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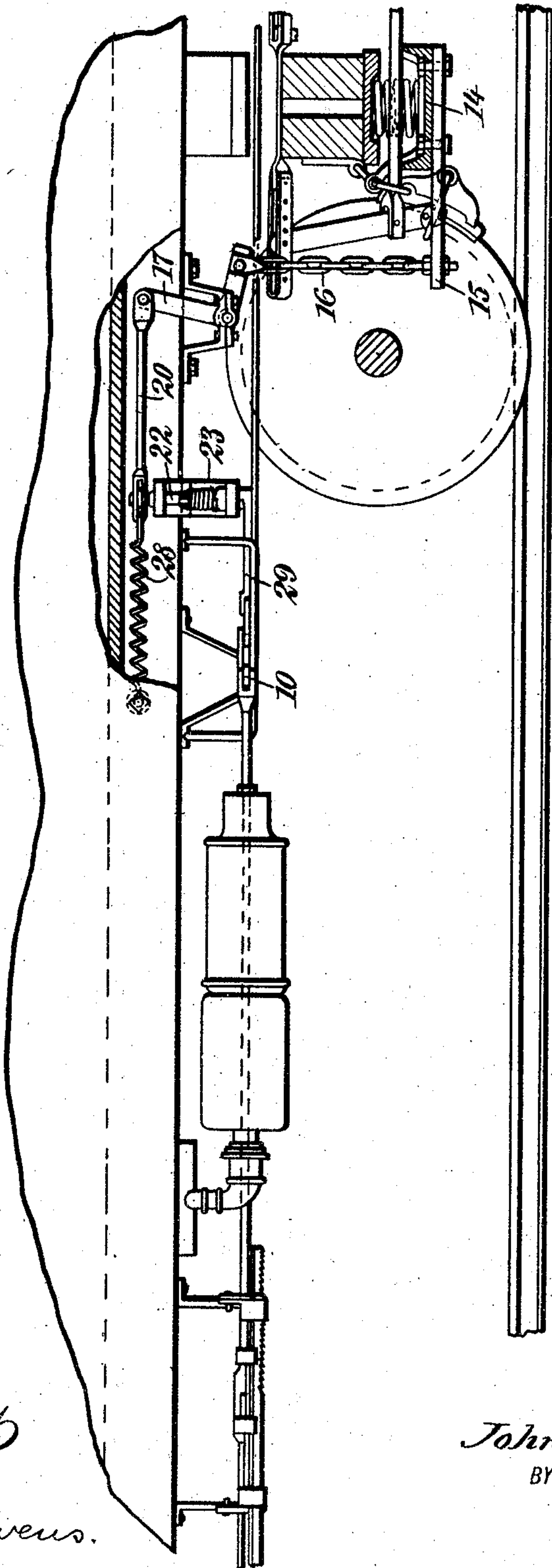
PATENTED JAN. 24, 1905.

J. M. DAVIES, JR.
BRAKE RIGGING.

APPLICATION FILED AUG. 17, 1904.

3 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

L. Almquist.

Isaac B. Owens.

INVENTOR

John M. Davies Jr.

BY

Mumford
ATTORNEYS

No. 780,868.

