C. H. HOWARD & H. M. PFLAGER.

RAILROAD CAR BRAKE.

APPLICATION FILED APR. 9, 1910.

992,197. **Patented May 16, 1911.**

Fig. 1.

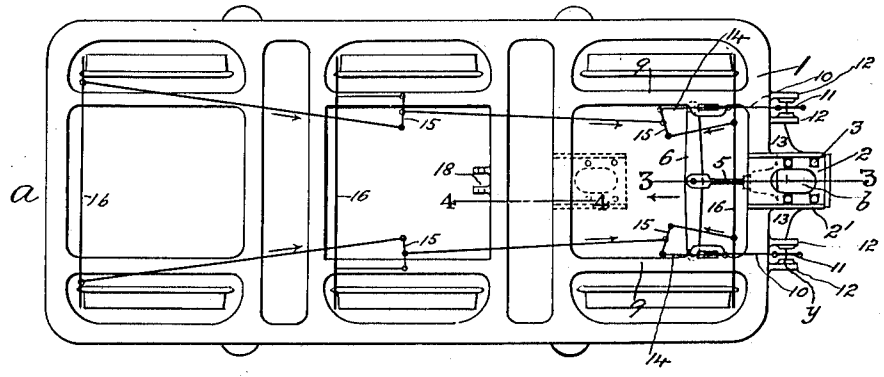


Fig. 2.

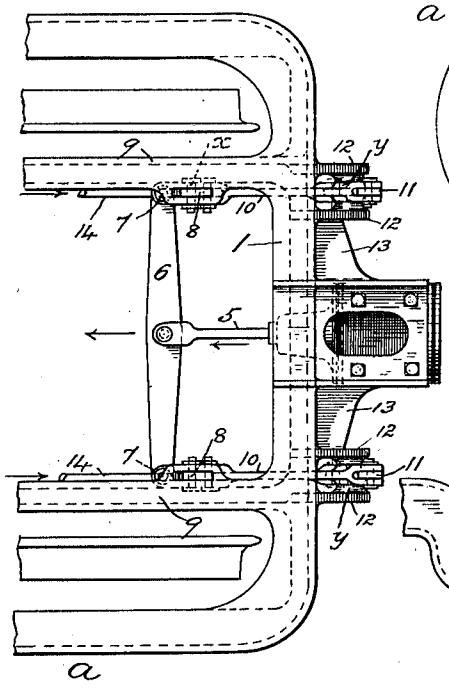


Fig. 3.

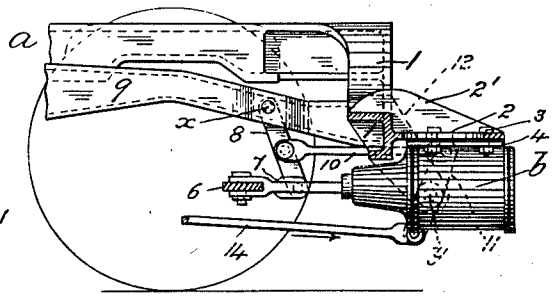


Fig. 4.

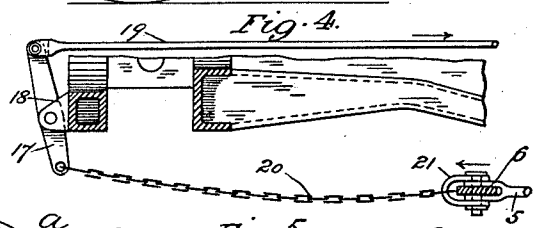
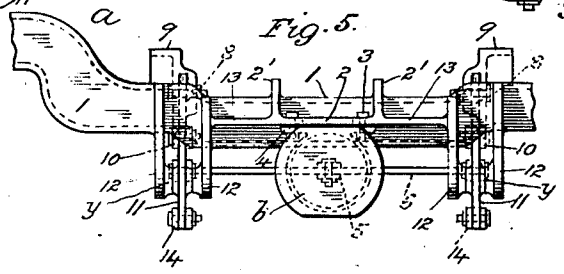


Fig. 5.



WITNESSES

J. W. Benbow.

E. G. Siggers

INVENTORS

Clarence H. Howard

Harry M. Pflager

By Edward H. Ferrell

their Atty

UNITED STATES PATENT OFFICE.

