

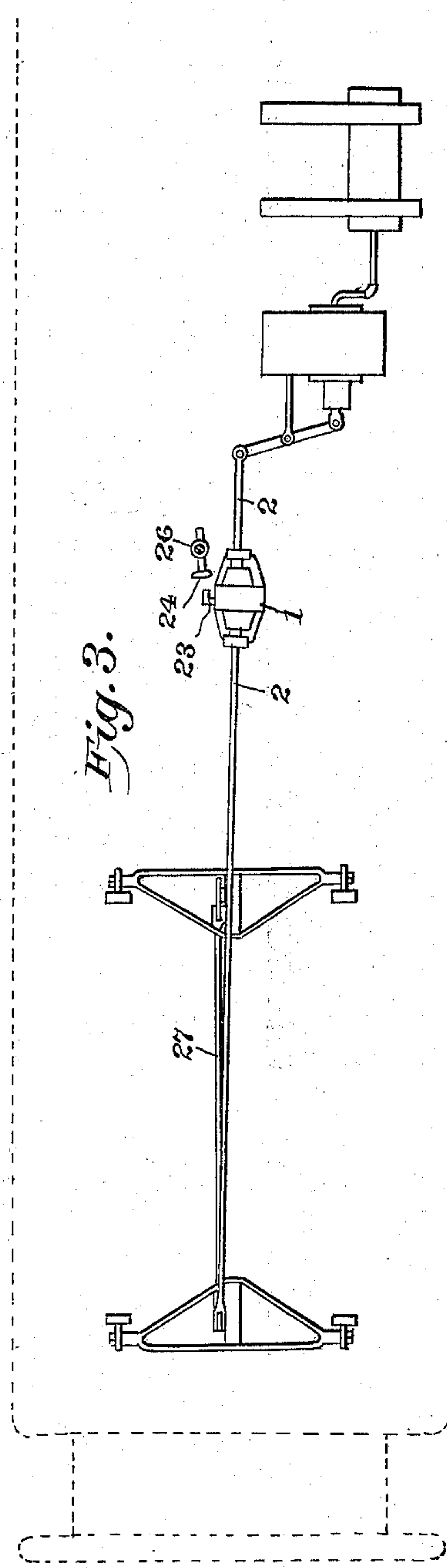
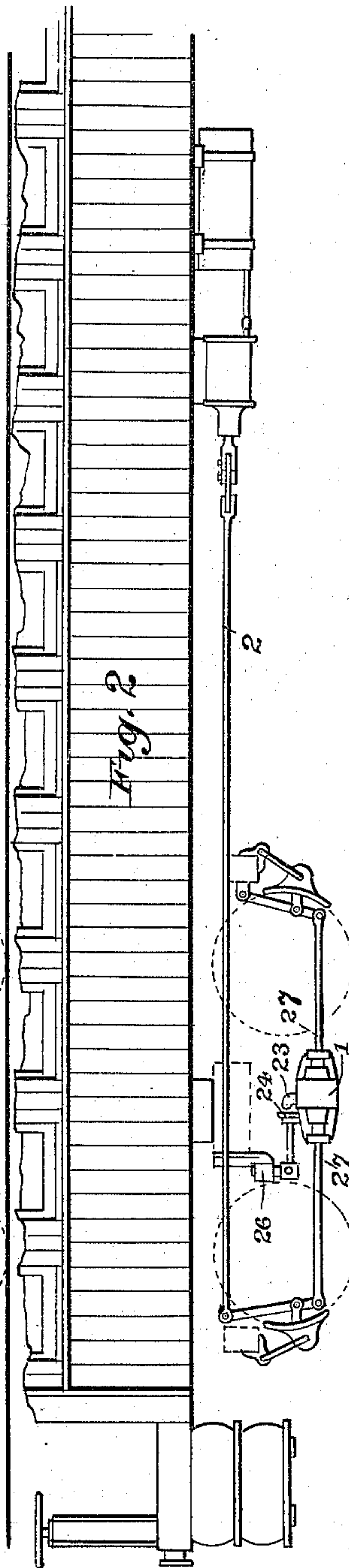
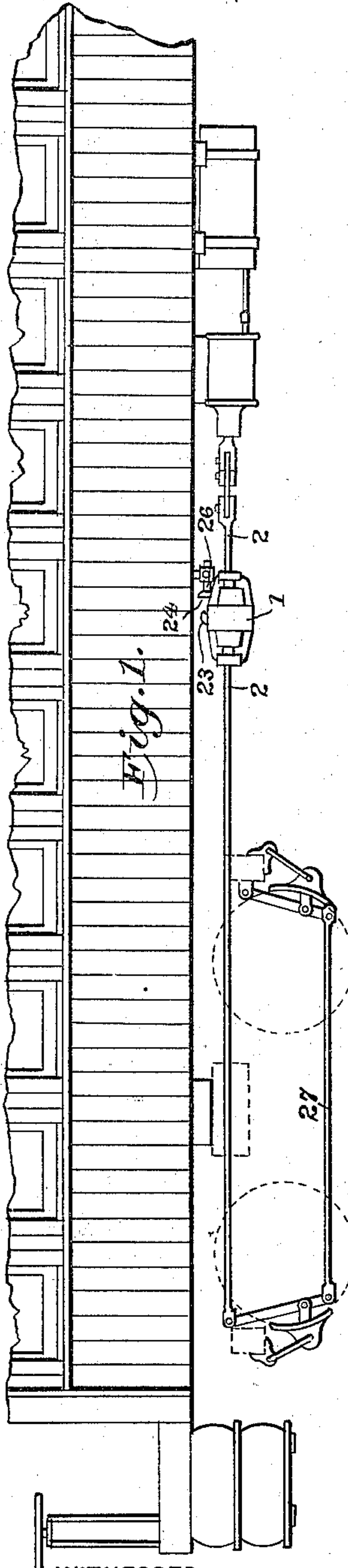
(No Model.)

