

No. 754,551.

PATENTED MAR. 15, 1904.

S. A. DUVALL.
EMERGENCY CAR BRAKE.
APPLICATION FILED DEC. 8, 1903.

NO MODEL.

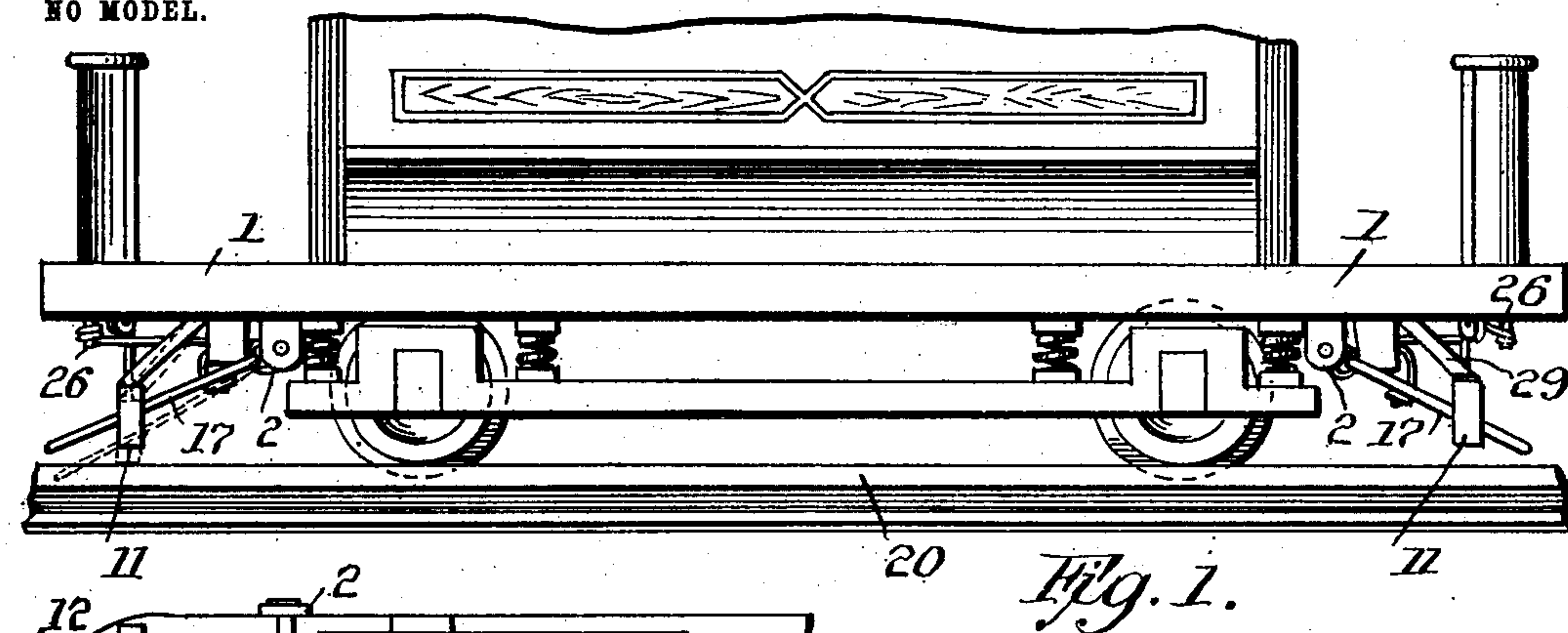


Fig. 1.

