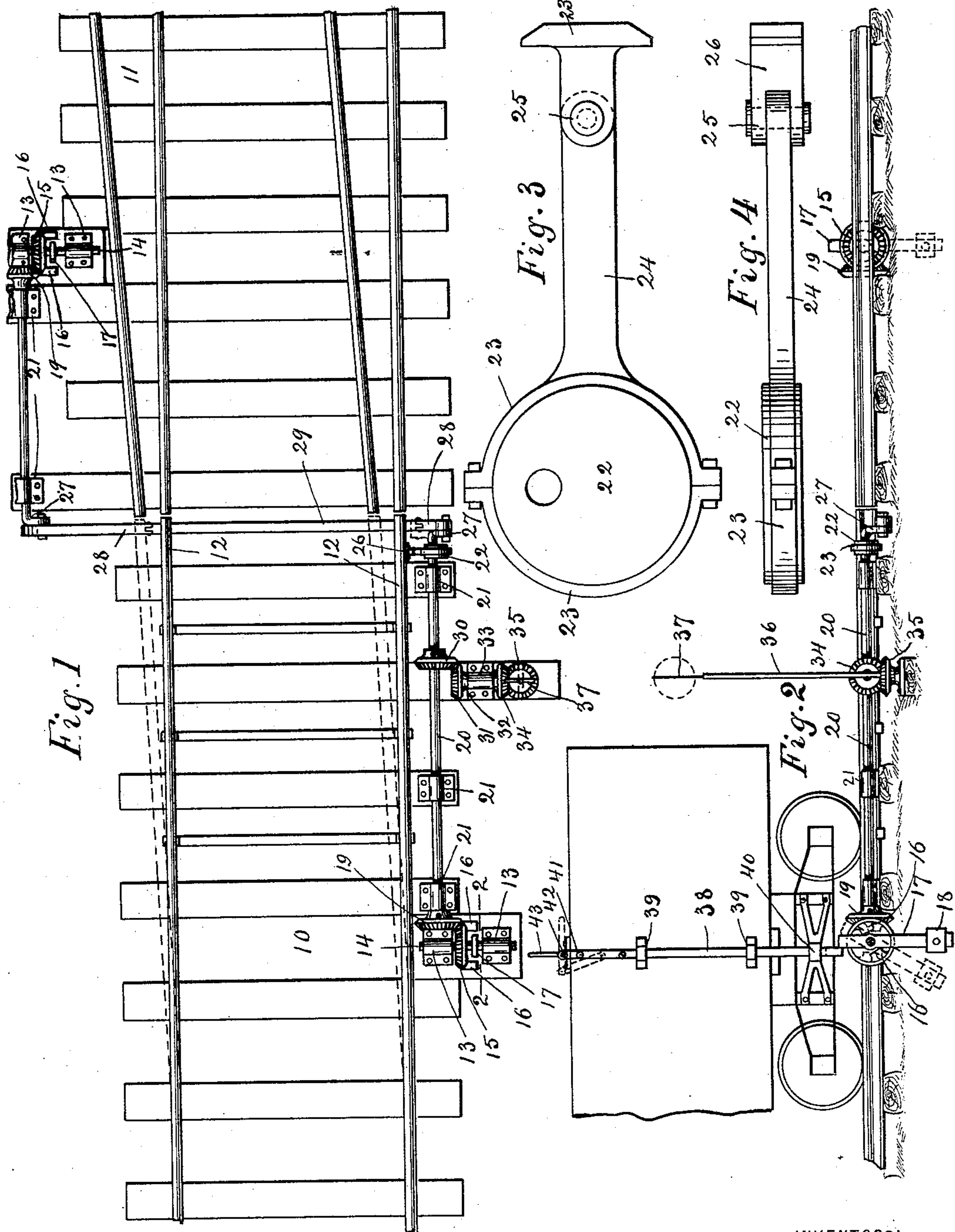


(No Model.)

J. GILSTRAP & M. L. BROWN.
SWITCH SHIFTER.

No. 483,053.

Patented Sept. 20, 1892.



WITNESSES:
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JOHN GILSTRAP AND MARTIN L. BROWN, OF MOSCOW, IDAHO.

SWITCH-SHIFTER.

SPECIFICATION forming part of Letters Patent No. 483,053, dated September 20, 1892.

Application filed September 12, 1891. Serial No. 405,504. (No model.)

To all whom it may concern:

Be it known that we, JOHN GILSTRAP and MARTIN L. BROWN, of Moscow, in the county of Latah and State of Idaho, have invented a new and Improved Switch-Shifter, of which the following is a full, clear, and exact description.

Our invention relates to improvements in switch-shifters; and the object of our invention is to produce a simple and positive apparatus by means of which a railway-switch may be operated from a moving train.

To this end our invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is a plan view of that portion of the apparatus which is connected with the track. Fig. 2 is a side elevation of the same, partly in section, on the line 2 2 of Fig. 1, showing also the apparatus which is carried by a car or locomotive. Fig. 3 is an enlarged side elevation of one of the eccentrics and its support, and Fig. 4 is a plan view of the eccentric and support.

