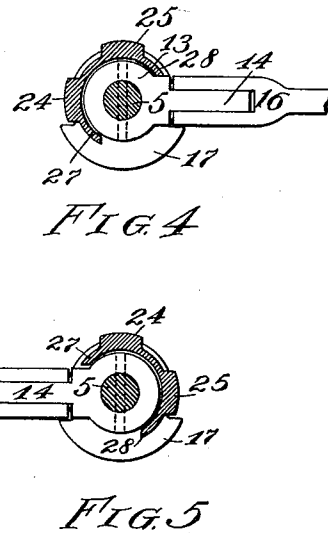
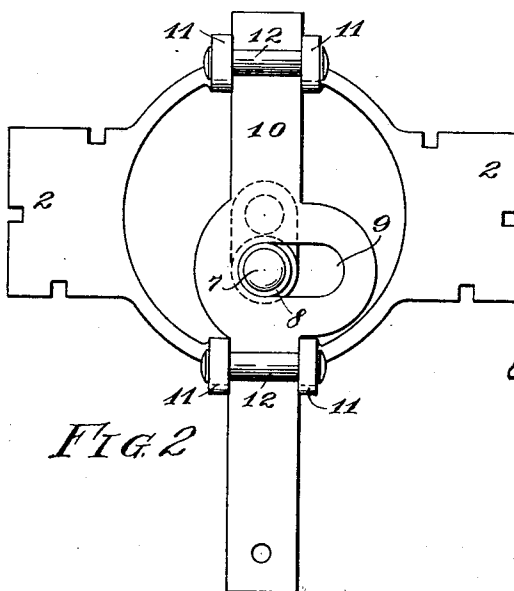
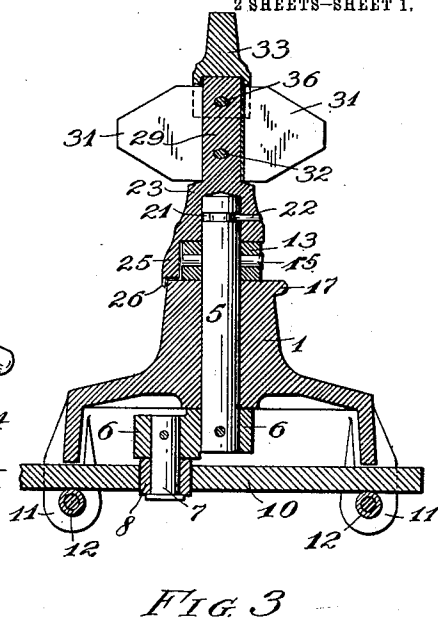
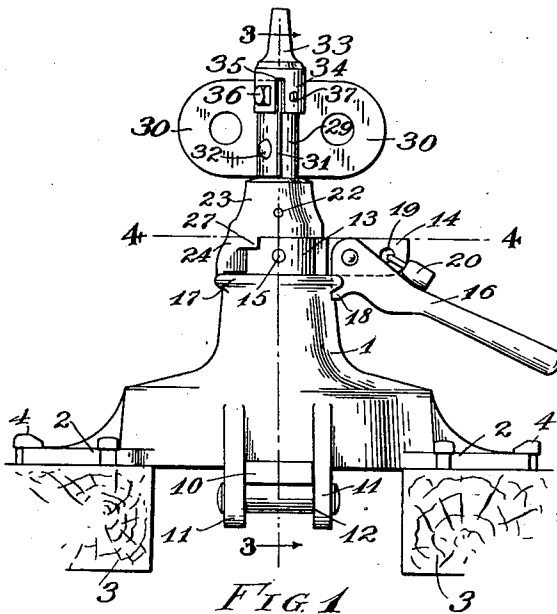