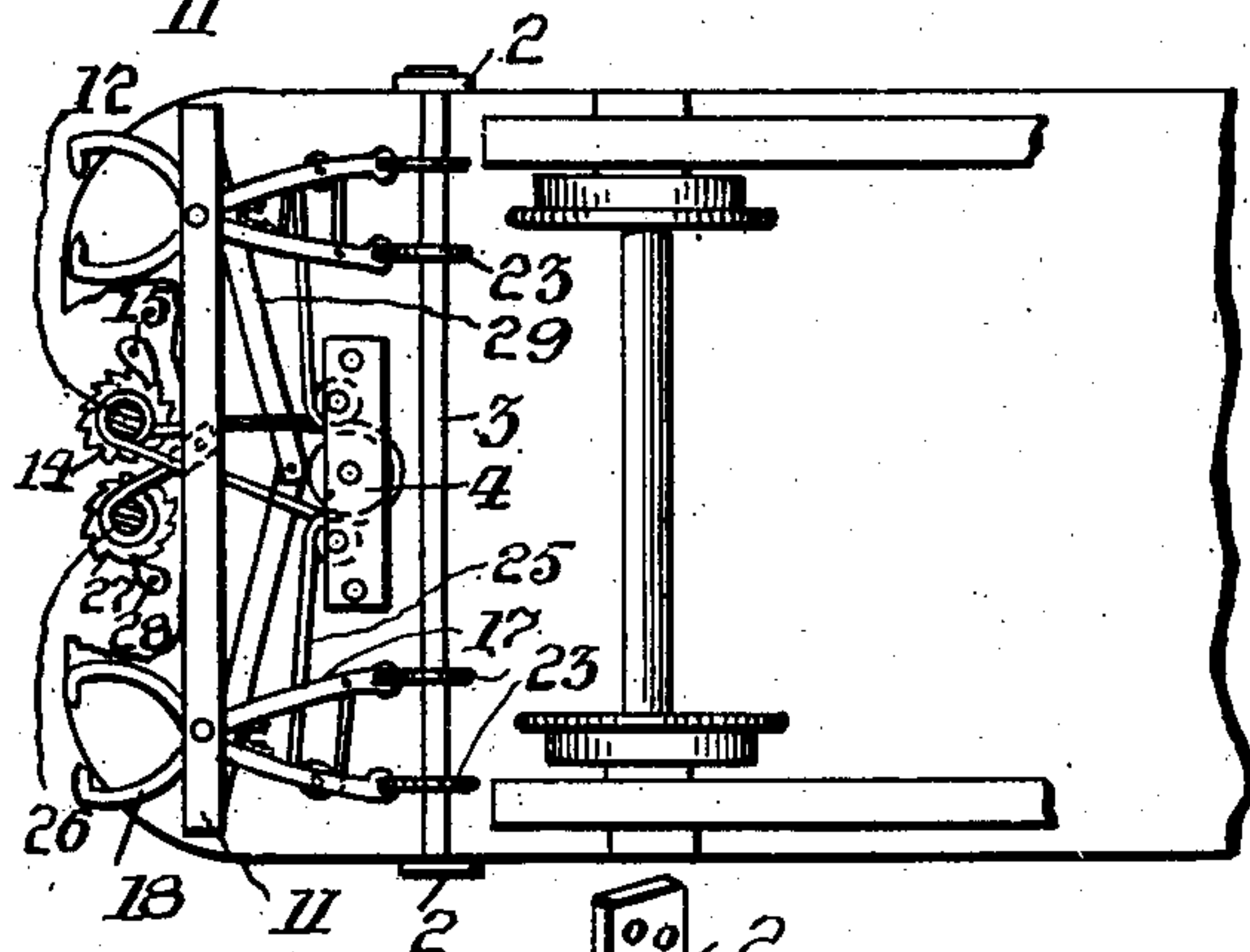


Fig. 2.

