

No. 754,193.

PATENTED MAR. 8, 1904.

H. T. BROWN.
CAR BRAKE.

APPLICATION FILED JULY 22, 1903.

NO MODEL.

Fig. 1.

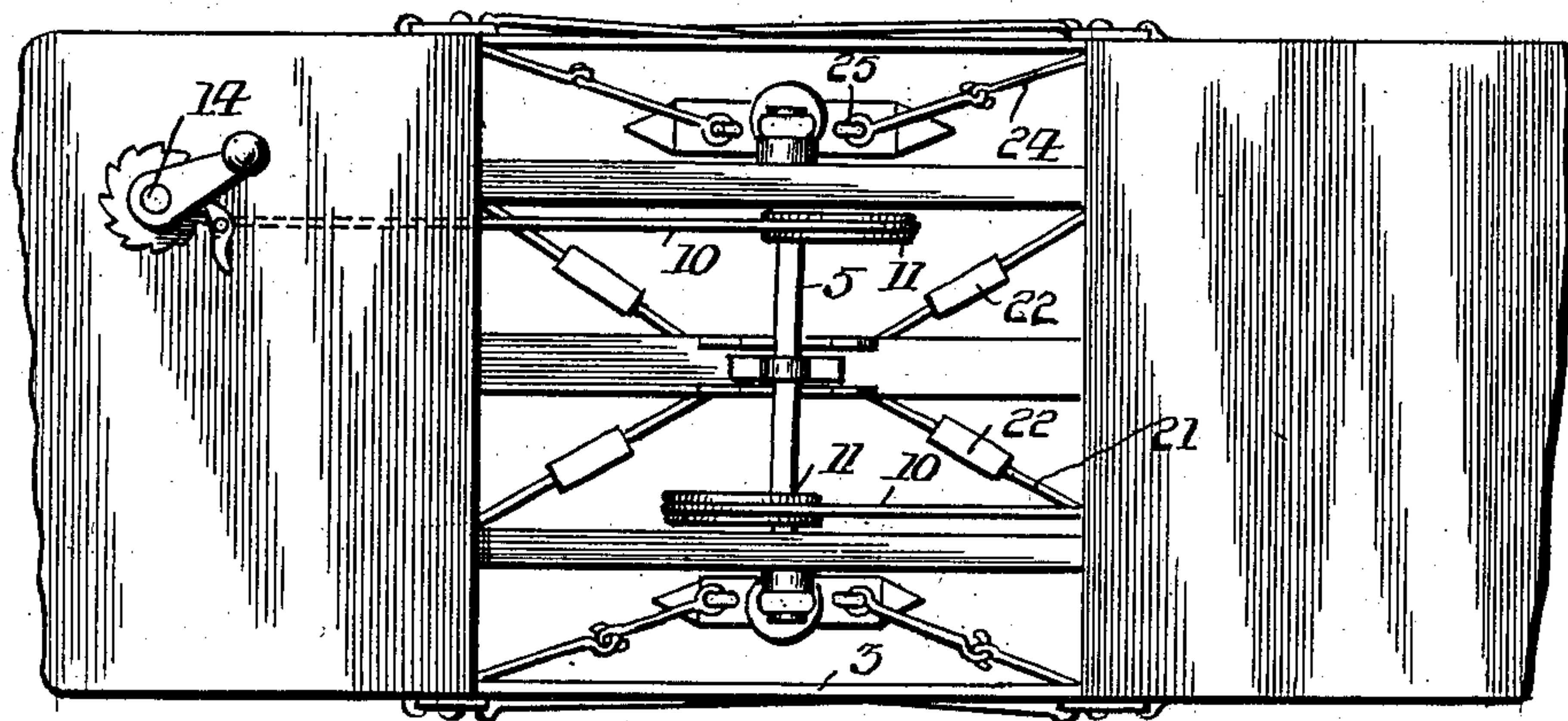
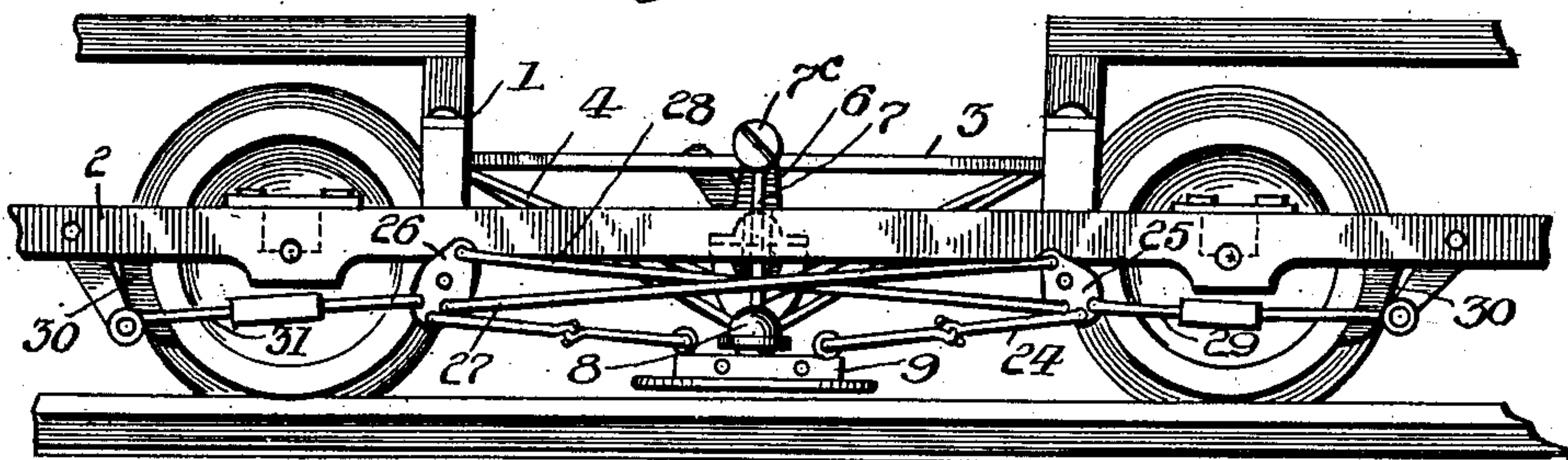