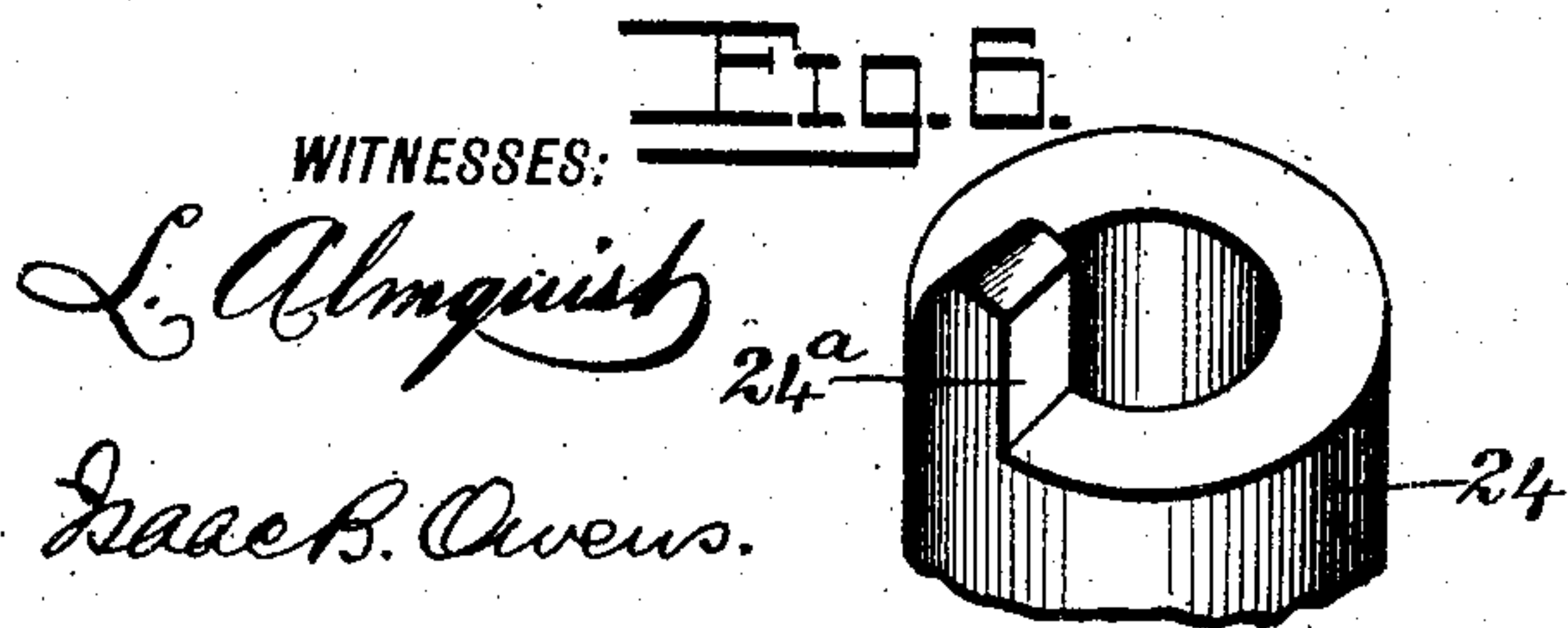
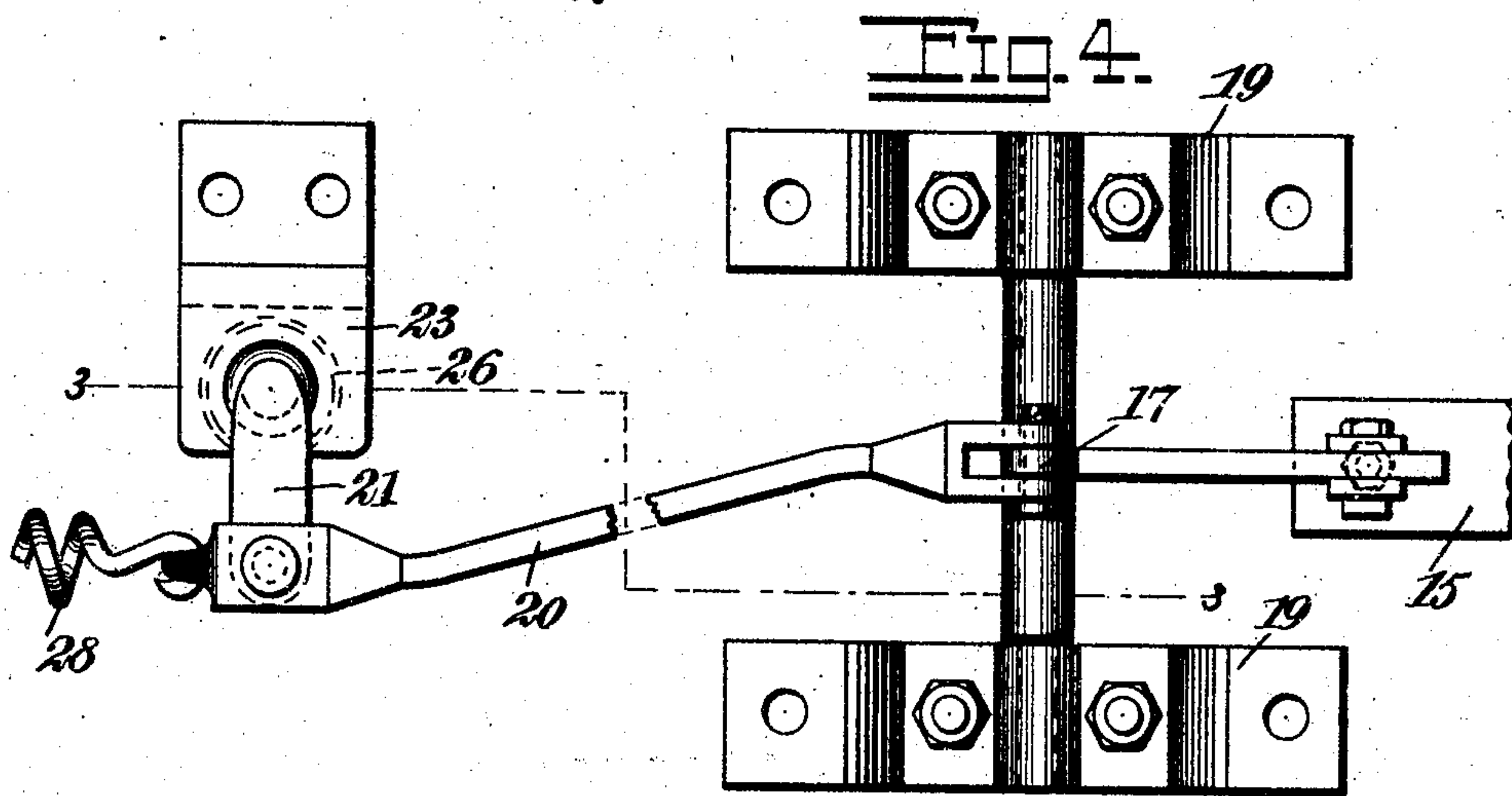
