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H. B. KLEINHANS & J. N. DALZELL.

RAILWAY SWITCH.

NO MODEL. APPLICATION FILED JAN. 15, 1904.

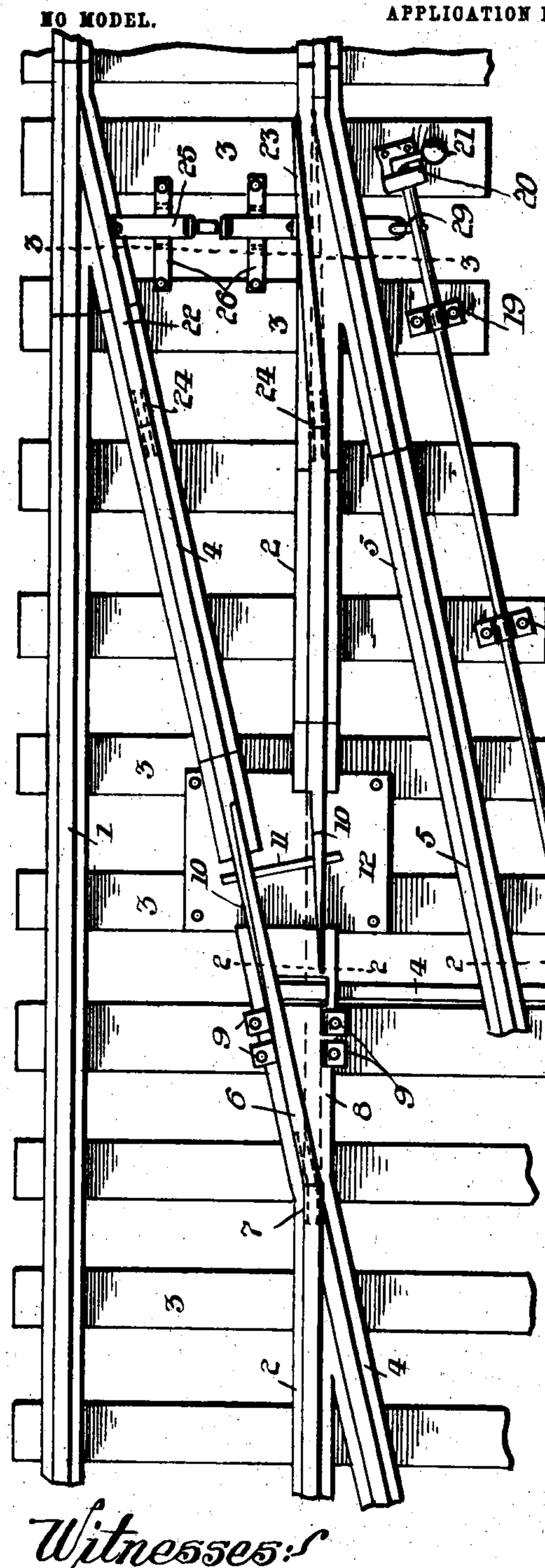

Fig. 1.

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

HARRY B. KLEINHANS AND JOSEPH N. DALZELL, OF PITTSBURG, PENNSYLVANIA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 758,974, dated May 3, 1904.

Application filed January 15, 1904. Serial No. 189,099. (No model.)

To all whom it may concern:

Be it known that we, HARRY B. KLEINHANS and JOSEPH N. DALZELL, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switches for railways and the like; and the object of the invention is to provide a switch which may be readily operated by hand or any other desired means, and a particular feature of this invention is to entirely dispense with frogs and guard-rails commonly used in railroad construction.

Another object of our invention is to provide a switch which will dispense with the frogs, these frogs having been very injurious to the rolling-stock of the road and often causing wrecks and a large expenditure for guard-rails to protect the same, and by employing our improved switch in the place of these frogs we provide means whereby either the main track or siding track will have a clear and uninterrupted passage, according to the way the switch is placed.

A further object of our invention is to provide a switch of the above type which will be simple to operate, strong in construction, and applicable to any form of rail now in use.

The invention consists in the novel construction, combination, and arrangement of parts, to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this application, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a plan view of our improved switch. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1.

To put our invention into practice, we provide the two main rails 1 and 2, which are secured upon the ties 3, the main rails constituting the main track of the road, and intersecting these tracks we provide a siding, which consists of the rails 4 and 5. At the junction of the main rail 2 and the siding-rail 4 we provide a rail member 6, which corresponds in construction to a switch-tongue, this rail member 6 being flexibly connected to the rails 2 and 4 by the splice-bars 7, and to provide for the travel of the rail member 6 we employ a plate 8, upon which this member is adapted to move, and adjacent to said plate the braces 9 to limit the movement of this member.