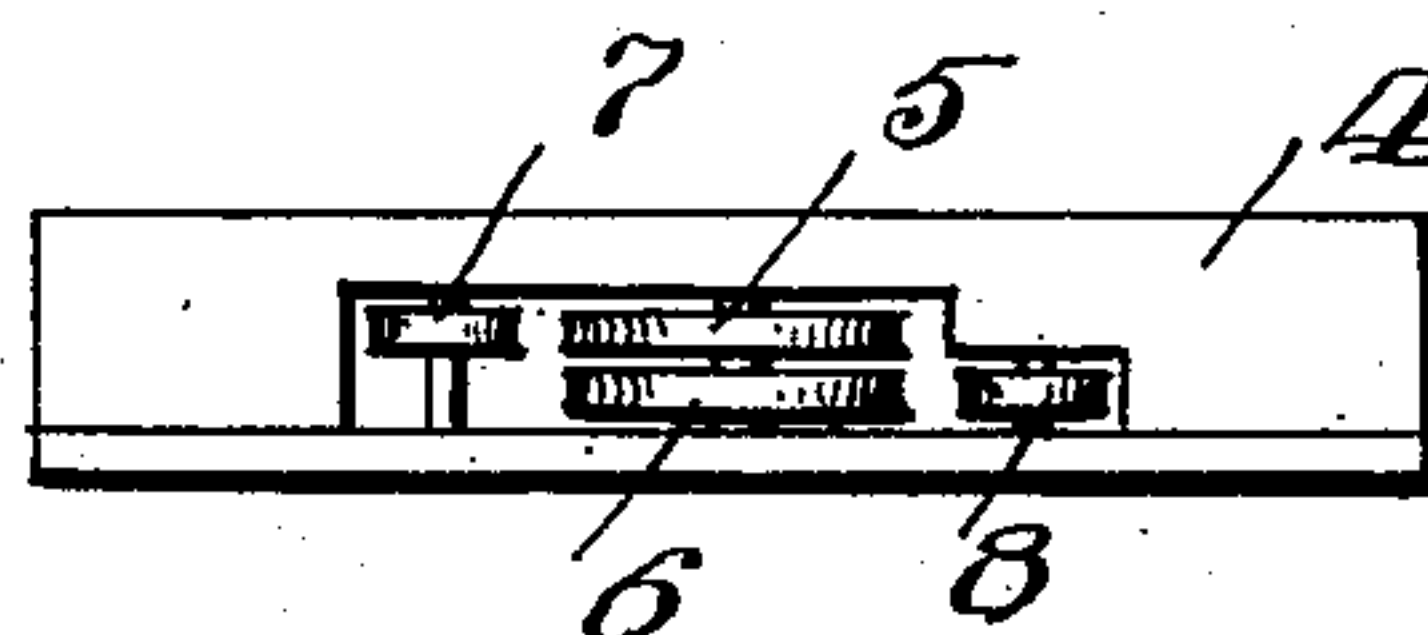


Fig. 3.

