

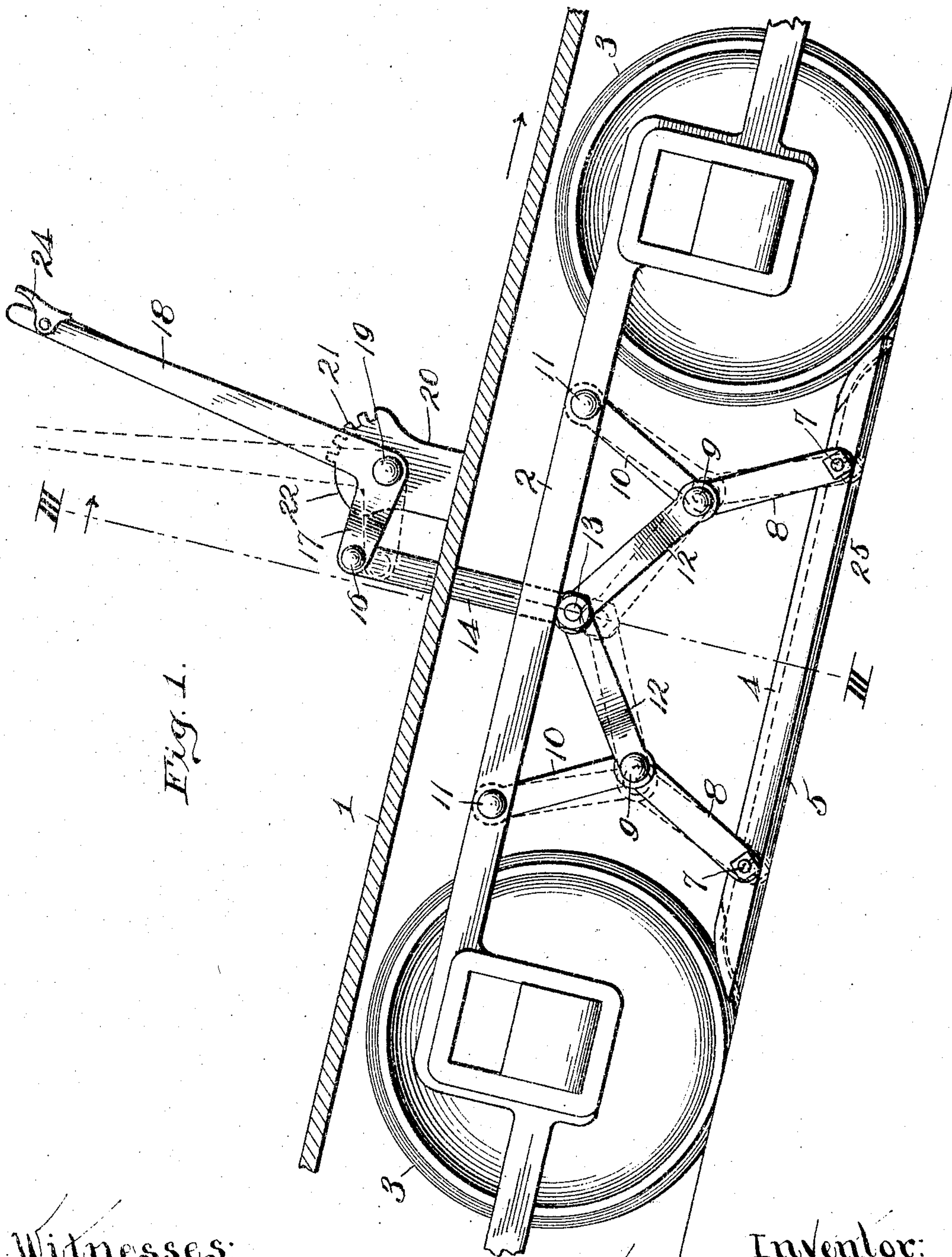
No. 772,536.

