No. 863,050. PATENTED AUG. 13, 1907.

W. J. BRITTAIN.

RAILROAD SWITCH STAND.

APPLICATION FILED JUNE 17, 1907.

Fig. 4.

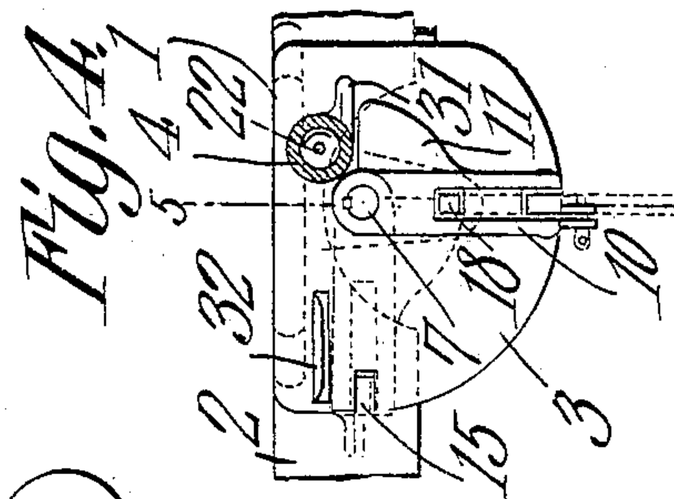

Fig. 5.

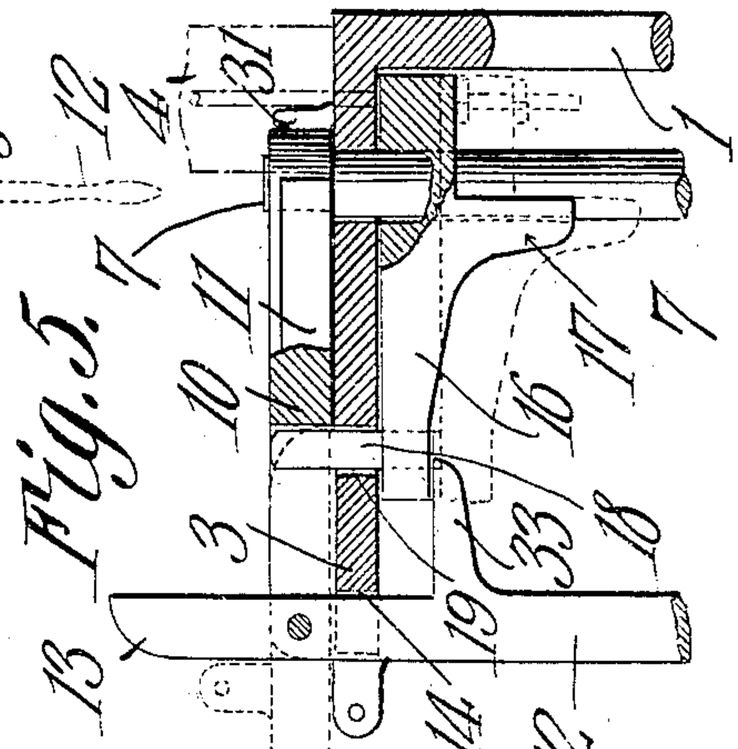

Fig. 3.

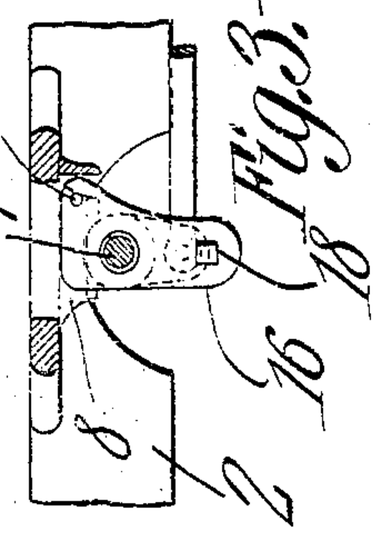

Fig. 2.

Fig. 1.