The main track 10 is provided with the usual siding 11, and has the customary switch-rails 12, adapted to be moved so as to align with either the rails on the main track or siding. On the side of the main track adjacent to the switch are boxes 13, in which is mounted a transverse shaft 14, having a miter-gear 15 thereon, and the gear has lugs 16 on its back and on diametrically-opposite sides. Pivoted on the shaft 14 so as to swing between the lugs is a lever 17, the upper end of which projects above the gear 15, and the lower end of which carries a weight 18, which causes the lever to swing into a vertical position. The gear-wheel 15 on the shaft 14 meshes with a similar gear-wheel 19 on the end of a line-shaft 20, which shaft is placed parallel with the track and turns in suitable boxes 21, secured to the outer ends of the sleepers.

At one end the shaft 20 is secured to an eccentric 22, which turns in an eccentric-strap 23, the latter being supported on the end of an arm 24, hinged, as shown at 25, to a stud

26, which is secured to one side of a rail 12, and as the rail 12 is movable the eccentric 22 is of a size to actuate the rail. The shaft carries a crank 27, which connects by means of a pitman 28 with the sliding switch-bar 29, passing beneath the rails 12, and the opposite end of the switch-bar connects by a similar pitman with a crank 27 on the end of a line-shaft 20, like that already described, and this shaft is operated by a similar mechanism to that described, except that no eccentric is used, as the shifting mechanism is arranged on the opposite side of the switch.

The shifting mechanism is arranged on opposite sides of the track and also on opposite sides of the switch, so that a passing train may operate the switch in one direction and after it has passed the switch it will turn the switch back to its original position. The shaft 20, which is placed parallel with the main line, is provided with a miter-gear 30, which meshes with a similar gear-wheel 31 on a transverse shaft 32, which is mounted in a box 33, adjacent to the track, and the shaft carries at its outer end a gear-wheel 34, which meshes with a gear-wheel 35, the latter gear-wheel being secured to a vertical rod 36, which is stepped in a suitable box and carries at its upper end a signal-disk 37, the position of which will indicate the position of the switch.

The swinging levers 17 are intended to operate the gear mechanism, and consequently the switch, and these levers are arranged in the path of the sliding bars 38, which are held to move in keepers 39 on the sides of the car or locomotive, as best shown in Fig. 2. The lower end of each slide-bar is also held in a guide 40 on one of the car-trucks, and the upper end of the bar is pivoted to a crank 41 on the shaft 42, which is mounted on the car-top and operated by a lever 43. This lever is adapted to be turned down flatwise upon the car-top, and when in this position the slide-bars 38 will be raised; but when the lever is raised the slide-bars will be depressed so as to engage the levers 17 of the switch-shifting mechanism. The lever 43 may be provided with a common form of ratchet mechanism to hold it firmly in an elevated position.

The shaft 42 has a crank at each end, and each car or locomotive is provided with sliding bars 38 on opposite sides, so that the cars

will be sure to operate the switch mechanism when going in either direction. The mechanism is arranged so as to normally hold the main line open, and if a siding is to be taken
 5 a lever 43 on the locomotive or on one of the cars is depressed, so that one of the sliding bars 38 will engage a lever 17. This lever will be swung when struck by the slide-bar and engaging the lugs 16 on the gear-wheel
 10 15 will turn the latter, and consequently operate the rod 20, which by means of the crank connection with the switch-bar will operate the switch and throw the rails 12 into alignment with the siding-rails, and after the train
 15 has taken the siding a slide-bar on the opposite side of the car or locomotive will engage the lever 17, adjacent to the siding, and will consequently operate the connected mechanism so as to throw the switch back to its original position.
 20

It will be readily understood that this shifter will work equally well on a double switch by having two more shifting-gears arranged opposite those shown in the drawings, and an
 25 extension-lever may be slipped on over the lever 17, so that the switch may be shifted by hand.

Having thus described our invention, we claim as new and desire to secure by Letters
 30 Patent—

1. The combination, with the switch-operating shaft, of a transverse shaft geared thereto, a weighted lever pivoted between its ends on the transverse shaft with its upper end in

the path of the train projection, and lugs on 35 the transverse-shaft gear at opposite sides of the said lever to be struck thereby, substantially as set forth.

2. The combination of the two line-shafts at opposite sides of the switch and track, a 40 transversely-sliding switch-bar connected at its ends with the ends of said shafts by pitman and crank connections, an eccentric secured to one line-shaft, a strap embracing the said eccentric and provided with an arm 24, 45 connected by a pivoted section 26 with the switch-rail, transverse shafts geared to the line-shafts, a weighted lever pivoted between its ends on each transverse shaft, and projections on the transverse-shaft gears, between 50 which said levers work, substantially as set forth.

3. A switch-shifter comprising crank-shafts arranged parallel with the track and connected with the switch-bar, transverse shafts 55 arranged adjacent to the crank-shafts and geared thereto, gear-wheels carried by the transverse shafts and having oppositely-arranged lugs thereon, weighted levers pivoted on the transverse shafts so as to swing between 60 the lugs, and sliding bars mounted upon the cars or locomotive of a train so as to strike the swinging levers, substantially as described.

JOHN GILSTRAP.

MARTIN L. BROWN.

Witnesses:

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