

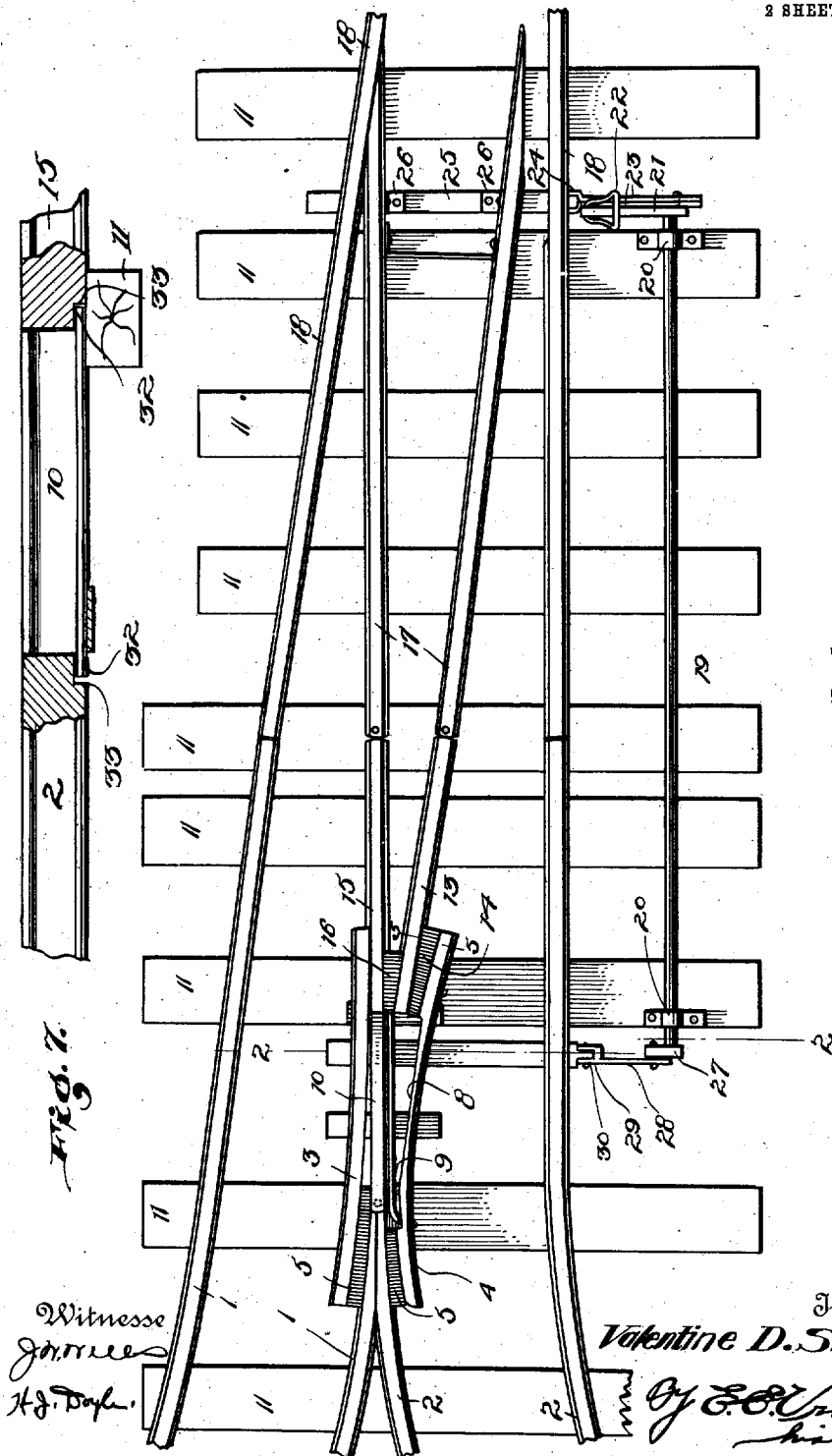
V. D. SHUSTER.
SWITCH.

APPLICATION FILED OCT. 4, 1910.

989,197.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.



Witness
J. D. Jones
H. J. Doyle.

