No. 720,005. PATENTED FEB. 10, 1903.

H. D. DESHLER.

TRACK BRAKE.

NO MODEL. APPLICATION FILED APR. 18, 1902. 2 SHEETS—SHEET 1.

Fig. 1.

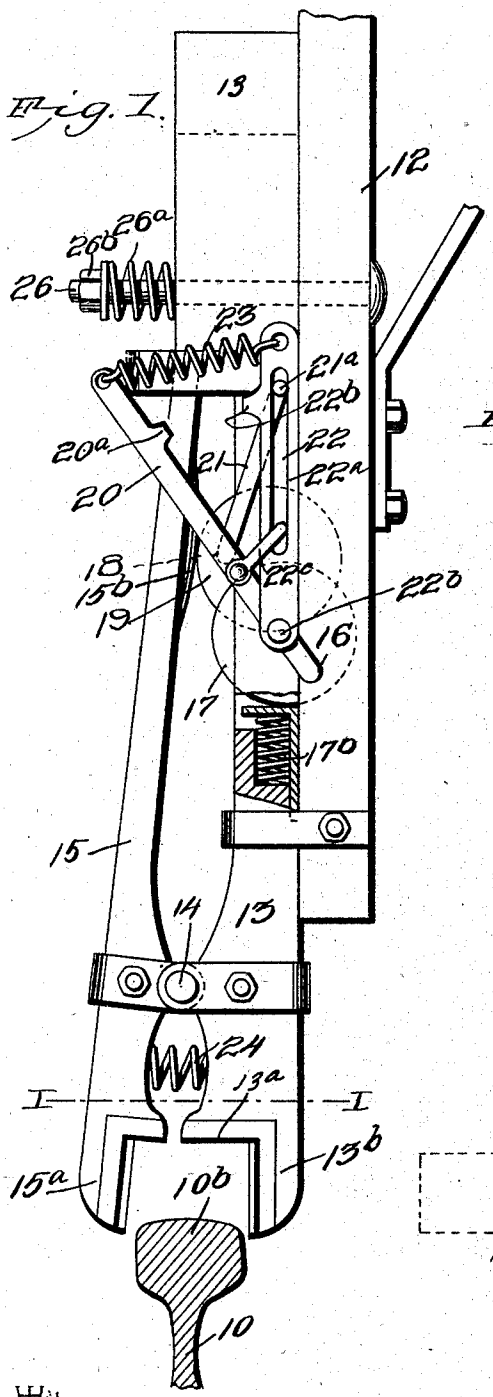
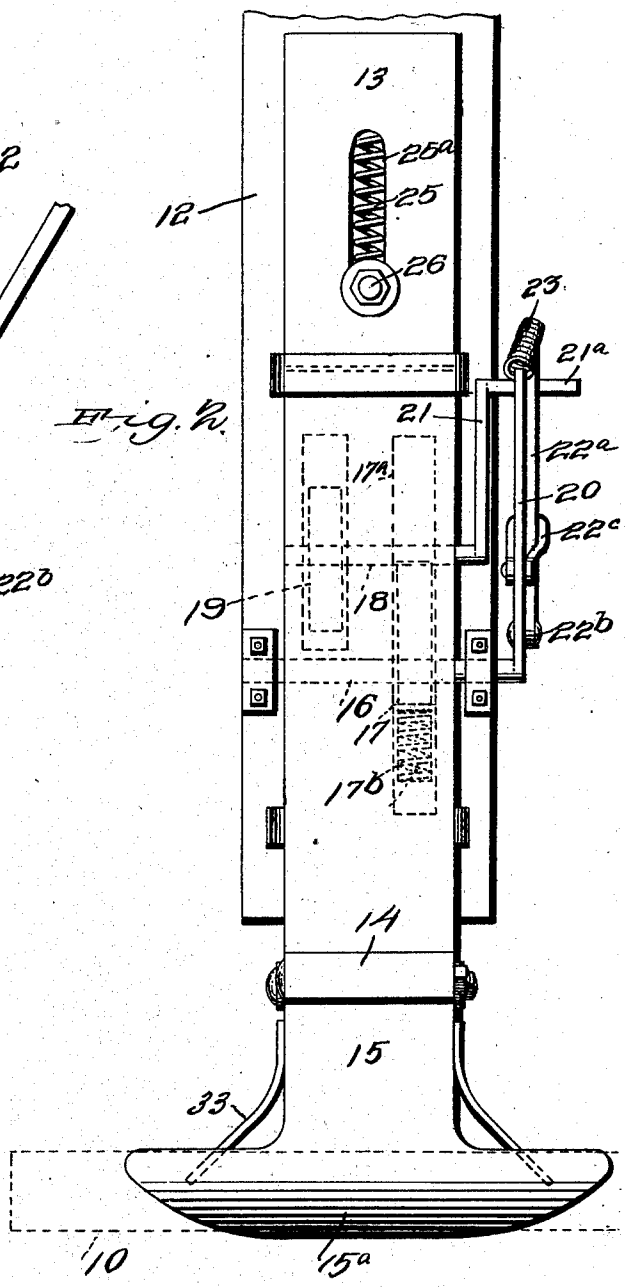