**1,007,380.**

2 SHEETS—SHEET 1.



WITNESSES:  
Brennan West  
Nathan F. Fretter

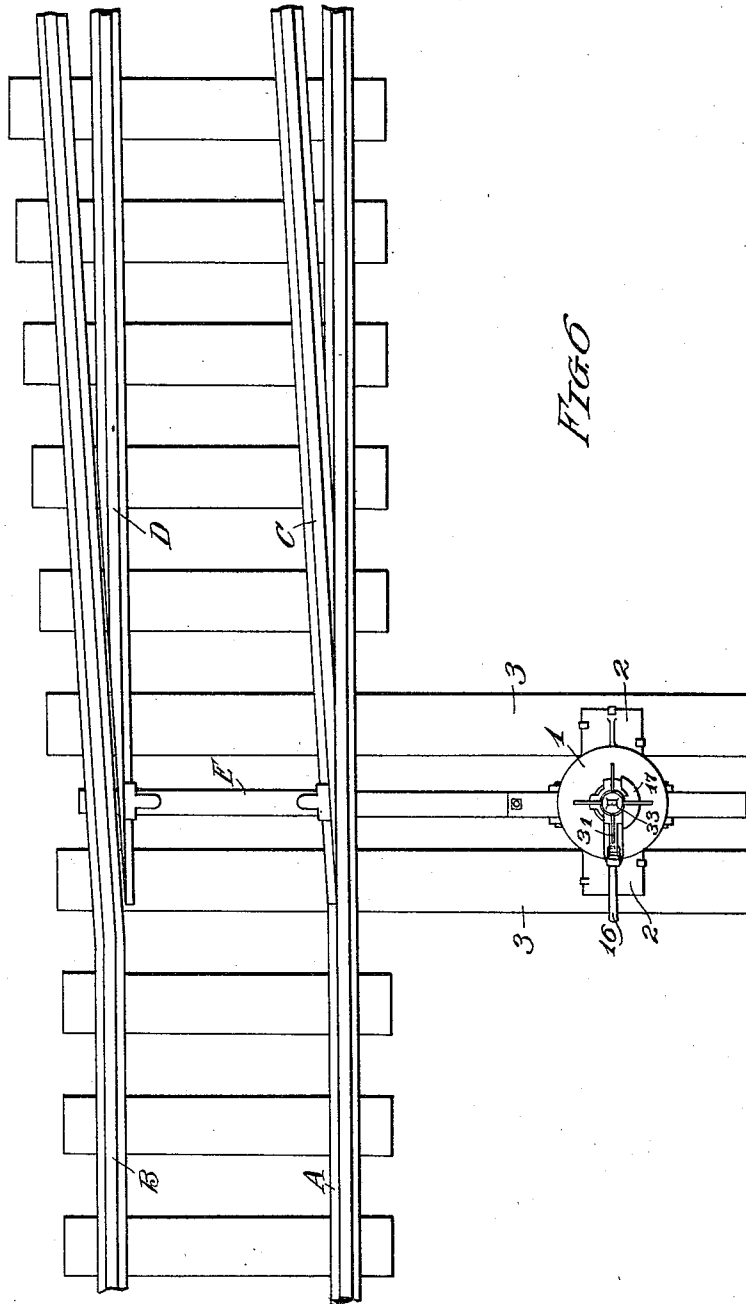
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ATTYS.

H. C. ODENKIRK.  
RAILWAY SWITCH STAND.  
APPLICATION FILED MAY 12, 1909.

1,007,380.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

HARRY C. ODENKIRK, OF CLEVELAND, OHIO.

## RAILWAY-SWITCH STAND.

1,007,380.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed May 12, 1909. Serial No. 495,502.

*To all whom it may concern:*

Be it known that I, HARRY C. ODENKIRK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Railway-Switch Stands, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to switch stands for railways, and it has for its object the production of a stand which shall be economical in manufacture, easy in operation, strong and reliable so that it will not be easily broken, and substantially self locking when thrown into either of its extreme positions. Provisions are also made for locking the stand in either of these positions, and for preventing the locking of the stand in any other position. Means are also provided for adapting the stand to various kinds of signal lamps by simply making the lamp-fit exchangeable, said means also permitting the lamp-fit to be turned so as to expose the proper colored light, no matter in what position the stand may be placed along the track.

In the drawings forming a part of this application, Figure 1 is a side elevation of the switch stand; Fig. 2 is a bottom plan view of the stand; Fig. 3 is a central vertical section taken on the line 3—3 of Fig. 1; Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 1 with the operating lever in the same position as is indicated in said figure; Fig. 5 is a view taken on the same line as Fig. 4, but showing the operating lever in its other extreme position; and Fig. 6 shows a portion of a railway having switch rails, the same being connected with my improved switch stand.

Taking up a more detailed description of the invention by the use of reference characters, A and B represent the main rails of the railway and C and D the switch rails. These latter rails are connected by a tie bar E, said bar being suitably connected to the switch stand so as to be moved longitudinally thereby to open and close the switch,—Fig. 6 of the drawing showing the switch thrown so as to turn the train off the main track.

