No. 641,223. Patented Jan. 9, 1900.

J. Y. PORTER.

RAILROAD SWITCHING DEVICE.

(Application filed May 11, 1895.)

(No Model.)

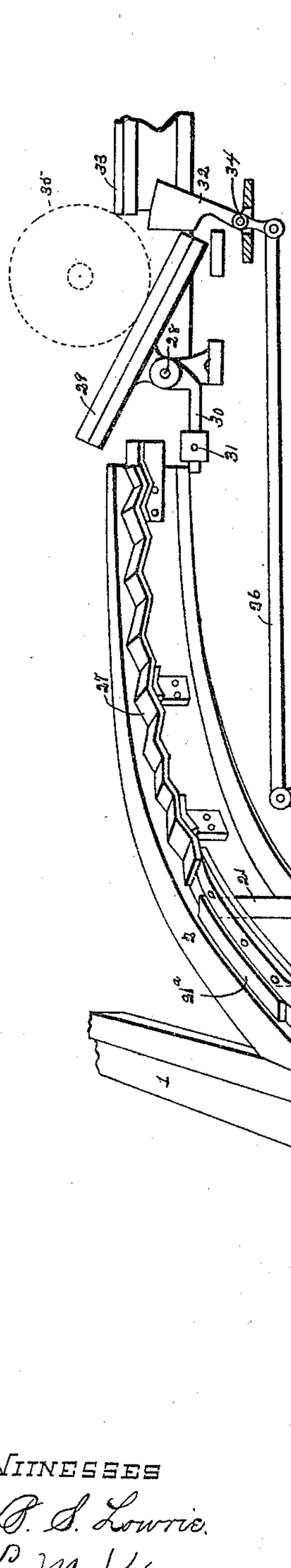

FIG. 1.

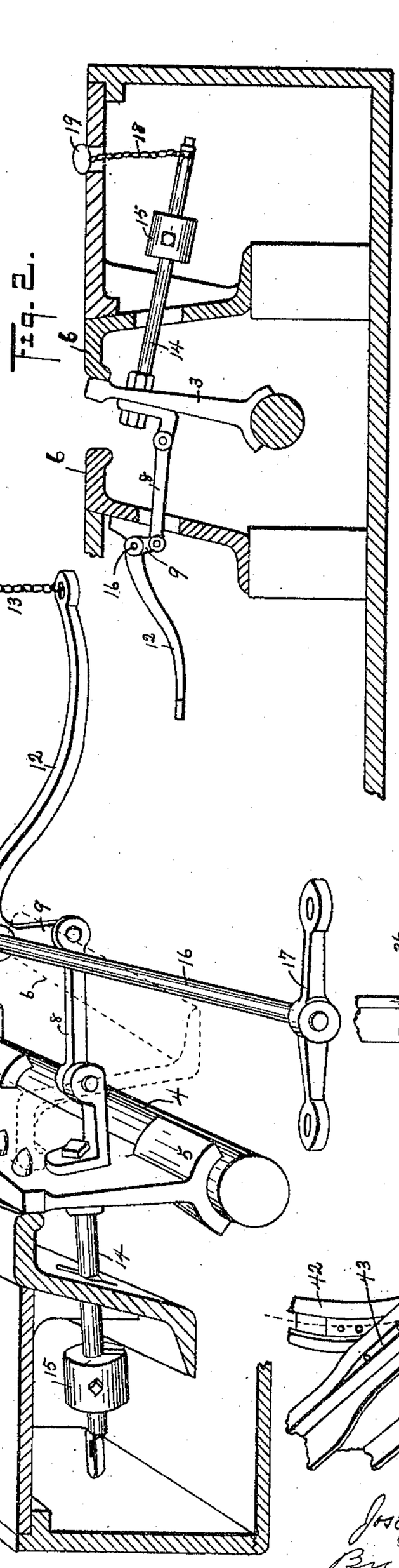

FIG. 2.

FIG. 6.

FIG. 5.

FIG. 3.

FIG. 4.

WITNESSES

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RAILROAD SWITCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 641,223, dated January 9, 1900.

Application filed May 11, 1895. Serial No. 548,946. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH Y. PORTER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railroad Switching Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in railroad switching devices; and it appertains more especially to the features hereinafter pointed out in the annexed claims.

