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Patented Jan. 28, 1902.

G. S. & W. D. SUMLIN.

RAILWAY GATE.

(Application filed Mar. 26, 1901.)

(No Model.)

2 Sheets—Sheet 1.

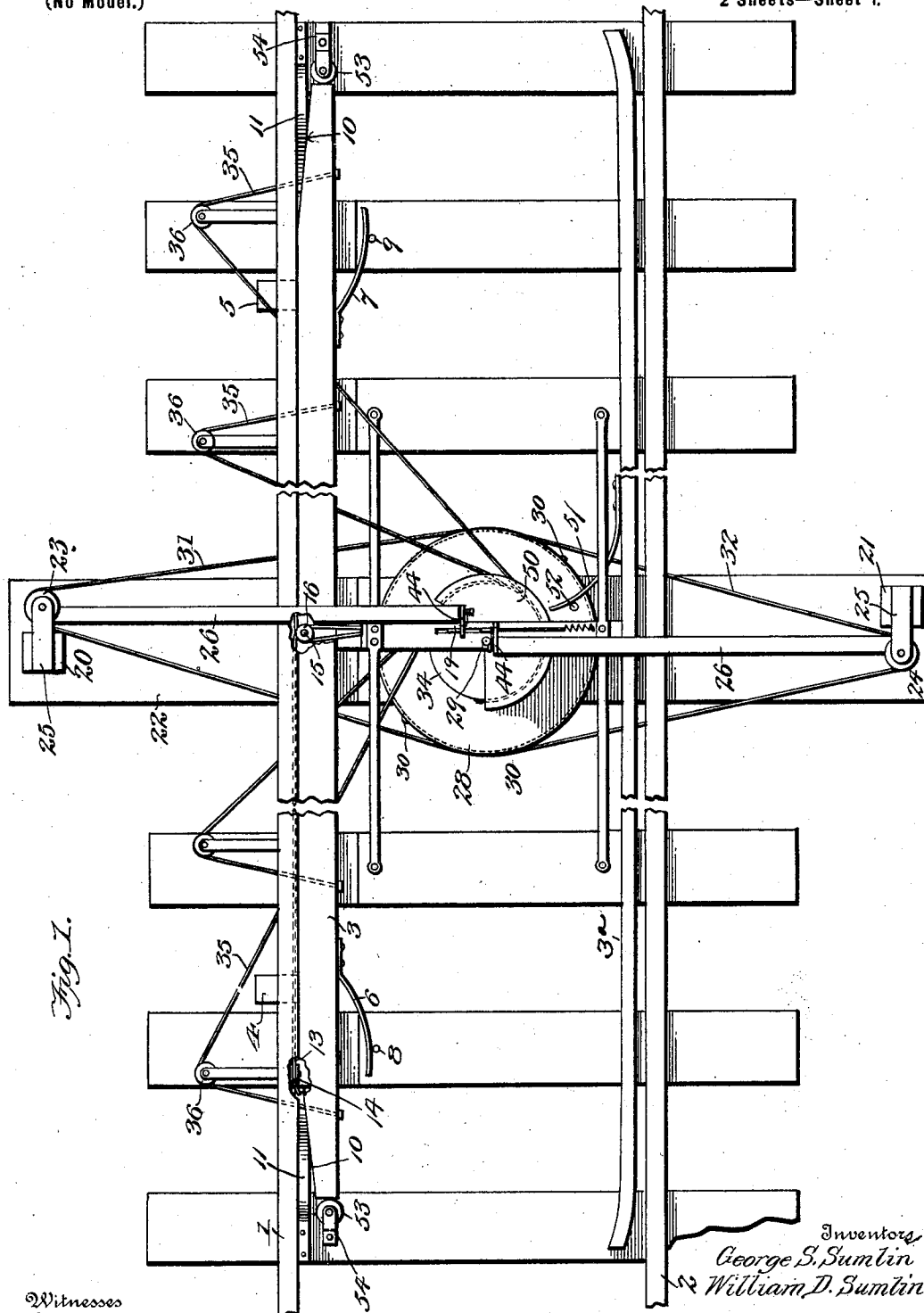


Fig. 1.