3 Sheets—Sheet 1.

E. CHAQUETTE.
SLACK ADJUSTER.

No. 542,627.

Patented July 16, 1895.



WITNESSES:

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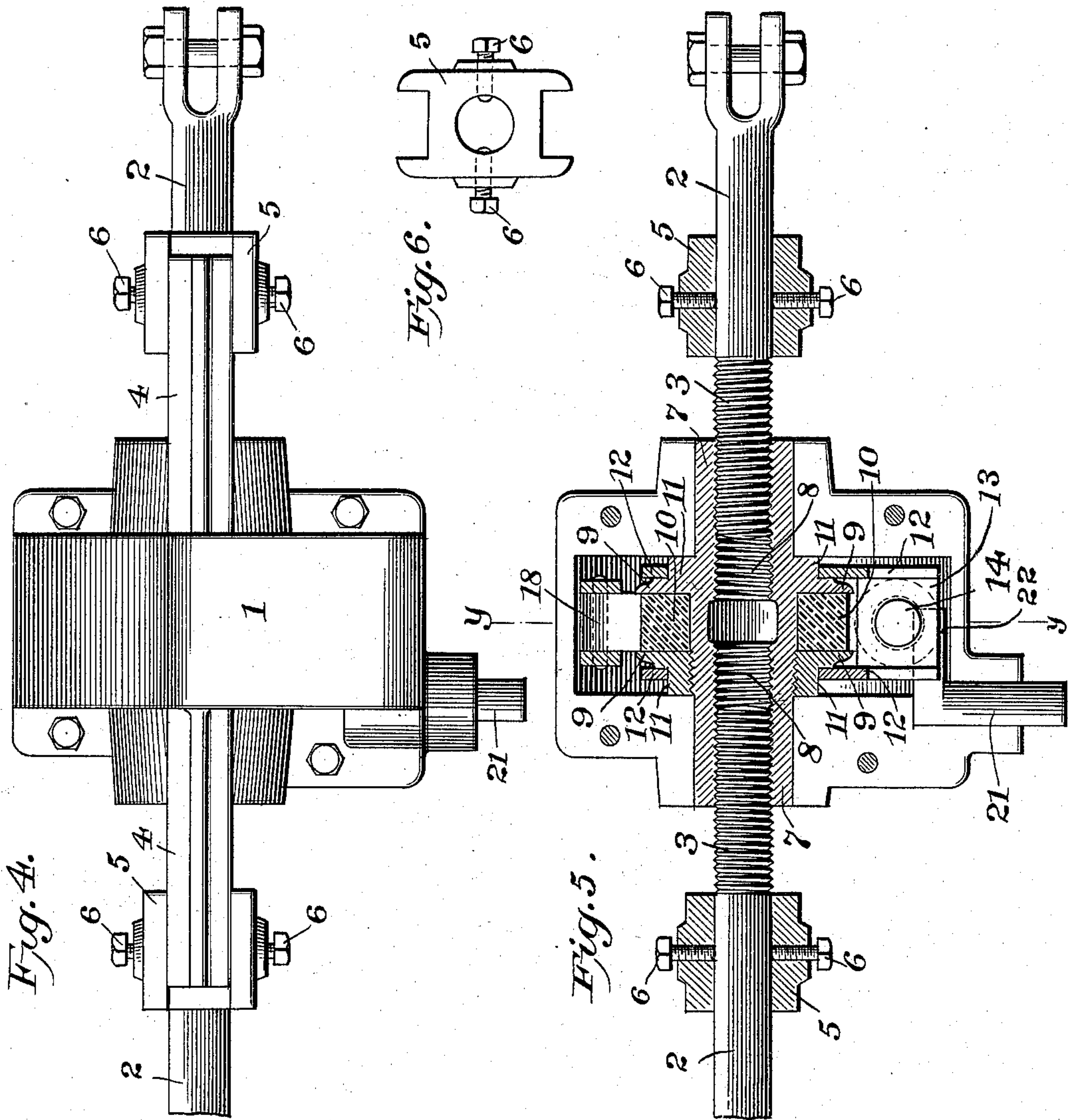
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3 Sheets—Sheet 2.