The casing 1 of the switch stand is somewhat in the shape of an inverted cone, being hollow on its under side for housing the mechanism for operating the switch rails,

the casing being formed of a single casting, and having projecting lugs 2 for resting upon the extended ties 3, by means of which the switch stand is held in place, the same being secured to the ties by spikes 4. The upper portion of the casing proper is substantially cylindrical in shape and is provided with a central bore in which is journaled the vertical operating shaft 5. At its lower end, this shaft has secured to it a crank 6, the crank being rigidly attached to the shaft in any suitable manner, as by a pin passing through the crank and shaft. In its outer end the crank is provided with a downwardly extending crank-pin 7 upon which is journaled an anti-friction roller 8, said roller operating in an elongated slot 9 of a slide bar 10, said bar lying in a substantially horizontal position across the bottom of the casing directly beneath the operating shaft 5. The slot 9 extends at substantially right angles to the longitudinal center line of the bar 10, and, when the shaft 5 is oscillated by means hereinafter described, the bar is moved longitudinally back and forth between the ties 3. Inasmuch as the center line of the bar is directly beneath the lower end of the shaft 5, and substantially intersects the axial line of the shaft, and said shaft is brought to rest with the crank extending in the direction of the bar, the latter becomes securely locked against movement until the crank is turned. This feature of construction is of importance since it relieves the crank from the excessive strain which would be thrown on it in case a train should run through the switch while the crank stood locked in a position diagonal with respect to the bar. The bar 10 is guided between lugs 11, which depend in pairs from the opposite sides of the casing, said lugs being in the shape of eyes through which pass pins or bolts 12 upon which the bar rests. In order to avoid friction as much as possible, these pins or bolts may be provided with rotary sleeves or wheels, thus forming roller bearings for the bar, as indicated in the drawings.

The operating shaft is held against downward movement by a member pinned thereto, which member rests upon the upper portion of the casing and consists of a collar 13 having a radial extension 14 thereon, the collar being pinned or otherwise secured to the shaft, as indicated at 15. Pivoted to the said radial extension is the operating lever

16, the same being adapted to be grasped by the operator and to be thrown through an arc of 180 degrees, said movement turning the shaft through the same arc and causing the crank 6 to move the slide-bar 10 back and forth a distance sufficient to open and close the switch. This movement of the operating lever is controlled by a segment of a flange 17 that projects horizontally from the upper portion of the casing. As shown in Figs. 4 and 5, the lever 16 rests at the opposite ends of this segment flange when in its two extreme positions. The said lever is provided beneath its pivot with an angular extension 18, which falls down opposite the ends of the segment flange and engages therewith when the lever is in either of its extreme positions. The radial extension 14 of the collar 13 is provided with an aperture 19 for the reception of a pad lock 20, which lock may be inserted through the aperture, thus holding the operating lever downward with its extension 18 in engagement with the segment flange. In operating the switch, this lever 16 must be elevated until its extension 18 is above the plane of the segment flange, which flange holds the lever in an elevated position with the aperture 19 of the extension 14 closed, so that it is impossible to lock the lever except when it is in one or the other of its extreme positions, in which case the switch rails have been properly set, and the crank 6 is in the line of the center of the bar 10.

The operating shaft 5 extends vertically above the collar 13, and near its upper end it is provided with a circumferential groove 21, into which projects a pin or key 22 that is carried by the target or signal support 23. This support is preferably made of a single piece, as shown, the same being bored on its under side so as to receive the upper end of the operating-shaft. Depending from the support 23 outside of the collar 13, is a pair of extensions 24 and 25, the same being formed on their inner sides with concave surfaces so as to snugly fit the collar 13. At their extreme lower ends these extensions are each provided with a depending lip 26 which extend into positions to engage the segment flange 17 on the main casing. These extensions are also provided on their sides toward the operating handle with curved webs 27 and 28 respectively, said webs projecting into position to be engaged by the extension 14 on the collar 13. In Fig. 4, the web 28 is shown in engagement with the extension on the collar and the web 26 at the lower end of the projection 24 is at the same time in contact with the left hand end of the segment flange 17. As the operating handle 16 is then in engagement with the opposite end of the flange 17, it is clear that the parts are securely locked, the target or signal support preventing the rotation of the operat-

ing handle toward the left, and the segment flange preventing the rotation of the handle in the opposite direction. If the said handle be lifted above the flange segment, it may then be turned to the right and the target support may remain stationary until the collar extension 14 engages with the web 27, after which the said support is forced to turn with the handle until the extension 25 engages the right hand end of the segment flange, at which time the operating handle has passed beyond the flange and may drop into locked position behind it. In turning from the position shown in Fig. 4 to that shown in Fig. 5, the target support has rotated through ninety degrees while the operating handle has rotated one-hundred eighty degrees, this difference in extent of movement being provided for by the groove 21 and the key 22 therein.