Witnesses
Edwin McKee
H. Schmidt.

Inventors
George S. Sumlin
William D. Sumlin
Victor J. Evans
Attorney

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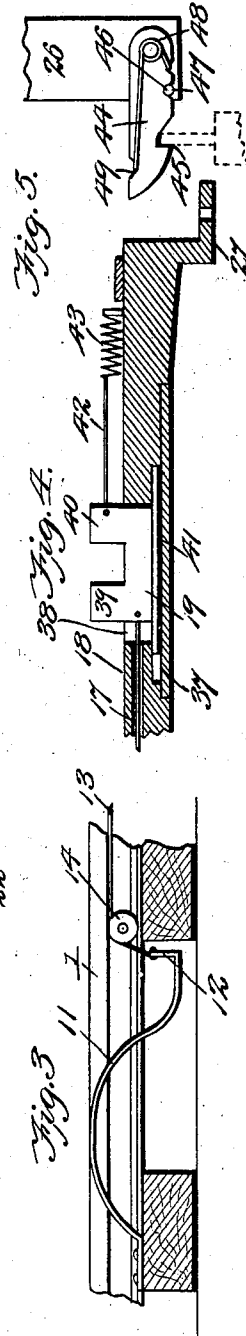
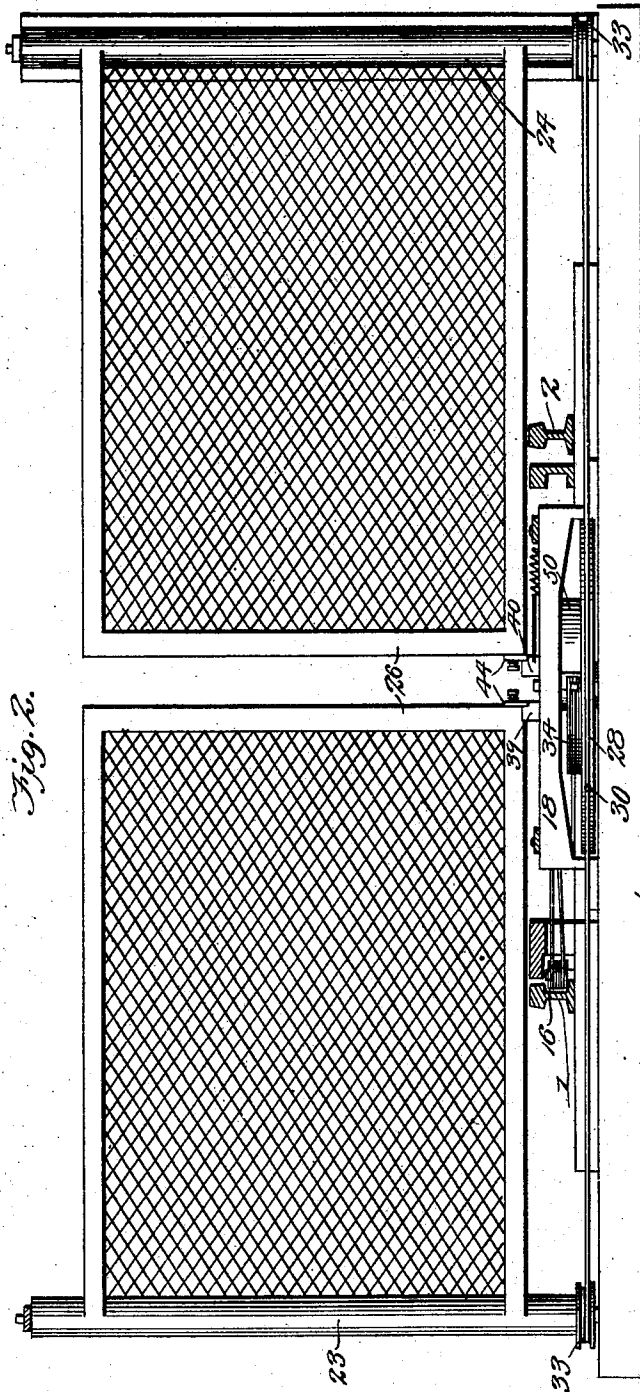
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Witnesses
Edmund G. McKee
H. Schmidt.