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No. 542,627.

Patented July 16, 1895



WITNESSES:

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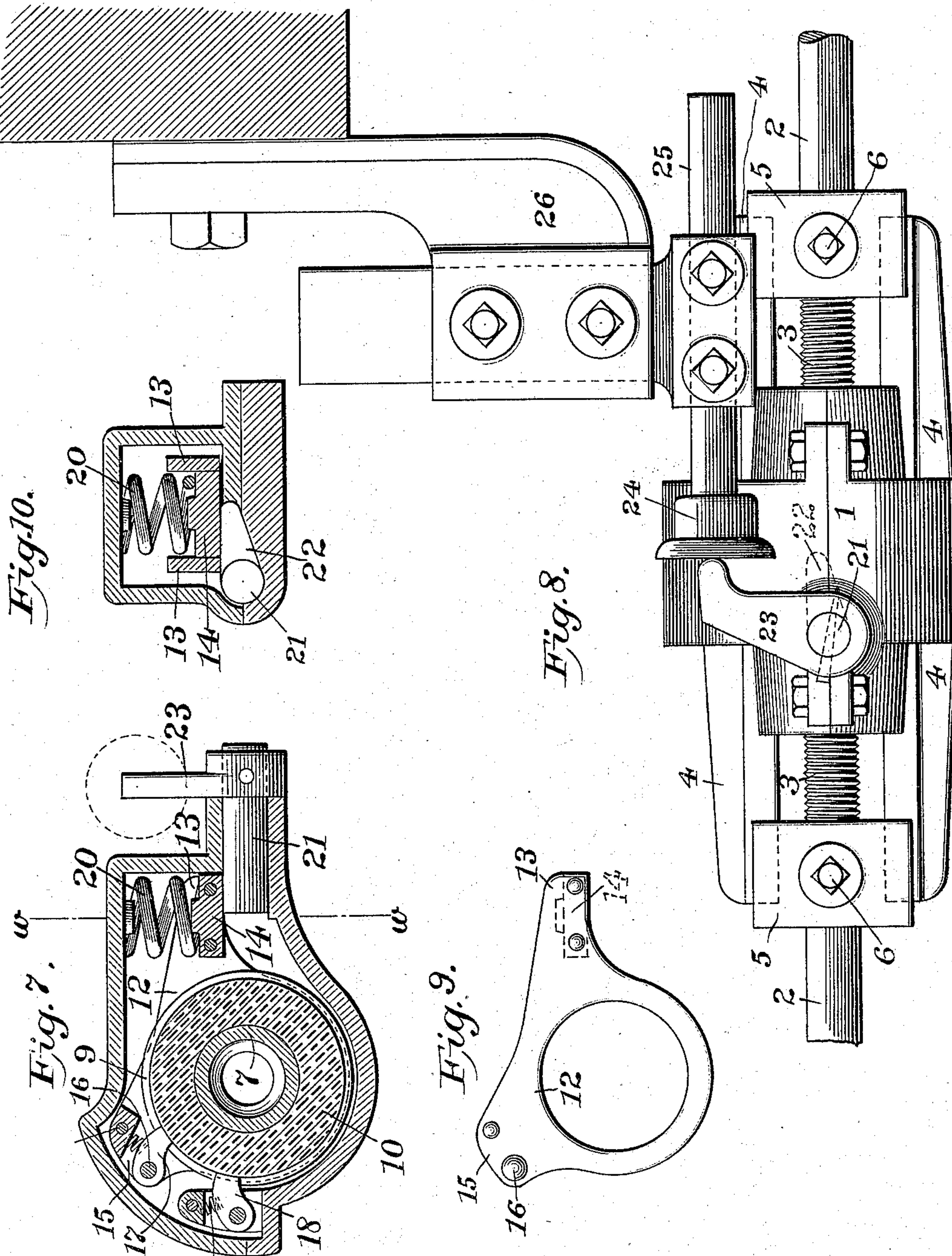
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3 Sheets—Sheet 3.

