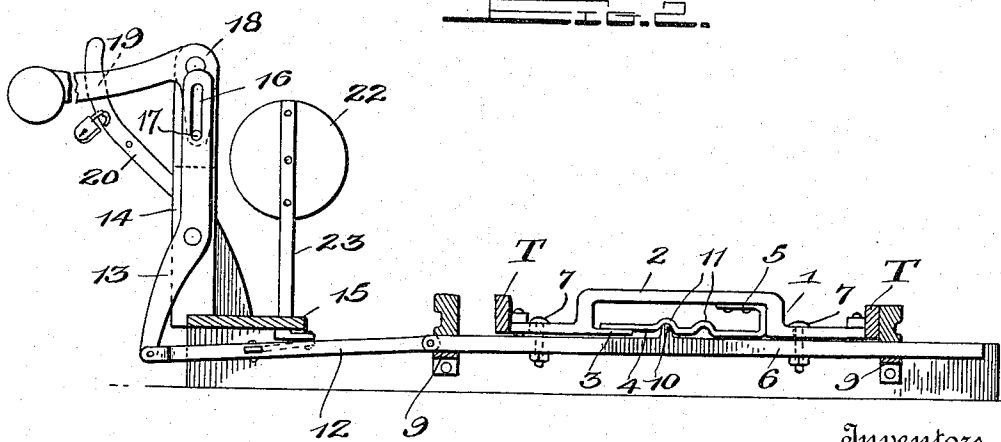
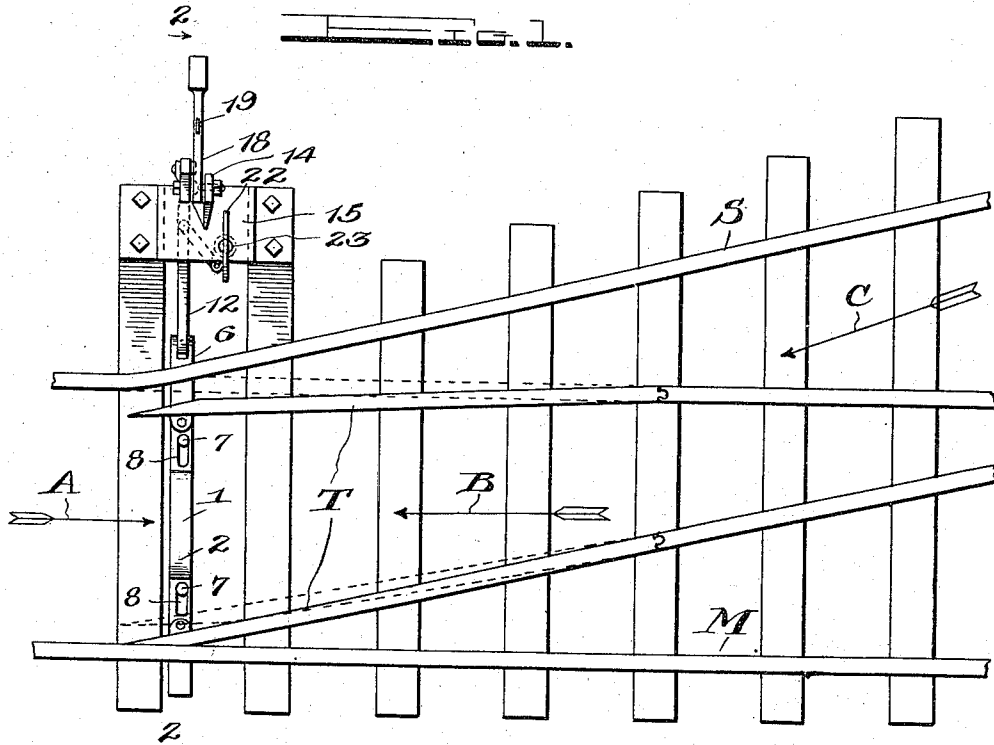


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RAILWAY SWITCH.
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Patented Mar. 28, 1916.

