

(No Model.)

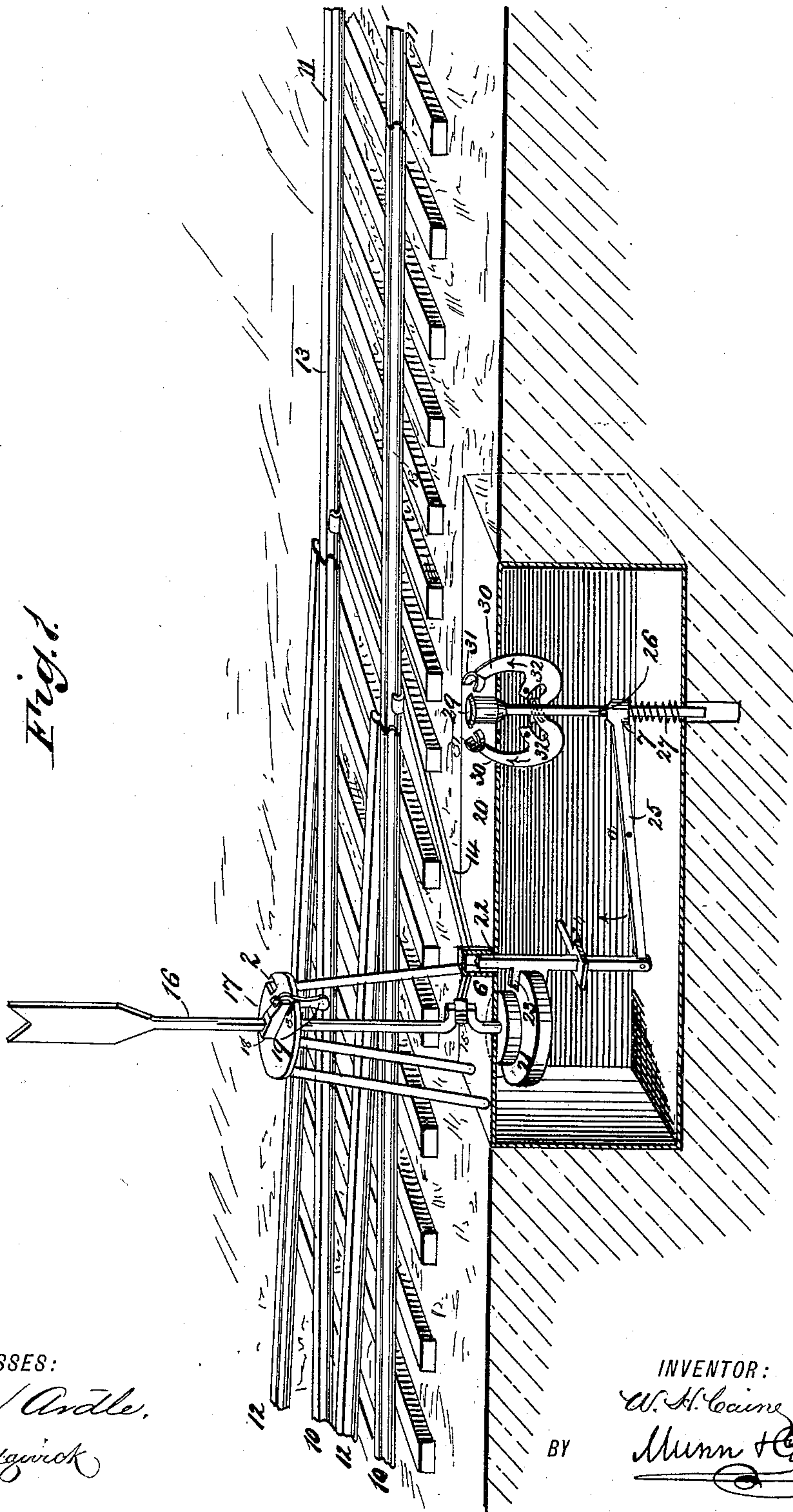
2 Sheets—Sheet 1.

W. H. CAINE.

SAFETY LOCK AND SHACKLE FOR RAILROAD SWITCHES.

No. 409,388.

Patented Aug. 20, 1889.



WITNESSES:

*J. M. Ardle,*  
*C. Sedgwick*

INVENTOR:

*W. H. Caine*  
*Munn & Co.*

BY

ATTORNEYS.