E. CHAQUETTE.
SLACK ADJUSTER.

No. 542,627.

Patented July 16, 1895.



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UNITED STATES PATENT OFFICE.

EPHRAIEM CHAQUETTE, OF BRIDGEPORT, CONNECTICUT.

SLACK-ADJUSTER.

SPECIFICATION forming part of Letters Patent No. 542,627, dated July 16, 1895.

Application filed September 14, 1894. Serial No. 522,997. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIEM CHAQUETTE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Brakes for Railroad-Car Wheels; 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.

This invention relates to certain novel and useful improvements in car-brakes, either such as are operated by hand or by compressed air, or by the vacuum, and the object thereof is to provide a simple and efficient take-up, attachable to the brake-rod or other power-transmitting connection of either of the kinds of brake above referred to, whereby any wear of the brake-shoes may be compensated for and any lost motion promptly and automatically taken up; and with these ends in view my invention consists and resides in the construction and combination of elements hereinafter fully and in detail explained, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will proceed to describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figures 1 and 2 are broken side elevations of railway-cars having my invention applied at different locations. Fig. 3 is a detail plan view of the braking devices shown at Fig. 1. Fig. 4 is a plan view of my improvement in detail and enlarged. Fig. 5 is a central longitudinal horizontal section. Fig. 6 is an end elevation of one of the slide-blocks. Fig. 7 is a section on the line *y y* of Fig. 5. Fig. 8 is a detail side elevation. Fig. 9 shows a detail elevation of the operating-lever, and Fig. 10 is a detail section on the line *w w* of Fig. 7.

The same numerals denote the same parts in each of the figures of the drawings.

By the numeral 1 I denote a housing in which certain of the parts of my invention are inclosed.

2 denotes a brake-rod of any desired type or construction, and adapted to operate in

connection with any suitable form of brake mechanism. For the interposition of my invention the brake-rod is cut in two, as shown for instance at Fig. 5, and its extremities oppositely screw-threaded, as at 3. From each end of the housing 1 a pair of arms 4 extend outwardly, their opposed faces forming guide-ways for the accommodation of slide-blocks 5, which, as seen particularly at Figs. 4, 5, and 8, are firmly secured upon the brake-rod, as for instance by set-screws 6.

Contained within the housing is a large double-ended nut 7, whose ends are journaled in the ends of the housing, as shown at Fig. 5, and whose interior is screw-threaded for the accommodation of the brake-rod, as denoted by 8, the threads in one end being right hand, and in the other left hand, so that when the screw-threaded ends of the brake-rod are in engagement with the threads, a rotative movement of the nut will either draw said ends together or force them apart, according to the direction of the rotation. Near its center the nut 7 bears a pair of peripheral flanges 9, between whose opposed faces is secured, by means of bolts, screws, or other fastening, an annulus 10 of vulcanized rubber, leather, or metal.

Around the hubs 11, which appear upon the nut within the housing; and at either side of the flanges, are journaled levers 12 of the shape shown at Fig. 9. The outer ends of these levers, which I denote by 13, are joined by a cross bar or plate 14, so as to cause the two parts 13 to move as one lever. At the other extremity the levers are provided with projections 15, and between these, upon a stout shaft or bolt 16, is journaled a pawl 17, whose face lies in constant engagement with the periphery of the annulus 10. Below the pawl just described and pivoted on the inside of the casing is another pawl 18, whose face also engages the annulus and which is retained in such engagement by means of a spring 19. The constructions just described are clearly shown at Fig. 7. The projections 13 and their cross-bar are accommodated in a recess or extension of the housing (see Fig. 7) and they are normally held downward by means of a stout spring 20 interposed between the cross-bar 14 and the top wall of the housing. Just below the spring and cross-bar the housing is

provided with a bearing at right angles to the length of the brake-rod, and in this bearing is contained a short shaft 21 whose inner end (see Fig. 10) bears an outwardly-projecting lever 22 and whose outer end outside the housing is provided with an upwardly-projecting arm or tappet 23.