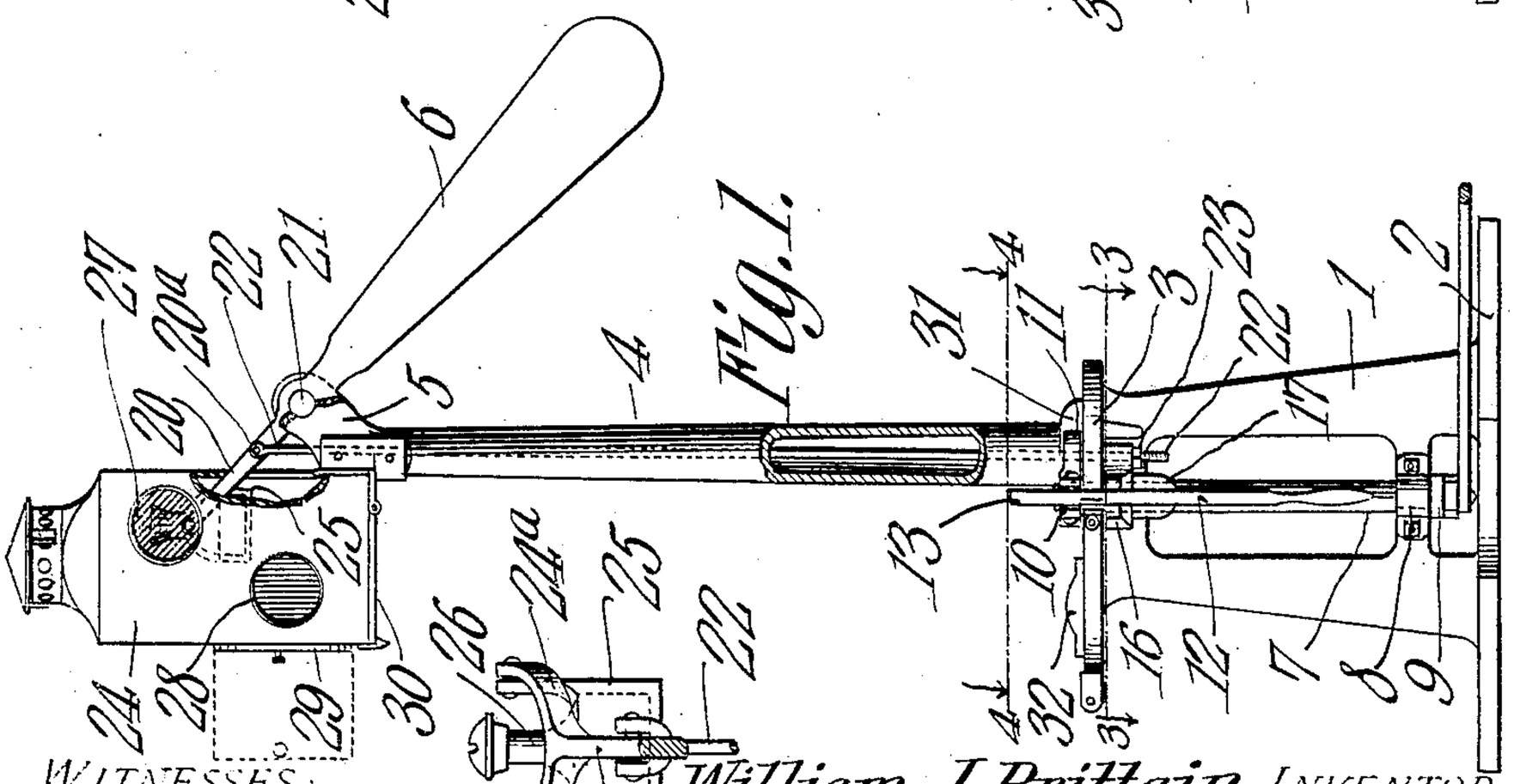

Fig. 6.

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RAILROAD-SWITCH STAND.

No. 863,050. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed June 17, 1907. Serial No. 379,513.

