and which will not require special attention to keep in working order. And also to supply a switch stand which has no wearing surfaces which are liable to become worn down and thereby put the appliance out of adjustment. The construction further provides for the protection of the interior mechanism from the weather and from damage by the entrance of extraneous objects.

My invention consists in a switch stand which is thrown by a hand lever and this lever is rigidly connected with the switch points during the operation of throwing the switch, while at the end of the operation the lever cannot be set in its fixed socket or notch unless the switch points are absolutely home. This feature is distinguished from prior forms of switch stands in which the lowering of the lever into its position is governed by a spring clutch and socket which allows the lever to be depressed while the switch points are not closed owing to obstructions or other causes.

It further consists in a switch stand which permits the switch points to be set by wheels of a locomotive or car trailing through and which indicates the position of the points by setting the target or lamp without changing the position of the hand lever. It thus provides an automatic tell tale of trailing through.

Reference is made to the annexed drawings in which—Figure 1. is a front eleva-

tion of the switch stand. Fig. 2. is an elevation of mechanism partly in section. Fig. 3. is a diagrammatic elevation of the clutch fully open; Figs. 4. and 5. side view and plan view of parts A and C; Figs. 6 and 7. side view and bottom view of part D; Figs. 8 and 9. side view and top view of part G; Figs. 10 and 11. side view and top view of switch stand table M.

The standard consists of a table M. a base plate N and legs O. O. The spindle B. has its bearings in the table and base plate and below the latter is the crank K. which actuates the switch point through a rod.

Above the table and rigidly attached to the spindle is the plate A which is supported on an antifriction bearing M³. on the table surrounding the spindle B.

Above the plate A. and integral therewith is the collar C. with the annular beveled notches C¹. on its upper surface, and having its lower outer edge cut away to form a groove C².

Supported by the collar C. is the circular block D. in which are journaled the friction rollers D¹ which bear on the notches C¹ of the collar C. Above the block D. is the coil spring E. with an antifriction bearing E¹. at its upper end. Beveled teeth may replace the rollers D¹.

The spindle B is threaded with threads B². at its upper portion and a nut B³. enables the tension of the spring E. to be adjusted to meet the required tension.

The lever L. which operates the stand is hinged to the lug G¹. of the casing G. by the pin G⁴. The casing G. surrounds the block D and collar C. Its inner surface is provided with projections G² which enter the groove C² at its lower edge and also vertical projections G³ which enter vertical grooves D³ in the block D. thereby forming a vertical slideway for the latter part. A cover F. fits on the upper edge of the casing G and is held securely by a nut F¹ on the spindle B.

The table M. has two notches M¹. at an angle to one another and stops M² outside these notches.

Antifriction bearings M³. surround the spindle B. and support the plate A. and an annular rim A³. on the plate A. enters the

annular groove G⁶ in the bottom of the casing G. and makes a weather proof protection to the interior parts.

The lever L. can only be lowered into one of the notches M¹. The portion L¹. of the lever L. enters the notch A² when the lever is raised. The lug G¹. may be provided with a lock piece G⁶. through which the hasp L² passes when the lever L. is lowered by means of which it may be padlocked.

The spindle B. is journaled in the base plate N. and thereunder is secured to the crank K.

The operation of the stand is as follows:
 The hand lever L. when raised causes the part L¹ to enter the notch A². of the plate A thereby connecting the lever rigidly with the switch points. The switch can be thrown, but the lever cannot be lowered and set in the notch M¹. unless the switch points are absolutely home. The spring clutch only comes into operation when the lever L. is lowered and the part L¹. leaves the notch A². When in this position the lever may be locked by a padlock on the hasp L⁴. The switch stand will then permit the points to be shifted by wheels trailing through, the first pair of wheels forcing the spindle B. to rotate and thereby rotating the plate A. which causes the block D to rise to the position shown in Fig. 3. Whereupon the tension of the spring E. causes the block D. to descend and the rollers D¹ enter the adjoining beveled notches C¹. and thereby completing the throw of the point. The target or lamp on the spindle B. then indicates the position of the points while the lever indicates that the switch was set in the opposite position. In order to reset the lever and plate A. in their corresponding position for ordinary operation one of the following methods must be adopted: Either the points can be thrown back by the wheels trailing through in the opposite direction from the other track, or the points may be forced back by means of bars or levers applied to the points, or lastly the hand lever L. may be raised and turned toward the opposite position and when more than half way the spring clutch will reengage it at its original position, the lever is then turned back to its first position carrying with it the spindle and throwing the points. When the lever is depressed the plate A. will spring into its first position by reason of the clutch bearing home. This feature is important and novel as it provides a switch stand which thus acts automatically in the case of emergency or inadvertence, but after being run through the train or engine doing so must stop and reset the stand or it remains with the plate A set in the opposite position to that of the lever and thus indicates that the switch has been run through.
 This practice of running through switches

equipped with existing forms of automatic stand is common as it frequently saves negligent employees from stopping and throwing the switch by hand, and there is nothing to indicate that the switch has actually been used in this way. The practice is also very detrimental to the switch material.