PATENTED OCT. 18, 1904.

W. M. RYNERSON.
EMERGENCY CAR BRAKE.
APPLICATION FILED FEB. 1, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:

A. M. Luther
To R. R. Gore.

Inventor:

Wallace M. Ryerson

By George L. Thorpe atty.

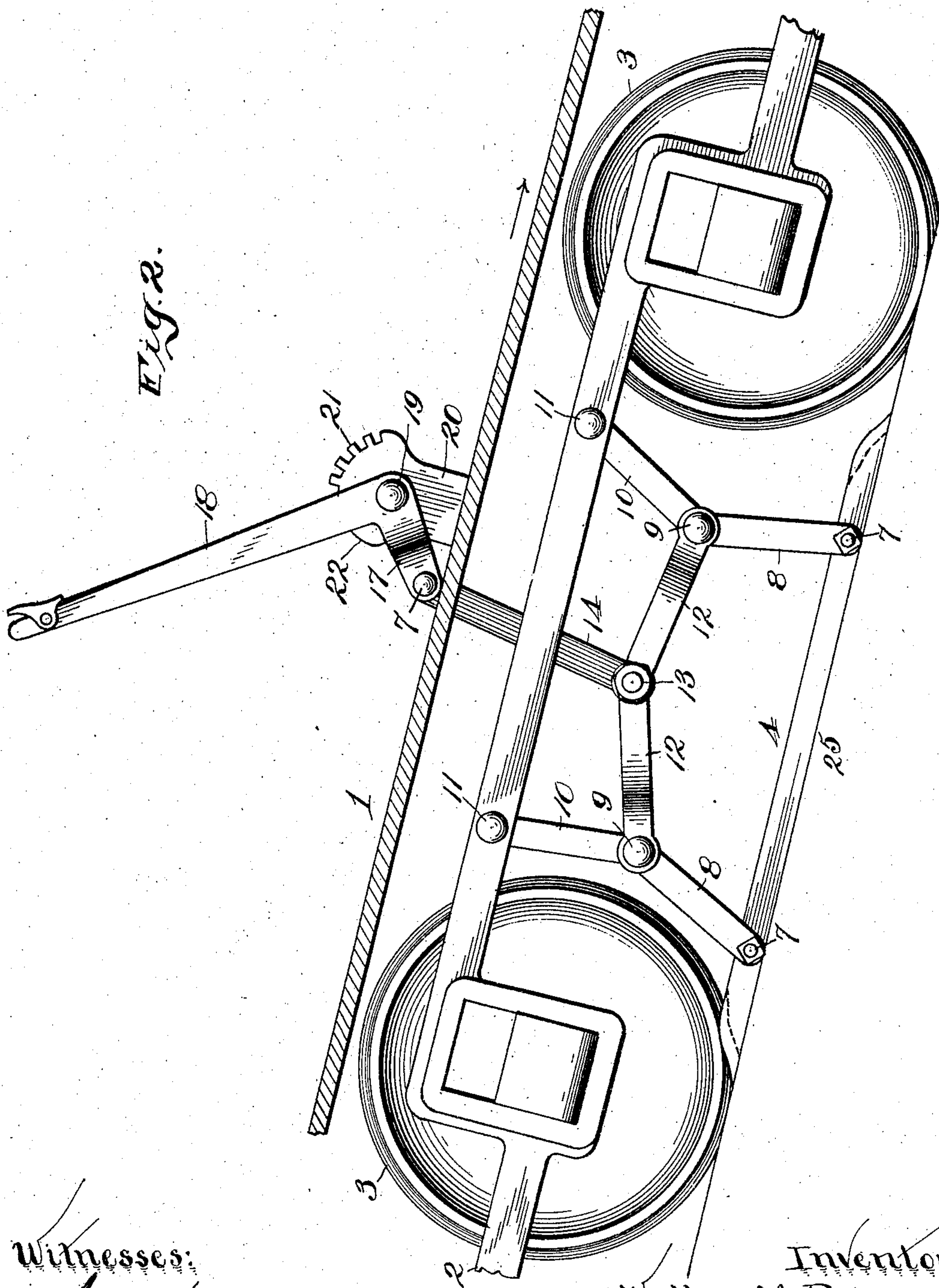
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3 SHEETS--SHEET 2.