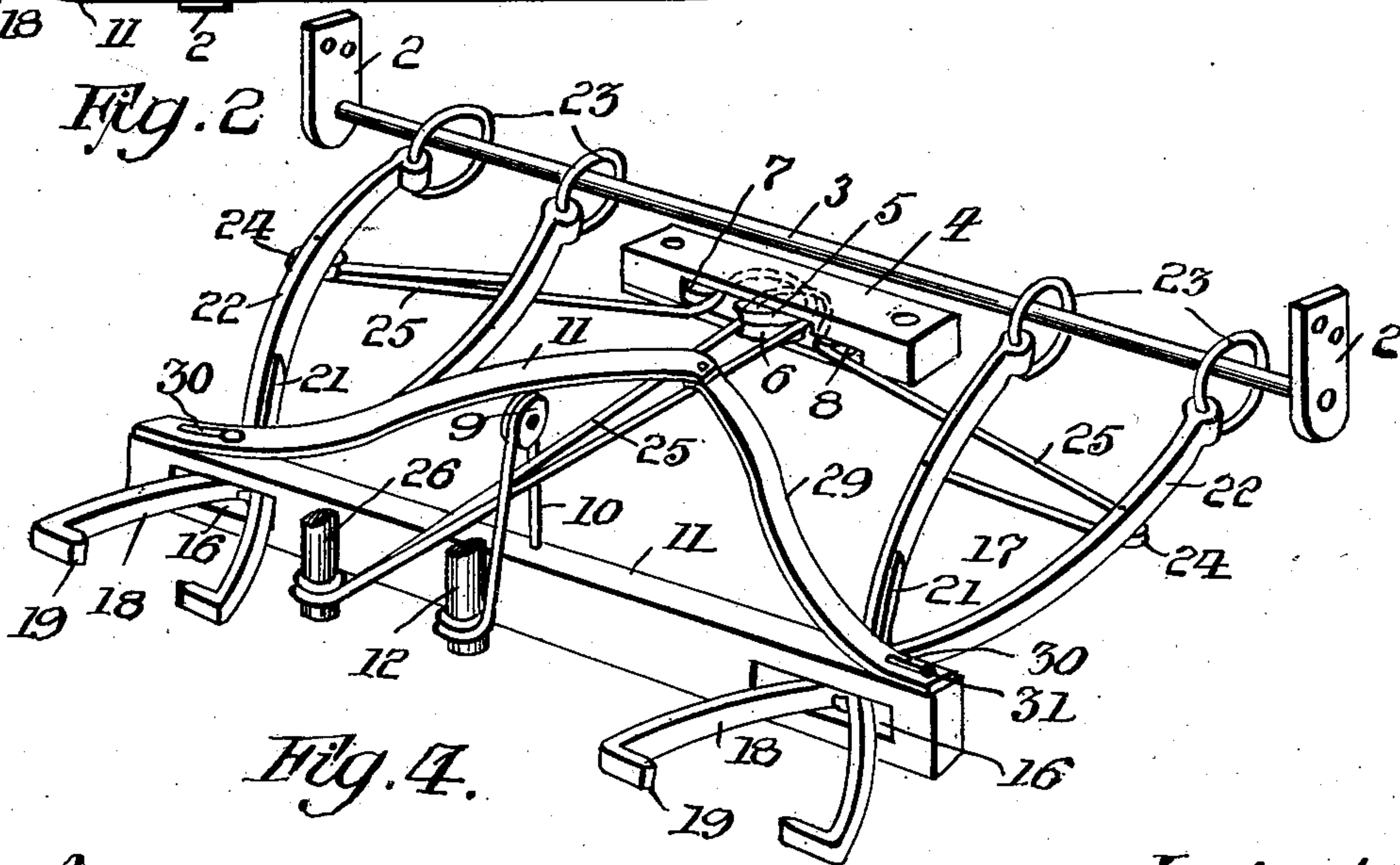


Fig. 4.

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UNITED STATES PATENT OFFICE.

STEPHEN A. DUVALL, OF PENRITH, WEST VIRGINIA.

EMERGENCY CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 754,551, dated March 15, 1904.

Application filed December 8, 1903. Serial No. 184,326. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN A. DUVALL, a citizen of the United States of America, residing at Penrith, in the county of Hancock and State of West Virginia, have invented certain new and useful Improvements in Emergency Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in brakes, and relates more specifically to emergency-brakes for street-cars, the main object of the invention being to provide means for the effectual checking of the speed of the car in event the ordinary brakes for any cause refuse to work properly or fail to check the momentum of the car.

A further object of the present invention is to provide an emergency-brake that may be attached to the car without danger of interfering in any manner with the brakes usually employed, the emergency-brakes when employed being applied from the rear of the car and engaging the rails below the tread of the latter.

Briefly described, the invention comprises a pair of spring-pressed rail-grippers, one for each rail of the track, and which grippers are hung in a suspension-bar held normally elevated, but which is adapted when it is desired to use the emergency-brake to be dropped or lowered, whereby to drop the grippers over the rails of the track. Means is provided for actuating the grippers after they have been engaged over the rails to close the same into engagement with the rails, and thus check the momentum of the car.

In the accompanying drawings I have shown a practical embodiment of my invention and will herein describe the same in detail without, however, limiting myself to the exact construction herein shown when practicing the invention.

In the drawings, Figure 1 is a side elevation of a street-car, partly broken away, showing the same equipped with my improved emergency-brake. Fig. 2 is an underneath plan view of a part of the car, showing the

emergency-brake at one end of the car. Fig. 3 is a detached side elevation of the pulley-block and pulleys. Fig. 4 is a detached detail perspective view of the brake apparatus.

In practice an emergency-brake constructed in accordance with my invention will be placed at each end of the car, and as the construction and operation of the brake apparatus at each end of the car is identical the same reference-numerals will be applied to like parts at each end of the car.