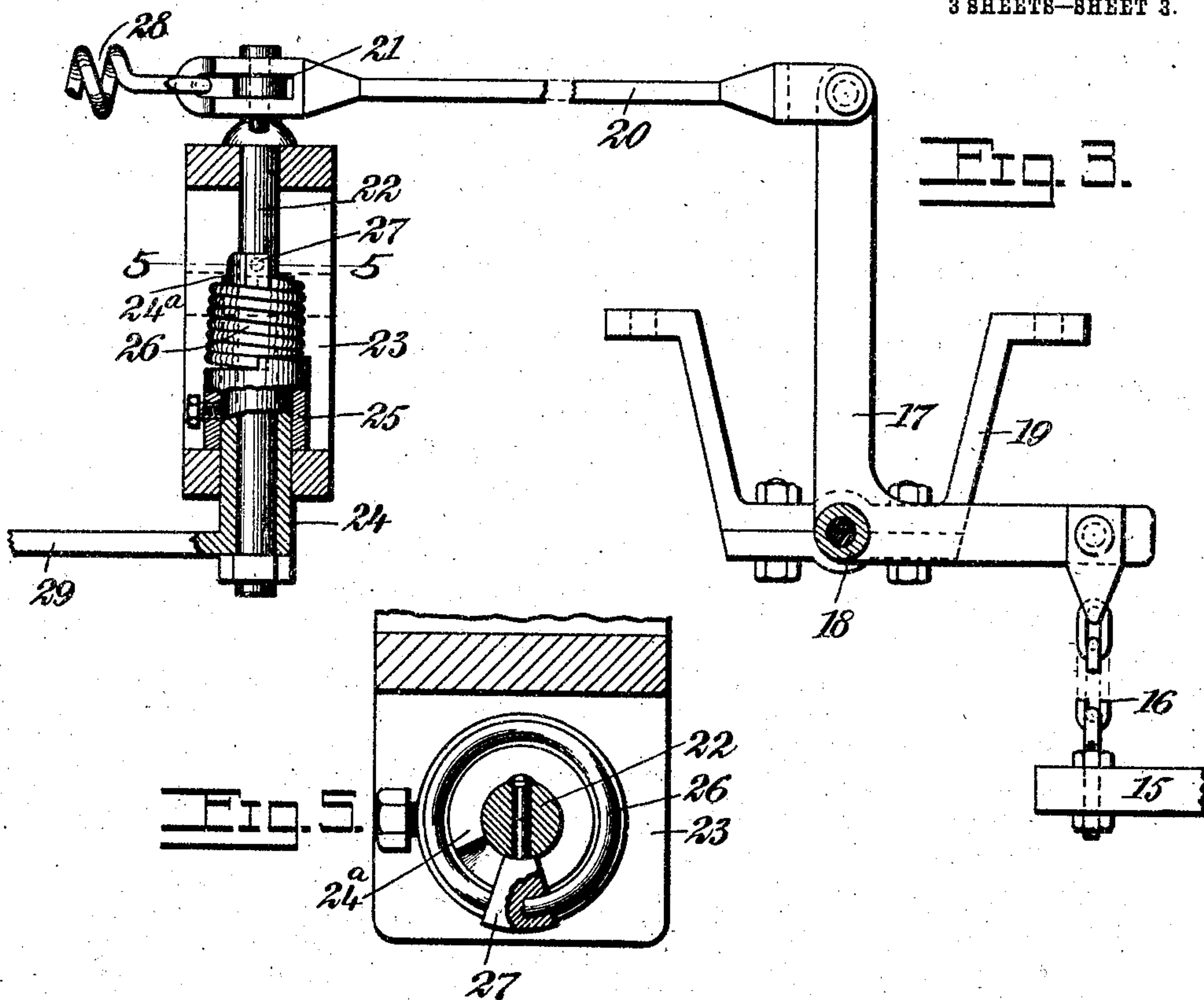
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INVENTOR