Witnesses:

A. M. Luther
F. R. Gore.

Inventor:
Wallace M. Ryerson

By *George B. Hooper* Atty

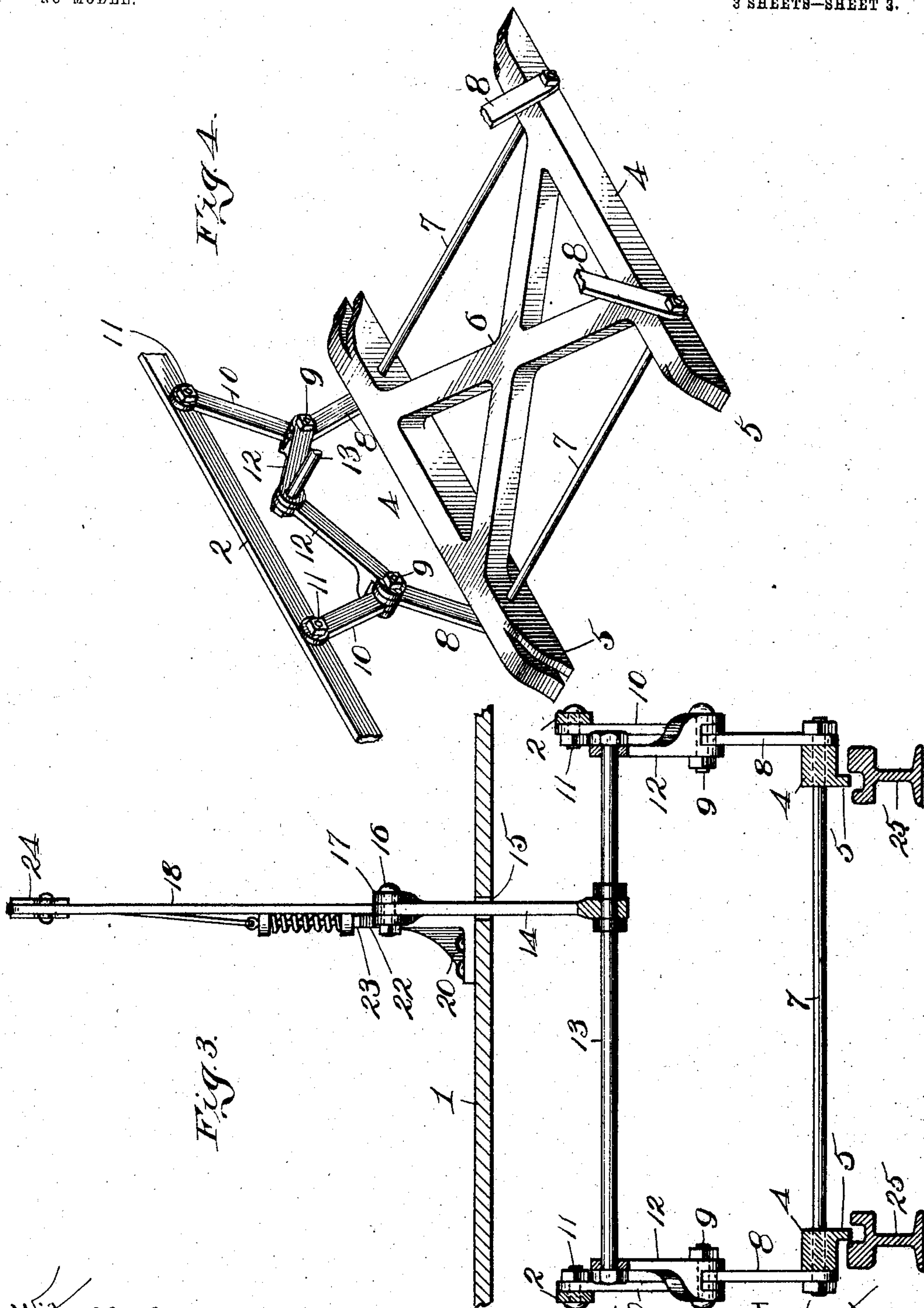
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3 SHEETS—SHEET 3.



