E. CASTANHO.

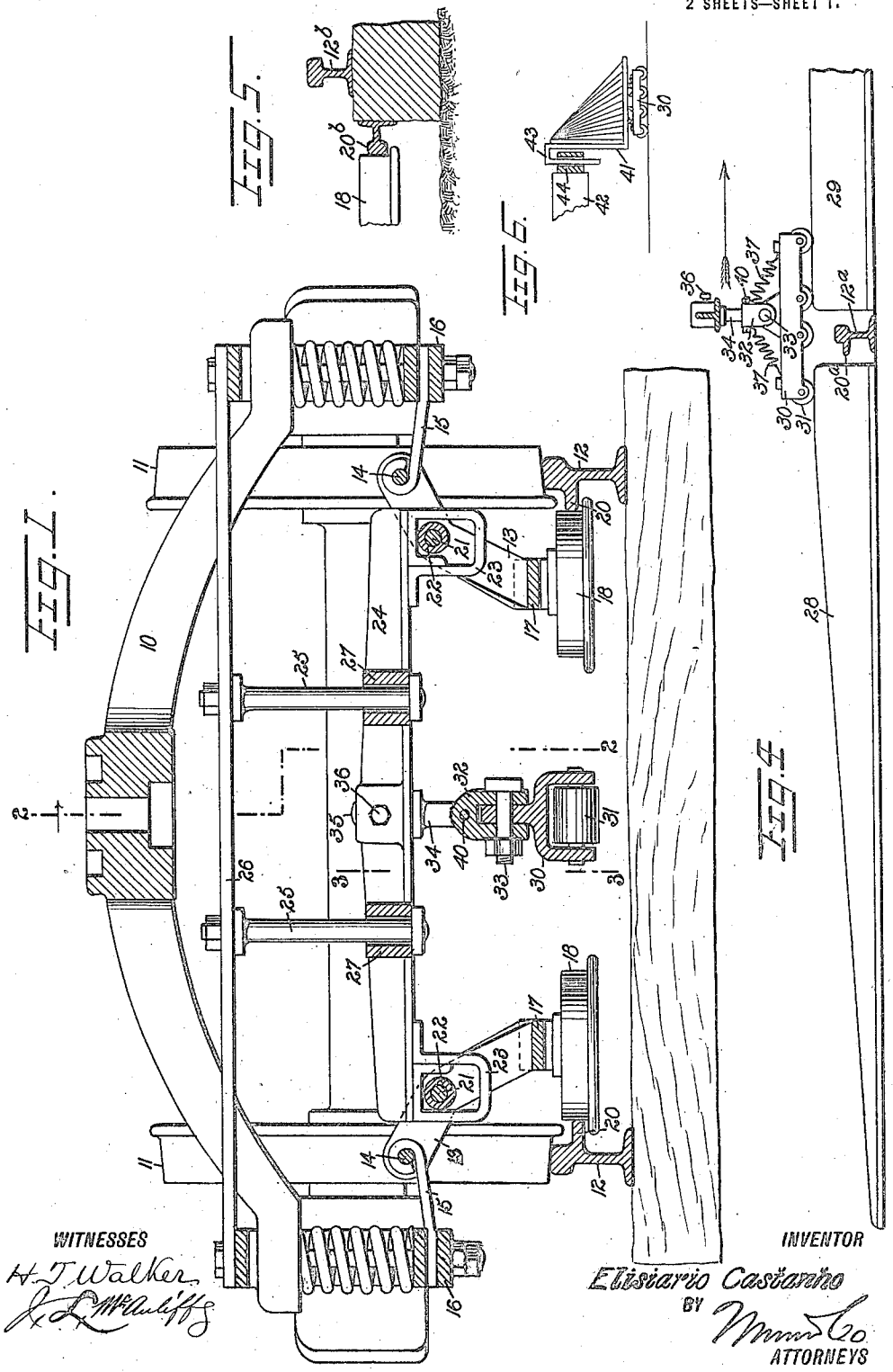
DEVICE FOR PREVENTING DERAILMENT.

APPLICATION FILED MAR. 27, 1917.

1,252,998.