Fig. 2.



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No. 720,005. PATENTED FEB. 10, 1903.

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TRACK BRAKE.

APPLICATION FILED APR. 18, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

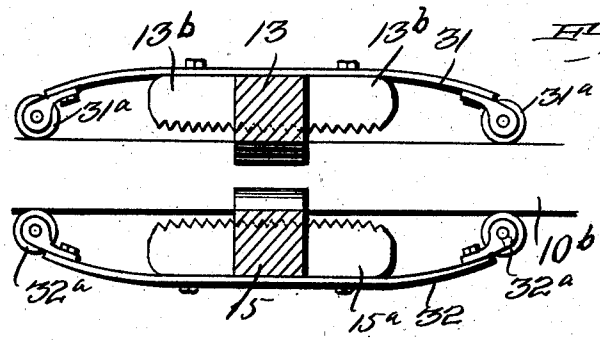


Fig. 5.

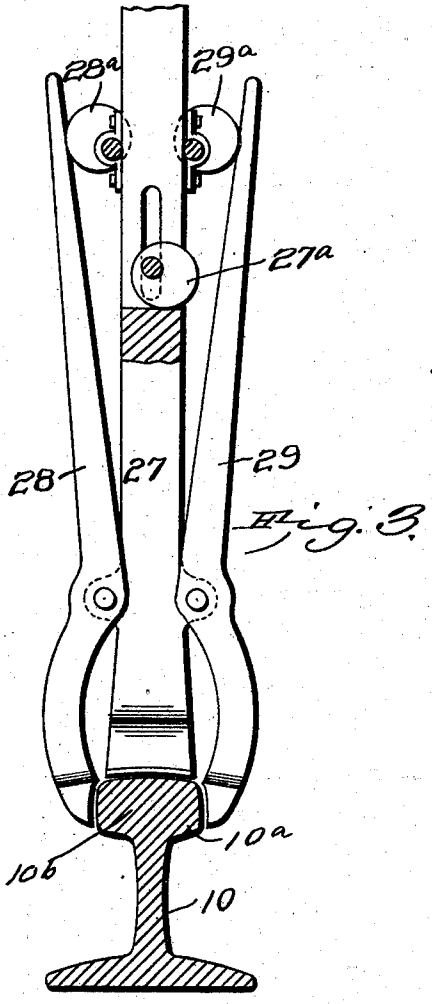


Fig. 3.