The siding-rail 4 and the main rail 2 have their ends sheared away, as indicated at 10, to form a seat for the rail member 6, and upon the outer end of this rail member we provide a guide-bar 11, which is adapted to be secured to the base of this rail member and operate under each end of the rails 4 and 2 to prevent the rail member 6 from rising or becoming thrown out of position. To further facilitate the movement of this rail member 6 and to support this member and the ends of the rails 4 and 2, we provide a plate 12, which is secured to the ties 3. Connected by any suitable means to the rail member 6 we provide a bridle-bar 14, which operates between the ties 3, the one end of said bar extending upwardly through the plate 8, as indicated at 15, and secured to the rail member 6, while the other end thereof extends outwardly to the side of the track and has connected thereto a link 16, the end of this link passing through an aperture 17, formed in the end of the bridle-bar, the other end of the link passing through and secured to an operating-rod 18, which extends parallel with the rails and is mounted in the bearings 19 and the end brackets 20, which are carried by the ties 3. On the end of this operating-rod 18 we provide a weighted crank 21 for operating the same, although any suitable operating mechanism may be employed to operate the switch.

The rails 4 and 2 are provided with the or-

dinary switch-tongues 22 and 23, which are connected to the rails 4 and 2 by the splice-bars 24, and these switch-tongues are operated by an adjustable bridle-bar 25, which operates between the ties 3 and upon the guides 26, which are secured on the ties, this bridle-bar being adjustable by the ordinary spring mechanism or turnbuckle, and the one end of this bar extends upwardly and is secured to the switch-tongue 22, as indicated at 27, and the switch-tongue 23 is connected to this bar by means of the angle-iron 28, as illustrated in Fig. 3 of the drawings. This bridle-bar has a similar link 29 as to that described before, which is connected to the end of the bridle-bar, as indicated at 30, the other end being secured in the operating-rod 18, as indicated at 31.

It will be readily seen from the accompanying drawings that when the operating-rod 18 is rotated in either one or the other direction the links 16 and 29, which act as a crank, will actuate the rail member 6 and the switch-tongues 22 and 23 in either one or the other direction, and, as illustrated in the drawings, the switch is shown in a position for the rolling-stock to pass from the main tracks 1 and 2 to the siding-tracks 4 and 5, and upon the weighted lever 21 being thrown in the opposite direction from that shown the rail member 6 and the switch-tongues 23 and 22 will be thrown in a position whereby the train may continue on the main tracks 1 and 2. It will thus be seen by this construction that all guard-rails have been entirely dispensed with and that no obstructions occur whereby the train in any manner could become derailed or injured, as heretofore experienced where guard-rails and frogs have been used, and it will be noted that our improved switch provides a continuous track and dispenses with all jarring of the rolling-stock, which has been detrimental to its welfare. It will also be obvious that slight changes may be made in the details of construction without departing from the general spirit of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a switch of the character described, the combination with main rails and siding-rails, switch-tongues flexibly connected to one of the main rails and to one of the siding-rails, a rail member flexibly connected to one of the main rails and to one of the siding-rails, one of the main rails and one of the siding-rails being cut away on one side to match with the rail member when the latter is brought into engagement therewith, a guide-bar secured to the rail member and lying under the said cut-away main rail and cut-away siding-rail, a bridle-bar connected to the rail member, an adjustable bridle-bar connected to both switch-tongues, and means connected to said bridle-bars for actuating the switch-tongues and rail member simultaneously, substantially as described.

2. In a switch of the type set forth, the combination of two main rails and two siding-rails, one of said siding-rails and one of the main rails having switch-tongues flexibly connected thereto, an adjustable bridle-bar connected to said switch-tongues, a rail member flexibly connected to one of said main rails and to one of the siding-rails, one of said main rails and one of the siding-rails being sheared away to receive said rail member, a guide-bar connected to said rail member and adapted to operate beneath the sheared ends of the main rail and siding-rail, brackets secured adjacent to said rail member, a bridle-bar connected to said rail member, an operating-rod mounted adjacent to said rails and connected to said bridle-bar and the adjustable bridle-bar, and means for rotating the said operating-rod to throw the switch-tongues and the rail member, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

HARRY B. KLEINHANS.
JOSEPH N. DALZELL.

Witnesses:
H. C. EVERT,
JOHN GROETZINGER.