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Patented Oct. 21, 1902.

L. C. & W. S. JOHNSON.  
CAR BRAKE.

(Application filed June 27, 1902.)

(No Model.)

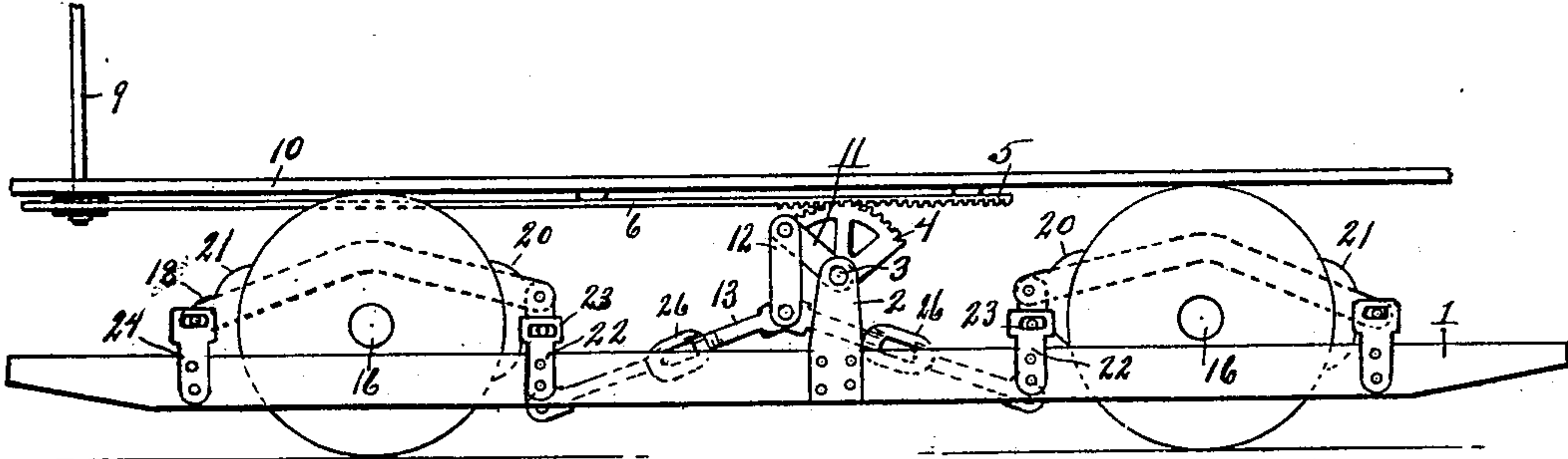


Fig. 1.