Patented Jan. 8, 1918.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

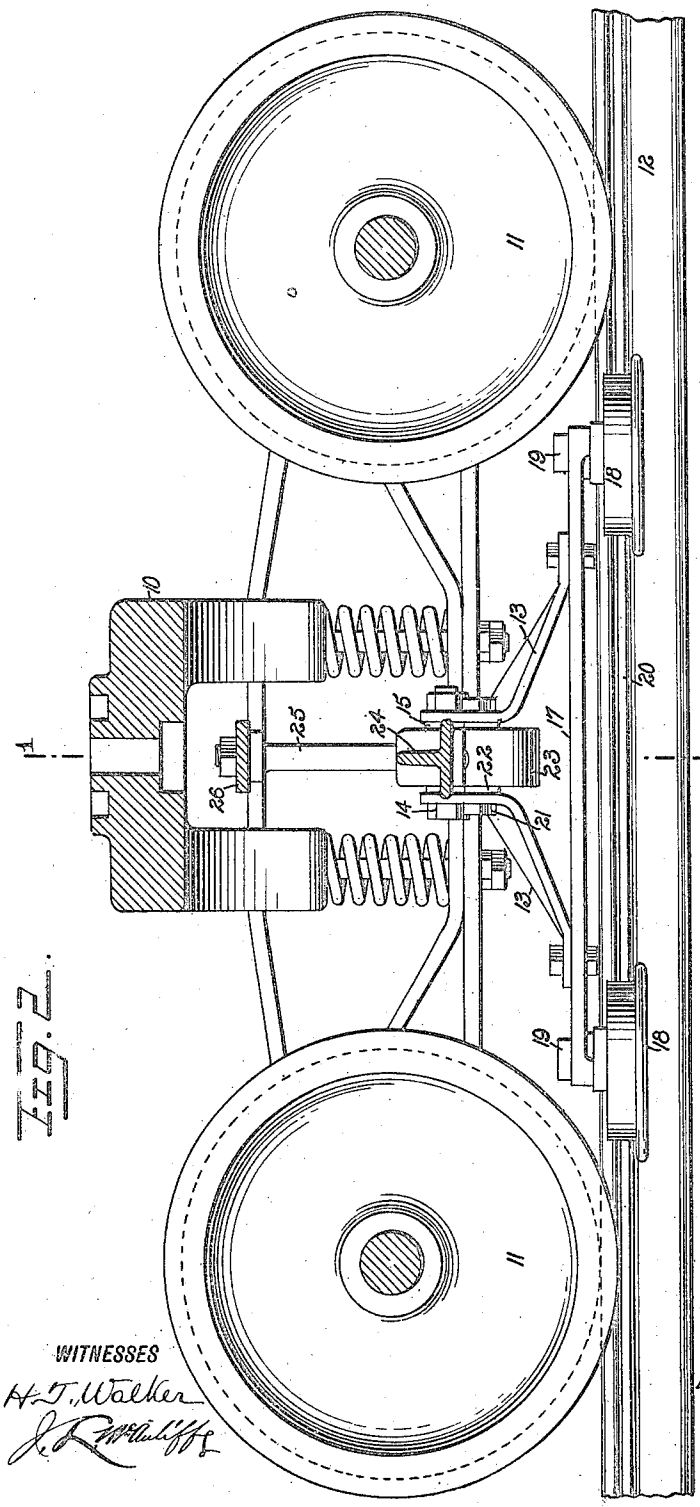


FIG. 2.

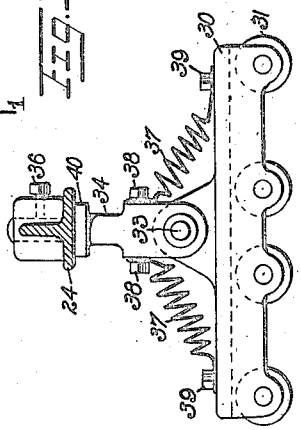


FIG. 7.

WITNESSES

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DEVICE FOR PREVENTING DERAILMENT.

1,252,998. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed March 27, 1917. Serial No. 157,780.

To all whom it may concern:

Be it known that I, ELISIARIO CASTANHO, a citizen of Brazil, and a resident of São Paulo, Brazil, have invented a new and Improved Device for Preventing Derailment, of which the following is a full, clear, and exact description.

My invention relates to means applicable to a railway truck to prevent derailment, and particularly relates to a device for the indicated purpose, in which guard wheels are adapted to be positioned to turn on vertical axes and engage a lateral nervure or rail on the track.

An object of the invention is to provide novel and practical means to lower or to raise the guard wheels to and from the operative position.

A more specific object of the invention is to provide controlling means for the guard wheels comprising co-acting truck and track devices for automatically raising and lowering the guard wheels at a crossing track.

The invention also has for an object to provide an attachment of the character referred to that may be applied with facility to standard railway trucks without material alteration of the truck.

The invention will be particularly explained in the specific description following.

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

Figure 1 is a transverse vertical section on the line 1—1, Fig. 2, showing my invention applied to a railway truck;

Fig. 2 is a longitudinal vertical section on the line 2—2, Fig. 1;

Fig. 3 is a detail side elevation of the shoe for raising the guard wheels at a crossing, a portion of the element carrying the shoe being shown in cross section;

Fig. 4 is a view similar to Fig. 3 but on a reduced scale, and showing the third rail elements which are positioned in the track to effect the raising and lowering of the shoe;

Fig. 5 is a detail showing a modified arrangement of the lateral rail to engage the tread of a guard wheel;

Fig. 6 shows one feature of my invention embodied in a locomotive pilot.