My device is designed to normally maintain either a siding or a main track in unobstructed continuity, and it also affords a means for operating the switch by suitable levers directly at the switch, to either side of it, or opposite the switch. The point where the operating-switch is is preferably between the switch and the car, instead of beyond it.

Another feature of my invention consists in providing a depressible portion of track, whether located in a turnout or straight portion of the line, such depressible portion being capable of precipitating the car-wheels to a certain distance below the normal level of the tread of the track-rails, and in providing means for automatically unlatching such depressible portion of the track, so that the car would be automatically stopped. If this depressible portion of the track were placed in the main line to guard against points of danger, then the automatic tripping device would be so arranged, with one or more suitable operating mechanisms therefor, that the depressible portion of the track would not be tripped if no danger existed, as would be determined by the observation of the conductor or other employee. This feature could be made inoperative simultaneously with the setting of a derailing-switch for or against the main track, or such depressible portion of the main track could be used independent of any derailing-switch, and the tripping mechanism could be operated any distance from such points of protection in any direction from the safeguard, whether in advance, to the rear, or the sides of such points.

With these ends in view I illustrate in the accompanying drawings such features of my invention as relate to the carrying out of the adaptations in this instance selected; but I do not in any manner limit myself to the specific details of construction shown.

Figure 1 is a perspective view of the several features of the selected adaptations. Fig. 2 is a cross-section elevation of the derailing-switch-operating mechanism. Fig. 3 is a cross-section elevation showing the switch with a protecting-apron secured thereto. Fig. 4 is a perspective of the "mate" portion of the track directly opposite to the switch shown in Fig. 3. Fig. 5 is a perspective of the protecting-apron. Fig. 6 is an enlarged cross-sectional elevation of the protecting-apron and the switch-rocker.

In any suitable track-rail 1 I place at dangerous points a derailing-switch 3 or a depressible section of track 29, as desired. In the instance shown only the derailing-switch 3 is placed in the main-track rail 1. The switch 3 in this instance is of the rocker type; but any other style of switch might be used with equal advantage. The switch shown has bearing-supports 5, which rock upon an inclined shaft 4, such shaft being so placed as to cause the forward end or what is commonly known as the "point" of the switch to rock farther than the "heel" portion of such switch. To the side of the switch-rocker 3 are placed guard-rails 6, and beyond the switch, diverging from the main-track rail 1, is placed a turnout-rail 2. In this instance of adaptation I show the depressible portion of track 29 placed within the diverging or turnout rail 2, and I also place preceding such depressible track-section 29 a wavy or rack portion of rail 27, which is located below the head portion of the rail 2. This section of rail would tend to retard the motion of the car very materially.

The depressible track-section 29 is operated as follows: At some distance before the section 29 is reached a plate 21^a, fastened to two arms 21, projects alongside of the track-rail, so as to be engaged by the car-wheel. This operating-lever approximates the shape of the letter F, the central short cross-bar being designated by 23, while the lower stem exten-

sion is 24, the fulcrum for the lever being at 22. The stem extension 24 serves to support a suitable counterweight 25. The short arm 23 is connected by a rod 26 to a "catch-lever" 32, which is fulcrumed at 34. This catch-lever serves to hold the depressible track-section 29 in a raised position.

The depressible track-section 29 is fulcrumed at 28 and has a rearward projection 30, which carries a counterweight 31, which serves to retain the section 29 in a horizontal position even when the catch-lever 32 is removed. The car-wheel 35 would descend the incline of track-section 29 to what depth was deemed necessary at the rail end 33, and thus stop the car, and in backing up the car the wheels return the section 29 to a horizontal position.

In order that the plate 21ª would not be interfered with by ordinary road-vehicles, I would place the termination of such plate in a groove just inside of the head of the rail, such groove being just wide enough to allow the wheel-flange to pass through it, and thereby depress the plate 21ª, and in order that the counterweight 31, in coöperation with the counterweight 25, would not hold the parts in such relation that the catch-lever 32 would simply snub under the section 29 after the plate 21ª was released I would place the lever 21 such a distance from the section 29 that the rear wheels of the car or a wheel immediately following the front wheels would depress this lever 21 as the front wheel was about to ride upon the section 29 or was already upon the section to a slight distance.

