No. 848,421. PATENTED MAR. 26, 1907.

J. R. WYATT.

RAILROAD SWITCH STAND AND SWITCH LOCK.

APPLICATION FILED DEC. 8, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

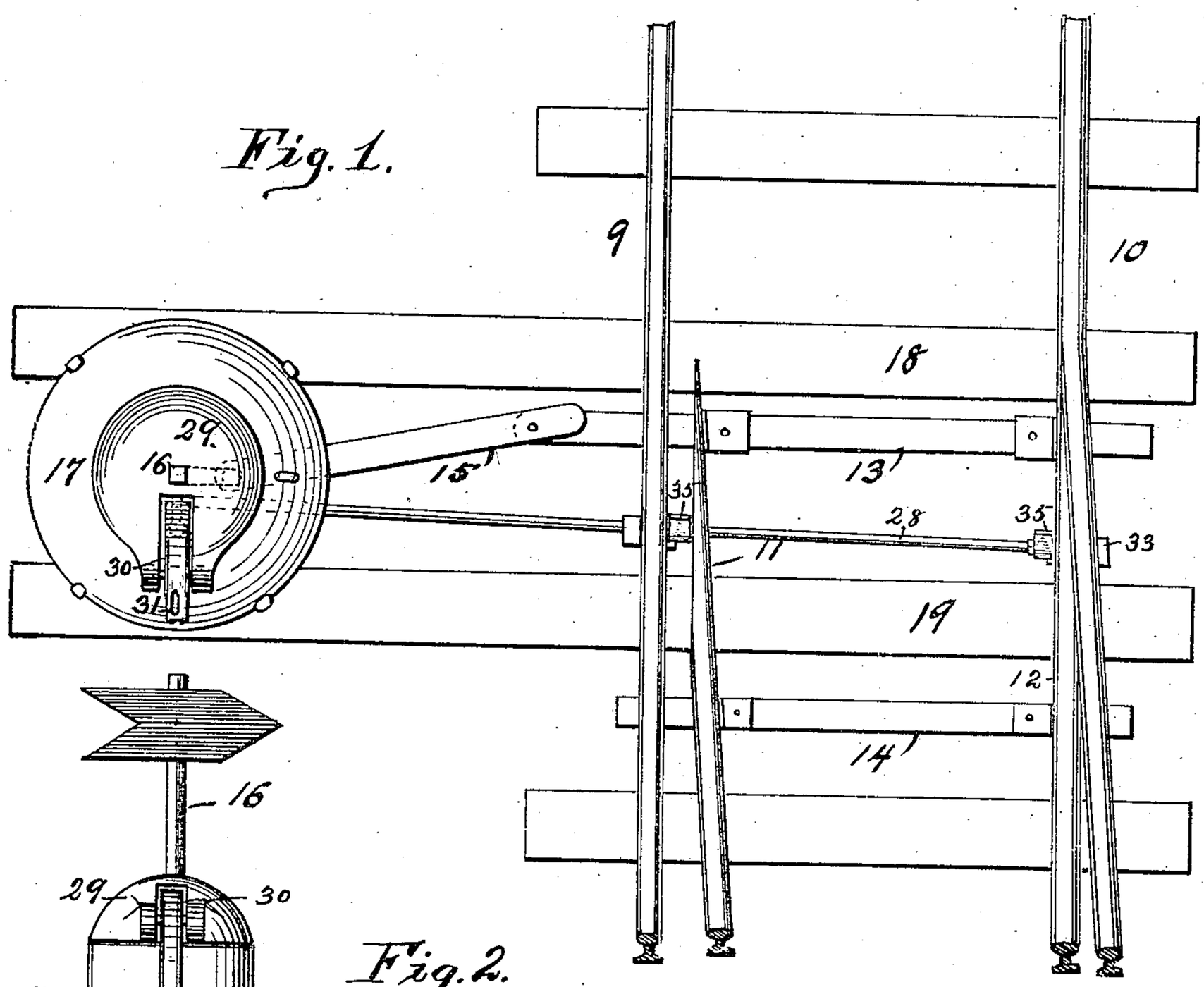


Fig. 2.