Referring more particularly to Figs. 1 to 5, the numeral 10 indicates a railway truck which may be of any approved construction having wheels 11 running on tracks 12. On the truck 10 guard wheels are provided to engage the rail 12 and carrying means therefor, of suitable construction, having an articulated connection with the truck. In the form shown, arms 13 are provided, pivotally secured at their upper ends by bolts 14 or the like to a bracket plate 15 which is bolted to a lower frame member 16 at each side of the truck, the arrangement at each side being alike. At the lower ends the arms 13 diverge as shown in Fig. 2 and have secured thereto a horizontal bar 17, the whole constituting a frame adapted to swing with the bolts 14 as pivots. To an end of each swinging frame a guard wheel 18 is mounted to turn on axles 19 which are vertically disposed when the wheels are in the lowered position so that the treads of the wheel will bear laterally against lateral nervures or rail elements 20, these being shown in Figs. 1 and 2 as formed integral with the rails 12, whereas in the form shown in Fig. 5 ordinary T-headed rails are provided for both the main rail 12^b and the lateral rail 20^b. In Fig. 4, the character 12^a indicates a rail of a crossing track, and 20^a the lateral rib or integral nervure thereof.

Between the arms 13 of the wheel-carrying frame, a transverse rod or bolt 21 extends, and turning thereon is a friction roller or sleeve 22. Loosely embracing the rods 21 and their rollers 22 are bridles 23 depending from the ends of a vertically movable, transverse bar 24. The bar 24 is permitted vertical guided movement on hanger bolts 25 which depend from a fixed transverse bar 26 which extends across the truck 10 and is rigidly secured thereto by any suitable means. The hanger bolts 25 extend loosely through vertical holes 27 produced in the bar 24.

In order to raise the bar 24 for swinging the wheel-carrying frames upwardly upon approaching a crossing track and permitting the same to lower after the crossing track has been passed, co-acting means are provided in the track and on the bar 24. The track devices consist of inclined third-rails 28, it being understood that one of these is provided in the main track lengthwise thereof at each side of the crossing track, while between the rails of the crossing track an elevated level rail 29 extends at a height

above the crossing rails 12ª. On the cross bar 24 is a shoe designated generally by the numeral 30 and here shown as provided with a series of wheels or rollers 31 at the under side to run on the rails 28, 29. The shoe is hung by a transverse pivot 33 in an inverted or U-shaped shackle 32, which is secured by screws 40 or otherwise to a spindle 34 that extends vertically at its upper end as at 35 (Fig. 1) through the bar 24 and is secured to the latter by a set screw 36 or other means. On each side of the shackle 32 springs 37 are provided connected respectively, with the said shackle and with the shoe 30 so that the latter may swing in a vertical plane on the pivot 33 and be returned to its normal position by the springs 37. From the foregoing, it will be clear that since the rails 28 present respectively ascending and descending gradients the shoe 30 will rise upon approaching a crossing track and ride over the crossing rails 12ª, traveling on the intermediate third rail member 29 to the opposite or descending gradient at the opposite side (not shown), permitting the shoe to descend after the crossing track has been passed. The raising of the shoe 30 will raise the bar 24, thereby causing the bridles 23 thereof to engage the rollers 22 and swing the guard wheels 18 upwardly to clear the crossing tracks, the guard wheels being lowered after the crossing tracks have been passed. In the lowered position the flanges of the guard wheels 18 will extend under the lateral rails (20, etc.,) without direct contact therewith, the flanges being in position, however, to engage the said lateral rails in the event the truck tends to tip, thereby preventing derailment. In the lowered position of the bar 24, the bridles 23 at the tops will lie close to the rollers 22 and prevent the wheel-carrying frame from swinging upwardly.

My improved shoe 30 and the inclined rails 28, 29 may be employed to raise a locomotive pilot at a crossing. Fig. 6 illustrates the shoe applied to a pilot 41 vertically movable on the locomotive, part of which is indicated at 42. The connecting means may consist of a hook 43 on the pilot movable in a slot 44 in any convenient part of the locomotive.

Having thus described my invention I claim as new, and desire to secure by Letters Patent:

1. In a device to prevent derailment, a vertically movable bar, swingable elements, bridles on the vertically movable bar to engage said swingable elements and swing the same by an upward movement of the bar, the bridles in the lowered position acting to prevent upward movement of said swingable elements, guard wheels carried by the swingable elements to engage laterally against lateral track rails, means to mount the device on a railway truck, and actuating means on the movable bar adapted to be engaged by a track trip.

2. The combination with a railway truck of guard wheels, carrying means for the wheels swingingly mounted on the truck, a vertically movable, transversely disposed bar engageable with said carrying means to raise the same, a shoe pivotally hung at about its center on the said bar and adapted to be engaged by a track trip to raise the bar, and spring means normally tending to maintain the shoe in a plane parallel with a railway track.

3. The combination with a railway truck, of a fixed transverse bar, depending hangers thereon, a transversely disposed bar movable vertically on said hangers, and formed with bridles thereon near the ends, frames at the sides of the truck and swingable in a vertical plane, guard wheels on said frames adapted to bear laterally against a track rail, said frames having members thereon engageable by said bridles, a shoe on the vertically movable bar, and trip means in the railway track to engage said shoe for raising the movable bar, the said trip means including inclined rails at the sides of the crossing tracks and transverse thereto, presenting ascending and descending gradients, and a co-acting transverse rail between the rails of the crossing track and above the latter.

ELISIARIO CASTANHO.

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