Fig. 2.

Fig. 4.

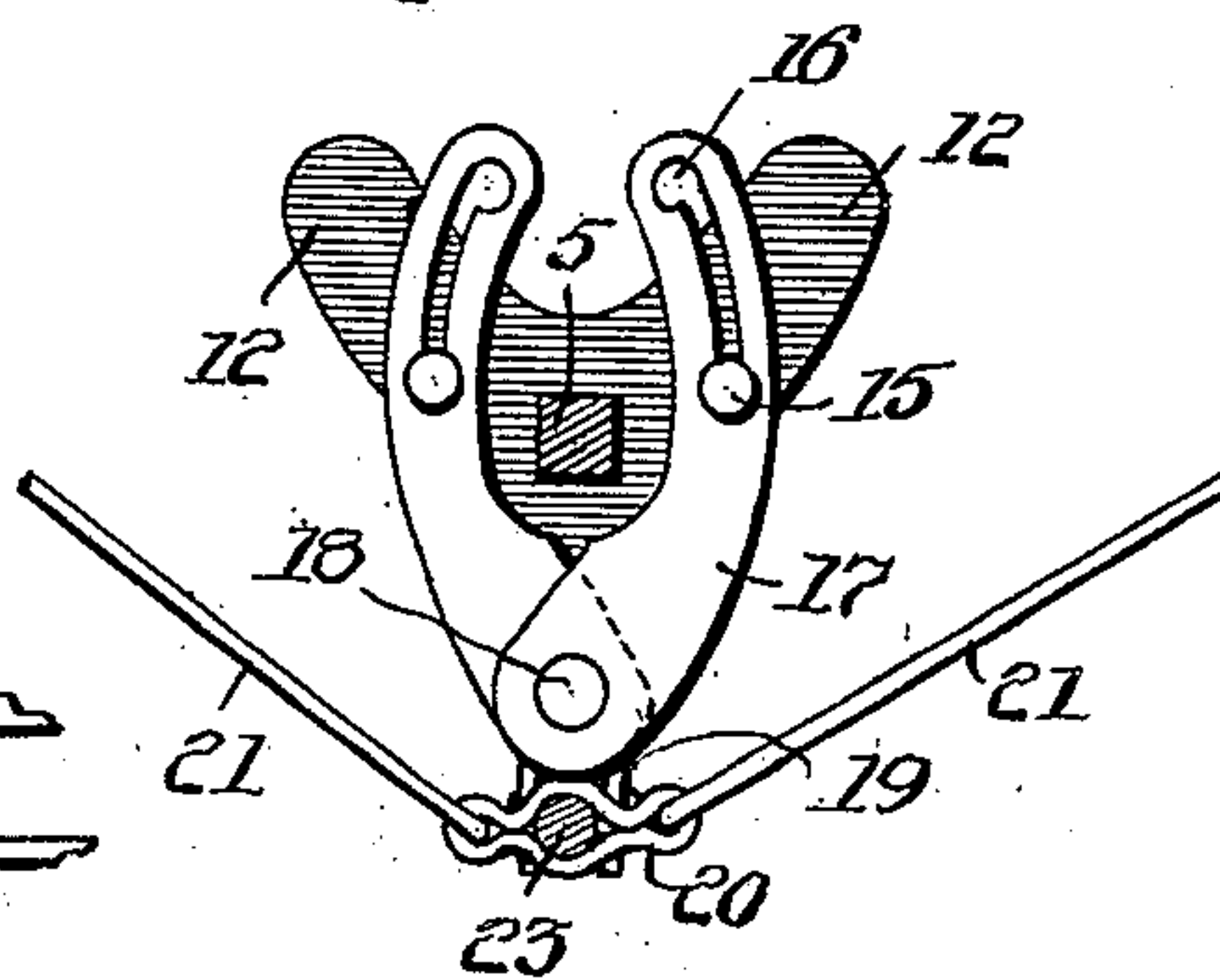