The switch-rocker 3 is operated when normally standing in position to deflect the car to the right, as shown in Fig. 1, by a bell-crank lever 12, operated by chain 13 through a ring 20. This lever has its short arm 9 connected by link 8, which is secured to the rocker 3. The bell-crank lever 12 is pivoted from 10 to a suitable fulcrum or bearing support, which is suitably fastened to one of the guard-rails 6 or to any other portion of the switch-box. The rocker 3, as shown in Fig. 1, upon the opposite side has an arm 14 rigidly secured thereon, such arm having a counterweight 15 secured thereon. This counterweight uniformly serves to hold the rocker 3 in the position shown.

If it is desired to operate the switch-rocker 3 from a distance in any direction away from the switch, a shaft 16 or other means would be provided with any suitable lever 17, whereby such rocker 3 could be operated in either direction.

When it is desired to have the switch-rocker 3 normally stand in the reverse direction to that shown in Fig. 1, then the arm 14 is placed on the right-hand side of the rocker instead of the lever 12 and its connecting-links, while the lever 12 is placed in the position previously occupied by the lever 14. The shaft 16 would also be correspondingly modified. To operate the switch when its normal position is that shown in Fig. 2, a chain 18, fastened to lever 14 through a ring 19, would be operated, the counterweight 15 serving to hold the switch normally in the position shown.

In order that the track-switches that I use may not become clogged with dirt or be made inoperative by the placing of a wedge or similar obstruction between the switch-rocker and the guard-rail by malicious persons, I provide a suitable apron 36, which is supported by the rocker 3 in a pivotal manner This plate rests upon a contiguous guard-rail, that is of a slightly-modified form to that shown in Fig. 1.

It will be noticed that the plate 36 is beveled, and the contiguous edge of the cover is also beveled. These edges are so formed that it is impossible for dirt to be packed between them, and thus clog the switch and prevent its operation.

Plate 36, at the rear edge thereof, has curved hook projections 37 cast thereon. These hook projections are inserted into other openings which are provided upon the opposite edge of the rocker 3, and the plate is put into position as shown in dotted lines in Fig. 6. As the plate is placed in a horizontal position, the hook edge 37 prevents the plate from being displaced. The portion 38 of the rocker serves to support any load that may pass over the plate 36. This portion is cast to the head of the rail of the rocker 3, and it forms a flange 39, which protects the plate 36 from any side strains on account of heavily-loaded vehicles passing over the same. I also provide a mate-track portion 40, which is located directly opposite the switch. (Shown in Fig. 3.) This is so constructed that the flange of the car-wheel will ride over the head of the main-track rail 41 and pass upon the derailing-rail 42.

The track-rail 41 is bent sidewise, as shown at 40, and the small piece of steel 43 is placed into position, as shown, just inside of the head of the track-rail, so as to fill in the curve space 40. This portion 43 at the one end thereon is formed with an incline 44, upon which the flange of the car-wheel will ride as the wheel is carried over the head of the track-rail. If it were desirable, the main-track rail could also be slightly depressed at this point, so as to obviate the necessity of lifting the car to such an extent, as determined by the height of the head of the track-rail. I do not limit myself to the specific construction shown in reference to the protecting-apron or to the switch mate, nor to any other details of construction as shown, excepting as interpreted by the annexed claims.

What I claim is—

1. In a derailing-switch, the combination with a suitable switch, of a depressible portion of track, a catch for holding the same, and operating-levers connecting with said track, a termination of such connecting mechanism being placed in the path of travel of the car-wheel, whereby the catch will be re-

leased and the depressible portion of the track deprived of its support to derail a car, as set forth.

2. In a derailing-switch, the combination with a switch-point, adapted to be held normally in one position and to be moved in the opposite position, of a depressible portion of track, a catch for holding the same, and operating-levers connecting with said track, a termination of such connecting mechanism being placed in the path of travel of the car-wheel, whereby the catch will be released and the depressible portion of the track deprived of its support to derail a car, as set forth.

3. The combination with a section of track, of a depressible section pivoted in the line of said track, mechanism for maintaining said depressible section in normal position, and mechanism located in advance of said depressible section and connected thereto by suitable levers, whereby said depressible section is automatically operated to derail a car, as set forth.

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

JOSEPH Y. PORTER.

Witnesses:
BRADFORD WILSON,
BERTHA H. BITZER.