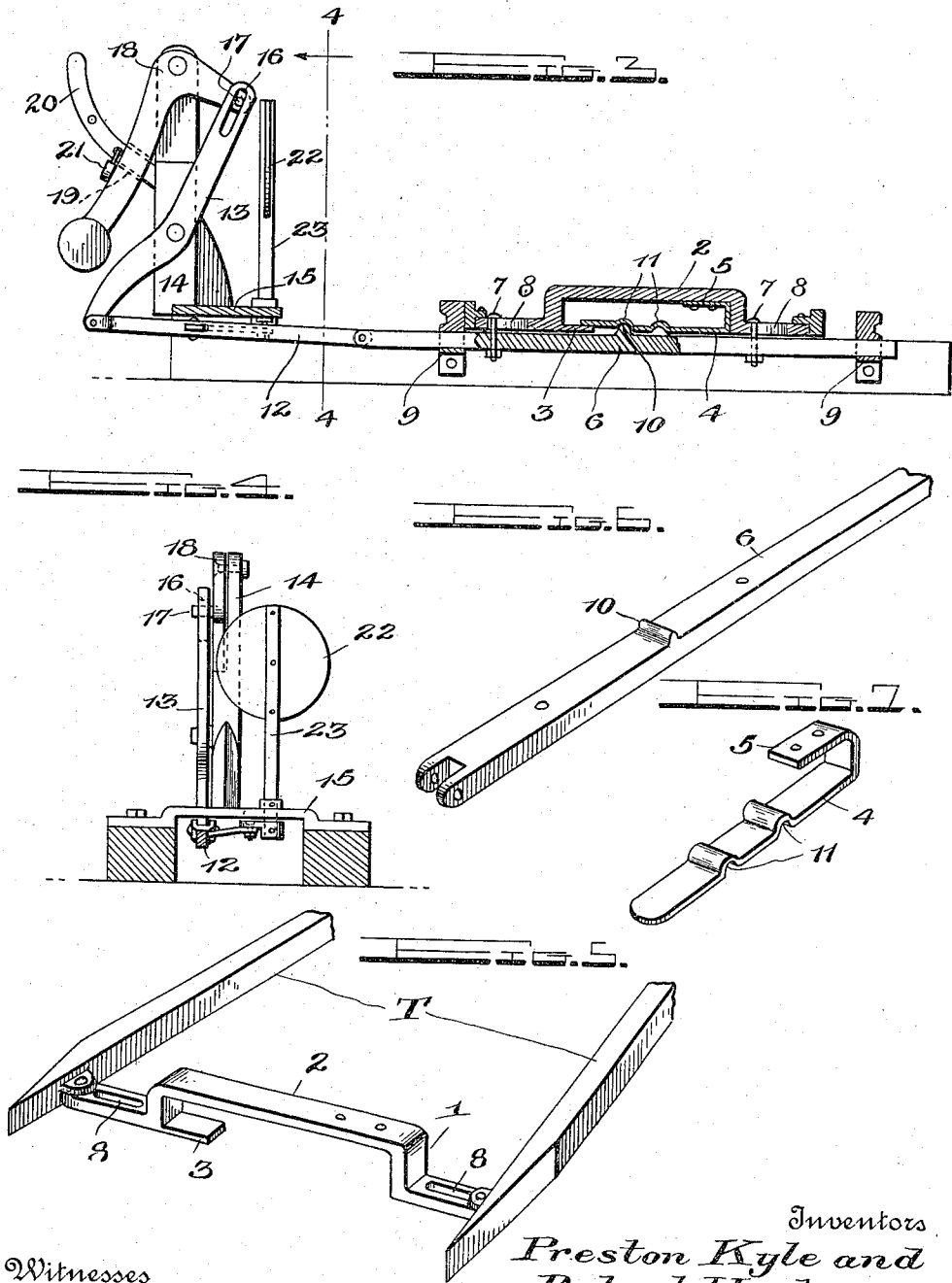
2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

PRESTON KYLE AND ROBERT HARKES, OF COAL BLUFF, INDIANA.

RAILWAY-SWITCH.

1,176,968.

Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed September 7, 1915. Serial No. 49,283.

To all whom it may concern:

Be it known that we, PRESTON KYLE and ROBERT HARKES, citizens of the United States, residing at Coal Bluff, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Railway-Switches; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates broadly to improvements in railway switches, and more particularly to the connection of the bridle bars thereof with the operating bars which are actuated by suitable mechanism disposed to one side of the track.

The object of the invention is to improve upon the construction of connections of the class described to such an extent as to allow the bridle bar to shift independently of the operating bar under certain conditions to be set forth.

With this general object in view, the invention resides in certain novel features of construction and in unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings wherein:

Figure 1 is a top plan view of a railway switch constructed in accordance with the invention; Fig. 2 is a vertical transverse section viewed on the plane of the line 2—2 of Fig. 1; Fig. 3 is a similar view showing a different position of parts; Fig. 4 is a detail vertical section taken on the plane indicated by the line 4—4 of Fig. 3; Fig. 5 is a perspective detail showing more particularly the construction of the bridle bar; Fig. 6 is a perspective view of the operating bar, and Fig. 7 is a similar view of the spring connection between the two bars.

In these drawings which constitute a part of the application, and in which like reference characters designate corresponding parts throughout the several views, M indicates broadly the main line of a railway track, S represents a siding, and T designates the usual switch tongues which control the passage of rolling stock onto the siding or the main track according to requirements.

Pivoted at its opposite ends by any preferred means to the switch tongues T, is a horizontal bridle bar 1 whose intermediate

portion is offset laterally as disclosed at 2 to provide a gap between the ends of the bar, the portion 2 being preferably though not necessarily offset upwardly as shown in Figs. 2 and 3.

Formed integrally with one end portion of the bar 1, and projecting into one end of the gap in substantial alinement with both ends of the bar in question, is a horizontal stop lug 3 upon which one end of a flat horizontal spring 4 bears, the other end of said spring being bent upwardly and laterally as disclosed at 5 and being riveted or otherwise secured to the offset central portion 2 of the bar 1.