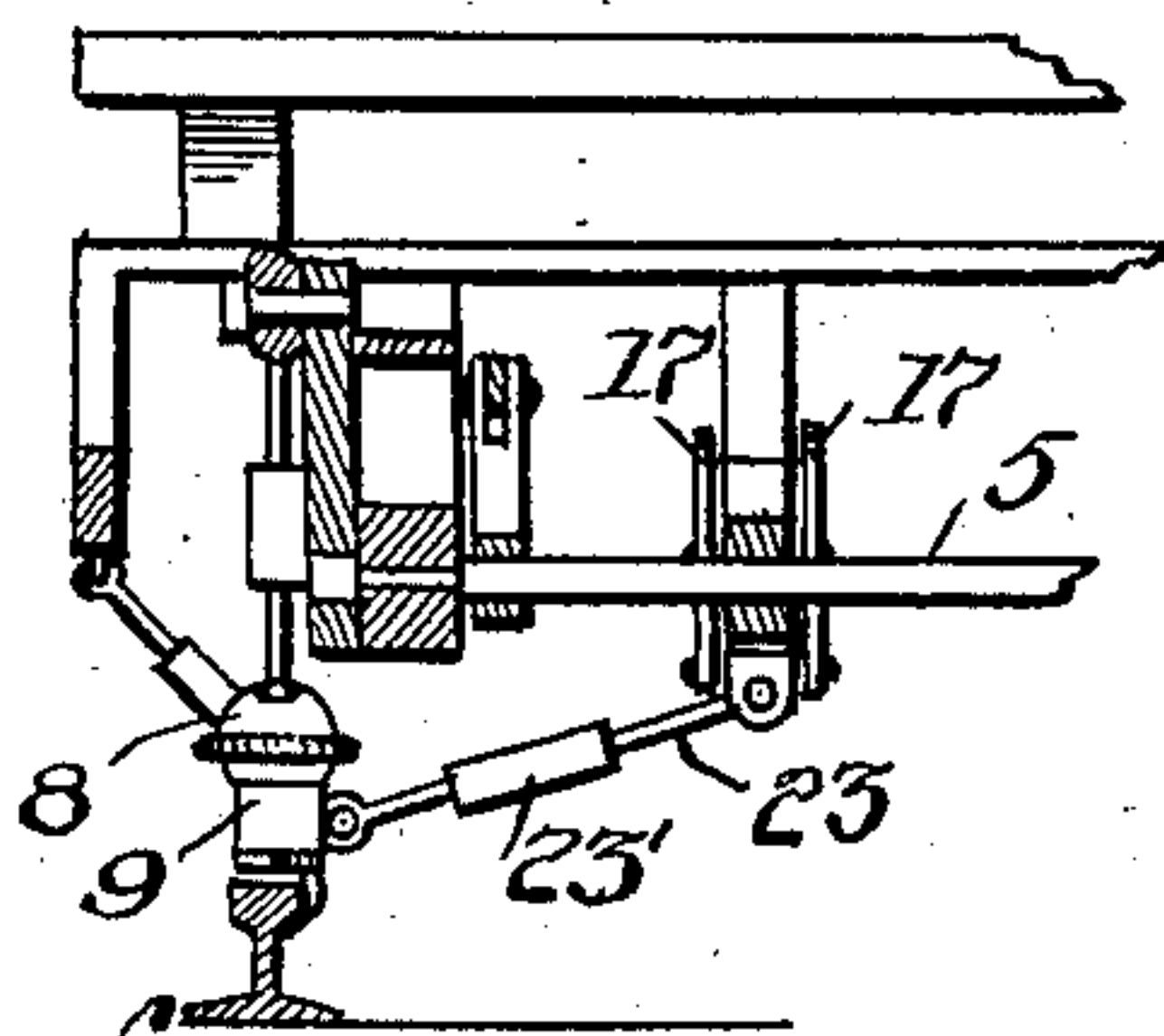