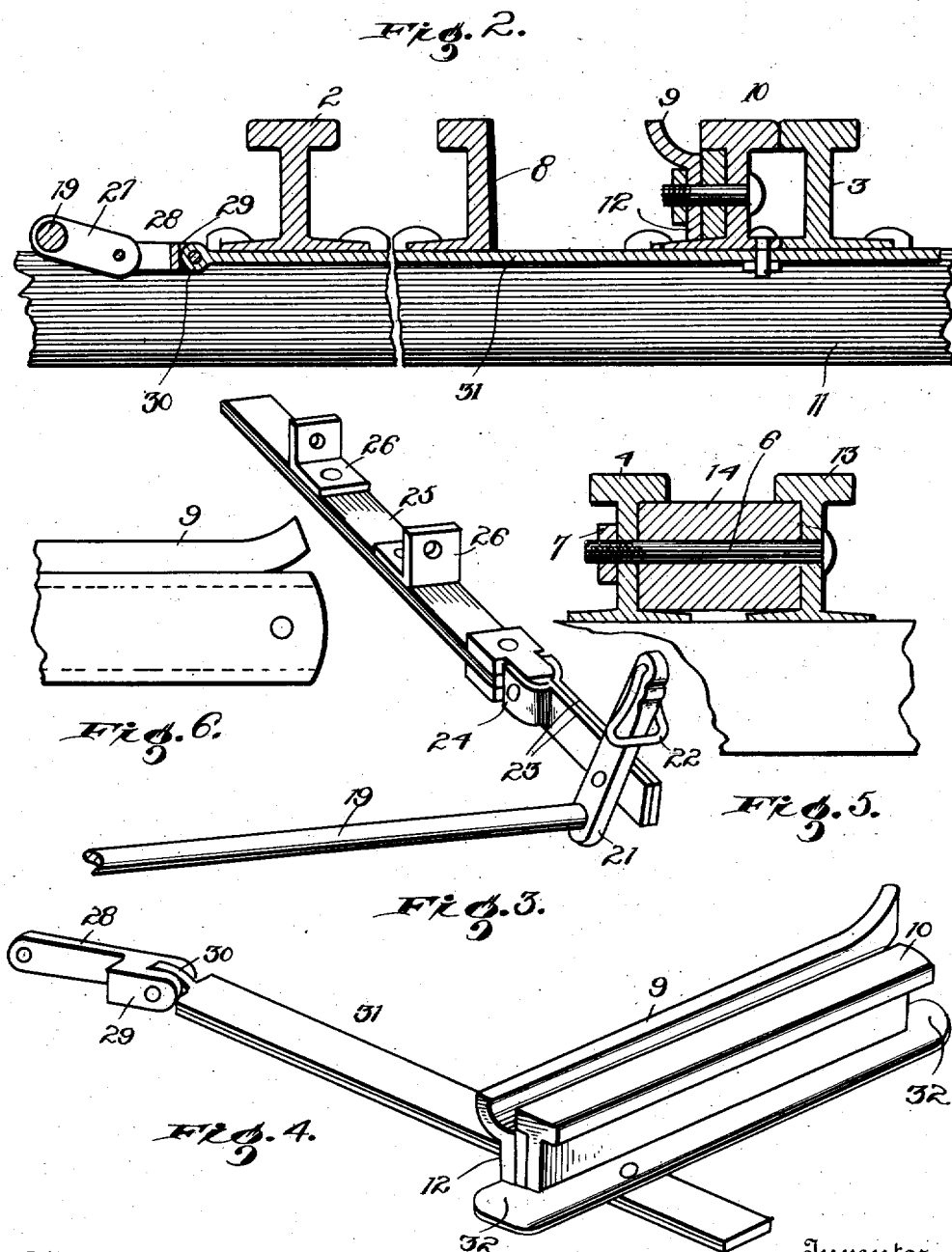
Inventor
Valentine D. Shuster
By E. C. Vroman,
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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

VALENTINE D. SHUSTER, OF SALEM, OHIO.

SWITCH.

989,197.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed October 4, 1910. Serial No. 585,257.

To all whom it may concern:

Be it known that I, VALENTINE D. SHUSTER, a citizen of the United States of America, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Switches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to switch mechanism for railways and the principal object of the same is to provide a novel switch and frog which are simultaneously operated, so that the passage of a train over the same will be smooth and noiseless, thus preventing the switch and frog and wheels being damaged by abrupt contact.