What I claim and desire to secure by Letters Patent is:—

1. In a switch stand the combination of a spindle, a lower clutch member fixed to said spindle and rotatable therewith, an upper cooperating clutch member rotatably mounted on said spindle, yielding means for holding said clutch members interlocked, a casing inclosing the aforesaid parts and provided with vertical guideways for said upper clutch member, and a hand lever pivoted to said casing and adapted to lock in the stand table when lowered.

2. In combination, a stationary switch stand table provided with notches in its edge, a spindle journaled therein, a lower clutch member fixed to said spindle, an upper cooperating clutch member rotatably mounted on said spindle, yielding means for holding said clutch members interlocked, a casing having sliding connections with both of said clutch members, and a hand lever pivoted to said casing and adapted to be swung downwardly into one of the notches of the aforesaid switch stand table.

3. In combination, a stationary switch stand table, a spindle journaled therein, a lower clutch member fixed to said spindle, and provided with a notch in one side, an upper cooperating clutch member rotatable on said spindle, yielding means for holding said clutch members interlocked, and a pivoted operating handle rotatably mounted with relation to said lower clutch member and provided with an extension adapted to drop into the aforesaid notch to cause said lower clutch member and said handle to rotate together.

4. In combination, a stationary switch stand table, provided with notches in its lower edge, a spindle rotatably mounted in said table, a lower clutch member fixed to said spindle and provided with a notch in its edge, an upper cooperating clutch member rotatable on said spindle, yielding means for holding said clutch members interlocked, a pivoted operating handle rotatable with relation to said lower clutch member and adapted to be lowered into the notches of the aforesaid switch stand table, said handle being provided with an extension adapted to be seated in the notch of the lower clutch member when the handle is raised, and moved out of said notch when said handle is lowered.

5. In combination, a stationary switch stand table provided with notches in its edge, a spindle journaled therein, a lower

clutch member fixed to said spindle and provided with a notch in one edge, an upper cooperating clutch member rotatable on said spindle, yielding means for holding said clutch members interlocked, a casing inclosing said clutch members and slidably mounted relatively thereto, and a handle pivotally mounted in said casing and adapted to be lowered into one of the notches of the aforesaid switch stand table, said handle being provided with an extension adapted to be seated in the notch of the aforesaid lower clutch member when the handle is in raised position.

6. In combination, a stationary switch stand table, provided with notches in its edge, a spindle journaled therein, a lower clutch member fixed to said spindle an upper cooperating clutch member rotatable on said spindle, yielding means for holding said clutch members interlocked, a casing rotatably connected to said lower clutch member, means for connecting said casing and said upper clutch member to permit relative vertical movement between the same while at the same time causing them to rotate together, and an operating handle pivoted to said casing and provided with an extension adapted to be seated in the notch of the aforesaid lower clutch member.

7. In a rotating spring actuated clutch mechanism, the combination of a spindle, a lower clutch member fixed thereto, an upper cooperating clutch member rotatably mounted on said spindle, a casing provided with vertical guideways adapted to receive said

upper clutch member, means for coupling said casing to said lower clutch member and means for preventing rotation of said casing.

8. In a rotating spring actuated clutch mechanism, the combination of a spindle, a lower clutch member fixed thereto and provided with an annular groove, an upper cooperating clutch member rotatably mounted on said spindle, yielding means for holding said members interlocked, a casing provided with vertical guideways adapted to slidably receive said upper clutch member, a flange on said casing extending into the aforesaid annular groove, and means for preventing rotation of said casing.

9. In a rotating spring actuated clutch mechanism, the combination of a spindle, a lower clutch member fixed thereto and provided with an annular groove, an upper cooperating clutch member rotatably mounted on said spindle, yielding means for holding said members interlocked, a casing provided with vertical guideways adapted to slidably receive said upper clutch member, a flange on said casing extending into the aforesaid annular groove, a cover supported on said casing, and means for preventing rotation of said casing.

Signed at Ind. Harbor, Ind. this thirteenth day of June 1910 in the presence of two witnesses.

PATRICK HENRY McCOOE.

Witnesses:

JAMES HENRY McCOOE,

DAVID ANTHONY McCOOE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."