Inventors
George S. Sumlin
William D. Sumlin
By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

GEORGE S. SUMLIN AND WILLIAM D. SUMLIN, OF WILMINGTON, NORTH CAROLINA.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 691,823, dated January 28, 1902.

Application filed March 26, 1901. Serial No. 52,970. (No model.)

To all whom it may concern:

Be it known that we, GEORGE S. SUMLIN and WILLIAM D. SUMLIN, citizens of the United States, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented new and useful Improvements in Railway-Gates, of which the following is a specification.

Our invention relates to railway-gates adapted to serve as cattle-guards; and the object of the invention is to provide a pair of swinging gates adapted when closed to extend across a railway-track in combination with improved mechanism adapted to be operated by the flange of a car-wheel to unlock the gates and swing them open and means for automatically closing the gates after the passage of a train.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, forming part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a plan view of a section of railway-track with our improved gates in position thereon. Fig. 2 is a transverse section of the track, showing the gates and their operating devices in elevation. Fig. 3 is a side elevation of one of the track devices for operating the gate-latches. Fig. 4 is a longitudinal vertical section of the yoke which supports the sliding bolt, the latter being shown in elevation; and Fig. 5 is a detail side elevation of one of the gate-latches.

The reference-numerals 1 and 2 designate the rails of a railway-track, adjacent to the inner side of one of which is arranged a movable rail 3, provided with arms 4 and 5, which are secured to the under side of the rail 3 and extend outward below the rail 1 to guide the movement of the rail 3. 3^a designates a guard-rail adjacent to the opposite rail. To the inner side of the rail 3 are secured oppositely-projecting springs 6 and 7, the free ends of which are adapted to bear against pins 8 and 9, projecting upwardly from the adjacent ties of the track. The inner sides of the ends of the rail 3 are beveled, as shown at 10, to form spaces adapted to receive the flange of a car-wheel, and within each space thus formed between the rail 1 and the beveled ends of the

rail 3 is located a bow-spring 11, one end of which is secured to an adjacent tie of the track, while the opposite end is formed with an upwardly-projecting arm 12, to which is secured one end of a cable 13. This cable 13 extends over a pulley 14, mounted on the inner side of the rail 1, and thence along the inner side of the rail 1 to a point adjacent to the gates hereinafter referred to, where it passes around a second pulley 15, supported upon a suitable pin 16 and thence through an opening 17, formed in a yoke 18, where it is attached to bolt 19, the construction of which will be described.

20 and 21 designate standards rising from a base 22, extending transversely of the track and formed with bearings to receive pintles projecting from the lower ends of posts 23 and 24, the upper ends of said posts being pivotally supported by suitable brackets 25.

To each of the posts 23 and 24 is attached a gate 26, said gates being arranged out of horizontal alinement, as illustrated in Fig. 1, and being preferably adapted to swing in opposite directions.

The yoke or frame 18 is secured upon the base 22 between the rails, and said yoke is provided with depending feet 27 to support the yoke above the surface of the base.

28 designates a disk arranged below the yoke 18 and mounted upon an axial support 29, supported in bearings of the base and yoke. The disk 28 is formed with a continuous peripheral groove and at diametrically opposite points with projecting pins 30, to which are secured both ends of cords 31 and 32, said cords extending in opposite directions and passing around pulleys 33, arranged at the lower ends of the posts 23 and 24.

Concentric with the disk 28 and preferably integral therewith is a smaller disk or pulley 34, formed with a continuous peripheral groove, and to the periphery of this disk or pulley are attached one or more pull-cords 35, which extend through suitable grooves formed on the upper surface of the adjacent ties and then around pulleys 36 and thence to the movable rail 3, to which their ends are attached.