John M. Davies Jr.

BY

Wm. M. S.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN M. DAVIES, JR., OF PLATTSBURG, NEW YORK.

BRAKE-RIGGING.

SPECIFICATION forming part of Letters Patent No. 780,868, dated January 24, 1905.

Continuation of application Serial No. 204,397, filed April 22, 1904. This application filed August 17, 1904. Serial No. 221,050.

To all whom it may concern:

Be it known that I, JOHN M. DAVIES, JR., a citizen of the United States, and a resident of Plattsburg, in the county of Clinton and State of New York, have invented a new and Improved Brake-Rigging, of which the following is a full, clear, and exact description.

This invention relates to a means for automatically varying the heft of railway-brakes in proportion to the load on the car, so that the brakes will always be applied with all possible force, consistent, however, with not sliding the wheels of the car.

The present application is a continuation of my copending application, Serial No. 204,397, filed April 22, 1904.

In its preferred embodiment the invention comprises a combination with connections for transmitting the braking force, said connections including a shiftable part and devices for operating said part, the operating devices being themselves actuated by the relative movement of the car-body and trucks due to the absence or presence of a load on the body.

This specification is an exact description of one example of the invention, while the claims define the actual scope thereof.

Reference is had to the accompanying drawings, which form a part of this specification, in which drawings like characters of reference indicate like parts in the several views, and in which—

Figure 1 is a bottom plan view illustrating the sills of the car in dotted lines and showing my invention applied. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged side view of the elbow-lever and link and also showing the spring connection between the link and the brake-rigging-shifting means. Fig. 4 is a plan view showing the same part. Fig. 5 is a sectional plan on the line 5 5 of Fig. 3, and Fig. 6 is a detail perspective view of the sleeve hereinafter fully described.

Referring to Fig. 1, 10 indicates the brake-lever, which is connected with the piston-rod of the brake-cylinder 11. 12 indicates the rod which transmits to the brake-beams movement of the lever 10, this rod being shiftable on the lever so as to vary the force or leverage thereof. By means of my invention this shifting

of the rod 12 is brought about automatically and proportionately to the load on the car.

Connected to the spring-beam 14 of the car-truck is an arm 15, to which is joined a chain 16. This chain extends upward to an elbow-lever 17, which is fulcrumed on the shaft 18, carried on two hangers 19, fastened to and depending from the sills of the car. The arm of the elbow-lever opposite the chain has a link 20 pivoted thereto, and this link extends inward toward the middle of the car and is joined to a crank-arm 21, attached to the upper end of the shaft 22. Said shaft is revolubly mounted in an essentially U-shaped supporting member 23, formed, preferably, of cast metal and suitably secured under the body of the car. Encircling the lower part of the shaft 22 and revoluble within the said support 23 is a sleeve 24, loose on the shaft 22 and having keyed or otherwise fastened thereto a thimble 25. Said thimble has joined thereto one end of a torsional spring 26. The other end of said spring is joined to a clip 27, fastened to the shaft 22 and adapted to be engaged by a shoulder 24^a on the sleeve 24.

28 indicates a retractile spring which is connected to one end of the link 20 and suitably fastened to the under side of the car-body, this spring tending to move the upper arm of the lever 17 leftward, (referring to Fig. 3.) The lower end of the sleeve 24 carries an arm 29, to which is joined a link 30. Said link extends transversely under the car and is connected to the brake-rod 12, before described.