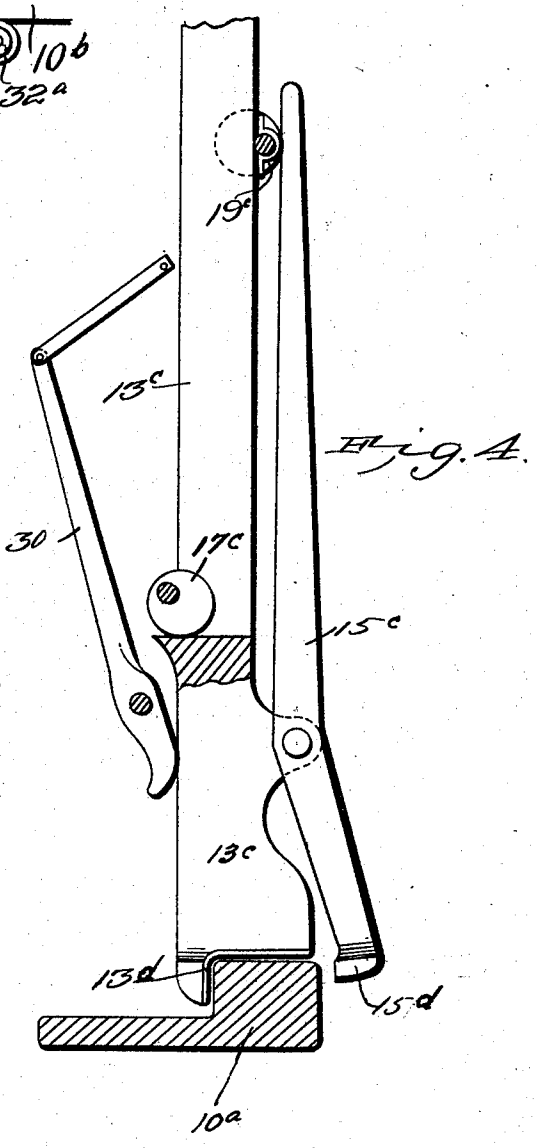


Fig. 4.

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UNITED STATES PATENT OFFICE.

HENRY D. DESHLER, OF BELVIDERE, NEW JERSEY.

TRACK-BRAKE.

SPECIFICATION forming part of Letters Patent No. 720,005, dated February 10, 1903.

Application filed April 18, 1902. Serial No. 103,616. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. DESHLER, a citizen of the United States, residing at Belvidere, in the county of Warren and State of New Jersey, have invented a new and useful Track-Brake, of which the following is a specification.

This invention relates to car-brakes, more particularly to the class known as "emergency-brakes," employed only when it is required to check or stop the car suddenly; and the invention consists in certain novel features of the construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, Figure 1 is a front elevation. Fig. 2 is a side elevation. Figs. 3 and 4 are side elevations illustrating modifications in the construction. Fig. 5 is a section of the gripping-jaws on the line II of Fig. 1, illustrating another modification of the construction.

This device may be applied to any form of rail, either the ordinary T-rail represented at 10 or to the street-car or flange rail represented at 10^a or any other of the various forms.

Suspended from the framework of the car or from the truck-frames is a bracket or support 12, suitably braced and supported, and slidably disposed upon this support is a pressure-foot member 13, having a horizontal portion 13^a and a vertical portion 13^b, the part 13^a adapted to engage the top of the "head" 10^b of the rail and the part 13^b laterally extended and adapted to engage the side of the head 10^b when the pressure-foot is operated.

Attached to the member 13 by a hinged joint 14 is a movable jaw member 15, the lower end 15^a laterally extended and corresponding to and opposing the part 13^a on the opposite side of the head 10^b, as shown.

Supported revolubly in the bracket 12 is a shaft 16, carrying an eccentric 17, the latter engaging the member 13 in a slot 17^a therein, so that when the shaft 16 is revolved the eccentric will forcibly move the member 13 downward and cause the foot 13^a to engage the top of the head of the rail.

In the bottom of the slot 17^a is inserted a heavy coiled spring 17^b to receive the impact of the eccentric, and thus gradually transmit the force to the member 13, so that a yieldable contact is afforded between the member 13 and the rail.

Journaled transversely upon the member 13 is a shaft 18, carrying an eccentric 19, the latter disposed to engage the upper part of the jaw member 15 and operate the jaw member when the shaft 18 is revolved.

The jaw member 15 will be provided with a spring 15^b, where the eccentric 19 engages it, to receive the pressure and gradually transmit the force to the jaw member, so that a yieldable contact is afforded between the jaw and the eccentric and the force therefore gradually applied to the rail.

The shaft 16 is provided with an arm 20, and the shaft 18 is provided with an arm 21, the free end of the arm 21 turned outward, as at 21^a, and engaging a slot 22 in an arm 22^a, the latter pivotally connected at 22^b by its lower end to the arm 20 near the shaft 16, as shown. The free end of the slotted arm 22^a is connected to the free end of the arm 20 by a spring 23.

Projecting from the arm 20 is a stop 20^a, with which a similar stop 22^b on the arm 22 engages when the levers are actuated, as hereinafter shown.

The arms 20 and 22^a are loosely coupled by a link 22^c, adapted to limit the outward movements of the arms, but permitting the movement of the arm 22^a toward the arm 20 and the engagement of the stops 20^a 22^b when the levers are actuated.

