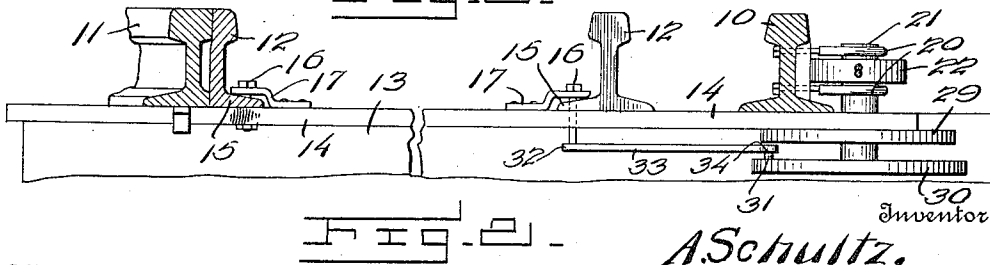
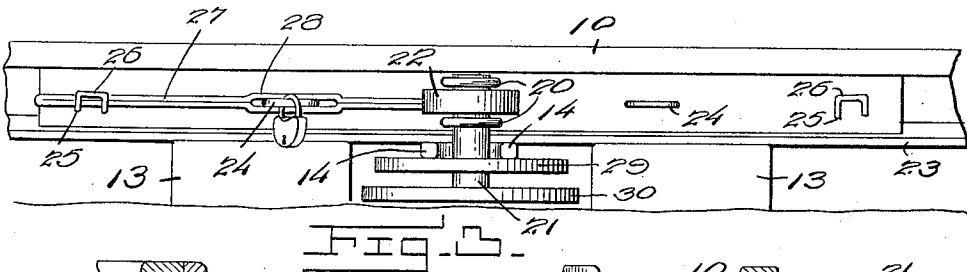
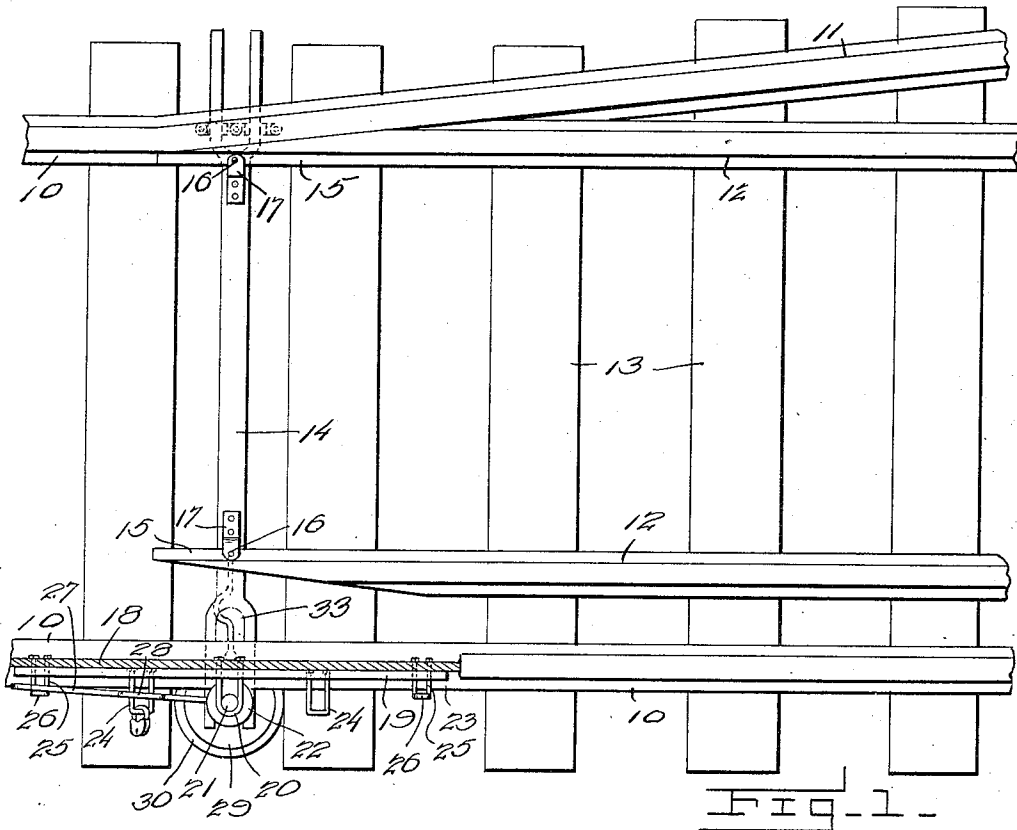