Fig. 4.

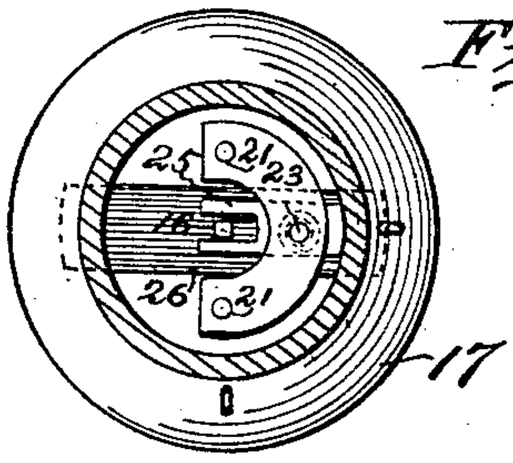


Fig. 5.

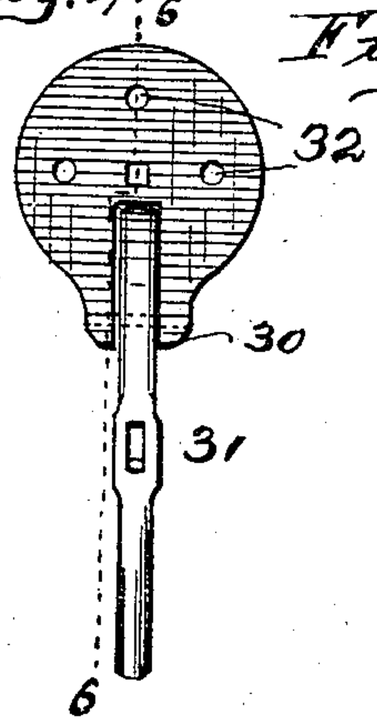
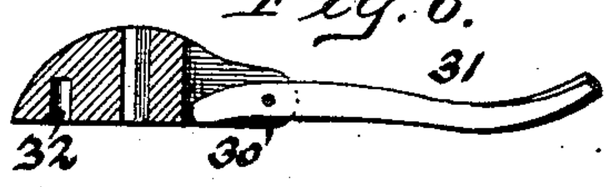


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 3.