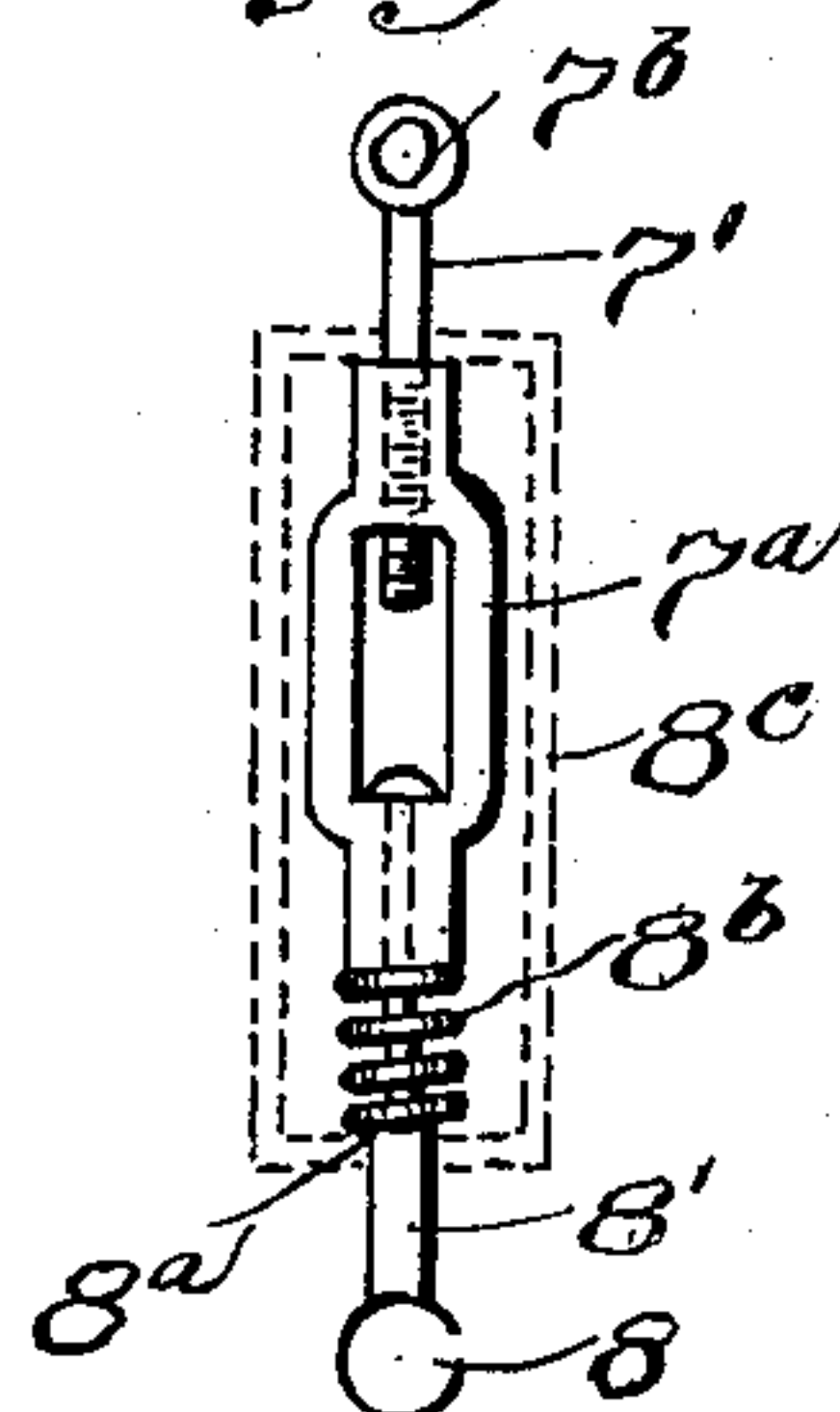