Slidable longitudinally in respect to the bar 1, is a horizontal operating bar 6, bolts 7 being passed through said bar 6 and through longitudinally extending slots 8 formed in the bar 1 near the opposite ends thereof. Preferably, the operating bar 6 slides in appropriate guides 9 secured to the cross ties of the railway. The bar 6 is shown in the present embodiment of the invention as provided with a rib 10 on its upper side which constitutes a stop shoulder for coaction with a pair of spaced stop shoulders formed on the spring 4 by bowing spaced portions of said spring upwardly as disclosed at 11 in Figs. 2, 3 and 7.

For shifting the operating bar 6 longitudinally to control the positions of the switch tongues T, practically any preferred means may be provided, but a link 12 preferably connects one end of said bar with an upright lever 13 fulcrumed between its ends to an upright standard 14 rising from a bed plate 15 which is spiked or otherwise secured to the ties. The upper end of the lever 13 is provided with a slot 16 receiving therein a stud 17 on the shorter arm of a vertically swinging bell crank lever 18, the latter being pivoted at its angle to the upper end of the standard 14 and having its longer arm weighted and formed with an opening 19 to receive therein the perforated bar 20 which projects laterally from the standard 14. By this arrangement of parts, a lock 21 (see Figs. 2 and 3) may be applied to lock the lever 18 lowered to retain the switch in closed position, but when said lever is raised to open the switch as shown in Figs. 1 and 2, the lock may be used to hold it in raised position.

Preferably operating in conjunction with the switch throwing means, is a circular

semaphore blade 22 carried by the upper end of a shaft 23 which rises from and is rotatably supported by the bed plate 15, the lower end of said shaft being equipped with a crank arm connected by a link with the link 12. This construction will operate the semaphore blade 12 simultaneously with opening and closing of the switch to display the condition of the latter.

The device above described is designed primarily for use upon single track railways on which trains traveling in one direction must run upon a blind siding to await the passage of another train in the opposite direction. When so applied to use, the switch tongues may be positioned as shown in full lines in Fig. 1 whereupon the train moving in the direction of the arrow A may travel upon the siding S, the connection between the bridle bar 1 and the operating bar 6 now assuming the position shown in Fig. 2. The tongues T may now remain in the position at which they have been previously set, since the second train traveling in the direction of the arrow B will, by the contact of its wheel flanges with the tongues T, throw them to the dotted line position shown in Fig. 1, this being allowed by the spring 4 which yields upwardly when the tongues T and the bridle bar 1 are shifted from one position to the other. The train upon the siding may now travel in the direction of the arrow C onto the main track, again opening the switch tongues in so doing, the lever 18 is then actuated to lock the switch in closed position as depicted in Fig. 3, and the train in question may then progress along the main line M in the direction of the arrow A.

From the foregoing description, taken in connection with the accompanying drawings, it will be obvious that although the construction provided for the attainment of the desired results is comparatively simple and inexpensive, the same will be highly efficient and durable and will possess a number of advantageous characteristics.

In the drawings, certain specific details of construction have been shown for accomplishing probably the best results, and in the preceding such details have been described, but obviously we need not be restricted thereto otherwise than to the extent to which the appended claims limit us.

We claim:

1. In a switch, a pair of horizontal bars disposed side by side and slidable in respect to each other, a horizontal spring secured to one bar, and coacting stop shoulders on the spring and on the other bar; in combination with a pair of switch

tongues secured to one bar, and means to shift the other bar longitudinally.

2. In a switch, a horizontal bar having its intermediate portion offset laterally from its ends to form a gap, a second horizontal bar slidable in respect to the first bar and extending across the gap, a horizontal spring disposed in the gap and secured to one bar, and coacting stop shoulders on the spring and the other bar; in combination with a pair of switch tongues secured to one bar, and means to shift the other bar longitudinally.

3. In a switch, a horizontal bar having its intermediate portion offset laterally from its ends to form a gap, a horizontal spring secured to said bar and disposed in said gap, a second horizontal bar slidable in respect to the first bar and extending across the gap, and coacting stop shoulders on the spring and on said second bar; in combination with a pair of switch tongues secured to one bar, and means to shift the other bar longitudinally.

4. In a switch, a horizontal bar having its intermediate portion offset laterally from its ends to form a gap, a stop lug extending into one end of the gap in substantial alignment with the ends of the bar, a horizontal spring in the gap bearing at one end on said stop lug and anchored to the bar at its other end, a second horizontal bar slidable in respect to the first bar and extending across the gap, and coacting stop shoulders on the spring and on said second bar; in combination with a pair of switch tongues secured to one bar, and means to shift the other bar longitudinally.

5. In a switch, a horizontal bar having its intermediate portion offset laterally from its ends to form a gap, a horizontal spring secured to the bar and disposed in the gap, said spring being bowed laterally at a pair of spaced points, a second horizontal bar slidable in respect to the first bar and extending across the gap, and a stop on said second bar for coaction with the laterally bowed portions of the spring; in combination with a pair of switch tongues secured to one bar, and means to shift the other bar longitudinally.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

his
PRESTON [×] KYLE.
mark
ROBERT HARKES.

Witnesses:

WILLIAM HARKES,
D. E. BROWNSON.