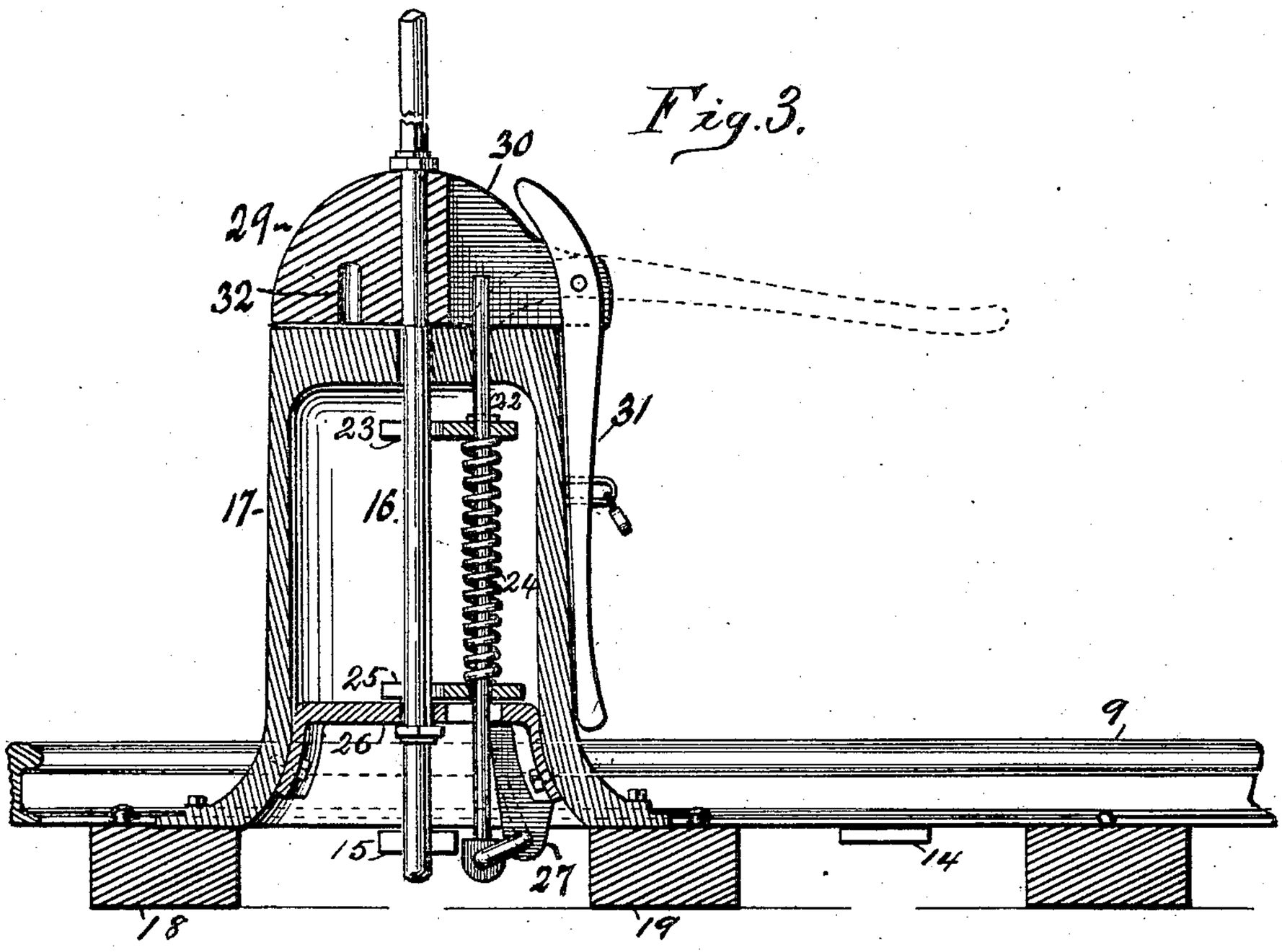


Fig. 7.