Fig. 5.

Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY T. BROWN, OF WILKINSBURG, PENNSYLVANIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 754,193, dated March 8, 1904.

Application filed July 22, 1903. Serial No. 166,602. (No model.)

To all whom it may concern:

Be it known that I, HENRY T. BROWN, a citizen of the United States of America, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in 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 for street-railways and the like, and relates more particularly to that class of brakes which are adapted to engage with rails of the track; and the object of the present invention is to provide means for the engagement of the rail-brakes and the operation at the same time of the wheel-brakes whereby to engage the shoes of the latter with the wheels of the car.

The present invention contemplates to provide means whereby a car may be brought to a gradual stop or in case of an emergency may be brought to almost an instantaneous stop, and in connection with the rail-shoes the invention aims to provide means for breaking the engagement with the tread and also with the side of the rail-tread, whereby to obtain a larger gripping-surface and in a manner to produce a wedging action of the brake-shoes against the inner face of the rails.

The present invention is an improvement to the form of brake shown, described, and claimed in Letters Patent No. 711,280, granted to me October 14, 1902, and in this application the improvements will be specifically designated and then particularly claimed.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation of a truck equipped with my improved brake. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse sectional view of the brake-shaft, showing the V-shaped lever in side elevation. Fig. 4 is a transverse vertical sectional view of a part of the truck and brake. Fig. 5 is a plan view of one of the hanger-rods of the brake-shoes.

As in my former patent hereinbefore re-

ferred to, I attach to the truck-frame 2 the cross-bars 1, supporting-bars 3, and hanger-bars 4. The hanger-bars 4 carry suitable bearings, in which is journaled the brake-shaft 5, the latter being square in cross-section except at its journals and being provided at each end with cranks 6. Pivotaly connected to the upper end of these cranks are hanger-rods, which at their lower ends are connected by the ball-and-socket joint 8 to the rail brake-shoes 9. The hanger-rods are preferably made as shown in detail in Fig. 5, each comprising the rod 7', threaded at its lower end into the upper end of a turnbuckle 7^a and at its upper end provided with an eye 7^b to engage over the pin 7^c, carried by crank 6. Engaging into the lower end of the turnbuckle 7^a is a rod 8', which carries the ball member of the ball-and-socket joint 8. This rod is reduced for a portion of its length, and between the shoulder 8^a thereby formed and the lower end of the turnbuckle is a spring 8^b, which will compress as the brake-shoes are applied and prevent the shoes being applied to the rails with a sudden shock or jar. The turnbuckles are preferably inclosed in a casing 8^c, as shown by dotted lines in Fig. 5. The rail brake-shoes are made so as to engage with the tread of the rail and on the side of said rail, as fully explained in my former patent, and the operating-rods are provided with the turnbuckles, whereby to permit the adjustment thereof as may be desired.