In Fig. 1 the full lines illustrate the parts in the position which they assume under a light load. In this position the body of the car rises under the action of the car-springs and the chain 16 and spring 28 are taut, the crank-arm 21 being thrown rightward (referring to Figs. 3 and 4) and the parts 29 and 30 correspondingly moved. Should the car become loaded, the body will sink, compressing the car-springs and slacking the chain 16, thus allowing the spring 28 to assert itself and move the crank-arm 21 and its connection leftward, (referring to Figs. 3 and 4.) This will shift the arm 29 back to or toward the position indicated by broken lines in Fig. 1 and bring about a corresponding change in the

relative positions of the parts 10 and 12, thus increasing the leverage or power exerted by the lever 10, and consequently increasing the power of the brakes. The spring 26 is provided to effect a flexible connection between the parts 22 and 24 and avoid any rupture which might occur in case a solid connection were employed and the car were loaded or unloaded, bringing about a swinging action of the shaft 22 when the brakes were applied. In this event the frictional engagement between the parts 10 and 12 would be so great as to tend to fracture some of the parts of the rigging; but by employing the spring 26 this danger is avoided.

Various changes in the form, proportions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the terms of my claims.

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

1. The combination with a brake-rigging having a shiftable part to vary the force of the brakes, of means for automatically shifting said part, said means being controlled by the movement of the car-body under the influence of its load, and including two axially-coincident relatively movable parts and a torsional spring having its ends respectively connected to said parts.

2. The combination with a railway-car and brake-rigging having a shiftable part to vary the force of the brakes, of a lever connection between said lever and a part of the car stationary relative to the vertical movement of the car under the influence of its load whereby to move the lever in one direction, a spring tending to move the lever in the other direction, a link in connection with the lever, a rock-shaft connected with and actuated through the link, a sleeve turning freely on the rock-shaft, a spring connecting the shaft and sleeve, and means in connection with the sleeve for shifting said shiftable part of the brake-rigging.

3. The combination with a car-rigging having a shiftable part to vary the braking force, of a lever, means for mounting said lever on the car, a connection between the lever and the brake, a rock-shaft, a connection between the rock-shaft, and the lever, comprising a revoluble thimble on the shaft, and a spring also on the shaft and connecting therewith and with the thimble, and means for transmitting the movement of the rock-shaft to said shiftable part of the brake-rigging.

4. The combination with a car-brake rigging having a shiftable part to vary the braking force, of a lever, means for mounting the lever on the car, a flexible connection between

the lever and the car-brake, a rock-shaft, a connection between the rock-shaft, and the lever, comprising a revoluble thimble on the rock-shaft, and a spring connected to the rock-shaft and to the thimble and tending to throw the lever in one direction, and means for transmitting the movement of the rock-shaft to said shiftable part of the brake-rigging.

5. The combination with a car-brake rigging having a shiftable part to vary the braking force, of a lever, means for mounting the lever on the car, a connection between the lever and the car-brake, a link attached to the lever, a cranked rock-shaft connected to the link, a revoluble thimble on the rock-shaft, and a spring connected to the rock-shaft and to the thimble, means for mounting the rock-shaft on the car, and means for transmitting the movement of the rock-shaft to the said shiftable part of the brake-rigging.

6. The combination with a car-brake rigging having a shiftable part to vary the braking force, of a lever, means for mounting the lever on the car, a flexible connection between the lever and the truck of the car, a member movably mounted on the car, and connected with the lever, a thimble on this member, and a spring connected to the thimble and to the member and serving to throw the latter in one direction, and means for transmitting the movement of said member to said shiftable part of the brake-rigging.

7. The combination with a car-brake rigging having a shiftable part to vary the braking force, of a member pivotally mounted on the car, a connection between said member and the brake, a rock-shaft, and means for mounting the rock-shaft on the car, a connection between the rock-shaft and said pivoted member, a sleeve loosely encircling the rock-shaft, a connection between the sleeve and said shiftable part of the brake-rigging, and a flexible connection between the rock-shaft and the sleeve.

8. The combination with a car-brake rigging having a shiftable part to vary the braking force, of a rock-shaft, means controlled by the movement of the car-body under the influence of its load for operating said rock-shaft, a sleeve loosely encircling the rock-shaft, a connection between the sleeve and the said shiftable part of the brake-rigging, and a flexible connection between the rock-shaft and the sleeve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN M. DAVIES, JR.

Witnesses:

THOS. H. SMITH,
RALPH L. SIGNOR.