A. SCHULTZ.
RAILWAY SWITCH.
APPLICATION FILED MAY 2, 1912.

1,065,002.

Patented June 17, 1913.



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUST SCHULTZ, OF SAN DIEGO, CALIFORNIA.

RAILWAY-SWITCH.

1,065,002.

Specification of Letters Patent. Patented June 17, 1913.

Application filed May 2, 1912. Serial No. 694,751.

To all whom it may concern:

Be it known that I, AUGUST SCHULTZ, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to railroad switches, and has for its object to provide a switch of simple construction adapted to be installed upon a line at a minimum expense for providing foundations and supports.

It is an object to enable the construction of a complete switch mechanism for shipment to an outlying district where it may be installed by simply being bolted on the side of a rail, so that there will be a minimum liability of accident by inefficient construction work.

Another object is to provide means for retaining the switch rails securely against jumping, this means serving also as a connecting and operating link for the switch rails.

A further object is to provide an efficient form of crank device and guard means for a link connecting the crank and switch rails.

A further object is to form a safety switch lever and locking means therefor, whereby it may be padlocked at either limit of its movement, but which without the lock will not be liable to casual displacement.

Other objects and advantages will be apparent from the following description, and from the drawings, in which,

Figure 1 is a top view of the invention, Fig. 2 is a cross section of a railway equipped with my invention, Fig. 3 is a side view thereof, Fig. 4 is a horizontal section on the line 3—3 of Fig. 3.

There is illustrated a switch structure comprising the main line rail 10, the siding rail 11, and the pivoted switch rails 12 of ordinary form, their pivotal connections being of any suitable construction. The rails 10 and 11 may be supported on any suitable form of ties 13 spaced longitudinally of the track. Engaged slidably across the track beneath the rails 10 and 11 there is a guide bar 14 to which the switch rails are pivotally connected adjacent their free ends at points spaced to allow alternative engagement of the switch rails with respective outer rails. The bar is of such length that when the switch is open or closed the bar will be engaged slidably beneath the rails

10 and 11. The inner flange of each switch rail is suitably apertured to receive there-through a pivot bolt 16 extended downwardly through a guard plate 17, the latter projecting over the flange 15, which is held loosely thereunder, the bolt continuing through the guide bar 14 to which it is suitably secured. The guard plates 17 are carried on the guide bar, being secured rigidly thereto inwardly of the switch rails, their outer portions being offset upwardly. Secured to the web 18 of the rail 10 there is a base plate 19, centrally of which there are located two vertically spaced parallel alined staple devices 20, holding revolvably therewithin a shaft 21, upon which, between the staples, there is secured a disk 22, bearing against the plate 19 and thereby serving to hold the shaft 21 against the bight portions of the staples outwardly of the flange 23 of the rail. The staples have the ends of their arms tenoned and extended through the plate and the web of the rail, threaded and secured by nuts, whereby the attachment of the staples serves also to retain the plate 19 in place. The plate 19 projects equal distances on each side of the staples 20, and intermediately of the end portions there are located lock staples 24. Immediately adjacent each end of the plate there are staples 25 horizontally alined with those 24 and having their outer end portions turned upwardly to form retaining bills 26. Engaged with the disk 22 there is a radially extending switch lever 27 comprising a loop of heavy iron rod, the ends of which are engaged suitably in the disk, the sides of the loop being bowed outwardly, as at 28, to receive the lock staples 24 slidably there-through at the opposite limits of its movement. The staples 24 project some distance outwardly of those 25 from the plate 19, so that they engage through the bowed portion 28 of the lever before the outer end portion of the lever engages the last named staple. In this way, the end of the lever has to be sprung upwardly to pass over the bill 26, which is slightly inclined inwardly toward the rail, whereby a pressure of the lever thereagainst will serve to effect the necessary springing thereof to allow its passage. The shaft 21 carries thereon spaced closely beneath the adjacent end of the guide bar 14 a disk 29, and spaced again beneath this disk there is a larger one 30, at a proper point on the upper side of which there is