In carrying out the objects of the invention generally stated above, it will be understood, of course, that the essential features thereof are necessarily susceptible of changes in details and structural arrangements, one preferred and practical embodiment of which is shown in the accompanying drawings, wherein—

Figure 1 is a plan view of a system of tracks equipped with this invention. Fig. 2 is a transverse sectional view taken on the line 2—2, Fig. 1. Fig. 3 is a detail perspective view of the means for shifting the switch rails. Fig. 4 is a detail view of the shifting rail of the frog and the means for operating the same. Fig. 5 is a fragmentary transverse sectional view taken on the line 5—5, Fig. 1. Fig. 6 is a fragmentary bottom plan view of the shifting rail of the frog. Fig. 7 is a view in side elevation, partly in section, of the shifting rail and the outer end of rail 2 and frog rail 15.

Referring to the accompanying drawings by numerals, it will be seen that the improved crossing switch device has been shown in connection with the tracks 1 and 2, forming a main line and a branch line, the crossing frog at the junction thereof comprising the spaced guard rails 3 and 4, which are retained in spaced relation to the meeting ends of the inner rails of said tracks by the blocks 5, which are preferably of metal and held in contact with the webs of said rails and beneath the treads thereof by the transverse bolts 6 and the lock nuts 7. The guard rail 4 is provided with a longitudinal recess 8 in its inner side which forms a seat for the guard flange 9 that is carried by the outer side of the shifting rail 10 that has

one end pivotally connected to a tie 11 at the outer ends of the meeting points of the inner rails of the tracks 1 and 2. Said guard flange 9 is in spaced parallel relation to the tread of rail 10 and has its body 12 suitably fastened to the outer surface of the web thereof. The guard rail 4 is retained in spaced relation to the frog rail 13 by the block 14 which is similar to the block 5 and fastened in position in the same manner. The other frog rail 15 is spaced from said frog rail 13 by a similar block 16.

The switch rails 17 have one of their ends pivotally connected to one of the ties 11 in close proximity to the forward or outer ends of the frog rails 13 and 15. The free ends of said rails 17 are tapered for engagement with the rails 18.

An operating shaft 19 is journaled in bearings 20 carried by two of the ties 11, one end of said shaft being equipped with a hand lever 21 that is provided with a hand grip 22. Link plates 23 are pivotally connected to the hand lever 21 and are provided with forked end 24 in which one end of a supporting plate 25 is pivotally connected. Said plate 25 is provided with angular seats 26 in which the switch rails are rigidly fastened. The opposite end of shaft 19 is equipped with a crank 27, to which a link 28 is pivoted, said crank having a forked end 29 in which the end tongue 30 of a supporting plate 31 is pivotally fastened, said plate 31 carrying the shifting rail 10.

It will be understood from the foregoing that by rotating shaft 19 the shifting rail 10 of the frog and the switch rail are simultaneously operated.

Shifting rail 10 is provided with end flanges 32 which project beyond the notched lower surfaces 33 of the ends of rails 13, 15 and 1, 2. This arrangement prevents the rail 10 from rising relative to the notched portions 33 of said rails.

What I claim as my invention is:—

1. A device of the character described comprising a pair of guard rails, one of said rails provided with a side recess, a shifting rail pivotally mounted between said rails, a guard flange carried thereby and held in spaced parallel relation and adapted to be seated in said recess when the shifting rail is moved in one direction, switch rails, and means for simultaneously operating the switch and shifting rails.

2. A device of the character described comprising a pair of guard rails, one of said rails provided with a seat, a shifting rail pivotally mounted between said guard rails, a flange carried by the shifting rail and adapted to enter said seat, and means for operating said shifting rail.

3. A device of the character described comprising a frog composed of a pair of guard rails one of said rails provided with a longitudinal seat, a shifting rail pivotally mounted therebetween and provided with guard means that enter said seat, and means for operating said shifting rail.

4. In a device of the character described the combination with a pair of rails of a track system and a pair of frog rails, of guard rails overlapping in spaced relation

the ends of the track rails and one of the guard rails overlapping in spaced relation one of the frog rails, the other guard rail overlapping and contacting with the other frog rail, spacer blocks interposed between the track rails and the guard rails, a spacer block interposed between the spaced guard rail and the frog rail, a spacer block interposed between the frog rails, a shifting rail pivotally mounted between the guard rails, and means for operating the shifting rail.

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

VALENTINE D. SHUSTER.

Witnesses:

G. M. THOMAS,
E. E. HANNA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