Above the upper end of the operating-shaft, the target-support is formed into a banner-post 29 to which is secured the target-vanes 30 and 31, said vanes projecting radially from the banner-post and being secured thereto in any suitable manner, as by pins or bolts 32 passing through the vanes and the posts. Preferably these vanes are formed in pairs of a single piece of material, one of said pieces comprising a vane 30, and an adjacent vane 31, as indicated in Fig. 1 of the drawings.

Above the upper end of the banner post, and secured thereto, is a lamp fit 33, the same having its upper end rectangular in shape so as to fit a correspondingly shaped socket in the lamp to be applied thereto. This lamp fit is provided with a depending skirt 34, which practically surrounds the upper end of the banner post, the skirt being provided with vertical slots at 35 to fit over the upper edges of the vanes 30 and 31. The lamp fit is preferably secured to the banner post by a bolt 36 with passes there-through and through the banner-post. At right angles to the openings for said bolt the lamp fit is also provided with bolt apertures 37, in order that the lamp fit may be turned through 90 degrees and again secured by the bolt 36 if desired. The upper portion of the lamp fit may be made of a variety of forms to suit different lamps and the manner just described of securing the same to the banner post permits the ready adjustment of the switch stand to any form of lamp.

Having thus described my invention, what I claim is:

1. In a switch stand, the combination, with an oscillatory shaft, of a crank secured to said shaft, a crank pin carried by said crank, a longitudinally sliding bar adjacent said crank, said bar having a slot extending at right angles therethrough in which the said crank pin operates, the slot having par-

allel sides and substantially embracing the pin at all times, and means for oscillating the shaft through an angle of 180 degrees whereby the crank pin moves the bar back and forth, the crank extending longitudinally of the bar when the latter is in either of its extreme positions.

2. In a switch stand, the combination with a casing, said casing being hollow on its underside, means projecting from said casing for attaching the latter to the railway ties, a vertical oscillatory shaft journaled in the casing and extending centrally through the latter, a crank secured to the lower end of the shaft, lugs projecting downwardly from the lower edge of the casing, and a longitudinally sliding bar guided by said lugs and having an operating connection with said crank, and supporting pins connecting said lugs below the bar.

3. In a switch stand, the combination with a casing, said casing being hollow on its underside, means projecting from said casing for attaching the latter to the railway ties, an oscillatory shaft journaled in the casing and extending centrally through the latter, a crank secured to the lower end of the shaft, a pin carrying an anti-friction roller carried by the crank, lugs projecting downwardly from the lower edge of the casing, a longitudinally sliding bar guided by said lugs, said bar lying directly under the said shaft, the bar having a transverse slot therein in which the said anti-friction roller operates, an operating handle connected with said shaft for oscillating the same, whereby the bar is moved longitudinally, the crank standing in line with the said bar when the latter is in its extreme positions.

4. In a switch stand, the combination with a casing, said casing being hollow on its underside, means projecting from said casing for attaching the latter to the railway ties, an oscillatory shaft journaled in the casing and extending centrally through the latter, a crank secured to the lower end of the shaft, a pin carrying an anti-friction roller carried by the crank, lugs projecting downwardly from the lower edge of the casing, a longitudinally sliding bar guided by said lugs, said bar lying directly under the said shaft, the bar having a transverse slot therein in which the said anti-friction roller operates, an operating handle connected with said shaft for oscillating the same whereby the bar is moved longitudinally, the crank standing in line with the said bar when the latter is in its extreme positions, and means for locking the operating handle at each end of the arc of oscillation of the shaft.

5. In a switch stand, the combination with a casing, of a segment of a flange projecting outwardly from the upper portion of the casing, an oscillatory shaft journaled

in the casing, means connected with said shaft for operating the switch rails of a railway, an operating lever pivoted to the shaft above the casing, said lever having a projection that is adapted to engage with either end of the said segment of a flange for holding the lever and the shaft against movement, and means for locking the said lever with its said projection engaging the said segment.