The shaft 5 is operated by means of the connecting-rods 10, attached to the cranks 11. This shaft 5 carries a centrally-mounted V-shaped lever 12, each arm of which has a headed pin 15, which operates in the curved slots 16 of toggle-levers 17, pivotaly secured together at their lower ends, as shown at 18. The lower ends of said toggle-levers carry lugs 19, in which the spreader 20 is hung, and this spreader has connected to it the brace-rods 21. The upper ends of these brace-rods are connected to the hanger-bars 4 or to the supporting-bars 3. These brace-rods 21 are provided with spring-boxes 22 in order to permit the reciprocating movement of the toggle-levers and V-shaped lever 12 when the shaft 5 is actuated. Spreader-rods 23 connect with

the pivoted end of the toggle-levers 17 and are attached to the rail-shoes 9, whereby to spread the shoes as they are applied to the rails and force the same against the inner face of the tread in the same manner as is accomplished by my former patent, heretofore referred to. These spreader-rods 23 are also provided with spring-boxes 23', which tend to assist in elevating the shoes from the rails when the brakes are released.

In my former patent I provide suspension-rods, which are pivotally attached to the rail brake-shoes and to the truck-frame. In my present application I also provide these suspension-rods 24, which are pivotally attached to the eye 25', carried by the brake-shoe, in the same manner as in my former patent; but in the present invention I pivotally connect the upper ends of these suspension-rods to cam-levers 25 26, which are pivoted to hangers carried by the truck-frame 2. The connecting-rod 27 is pivotally attached to cam 25 near its upper end and to cam 26 near the lower end thereof, and a like rod 28 connects the upper end of cam 26 with the cam 25 near the lower end of the latter. The cams 25 at each end of the car are connected by rods 29 with the wheel brake-shoes 30 at one end of the car, and rods 31 connect the cams 26 with the brake-shoes 30 at the opposite end of the car. I preferably make each connecting-rod 24 in two sections linked together, as shown. The turning of the shaft 5 rocks the V-shaped lever 12, whereby to part toggle-levers 17, the cranks 6 forcing the rail brake-shoes against the rails of the track, the spreader-rods 23 acting at the same time to force the shoes against the inner face of the rail-tread. As the brake-shoes are forced into engagement with the rails the connecting-rods 24, pulling against cams 25 26, serve, through the medium of connecting-rods 29 31, to draw the brake-shoes 30 into engagement with the wheel, the brake-shoe at the forward end of the car having the wheels turned against the same and the brake-shoes at the rear end of the car having the wheels turning away from the same. The connecting-rods 27 28 equalize the pressure of the wheel brake-shoes, requiring cams 25 26 to each be turned an equal distance in applying the brakes.

While I have herein shown and described my invention in detail, it will be obvious that

various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a brake, the combination with a truck, of a transversely-arranged shaft, cranks at the ends of said shaft, rail brake-shoes pivotally connected to said cranks, and means for operating said shaft, of cams pivotally attached to the car-truck, connecting-rods pivotally connected to said rail brake-shoes and the cams, brake-shoes adapted to engage the wheels of the truck, connecting-rods pivotally attached to said wheel brake-shoes and the cams, and springs in each of said connecting-rods, substantially as described.

2. In a car-brake, the combination with a truck, a brake-shaft suspended therefrom, cranks carried by the said brake-shaft, rail brake-shoes connected to said cranks, and means for operating said cranks, of wheel-engaging brake-shoes, cams pivotally attached to the car-truck, connecting-rods pivotally attached to the rail brake-shoes and the cams, and connecting-rods pivotally attached to the cams at each side of the truck, substantially as described.

3. In a car-brake, the combination with a truck, of a brake-shaft, rail brake-shoes connected to said shaft, means for operating the shaft, pivotally suspended from the truck, connecting-rods pivotally connected to the cams and rail-shoes, wheel-engaging shoes, and connecting-rods pivotally attached to the wheel-engaging shoes and the cams, substantially as described.

4. In a car-brake, the combination with the truck, of a brake-shaft, rail brake-shoes, rods connecting the rail brake-shoes with the shaft with compression and adjustment means between the shaft and the said shoes, wheel-engaging shoes, and means connected to the wheel-engaging shoes for operating the latter simultaneously with the rail-engaging shoes, substantially as described.

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

HENRY T. BROWN.

Witnesses:

A. M. WILSON,
E. E. POTTER.