Witnesses:
A. McArthur
J. P. Glou

Inventor:
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UNITED STATES PATENT OFFICE.

WALLACE M. RYNERSON, OF KANSAS CITY, MISSOURI.

EMERGENCY CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 772,536, dated October 18, 1904.

Application filed February 1, 1904. Serial No. 191,550. (No model.)

To all whom it may concern:

Be it known that I, WALLACE M. RYNERSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Emergency Car-Brakes, of which the following is a specification.

This invention relates to emergency-brakes, and is designed chiefly for use upon street-railway cars, and has for its object to produce a brake mechanism embodying brake-shoes to engage the rails and immediately thereafter to form a chock for the rear wheels and cause the latter to impose a large proportion of the weight of the car upon said shoes to increase the pressure of the latter upon the rails.

With this general object in view the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal section through the floor of a car equipped with my improved brake mechanism, the latter being shown in side elevation, with the shoes slightly above the track-rails. Fig. 2 shows a similar view, with the shoes in engagement with the track-wheels after having chocked the rear wheels and caused them to rise from the rails and bear down upon the shoes. Fig. 3 is a cross-section on the line III III of Fig. 1. Fig. 4 is a sectional perspective view of a portion of the brake mechanism.

In the said drawings, 1 designates the floor, 2 the truck-frame, and 3 the wheels, of a car of any suitable type, which parts constitute a "wheeled frame" and is hereinafter so termed.

4 designates brake-shoes of length to extend almost from the front to the rear wheels and tapered downwardly at their ends, said shoes being provided at their inner sides with depending flanges 5 to guard against lateral movement of the shoes when upon the rails. Said shoes are preferably united rigidly together by a cross-frame 6 and cross-bars 7,

the latter forming pivots for the lower ends of links 8, which slope upwardly and inward and are pivotally connected at their upper ends, as at 9, to the lower ends of links 10, which extend upwardly and outwardly from said pivotal points to the wheeled frame, where they are pivotally secured at their upper ends, as at 11. These links 8 and 9 constitute toggles between the brake-shoes and the wheeled frame, which as expanded force the brake-shoes down upon the rails and as contracted raise the brake-shoes above the rails and perform an additional function, as hereinafter explained.

12 designates links pivotally connected at their outer ends to pivotal points 9 and at their inner ends to pivot-rod 13, and pivoted to said rod at a suitable point is a bar 14, which extends up through a slot 15 in the floor of the wheeled frame and is pivoted at its upper end, as at 16, to the foot portion of an angle-arm 17 of a lever 18 for operation by the person in control of the vehicle. Said lever is pivoted, as at 19, to the sector 20, secured to the floor of the wheeled frame, said sector having toothed and non-toothed surfaces 21 22, respectively. The lever, as usual, is equipped with a spring-actuated dog 23, to be retracted by the hand-grip 24, pivoted to the upper end of the lever. When the wheeled frame is traveling along level portions of the track 25, it is preferable to so dispose the lever 18 that the dog shall engage a sector-tooth remote from the non-toothed portion 22 in order that the connecting portions 6 and 7 of the brake-shoes shall clear projecting surfaces of the trackway. When the wheeled frame starts to ascend or descend an incline, the person in control should throw the lever to about the position shown in full lines, Fig. 1, so as to dispose the brake-shoes close to the track-rails, this action expanding the toggle composed of links 12 and through said toggle the toggles composed of links 8 and 10. Should it be necessary to suddenly arrest the movement of the wheeled frame while traveling upon such incline, the lever-grip is grasped to first disengage the dog, and then the lever is swung to about the position indicated by dot-