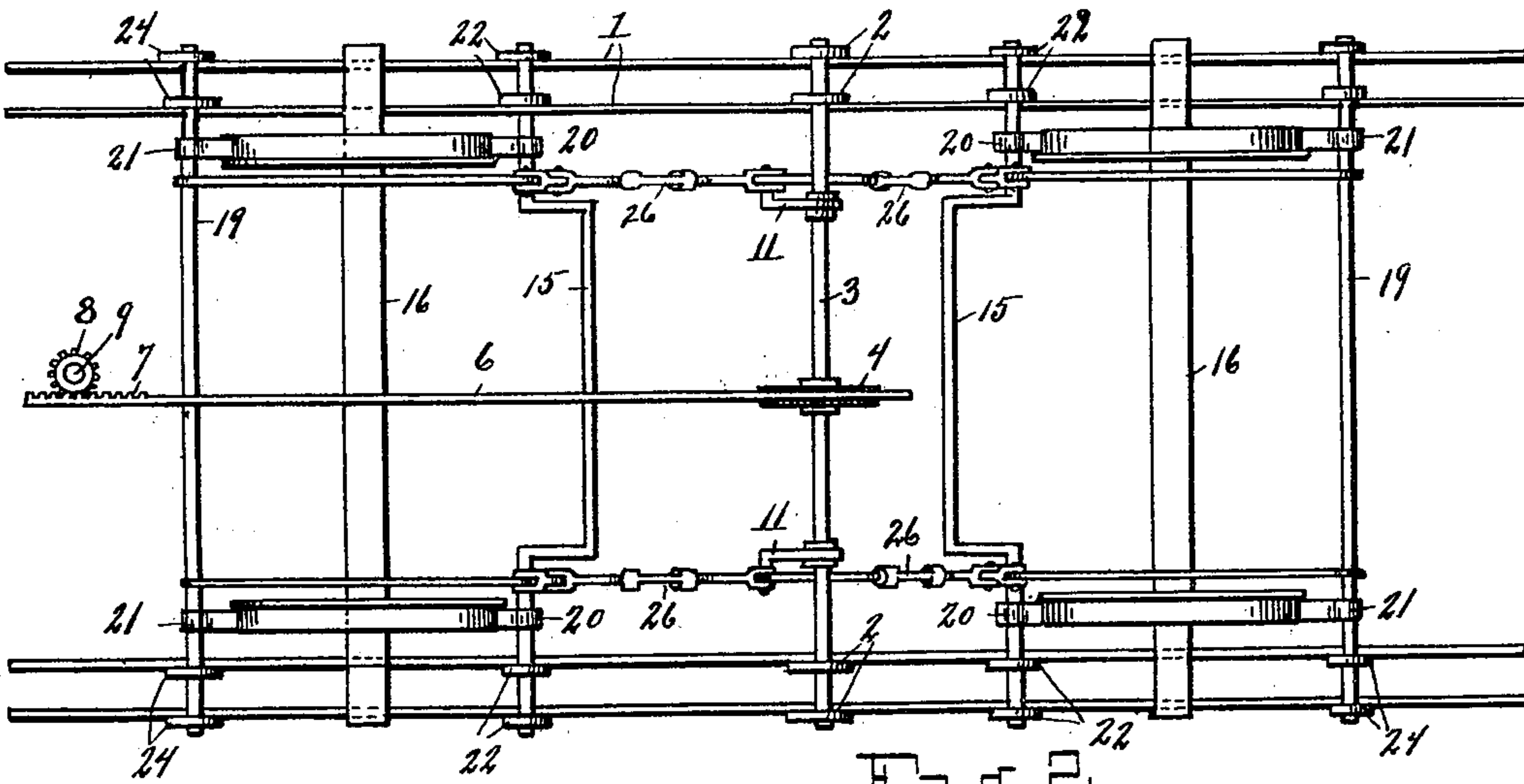


Fig. 2.

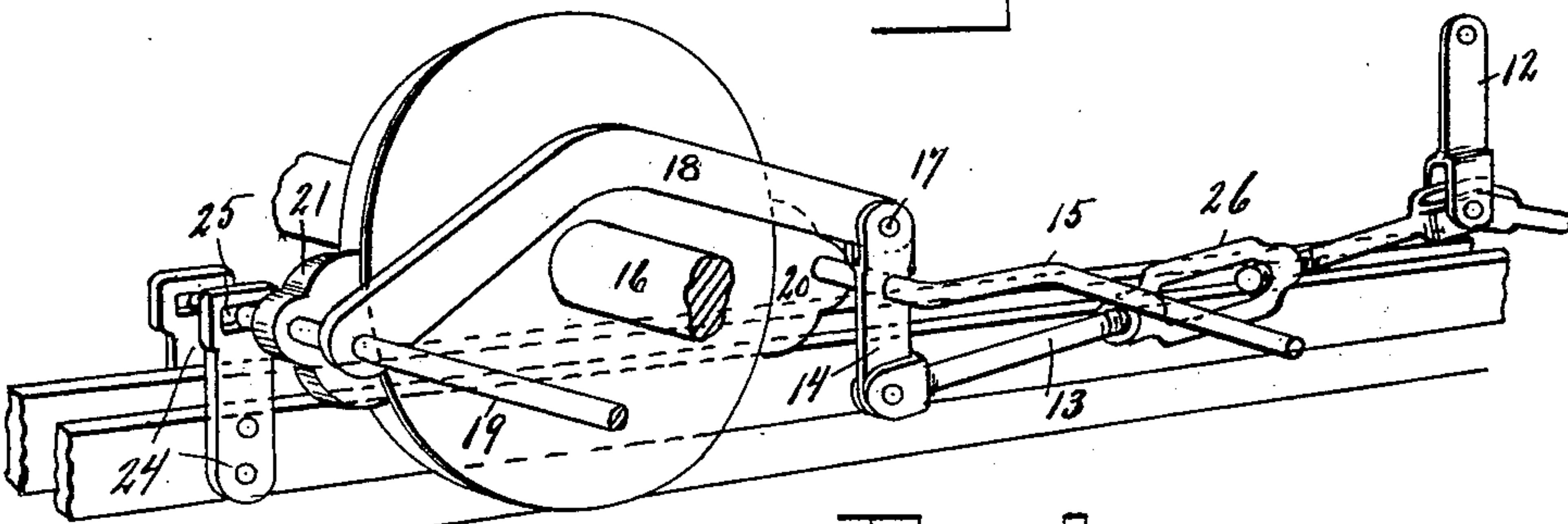


Fig. 3.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 711,899, dated October 21, 1902.

Application filed June 27, 1902. Serial No. 113,521. (No model.)

*To all whom it may concern:*

Be it known that we, LOUIS C. JOHNSON and WILLIAM S. JOHNSON, citizens of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Car-Brakes; and we do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to car-brakes; and it consists in the construction and arrangement of parts hereinafter more fully set forth.

The object of the invention is to provide simple and efficient means for applying brakes to cars by hand, in which the arrangement is such as to enable the brakes to be quickly applied and with such force as to bring the car readily under control, affording ample power to stop the heaviest cars even when going at a high rate of speed.

The above object is attained by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the truck-frame and a portion of a platform of a car, showing our improved brake applied thereto. Fig. 2 is a plan view with the platform of the car removed. Fig. 3 is an enlarged perspective view in detail, showing one wheel and the brake mechanism applied to the brake-shoes thereof, other parts being broken away.