To all whom it may concern:

Be it known that I, WILLIAM J. BRITTAIN, a citizen of the United States, residing at Neodesha, in the county of Wilson and State of Kansas, have invented a new and useful Railroad-Switch Stand, of which the following is a specification.

This invention relates to an improvement in switch stands such as are used on railroads for opening and closing track switches and at the same time indicating by means of a signal, the position of the switch with relation to the main line of track.

The object of the invention is to provide a switch stand of simple construction carrying suitable mechanism for throwing a switch to open and close the main line track of a railroad at a siding, cross over or junction, and at the same time to operate a day and night signal for indicating to an approaching train whether the track ahead is clear or the switch open. By means of this mechanism the signal, such as a swinging arm for day and a colored light for night use, is caused to show danger at the first movement to open the switch and before it can be started, until it is again closed to the main line. In whatever position the switch may be otherwise than that of safety, whether in the act of moving, or locked open at a junction, cross over or siding, danger will be indicated for the main line until the switch has been returned to normal position and locked, the act of locking causes the signal to move to the position indicating a clear track.

A further object of the invention relates to the night signal which comprises a case having colored lenses in each side facing up and down the track and containing a lamp suspended from an arm forming a continuation of the day signal or semaphore arm, which rises and falls as the switch mechanism is operated, bringing the lamp in line with one or the other set of lenses that indicate by their color, safety or danger.

In the accompanying drawings, Figure 1 is a view in elevation of a switch stand and signal apparatus in a position indicating safety. Fig. 2 is a similar view of the apparatus but with the signal indicating danger. Figs. 3 and 4 are cross sectional views on the lines 3—3 and 4—4 respectively of Fig. 1. Fig. 5 is an enlarged sectional view on the line 5—5 of Fig. 4.

The numeral 1 indicates the base of a switch stand, made as usual of cast metal and of any configuration desired, that shown in the drawing represents it in its simplest form. The base is provided with a foot plate 2 for bolting it to a suitable foundation and a horizontal top plate 3 overhanging the base, from which plate a tubular signal post 4 rises to a proper height, and has on its upper end a bracket bearing 5 in which a swinging arm 6 is pivoted to indicate by its position whether the main line track is open or closed. A vertical shaft 7 for operating the track switch is pivoted at its upper end in the horizontal plate 3 and at its lower end in a bearing 8 on the base 1, to which latter end is fixed the usual crank 9 for throwing the switch.

The upper end of the shaft 7 extends above the horizontal plate 3 and is there provided with a forked arm 10 having a wing or side plate 11 projecting therefrom on one side close to and parallel with said horizontal plate. When the switch is in position to clear the main line track, the arm 10 will lie perpendicular to the upright portion of the base 1, as clearly indicated in Fig. 4, but when moved to connect the track with a turnout, the arm will lie parallel to said base, or at an angle of ninety degrees to its first position. Pivoted in the fork of the arm 10 is a hand lever 12 normally hanging in vertical position, its upper, shorter end 13 adapted to pass between the fork of the arm when the lever is raised to horizontal position while its lower, longer end is shaped to form a handle for operating the lever.

A slot 14 is made in the edge of the horizontal plate 3 in position to receive the hand lever 12 when it is turned down to lock the switch and set the signal to safety after the main line has been cleared. A similar slot 15 for the hand lever is also provided when the switch is set for the turnout. These slots 14 and 15 form locks which prevent the switch being tampered with so long as the hand lever is in one or the other position. Loops or staples are provided to receive padlocks for fastening the handles when in locked position as at present.

Slidably mounted on the vertical shaft 7 just beneath the horizontal plate 3 is a block 16 having a downwardly projecting finger 17 bearing on the side of the shaft to assist in guiding the block as it is moved up and down said shaft. Rising from the forward end of the block 16 is a pin 18, projecting through an aperture 19 in the horizontal plate 3 between the shaft 7 and the notch 14 in the edge of said plate, and sufficiently long to pass into the fork of the arm 10 when the block 16 is raised into contact with the under side of the plate 3.