All the parts hereinbefore described are supported and carried upon the brake-rod itself. Co-operating with these parts and adapted to engage the extremity of the tappet 23 is a stop or abutment-head 24, which may be affixed to any part of the car that is stationary with reference to the brake-rod. This stop is shown at Fig. 8 as mounted on the end of a short rod 25, which passes through and is adjustable in the lower end of a hanger 26, depending from one of the beams of the car, so as to support the head 24 in the path of movement of the extremity of the tappet 23.

In equipping a car with my invention the parts are so placed that the extreme limit of the braking movement of the brake-rod will carry the tappet toward and so as to touch the head 24, (see Fig. 8,) the reverse movement returning it away from and out of contact with said head. Now, so long as no wear has occurred upon the shoes carried by the brake-rods at their outer extremities, said shoes will have a firm and uniform impact against the car-wheels at each braking movement, and the tappet will, in the course of such braking movement, be carried just into contact with the head. This will of course produce no movement of the tappet, but as wear takes place as to the shoes, the wheel-treads, or any of the connections or couplings, a little longer movement of the brake-rod is thereby rendered necessary to force the shoes into full braking-contact, and accordingly the brake-rod will move to an extended limit and the tappet will thus be forced against the head 24, thereby turning the short shaft 21 in its bearing. This partial rotation of the shaft raises the lever 22 and forces the outer connected ends 13 of the lever 12 upward against the force of the spring 20. This movement of the levers drags the pawl 17 for a little distance over the surface of the annulus, and when the pressure is released by the reverse movement of the brake rod the spring 20 depresses the levers and they, through the pawl, turn the threaded nut slightly, thereby drawing together the threaded extremities of the brake-rod. This, as will be readily understood, shortens the rod and compensates for slack or wear or lost motion, from whatsoever cause it may have arisen. This compensating will be effected as often as any shortening of the rod is necessary. Any reverse rotation of the nut is prevented by the bite of the detent-pawl 18 on the surface of the annulus.

In applying my improvement the latter may

be secured directly upon the brake-rod 2, as shown at Fig. 1, and as above described, or said improvement may be secured upon the connecting-rod 27, which connects the braking devices for two wheels, so that such devices may operate in harmony, as shown at Fig. 2. Referring to this last-mentioned adaptation of my invention, it will, of course, be understood that the rod 27 should be cut in two and the sections thereof threaded to engage with the nut 7, as in the instance of the brake-rod 2, the shortening of either the connecting-rod 27 or the brake-rod 2 having, of course, the same effect with regard to changing the normal position of the brake-shoes.

I claim—

1. In a take-up device for car brakes, the combination with the brake rod having its opposed ends oppositely screw-threaded, of a nut having right and left hand screw-threads and joining the ends of the brake-rod, a housing in which said nut is supported and may be rotated, a lever fulcrumed upon the nut and provided with a pawl for engaging the latter, a second lever having operative connection with the first and projecting outside the housing, and a fixed abutment or head adjacent to and adapted to turn a secondary lever, substantially as specified.

2. In a take-up device for car brakes, the combination with the brake rod whose adjacent ends are oppositely screw-threaded, of the similarly screw-threaded nut joined to the ends of the brake rod, the housing wherein the nut has a bearing, a spring-retained pawl-bearing lever fulcrumed about the nut and adapted to rotate the same, a detent pawl attached to the interior of the housing, and the secondary lever and means for operating the same whereby the pawl-carrying lever is actuated, substantially as set forth.

3. In a take-up mechanism for car brakes, the combination with the brake rod whose extremities are oppositely screw threaded, of the nut provided with right and left hand screw threads and joining the ends of the brake rod, a housing inclosing the nut and forming a bearing therefor, ways upon the housing co-operating with slide blocks on the brake rod, a spring-retained pawl-carrying lever arranged within the housing and adapted to actuate the nut, means for holding said nut against retrogression, and a secondary lever having operative engagement with the primary lever, and a head for the actuation of said secondary lever, the whole arranged substantially as described.

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

EPHRAIEM CHAQUETTE.

Witnesses:

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M. T. LONGDEN.