Referring now to Fig. 4, the yoke 18 is formed centrally with a horizontal slot 37,

* which communicates with a vertical elongated slot 38, and within these slots is movably supported the bolt 19, which is formed with two upwardly-projecting arms 39 and 40 and a base 41. As above stated, the bolt 19 is secured at one end to a cable 17, and its opposite end is connected by means of a flexible connection 42 with one end of a coil-spring 43, the opposite end of said spring being secured to any convenient portion of the yoke 18.

To the inner end of the bottom rail of each gate is secured a spring-controlled latch 44, Fig. 5, formed on its under edge with a notch 45 to engage one of the arms of the bolt 19 and a notch 46, adapted to engage a stop-pin 47, projecting from the end of the gate. Around the pivotal support of the latch 44 is secured a spring 48, the free end of which engages a notch 49 at the upper edge of the latch.

To prevent the disarrangement of the cables 35 upon the pulley 34, we preferably provide the latter with a guard-casing 50, having a depending flange which serves to prevent the cables from leaving the groove in the pulley. This casing, as illustrated in Fig. 1, need not extend entirely over the pulley 34, and it is formed with suitable openings for the passage of the cables, as illustrated by dotted lines in Fig. 1.

At each end of the movable rail 3 we arrange a horizontally-disposed antifriction-wheel 53, supported in a suitable bracket 54 upon the adjacent tie. These antifriction-wheels serve to support the movable rail against longitudinal movement and also permit the necessary lateral movement of the rail without undue friction.

The operation of the mechanism constructed as above described is as follows: Normally the gates are in the closed position, (illustrated in the drawings;) but the contact of the flange of a car-wheel with the spring 11 serves to disengage the latches 44 from the bolt 19 by moving said bolt laterally through the medium of the cable 17. The continued movement of the wheel in contact with the beveled end of the rail 3 throws said rail inward, thus imparting a partial revolution to the disks 28 and 34 through the medium of the cables 35. The rail 3 is retracted by means of the springs 6 and 7, and the disk 28 is returned to its normal position by a retracting-spring 51, secured at one end to any convenient portion of the track and having its free end bearing against a pin 52, projecting from the upper surface of the disk 28. The bolt 19 is also retracted to its normal position to re-engage the latches by means of the spring 43.

It will thus be seen that both the opening and closing of the gates is effected automatically.

We would have it understood that the invention is not restricted to all the details of construction herein shown and described, but that we reserve the right to make all such modifications and slight changes in the construction as may properly fall within the scope of the following claims.

We claim—

1. The combination with a railway-track; of gates extending across the rails thereof, and means for opening said gates comprising a movable rail arranged adjacent to the inner side of one of the track-rails and adapted to be moved by the contact therewith of the flange of a car-wheel; connections between said movable rail and the gates; latches or fastening devices carried by the gates; a bolt for engaging said latches; and means for moving said bolt consisting of a track device arranged between the movable rail and the adjacent rail of the track, and connections between said track device and bolt.

2. The combination with a railway-track, of swinging gates adapted to extend across the track; an oscillating disk, pivotally supported between the rails; cables connecting said disk with the gate-posts; a movable rail arranged adjacent to one of the track-rails; connections between said movable rail and said disk; latches carried by the gate; a movable bolt for securing said latches; a spring arranged between the movable rail and the adjacent track-rail; and a connection between said spring and bolt.

3. The combination with oscillating gate-posts; of gates secured thereto; pulleys on said posts; a disk pivotally supported between the rails; cords secured to said disk and passing around the pulleys on the gate-posts; a yoke spanning said disk and recessed to receive a movable bolt; a track device for operating said bolt; a connection between said track device and bolt; a movable rail arranged adjacent to the inner side of one of the track-rails; connections between said movable rail and the disk; and spring-latches carried by the gates and adapted to be engaged by said bolt.

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

GEORGE S. SUMLIN.
WILLIAM D. SUMLIN.

Witnesses:

GEO. E. FRECH,
B. F. FUNK.