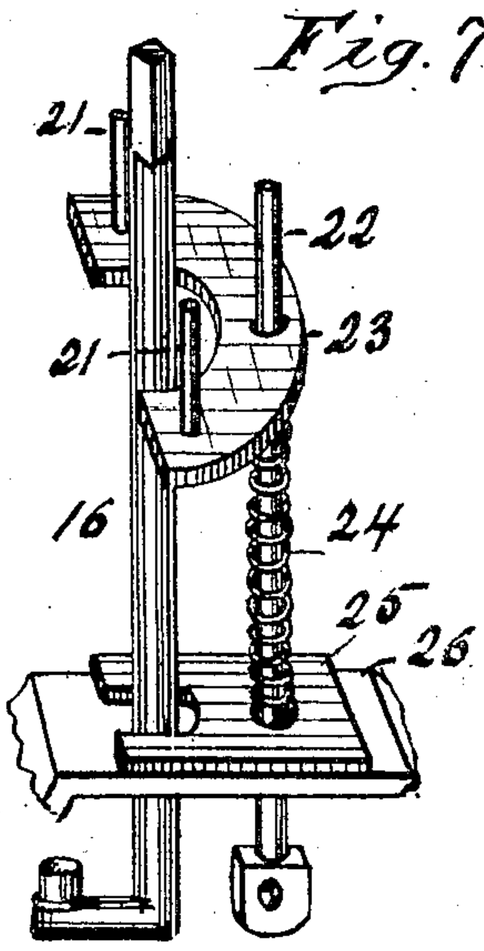
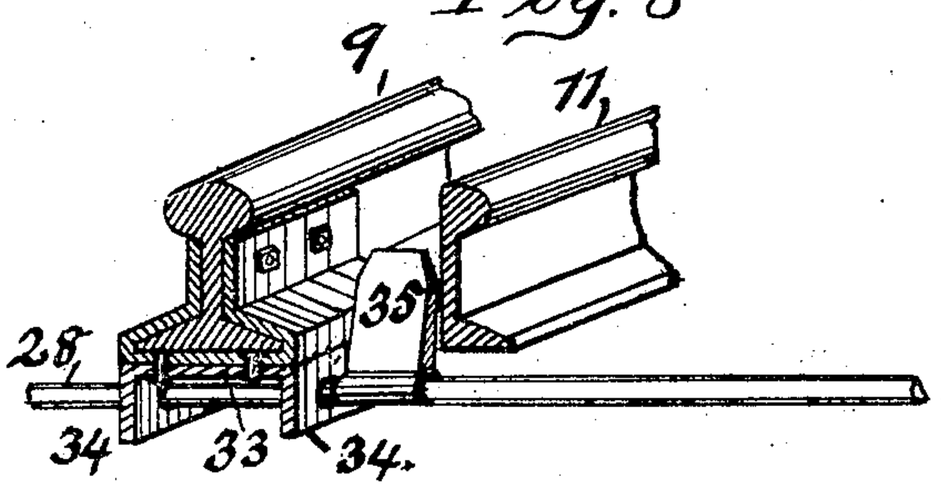


Fig. 8



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UNITED STATES PATENT OFFICE.

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RAILROAD SWITCH-STAND AND SWITCH-LOCK.

No. 848,421. Specification of Letters Patent. Patented March 26, 1907.

Application filed December 8, 1906. Serial No. 346,888.

To all whom it may concern:

Be it known that I, JOHN R. WYATT, a citizen of the United States of America, residing at McGowan, in the county of Caldwell and State of Kentucky, have invented certain new and useful Improvements in Railroad Switch-Stands and Switch-Locks, of which the following is a specification.

This invention appertains to that class or type of switch-stands that are provided with a vertically-supported rock-shaft and with means for moving the shaft in order to change the position of the switch-points and signal or target; and my invention relates more particularly to the means of locking the rock-shaft and connecting the locking means to a horizontally-maintained rock-bar to which is attached a lug or plate, so that such lug or plate may be positioned between one of the fixed rails and the adjacent movable rail or switch-point to provide a coöperating and supplemental switch-lock, as will be hereinafter fully set forth.

In the accompanying drawings, which illustrate one form of my invention, Figure 1 is a top plan view of the switch operating and locking mechanism. Fig. 2 is an end elevation, the rails, the switch-points, and a part of the switch-stand being in section. Fig. 3 is a vertical section of the switch-stand. Fig. 4 is a horizontal section on the line 4 4, Fig. 2. Fig. 5 is an inverted plan view of the movable top of the switch-stand. Fig. 6 is a section on the line 6 6, Fig. 5. Fig. 7 is a detail perspective view of the means for locking the movable head of the switch-stand, and Fig. 8 is a detail perspective view showing the lock for the switch-points.