The power for operating the brake is applied to the extended end 21^a of the arm 21 and may be of any suitable character, either hand or power. When thus constructed and power applied to the arm 21, the shaft 18 will be rotated and cause the eccentric 19 to operate the jaw member 15, and at the same time the spring 23 will be compressed and move the arm 20 and cause the shaft 16 and its eccentric 17 to be rotated and depress the member 13, the springs 23 and 17^b providing for a yieldable and gradually-applied force downward upon the head of the rail, while the force of the jaw member 15 is likewise yieldably and gradually applied to the side of the head of the rail by reason of the presence of the spring 15^b between the eccentric 19 and the jaw member. The action of the jaw member is to draw the two parts 15^a and

13[b] forcibly against the sides of the head 10[b] at the same time that the foot member 13 is forcibly depressed downward upon the head. By the peculiar form and arrangement of the lever-arms and the presence of the springs 15[b], 17[b], and 23 the force can be applied very gradually, so as to perfectly adapt the brake to the circumstances under which it is required.

If a very sudden stoppage is required, the whole power can be quickly applied and the rail gripped with great force and tenacity; but if a gradual stoppage is required the brake can be applied as gradually as may be deemed necessary.

The stops 20[a] 22[b] serve to limit the downward movement of the arm 22[a] toward the arm 20 to protect the spring 23 and prevent its compression beyond the safety limit, and the link 22[c] likewise prevents the undue separation of the arms and the consequent undue expansion of the spring.

An expansion-spring 24 is inserted between the jaw member 15 and the foot-pressure member 13 below the joint 14 to separate the jaw members when the brake is released, and thus restore them to their normal position.

A spring 25 will be inserted in a slot 25[a] in the member 13 and engage a bolt 26 therein to automatically return it to its upward position when released.

A spring 26[a] will be arranged between the nut 26[b] of the bolt 26 and the member 13 to provide a laterally-yieldable support to the member 13, so that it will be able to resist any undue lateral strain and prevent breakage of the parts. By this simple means a complete and operative emergency track-brake is produced, which may be quickly applied when required and which may be applied as gradually or as suddenly as the circumstances may require.

In Fig. 3 a modification in the construction is shown, consisting in employing two of the movable jaw members like the jaw member 15 and adapting them to operate upon opposite sides of a central member, the latter disposed to be depressed forcibly upon the head of the rail in the same manner as in the other modifications. In this structure the central member corresponding to the part 13 is designated by 27, the part corresponding to the member 15 designated by 28, and the supplemental jaw member designated by 29. In this modification the vertically-movable member 27 is operated by an eccentric 27[a] and the parts 28 29 operated by eccentrics 28[a] and 29[a], respectively, as shown, in substantially the same manner as in the other structures. The action in this modification is the same as in the structure shown in Figs. 1 and 2, and the results are the same.

In Fig. 4 another modification is shown, which will be employed in connection with the ordinary street-railway rails 10[a]. In this form of the device the pressure-foot member 13[c] is actuated by the cam 17[c] and is provided with an extension 13[d] to bear against the side of the rail-tread. Fulcrumed upon the pressure-foot is a lever 15[c], actuated by a cam 19[c] and provided with a terminal rail-engaging portion 15[d] to oppose the extension 13[d], or, in other words, bear upon the opposite side of the rail-tread from said extension. The pressure-foot is movable laterally to cause the extension 13[d] to bear against the side of the rail-tread by means of a hand-lever 30.

In Fig. 5 a transverse section through the jaw member 15 and vertical member 13 is shown, with springs 31 32 attached to the parts 15[a] and 13[b] and extending laterally in opposite directions and provided with rollers 31[a] 32[a], so arranged that the rollers engage the side of the head 10[b] in advance of the contact member 15[a], so as to produce a gradually-applied force and prevent any sudden grip or contact between the parts.

These various modifications all operate in substantially the same manner and produce the same results and are therefore not a departure from the spirit of the invention and may be employed without sacrificing any of its advantages.

The modification shown in Fig. 3 is designed for use more particularly in connection with locomotives.

Ice and obstruction scrapers 33 may be attached to the presser-foot member 13, if required, as shown in Fig. 2.