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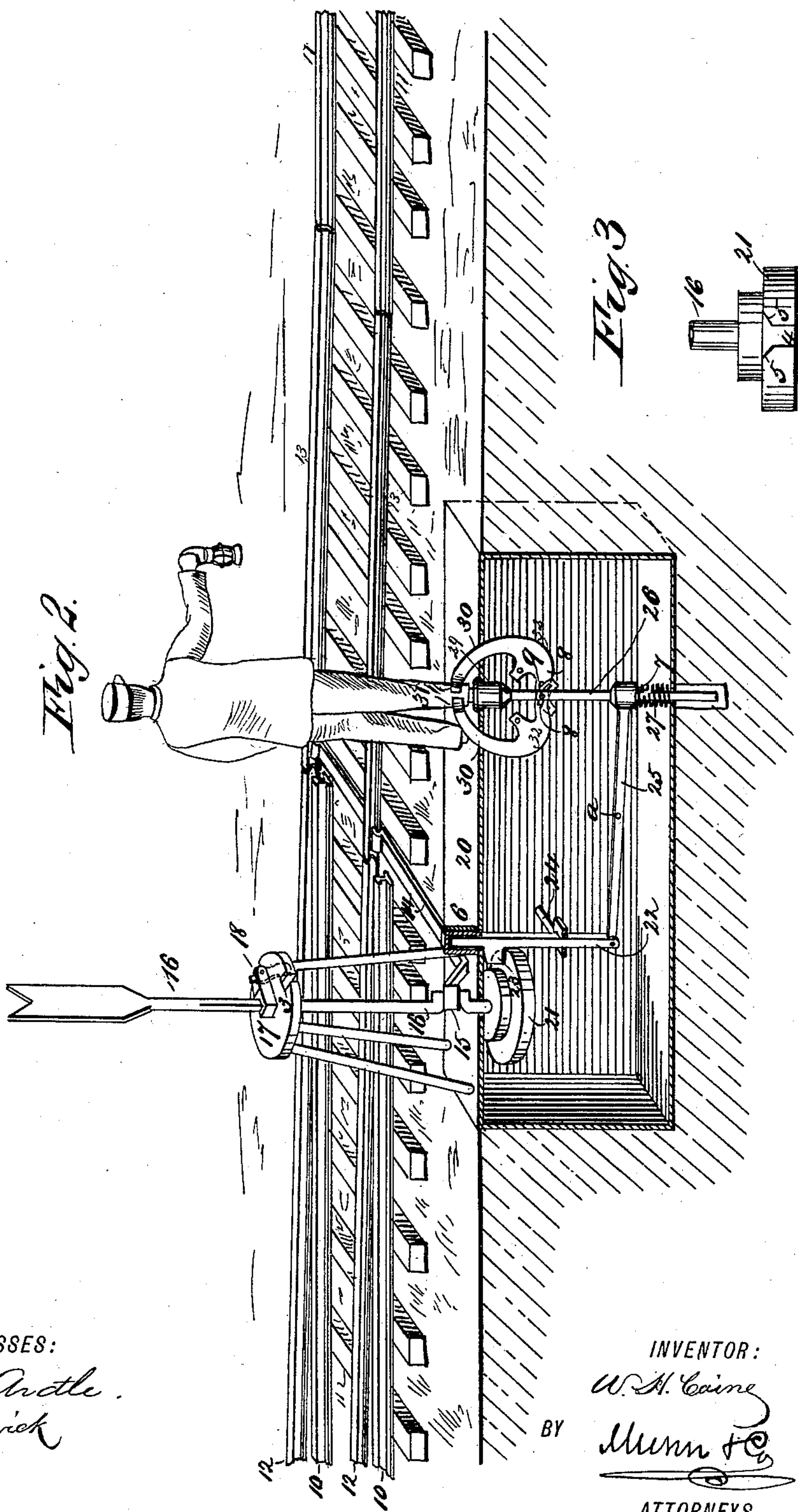
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# UNITED STATES PATENT OFFICE.

WILLIAM H. CAINE, OF STILLWATER, MINNESOTA, ASSIGNOR OF ONE-HALF  
TO LYELL T. MEAD, OF SAME PLACE.

## SAFETY-LOCK AND SHACKLE FOR RAILROAD-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 409,388, dated August 20, 1889.

Application filed January 2, 1889. Serial No. 295,145. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLIAM H. CAINE, of Stillwater, in the county of Washington and State of Minnesota, have invented a new and  
5 Improved Safety-Lock and Shackle for Railway-Switches, of which the following is a full, clear, and exact description.

Owing to the carelessness of switchmen and train-hands, it frequently happens that the  
10 switches leading to sidings are left open, and consequently serious accidents occur. It is to prevent the possibility of the switches being left open that I have designed the construction forming the subject-matter of this  
15 application.