Referring to the drawings, 9 and 10 indicate the fixed or stationary rails, and 11 and 12 the movable rails or switch-points, such movable rails being connected by tie-bars 13 and 14, the bar 13 being bolted or otherwise attached to a rod 15, that engages the crank or bent end of a vertical rock-shaft 16, that is supported by bearings attached to or forming a part of the switch-stand 17. The base of the switch-stand 17 is firmly secured to cross-ties 18 and 19, and the upper end of the base is apertured centrally for the passage of the vertical rock-shaft 16, and concentric with the aperture or bearing there are vertical openings for the passage therethrough of pins 21 and for the upper part of a spring-projected bar 22. The bar 22 below the closed upper end of the base of the switch-stand has attached thereto a semicircular or curved plate 23, above which project the pins 21 21 and the upper part of the bar 22. The bar 22 below the plate 23 is encircled by a spring 24. Such spring bears against the under side of the plate and upon a movable or sliding plate 25, that rests upon a cross-piece 26, attached to the hollow base portion of the switch-stand. The sliding plate 25 has an opening for the passage of the bar 22.

The cross-piece 26, that is attached to the lower portion of the switch-stand, is provided with a bearing for the rock-shaft 16, and to one side of such bearing there is a slot through which passes the bar 22, such slot being covered by the sliding plate 25, which moves with the bar. The cross-piece 26 has a depending portion 27, constructed to provide a bearing or support for one end of a substantially horizontal rock-shaft 28, the crank end of such shaft being maintained in engagement with the lower end of the bar 22.

A movable cap or top piece 29 is securely fastened to the shaft 16, so that the cap and shaft will turn in unison, and the cap rests upon the upper end of the stand 17, such cap having therein an open-ended slot 30, and between the walls of the slot there is pivoted a lever 31, means being provided for locking the lever when lowered to the switch-stand to hold the cap and the attached shaft against movement, and so prevent movement of the switch-points. The upper or inner end of the lever 31 is adapted when the handle is raised to engage with one of the pins 21 or with the upper end of the bar 22 to move the pins and the bar below the plane of the under side of the cap, such movement releasing the cap and moving the plate or lug below the plane of the under side of the switch-point or movable rail 11, and when the lever is given a quarter-turn the cap and shaft 16 will move in unison therewith to change the position of the rails or switch-points 11 and 12.

The cap 29, to which the lever and the shaft 16 are secured, is provided with three recesses 32, that are concentric with the shaft, such recesses being the same distance apart one from the other as the distance between the pins 21 and the shaft 22, so that when either one of the pins or the shaft enters the slot 30 the other projecting members will enter two of the recesses 32, holding the cap against movement or locked.

The horizontal crank-shaft 28 is supported

at one end by the hanger 27, and adjacent to its other end there is a fixture 33, which is secured to the fixed rail 9, such fixture having below the base of the rail depending side pieces 34, through which the shaft 28 is passed, and to the shaft beyond the fixture there is attached a lug or plate 35, that is adapted to be thrown upward between the fixed rail 9 and the switch-point 11 to lock the switch-points against movement. When the lug or plate is positioned between the rail 9 and the switch-point 11, the main track is open for traffic.

In operation to move the switch the lever is first unlocked from the fixed part of the switch-stand. It is then raised, so that its end which lies in the slot formed in the cap will engage either the upper end of the bar 22 or the upper end of one of the pins 21. The upward movement of the lever depresses the bar 22 and the pins carried by the plate 23, and when the pins and the bar are moved below the plane of the under side of the cap the rock-shaft 28 will be moved so as to throw the locking-plate attached thereto below the plane of the under side of the switch-point or movable rail, and it is only when the plate 35 is below the switch-point that the cap and its attached shaft can be moved. The end of the lever occupies the full width of the slot in the cap and holds the pins and end of the shaft 22 on the same plane as the top of the switch-stand, so that the cap and shaft may be turned to throw the connected switch-points or movable rails. When the cap is moved one-quarter, the upper ends of the pins and the shaft will enter the slot and recesses to lock the cap and the switch throw-shaft and provides a lock therefor when the switch is either open or closed, and in practice when the lug or plate is lowered below the movable rail 11 the spring on the shaft 22 raises the shaft, so that such shaft and the pins on the plate 23 may enter the slot and two of the recesses in the cap, the spring also forcing the end of the lug or plate 35 against the under side of the movable rail.