ted lines, Fig. 1, the result being that said toggles are further expanded and the brake-shoes caused to engage the track-rails. As this object is accomplished the friction between the rails and the shoes will retard the progress of the latter, and therefore result in a differential speed between the brake-shoes and the wheeled frame, and consequently cause the lever 18 to automatically continue the movement which was last imparted to it by the person in control until it assumes approximately the position shown in Fig. 2, the dog in this action obviously sliding upon the non-toothed portion 22 of the sector. By the time the lever has attained the position shown in the last-named figure the differential speed movement has resulted in the rear wheels (assuming that the wheeled frame is descending the incline at the time the brakes are applied) engaging the opposing or rear ends of the brake-shoes, which thus act to chock the wheels. If the vehicle has attained a considerable speed, the wheels will be caused to ride upward upon the tapered ends of the brake-shoes, substantially as shown in Fig. 2, the connection between the wheeled frame and the either stationary or more slowly moving brake-shoes permitting this result to take place, the unlatched lever obviously affording no resistance to such action. The rear wheels are therefore raised completely off the track and impose the greater proportion of the weight of the wheeled frame upon the brake-shoes. As a result the wheeled frame is instantly arrested, the brake mechanism being so proportioned that the rear wheels can never move forward a sufficient distance to strike the contiguous toggles. By reversing the operation of the lever the brake-shoes can be withdrawn from under the elevated wheels, the latter again settling down upon the track-rails as the brake-shoes rise to inoperative position, where they can be again secured by the reengagement of the dog with the toothed portion of the sector.

From the above description it will be apparent that I have produced a brake mechanism which embodies the features of advantage enumerated as desirable in the statement of invention, can be easily applied to or removed from a wheeled frame, and also embodies the desirable features of simplicity, strength, and durability, and, furthermore, is of comparatively inexpensive construction.

While I have illustrated and described the preferred embodiment of the invention, it is to be understood that it is susceptible of change of modification in various particulars

without departing from the essential spirit and scope or sacrificing any of its advantages.

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

1. The combination with a wheeled frame, of a pair of brake-shoes for engagement with the trackway of the wheels of the frame, and having their ends tapered downward toward a point, a pair of toggles connecting each brake-shoe with the wheeled frame, and toggles connecting the first-named toggles to expand or contract the latter.

2. The combination of a wheeled frame, with a pair of brake-shoes for engagement with the trackway of the wheels of the frame and having their ends tapered downward toward a point, a pair of toggles connecting each brake-shoe with the wheeled frame, toggles connecting the first-named toggles to expand or contract the latter, a link pivotally connected to said "connecting" toggles, and means to impart endwise movement to said link for expanding or contracting said "connecting" toggles.

3. The combination of a wheeled frame, with a pair of brake-shoes for engagement with the trackway of the wheels of the frame and having their ends tapered downward toward a point, a pair of toggles connecting each brake-shoe with the wheeled frame, toggles connecting the first-named toggles to expand or contract the latter, a link pivotally connected to said "connecting" toggles, a lever suitably mounted on the wheeled frame, and pivotally connected to said link, and means for securing said lever to hold the brake-shoes elevated.

4. The combination of a wheeled frame, with a pair of brake-shoes for engagement with the trackway of the wheels of the frame and having their ends tapered downward toward a point, a pair of toggles connecting each brake-shoe with the wheeled frame, toggles connecting the first-named toggles, to expand or contract the latter, a link pivotally connected to said "connecting" toggles, a sector secured to the wheeled frame and provided with teeth, a lever mounted axially on said sector and connected to the upper end of said link, and a catch carried by the lever for engagement with the sector.

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

WALLACE M. RYNERSON.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.