My invention consists, essentially, of a lock arranged in connection with the target-rod, a plunger operating said lock, and shackles arranged in connection with the plunger, said  
20 shackles being mounted to engage the ankle of the party throwing the switch, the parts being so arranged that the party so throwing the switch will be held by the shackles until the switch is moved to a position to open the  
25 main line.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the  
30 views.

Figure 1 is a perspective view of a switch embodying my invention, the parts being represented as they appear when the main line is open, the inclosing-case being shown in section. Fig. 2 is a similar view, the parts, however, being shown as they appear when the siding is open; and Fig. 3 is a side view of the recessed plate carried by the target-rod.

In the drawings, 10 10 and 11 11 represent  
40 rails constituting a portion of the main line, 12 12 rails leading to the siding, and 13 13 the switching-rails, which are, as usual, connected by a tie-bar that leads to a crank 15, formed upon the target-rod 16, said target-rod  
45 being supported by a switch-stand 17 and provided with an operating-lever 18, which is preferably formed with a folding handle 19, said handle being arranged to enter recesses 2 and 3, formed in the table of the stand 17.  
50 Beneath the switch-stand I arrange a box or case 20, preferably made of sheet metal, the

lower end of the target-rod 16 extending into this case. To the lower end of the rod 16, I connect a disk 21, formed with a notch or recess 4 in its peripheral face, the side walls of the said notch or recess flaring outward toward the upper face of the disk, as shown at 5 5 in Fig. 3. In connection with the disk 21, I arrange a locking-bar 22, formed with a key 23, that is arranged to enter the recess 4, the  
55 bar 22 being guided by a bracket 24 and by an upwardly-extending stem 6, which rides in a housing formed in the top of the case 20. To the lower end of the bar 22, I pivotally connect a lever 25, that is fulcrumed at *a*,  
60 said lever in turn being connected to a vertical plunger 26, which is normally held in the position shown in Fig. 1 by a spring 27, said spring abutting against the bottom of the case 20 and against the under side of a shoulder 7, formed upon the plunger. The plunger 26 extends upward through the top of the case 20, and carries a step or platform 29. At each side of the plunger I pivot shackles 30, formed with jaws 31 and with inwardly-extending arms 32, that are slotted at 8 to receive a pin 9, that is carried by the plunger 26.  
65

Referring now to Fig. 1, (in which the switching-rails are shown as they appear when the main line is open,) it will be seen  
80 that the key or bit 23 of the rod 22 rests within the recess 4 of the disk 21 when the main line is open, the key thus serving to hold the switching-rails to place, an additional lock being secured by turning down the handle 19  
85 so that it will enter the recess 3, formed in the table of the stand 17. If it be desired to open the way to the siding, the switchman places his foot upon the table or step 29 and depresses the plunger 26, thereby moving the  
90 lever 25 in the direction of the arrow shown in connection therewith in Fig. 1 to the position in which the lever is shown in Fig. 2, this movement of the lever carrying the rod 22 upward to a position such that its bit or  
95 key will be moved out of the recess 4. Then if the switchman grasp the handle 19 of the lever 18, the target-rod may be turned and the switch-rails moved to a position so that they will align with the rails 12, said switch-  
100 rails being locked in this position by turning the handle 19 downward, so that it will enter



the recess 2. As the plunger 26 is depressed, as hereinbefore set forth, the shackles 30 will be moved in the direction of the arrows shown in connection therewith until they bind firmly upon the ankle of the switchman, as shown in Fig. 2, and as the target-rod is turned the disk 21 will be moved to a position such that the bit or key 23 will rest upon its upper face, and consequently the shackles will be locked to place until such time as the recess 4 is again brought to a position beneath the bit—that is, until the switching-rails are moved back to a position to open the main line, so that all danger of the switchman leaving the siding open is avoided.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a switch-stand provided with a locking-bar, of a plunger, connections between the plunger and the bar, and shackles arranged in connection with the plunger, substantially as described.

2. The combination, with a switch-stand provided with a recessed disk, of a bar pro-

vided with a key or bit arranged to enter the recess of the disk, a lever connected to the bar, a plunger to which the lever is connected, and shackles arranged in connection with the plunger, substantially as described.

3. The combination, with a switch-stand provided with a vertical target-rod, of a case arranged beneath the stand, a disk formed with a recess and connected to the lower end of the target-rod within the case, a rod or bar 22, provided with a bit or key 23 and mounted to move vertically within the case, a lever connected to the rod, a plunger to which the lever is connected, a spring arranged in connection with the plunger, a step or table carried by the plunger, shackles pivotally mounted within the case and formed with slotted arms, and a pin carried by the plunger and arranged to enter said slots, substantially as described.

WILLIAM H. CAINE.

Witnesses:

J. N. SEARLES,  
JOHN A. SCOTT.