The lever, the cap, and the target-carrying shaft operate in the usual manner, and the switch-points may be shifted thereby and will be held when the lever is locked or otherwise fastened to the stand; but my invention, in addition to the usual locking means, provides an automatic lock for the cap or that part of the switch-stand that moves with the throw-bar and a lock for the movable rails or switch-points.

I am aware that it has been proposed to provide a rock-shaft with rail-engaging lugs, the shaft being connected to the throw-bar of the switch-stand or to the lever for moving the throw-bar, the connections being usually beyond the switch-stand and not within the same, whereas with my improvement the spring and auxiliary shaft are not attached to the lever and are moved by the lever only when the lever is raised.

Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In switch operating and locking mechanism, a switch-stand having a switch throw-shaft, a movable lever-carrying member fast upon the shaft, a bar that is spring-actuated in one direction and is adapted to be moved against the action of the spring by the lever, a rock-shaft that engages the vertically-movable bar, switch-point-engaging means attached to the rock-shaft, the parts being organized so that the spring-actuated bar when unrestrained will lock the lever-carrying member of the switch-stand and will move the switch-point-engaging means between a fixed rail and the switch-point.

2. In switch locking and operating mechanism, a switch-stand having a fixed base, a cap having a plurality of recesses and an open-ended slot, a lever pivoted between the walls of the slot, a switch-point throw-shaft attached to the cap, a rock-shaft having a switch-point lock, a spring-actuated bar that is connected to the rock-shaft, and pins attached to and movable with the bar to engage the cap to simultaneously lock the switch-point throw-shaft and the switch-point.

3. In a switch-stand, a base having journals for a switch-point throw-shaft, a bar carried by the base and maintained to one side of the switch throw-shaft, means for projecting the upper portion of the bar above the base, a rock-shaft operatively connected to the bar and provided with a lug or plate that is adapted to be positioned between the switch-point, a cap or top member for the switch-stand that is rigidly connected to the switch-point throw-shaft, a lever pivoted to the cap and positioned so that when the lever is raised it will engage the bar and depress its end below the upper end of the base the bar when depressed operating the rock-shaft to move the lug or plate attached thereto beneath the plane of the bottom of the switch-point.

4. In a switch-stand, a hollow base, a centrally-located and vertically-maintained switch-point throw-shaft carried by the base, a vertically-movable bar maintained to one side of the switch-point throw-shaft, a spring for moving the bar upward, a plate attached to the bar, pins carried by the plate, a cap mounted on the base, a plurality of recesses in the cap and a lever pivoted to the cap and adapted to engage the upper end of the spring-actuated bar or one of the pins carried thereby to depress the bar and pins below the cap and a rock-shaft having a lug or switch-point lock that is operatively connected to the vertically-movable bar.

5. In a switch-stand, a switch-point throw-shaft, a cap for the stand which is rigidly attached to the switch-point throw-shaft, a plurality of recesses in the cap, a lever pivoted to the cap, an upwardly-projected bar maintained by the base of the switch-stand which is adapted to move to engage and lock the cap, and pins carried by the bar to move therewith, for the purpose set forth.

6. In a switch-stand, a base, a cap mounted thereon, a lever-receiving slot in the cap, a plurality of recesses concentric with the center of the cap, a switch-point throw-shaft operatively connected to the switch-points, a lever pivoted to the cap, a plurality of apertures through the upper end of the base, a bar and a plurality of pins attached to the bar to be movable above the upper face of the base to enter the slot and the recesses, a rock-shaft and switch-point lock operatively connected to the bar, the parts being organized so that the bar and the pins may be depressed below the plane of the top of the base by the lever and will be moved to hold the cap against movement when the switch-points are thrown to the limit of their movement in either direction.

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

JOHN R. WYATT.

Witnesses:
R. L. GRESHAM,
BOB WALKER.