The signal arm 6 is of the usual form and provided with a smaller arm 20, on the opposite side of its pivotal point 21. Pivoted to the smaller arm 20 at 20^a is a rod 22 near said pivot 21, which, extends down through the signal post 4 to the block 16 through which it passes freely and is held in contact therewith by a nut 23 on the under side of the block.

Fastened on the top of the signal post 4 is a lamp case 24, into which the small arm 20 of the signal 6 enters. The free end of the arm 20 is forked as shown at 24^a and supports a swinging holder 25 for the lamp 26. The sides of the lamp case 24 facing up and down the track each carry two colored lenses, one lens 27 indicating a clear track may be green or white, the other lens 28 denoting danger is colored red. The lamp case is pro-

vided with doors 29 and 30 to permit the easy removal of the lamp and its swinging support 25 whenever necessary.

When the main line is open the signal arm 6 will be down and the lamp in line with the white or green lenses 27 as in Fig. 1. The hand lever 12 will be in vertical position and resting in the notch 14, having the space between the prongs of the forked arm 10 open. The block 16 will be in contact with the under surface of the horizontal plate 3 and the pin 18 on the block projecting up into the fork of the arm 10. Before the first movement to operate the switch can be made the hand lever must be raised to horizontal position carrying its end 13 into the fork of the arm 10 and there pressing on the point of the pin 18, moves the block downwardly, which, through the rod 22, raises the signal arm to danger and lowers the lantern opposite the red lenses 28. The hand lever on being moved to the left carries with it the arm 10, the latter through the medium of the shaft 7 operates the connections to throw the switch, after which the hand lever is dropped into the notch 15 to lock the switch in its new position. During the movement of the hand lever and the arm 10 from one position to the other, the pin 18 is prevented from rising by reason of the side wing 11 on the arm 10 which, while turning with the lever continually extended over the pin 18, thus holding the signal continually at danger, and will continue to do so until the switch is returned and the hand lever once more lowered into the notch 14. The signal arm is adjusted and properly set by means of the nut 23 on the lower end of the rod 22. To prevent the arm 10 from moving too far in either direction, the signal post 4 is provided with a stop 31 against which the wing 11 strikes when the switch is closed to the main line, and for limiting its movement in the opposite direction a stop block 32 is cast on the upper face of the plate 3.

To prevent any person from falsely setting the signal to danger when the main line is clear, the hand lever 12 is provided with a finger 33, which, when the lever is in the notch 14, extends beneath the block 16 as shown in Fig. 5.

Having thus described the invention, what is claimed is:—

1. A switch stand comprising a base, a vertical shaft journaled thereon and provided with means for moving a track switch, a forked arm on the upper end of said shaft, a hand lever pivoted in said arm, a signal arm, a block slidable on the vertical shaft, a connection between the block and the signal arm, and means on said block by which the latter is depressed when the hand lever is raised to move the signal arm to the danger position.

2. A switch stand comprising a base, a vertical switch operating shaft journaled on the base, an arm fixed on the upper end of said shaft having a hand lever pivoted thereto, a block slidably mounted on said shaft below said hand lever and adapted to be moved thereby, a signal arm and a connection between said signal arm and said block.

3. A switch stand comprising a base having a horizontal overhanging plate, a vertical switch operating shaft journaled on said base and projecting through said plate, a forked lever fixed to said shaft above said horizontal plate, a block slidably mounted on said shaft below said plate and having a pin extending through said plate and adapted to enter the fork in said arm, a hand lever pivoted in said fork and adapted to depress said pin and block, a signal arm and a connection between said arm and said block.

4. A switch stand comprising a base having a horizontal overhanging plate, a vertical switch operating shaft journaled on said base extending through and above said plate, a forked arm having a side wing fixed to said shaft, a block slidable on said shaft below said plate and having an upstanding pin projecting through said plate and adapted to rise above the plate in one position only of said arm, a hand lever pivoted in the fork of said arm, in position to depress said pin and block when the lever is raised, a pivoted signal and means connected to said block and said signal for operating the latter.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM J. BRITTAIN.

Witnesses:
A. L. HILL,
E. STUBER.