Referring to the figures of reference, 1 designates the side bars of the truck-frame upon which the brake mechanism is mounted. Secured to the side bars of the truck-frame are the vertical standards 2, in which the opposite ends of the transverse rock-shaft 3 are journaled. Mounted upon said shaft at any convenient place is a segmental gear 4, which meshes with the teeth in the rack 5, carried by the brake-rod 6. The opposite end of the brake-rod is provided with a rack 7, which meshes with a pinion 8 upon the lower end of the brake-post 9, which is mounted in the platform 10 of the car in the ordinary manner and is adapted to be actuated by the usual hand-wheel or other suitable means.

Secured to the rock-shaft 3 are the crank-arms 11, which are connected by links 12 (see Fig. 1) with the joined ends of the toggle-levers 13. From said links the toggle-levers extend outwardly and downwardly and are pivoted at their lower ends to the levers 14, which are fulcrumed upon the brake-beams 15. These brake-beams 15, as will be seen, are provided with an offset therein, the purpose of which is to avoid the motors on the axle 16, said motors, however, being omitted from the drawings as they form no part of this invention. The upper ends of the levers 14 are pivoted at 17 to the connecting-bars 18, which extend over the axles and are pivoted to the outer brake-beams 19. Mounted upon the brake-beams 15 are the brake-shoes 20, and mounted upon the brake-beams 19 are the brake-shoes 21. The ends of the brake-beams 15 are supported in brackets 22, mounted on the side rails of the truck, and provision is made for a lateral movement of said brake-beams by forming horizontal slots 25 in said brackets, in which the ends of the brake-beams may travel. The brake-beams 19 are in like manner supported in brackets 24, which are provided with horizontal slots 25, that allow of a horizontal movement of said brake-beams.

It will now be understood that when the brake-post is rotated to draw upon the brake-rod and actuate the segmental gear to rock the shaft 3 the movement imparted to said shaft will be transmitted through the cranks 11 to the toggle-levers 13, throwing the lower ends of said levers outwardly and operating the levers 14, to which said toggle-levers are connected, to crowd the brake-shoes 20 against the wheels of the truck and at the same time draw upon the connecting-rods 18 to carry the brake-shoes 21 against said wheels. It will be seen that the fulcrums for the levers 14 are the brake-beams 15, which move toward the wheel until the shoes 20 are brought into contact with the periphery thereof, when the movement is arrested, and a further operation of the levers 14 will draw upon the connecting-rods 18 to move the brake-beams 19 and apply the brake-shoes 21.

To provide for adjusting the throw of the brake-shoes, the toggle-levers 13 are provided with turnbuckles 26, whereby their length



may be increased or decreased to regulate the throw of the connected levers 14, and the consequent travel of the brake-shoes compensating for any wear or lost motion between the connected parts.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a car-brake, the combination of the  
10 rock-shaft, a crank upon said shaft, toggle-  
levers connected to said crank, brake-beams  
carrying the brake-shoes, levers fulcrumed  
on the brake-beams, bars connecting the in-  
ner and outer brake-beams pivoted to the  
15 levers fulcrumed on the inner brake-beams,  
and means for actuating said rock-shaft.

2. In a car-brake, the combination of a  
rock-shaft, a crank thereon, toggle-levers con-  
nected to said crank, brake-beams carrying  
20 the brake-shoes, said brake-beams being  
mounted to slide horizontally, levers ful-  
crumed on the inner set of brake-beams hav-  
ing one end connected with the toggle-levers,  
bars connecting the levers fulcrumed on the  
25 inner brake-beams with the outer set of  
brake-beams, and means for actuating said  
shaft.

3. In a car-brake, the combination of a  
rock-shaft, a segment thereon, a brake-rod  
30 engaging said segment, means for actuating

said brake-rod, a crank upon said shaft, tog-  
gle-levers connected with said crank, brake-  
beams mounted to slide toward and from the  
wheels of the truck, brake-shoes upon said  
brake-beams adapted to engage the wheels, 35  
levers fulcrumed upon the inner set of brake-  
beams, connecting-rods pivoted to one end of  
said levers and attached at their opposite  
ends to the outer set of brake-beams, sub-  
stantially set forth.

4. In a car-brake, the combination of a  
rock-shaft, a crank thereon, toggle-levers con-  
nected to said crank, movable brake-beams,  
brake-shoes on said beams, levers fulcrumed  
on the inner set of brake-beams having one 45  
end connected with the toggle-levers, bars  
connecting the levers fulcrumed on the in-  
ner set of brake-beams with the outer set of  
brake-beams, means for attaching the con-  
necting parts to regulate the throw of the 50  
brake-shoes, and means for actuating said  
rock-shaft.

In testimony whereof we sign this specifi-  
cation in the presence of two witnesses.

LOUIS C. JOHNSON.  
WILLIAM S. JOHNSON.

Witnesses:

C. E. DAVIS,  
E. S. WHEELER.