When the arm 22[a] is moved far enough to cause the lug 22[b] to engage the lug 20[a], a solid connection is produced, which causes the shoes to grip the rail strongly, and when it is desired to apply the brake quickly the lever 22[a] will be moved quickly and at once compress the spring 23 and force the lugs 20[a] and 22[b] into engagement. By this means the brake may be actuated suddenly or gradually, as may be desired.

The jaw members 13[b] 15[a] will be rounded, as indicated in Fig. 5, so that the device will freely pass over frogs, switches, or other projections.

Having thus fully described my invention, what I claim is—

1. A car-brake comprising a downwardly-movable presser-foot, a laterally-movable jaw carried by said presser-foot, means for operating said presser-foot, and means carried by said presser-foot for operating said jaw, substantially as described.

2. In a car-brake, a supporting-frame, a presser-foot carried by said frame and downwardly movable thereon, a laterally-movable jaw carried by said presser-foot, means carried by said frame for operating said presser-foot, and means carried by said presser-foot for operating said movable jaw, substantially as described.

3. A car-brake comprising a downwardly-movable presser-foot adapted to forcibly engage the top of the rail and with an extension

adapted to engage the side of the rail, and means for moving said presser-foot downwardly and laterally, substantially as described.

4. A car-brake comprising a downwardly-movable presser-foot adapted to forcibly engage the top of the rail and with an extension adapted to engage one side of the rail, a laterally-movable jaw adapted to forcibly engage the opposite side of said rail, means for operating said presser-foot downwardly and laterally, and means for operating said jaw laterally, substantially as described.

5. In a car-brake, a supporting-frame, a downwardly-movable presser-foot carried by said frame, a laterally-movable jaw carried by said presser-foot, a transverse shaft carried by said frame and having an eccentric engaging said presser-foot, a transverse shaft carried by said presser-foot and having an eccentric engaging said jaw, and means for operating said shafts, substantially as described.

6. In a car-brake, a supporting-frame, a downwardly-movable presser-foot carried by said frame, a laterally-movable jaw carried by said presser-foot, a transverse shaft carried by said frame and having an eccentric engaging said presser-foot, a transverse shaft carried by said presser-foot and having an eccentric engaging said jaw, a lever-arm carried by said presser-foot-operating shaft, a lever-arm carried by said jaw-operating shaft, a bar movably connected to said presser-foot-shaft arm and having a slot engaging said jaw-shaft arm, and a spring connecting the free ends of said bar and said presser-foot-shaft arm, substantially as described.

7. In a car-brake, a supporting-frame, a presser-foot carried by said frame and having a longitudinal slot, a holding-bolt extending from said frame and engaging said slot, a spring in said slot above said bolt and exerting its force to maintain said presser-foot normally upward, an eccentric carried by said frame and in engagement with said presser-foot, and a spring between said eccentric and said presser-foot whereby said presser-foot will be yieldably operated, substantially as described.

8. In a car-brake, a supporting-frame, a presser-foot carried by said frame and having a longitudinal slot, a holding-bolt extending from said frame and engaging said slot, a spring in said slot above said bolt and exerting its force to maintain said presser-foot normally upward, means for forcibly moving said presser-foot downward, and a spring upon said bolt exteriorly of said presser-foot, and adapted to yieldably support said presser-foot upon said frame, substantially as described.

9. A car-brake comprising a downwardly-movable presser-foot adapted to forcibly engage the top of the rail, and laterally-movable jaws carried by said presser-foot and adapted to engage the opposite sides of the rail, substantially as described.

10. In a car-brake, a downwardly-movable presser-foot adapted to forcibly engage the top of the rail with an extension adapted to engage one side of the rail, a laterally-movable jaw carried by said presser-foot adapted to forcibly engage the opposite side of the rail, and means for forcibly moving said presser-foot laterally to cause said extension to engage the side of the rail, substantially as described.

11. In a car-brake, a downwardly-movable presser-foot adapted to engage the top of the rail and having lateral extensions adapted to engage one side of the rail, a laterally-movable jaw carried by said presser-foot and having lateral extensions adapted to engage the opposite side of the rail, and spring-arms carried by said extensions and extending therefrom, and provided with bearing-rollers, to engage the rail in advance of said extensions, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY D. DESHLER.

Witnesses:

NICHOLAS HARRIS,

ULYSSES G. PURSELL.