carried the crank wrist 31. The guide bar 14 has its adjacent end bifurcated, the furcations being parallel and passing on respective sides of the shaft 21 with sufficient
5 spacing to obviate binding under the pivotal movement of the switch rails attached to the bar.

The nearer one of the bolts 16 securing the switch rails to the guide bar 14 is extended below the bar and shaped to form a suitable wrist pin, over which is engaged one
10 eye 32 of a connecting link 33 having an eye 34 at its opposite end properly engaged with the wrist 31. This wrist 31 is disposed
15 on the disk on a radius of the shaft 21 at right angles to the line of the lever 27. Thus the opposite limits of the lever movement correspond to the opposite limits of the movement of the switch rails communicated
20 through the link 33 under movement of the lever.

It will be seen that the disk 30 has the advantage over an ordinary crank arm in that at times rocks, dirt or other obstructing material may fall, tumble, or otherwise be projected into the path of the arm, whereby operation of the switch might be prevented at a critical moment in the operation of a railroad. On the contrary, the disk at all
30 times occupies an area circumscribing the path of movement of the wrist, preventing the introduction of obstructing material in the path of the wrist and making it impossible for any object to be interposed in the
35 path of the supporting portion for the wrist. The edge portion of the disk 29 is also projected over the wrist when the latter is at the outer limit of its movement and prevents the wrist from being chocked from above. The lower disk is made broader in
40 order to more efficiently prevent the seepage of sand, gravel, or the like into the path of the wrist. The provision of these disks makes it impossible for the device to be installed without proper clearance for the movement of the crank element, and in the care of the track it is only necessary for the workmen to see that the disks are clear to be sure that the proper clearance is maintained. This construction in switch connections will in many cases obviate the necessity for building a housing around connections.

The lock staples 24 are preferably riveted or otherwise safely secured to the plate 19
55 before attachment to the rail, but the staples 25 may be extended through the plate and

rail web and utilized as a securing means for attaching the device to the rail, in the same way that the staples 20 are.

It will be apparent that as dirt or gravel
60 tends to move inward over the disks any particles resting on the disks will be thrown outward by centrifugal force under operation of the switch and a serious accumulation prevented.
65

What is claimed is:

1. A switch control mechanism adapted to be attached to a railroad rail comprising a base plate attachable to the web, of a rail, a vertical shaft journaled thereon outwardly
70 of the flange of the rail, an operating lever engaged with the shaft means on the plate on each side of the shaft to hold the lever at opposite limits of its movement, and a crank element carried at the lower part of
75 the shaft adapted for link connection with a switch.

2. In a switch mechanism, a track, a support means, a vertical shaft carried thereby, a switch lever for operating the shaft, the
80 lower end of the shaft being disposed below the level of the track, pivoted switch rails, a disk on the lower end of the shaft, a wrist spaced inwardly of the periphery of the disk and located on its upper side, and
85 link connections between the wrist and switch rails.

3. In a switch mechanism, a track, switch rails, a support means, a vertical shaft carried thereby, means for operating the shaft,
90 superposed disks secured on the lower portion of the shaft below the level of the track in parallel spaced relation, a wrist therebetween spaced inwardly of their peripheries, and link connections between the wrist and
95 the switch rails.

4. In a switch mechanism, a supporting plate, a shaft mounted revolubly across its central portion, a lever having a central eye
100 therethrough, a lock staple on each side of the shaft adapted to engage through the eye at respective limits of movement of the lever slidably, and a billed element outwardly of each staple in the path of the lever, inwardly
105 of the end of the staple toward the plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST SCHULTZ.

Witnesses:

CHARLES MEISSNER,
WALTER HOFFMAN.