In the drawings, 1 indicates the bed of the car, underneath each platform of which the brake apparatus is suspended. Carried by the bed of the car at each side are brackets 22, in which are mounted the respective ends of a rod 3. A pulley-block 4 is attached to the underneath face of the car-platform, this pulley-block being cut away, and has mounted in this cut-away portion pulleys 5 and 6 and also pulleys 7 and 8, which are arranged at opposite sides of the pulleys 5 6. Also suspended from the underneath face of the car-platform is a pulley 9, over which passes a cord, cable, or chain 10, having its one end attached to a suspension-bar 11 and its other end attached to a vertical shaft 12, journaled in the car-platform. The flexible connection 10 is held wound on its shaft 12 by means of a ratchet 14, carried by the shaft, and a pawl 15, carried by the car-platform, on the upper face thereof. The suspension-bar 11 is provided with a slot 16 near each end, and within these slots 16 are pivotally mounted the spring-pressed grippers 17, the gripping-arms 18 of which have inturned ends 19, adapted to engage with the rails 20 of the track below the tread of said rails. Springs 21, exerting their tension against the handle ends of the grippers, serve to keep the gripper-arms 18 normally spread, as seen in Fig. 4, the handle ends 22 of the grippers carrying rings 23, which are received on the rod 3. One of the handle ends or arms 22 of each of the grippers carries a pulley 24, around which passes a cord, cable, or chain 25, with its one end connected to the other arm or handle end of the grippers. The cords or other flexible connections 25 for each pair of grippers are passed around the pulleys 5 6

and connected to a common vertical shaft 26, mounted in the car-platform, and on which the flexible connections are held wound by means of a ratchet 27 on the shaft and a pawl 28, carried by the car-platform. Although the suspension-bar would drop by gravity when released, I prefer to force this bar down rapidly to the track, and to accomplish this provide flat springs 29, pivoted together at one end, and at this end pivotally suspended from the underneath face of the car-platform and with their other ends slotted, as at 30, to receive headed pins 31, carried by the suspension-bar 11, adjacent its ends.

In practice the brake at the rear end of the car to the direction in which the car is traveling is adapted to be engaged with the rails when an emergency stop is required, and to apply the brakes the conductor of the car kicks off pawl 15 from ratchet 14, allowing flexible connection 10 to unwind from shaft 12 and the brake apparatus to drop to the track with the spring-pressed grippers straddling each rail. The operator then winds upon shaft 26, winding flexible connections 25 thereon, these connections operating over pulleys 5 6 and 7 8, pulling handle ends or arms 22 of the grippers toward each other, and closing the gripper ends 19 of grippers against the web of the rails 20. As the brake is applied at the rear end of the car it acts as a drag as well as a brake, serving to effectually check the momentum of the car, while at the same time avoiding all danger of the car being lifted from the rails by sudden checking of its speed.

It will be observed that in practice various changes may be made in the details of construction without departing from the general spirit of the invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an emergency car-brake, a suspension-bar hung from the car-platform, means for holding said bar normally elevated, spring-pressed grippers pivotally mounted in said bar, and means for actuating the rear ends of said grippers to close the forward ends thereof against the sides of the rails of the track

when the bar is lowered, substantially as described.

2. In an emergency-brake, a spring-pressed suspension-bar suspended from the car-platform, a pair of spring-pressed grippers carried by said bar, and means for closing said grippers into engagement with the rails of a track when the bar is lowered.

3. In an emergency car-brake, a pair of spring-pressed grippers pivoted together and held normally suspended above the track and adapted to straddle the rails of the track when lowered, and means for closing the grippers into engagement with the rails of the track when in the lowered position.

4. In an emergency car-brake, rail-gripping means having their forward or engaging ends held normally suspended above the track and adapted when lowered to straddle the rails, and means for actuating the rear ends of the gripping means to engage the forward end thereof with the sides of the rails when in the lowered position.

5. In an emergency car-brake, a pair of rail-grippers pivoted to each other and having their pivoted ends normally suspended above the track and adapted to be lowered so as to straddle the rails of the track, and means for closing the gripping means with the sides of the rails when in the lowered position.

6. A brake comprising a spring-pressed suspension-bar carrying gripping means pivoted to each other, and means for actuating the gripping means.

7. A car-brake comprising pairs of rail-grippers pivoted together at their rear ends and movable downwardly at said ends, with means for actuating the grippers.

8. A car-brake comprising rail-grippers pivoted together at their rear ends, and pivotally supported from their forward ends, with means for closing said grippers.

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

STEPHEN A. DUVALL.

Witnesses:

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