6. In a switch stand, the combination with a casing, of a segment of a flange projecting outwardly from the upper part of the casing, an oscillatory shaft journaled in the casing, means connected with said shaft for operating the switch rails of the railway, a collar secured to the shaft above the casing and resting on the latter, an extension on said collar, an operating handle pivoted to said extension, said handle having a projection that is adapted to engage with either end of the said segment of a flange, and means on the collar extension for locking the handle with its projection engaging the said segment of a flange, said segment and projection preventing the locking of the handle intermediate of its extreme positions.

7. In a switch stand, the combination with a casing, of a segment of a flange extending outwardly from the upper part of the casing, a vertical shaft journaled centrally in the casing, means on the lower end of the said shaft for operating the switch rails of a railway, a collar secured to the shaft above the casing and resting on the latter, said collar having a radial extension, an operating handle pivoted to said extension, said handle having a downwardly extending projection that is adapted to engage with either end of the said segment flange, a member journaled on the upper end of the shaft above the said collar, and means on said member for engaging with the extension on the collar as the latter is oscillated for turning the said member, said means and the segment flange being so positioned that when the operating lever is at either end of the segment flange it will be held against movement in one direction by the said segment flange, and in the other direction by the target supporting member.

8. In a switch stand, the combination with a casing, of a segment of a flange extending outwardly from the upper end of said casing, a vertical operating shaft journaled centrally in said casing, a crank secured to the lower end of the said shaft, a crank pin on the crank, a longitudinally sliding bar having a transverse slot in which said pin operates whereby, when the shaft is oscillated, the bar will be moved back and forth, a member loosely journaled on the upper end of the shaft, a collar secured to the shaft between the casing and the said supporting member, a handle pivoted to the

said collar, a projection on the said handle that is adapted to engage with either end of the segment flange for holding the handle against movement in the direction of the flange, and means on the target supporting member for engaging with the opposite end of the said flange for holding the handle from movement in a direction away from the flange.

9. In a switch stand, the combination with a casing, of a segment of a flange extending outwardly from the upper end of said casing, a vertical operating shaft journaled centrally in said casing, a crank secured to the lower end of the said shaft, a crank pin on the crank, a longitudinally sliding bar having a transverse slot in which said pin operates whereby, when the shaft is oscillated, the bar will be moved back and forth, a member loosely journaled on the upper end of the shaft, a collar secured to the shaft between the casing and the said supporting member, a handle pivoted to the said collar, a projection on the said handle that is adapted to engage with either end of the segment flange for holding the handle against movement in the direction of the flange, means on the target supporting member for engaging with the opposite end of the said flange for holding the handle from movement in a direction away from the flange, and a lamp-fit carried by the target-supporting member.

10. In a switch stand, the combination with a casing, of a vertical operating shaft journaled in said casing, a crank secured to the lower end of said shaft, a crank pin secured to the crank, a longitudinally sliding bar mounted in the casing, the longitudinal center of the said bar being directly below the center of the said shaft, the bar being provided with a transverse slot in which the crank pin operates, an outwardly extending segment flange on the upper end of the casing, and an operating handle secured to the shaft, said handle being adapted to lock behind either end of the segment

flange with the crank extending in the direction of the longitudinal center of the bar when the handle is locked at either end of the segment flange.

11. In a switch stand, the combination, with a casing, of a segment of a flange extending outwardly from said casing, a vertical operating shaft journaled centrally in said casing, a longitudinally sliding bar, an operating connection between the same and said shaft, a member loosely journaled on the shaft, a collar secured to the shaft between the casing and the said member, a handle pivoted to the said collar, a projection on the said handle that is adapted to engage with either end of the segmental flange for holding the handle against movement in the direction of the flange, and means on said member for engaging with the opposite end of the said flange for holding the handle from movement in a direction away from the flange.

12. In a switch stand, the combination with a casing, of a segment of a flange extending outwardly from the upper end of said casing, a vertical operating shaft journaled centrally in said casing, an operating connection therefrom to the switch point, a member loosely journaled on the upper end of the shaft, a collar secured to the shaft between the casing and the said member, a handle pivoted to the said collar, a projection on the handle that is adapted to engage with either end of the segmental flange for holding the handle against movement in the direction of the flange, and means on said member for engaging with the opposite end of the said flange for holding the handle from movement in a direction away from the flange.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

HARRY C. ODENKIRK.

Witnesses:

BRENNAN B. WEST,  
A. J. HUDSON.