CLARENCE H. HOWARD AND HARRY M. PFLAGER, OF ST. LOUIS, MISSOURI, ASSIGNORS TO DOUBLE BODY BOLSTER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

RAILROAD-CAR BRAKE.

992,197. Specification of Letters Patent. Patented May 16, 1911.

Application filed April 9, 1910. Serial No. 554,350.

To all whom it may concern:

Be it known that we, CLARENCE H. HOWARD and HARRY M. PFLAGER, citizens of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Railroad-Car Brakes, of which the following is a specification.

Our invention relates particularly to the brake-cylinder and those parts of the air brake-gear which are usually attached to the framework of the car body and connected by the main pull-rod to the other parts of the said gear carried by the car truck-frame, by which arrangement in applying the brakes to the car-wheels, the truck is drawn toward the cylinder and causes undue stress on the center-pins and other affected parts of the car, and our invention has for its object to relieve the car body from the weight of the brake-cylinder and its above-mentioned combined parts, and from the stresses due to their operation.

The invention consists essentially in attaching the air brake-cylinder and its appendages to the car truck in lieu of to the car body, combined with other features of novelty as hereinafter described and claimed, reference being had to the accompanying drawing forming part of this specification, whereon,

Figure 1, is a top plan view of a six-wheeled car truck-frame having an air brake-cylinder attached thereto according to our invention, and representing diagrammatically parts of the air brake-gear arranged accordingly in connection with the push-rod of the cylinder and with the other parts of the said gear usually carried by the car truck-frame for applying the brakes to the car-wheels; Fig. 2, an enlarged view of the end member of the truck-frame as seen in Fig. 1 to which the brake-cylinder and its operating parts are preferably attached; Fig. 3, a vertical longitudinal section therethrough on line 3, 3, in Fig. 1; Fig. 4, a similar view to Fig. 3 through the transoms of the truck-frame on line 4, 4, in Fig. 1, showing means whereby the air brake-gear, as seen particularly in Figs. 2 and 3, may be operated by the ordinary hand-brake for applying the brakes to the wheels by hand in lieu of air through the said gear, and Fig. 5, an end elevation of the brake-cylinder and corresponding view of the end member of the truck-frame (broken away) as seen from the right of Fig. 3.

Like letters and numerals of reference denote like parts in all the figures.

a represents a six-wheeled car truck-frame, from a member of which, preferably the end transverse member 1 (or from one of the transoms as indicated by dotted lines in Fig. 1) projects a horizontally arranged bracket 2 having suitable strengthening ribs 2′ which with the bracket 2 are preferably integral with the member 1, the bracket 2 being adapted for the attachment thereto by bolts 3 of the ordinarily equipped brake-cylinder *b* of an air brake mechanism, the bolts 3 passing vertically through the bracket 2 and through the flanges 4 formed along the top of the cylinder *b* as shown. Or the cylinder *b* may be attached to the top side of the bracket 2 and the ribs 2′ arranged beneath accordingly as found most desirable in practice.

The push-rod 5 of the brake-cylinder *b* is connected at its outer end on the inner side of the member 1 of the truck-frame *a* to a cylinder-lever 6 which is horizontally arranged transversely to the frame *a* and connected at each end, preferably in the present case by a link 7, to the lower part of a vertically (or thereabout) arranged fulcrum-lever 8 of the second order having its upper end pivoted or fulcrumed at *x* to the frame *a*, preferably to the corresponding inner longitudinal member or axle-guard 9 thereof as shown, and to the lever 8 between its pivot or fulcrum *x* and the link 7 is coupled one end of a horizontally arranged connecting rod 10 which is coupled at its other end to the upper end of a pull-rod lever 11 of the first order pivoted or fulcrumed at *y* to and between two opposite upright lugs or ears 12 which project from and are preferably integral with the member 1 of the truck-frame *a* on the same side thereof as the brake-cylinder *b*, one of the lugs 12 being united to the cylinder bracket 2 by a strengthening rib 13. To the lower end of the pull-rod lever 11 is coupled the outer end of the main pull-rod 14 which connects with the equalizers 15 and brake-beams 16 for applying the brakes to the wheels (as indicated diagrammatically in Fig. 1), the parts 14, 15, and 16, being of

the ordinary well-known construction and arrangement and therefore needing no further description.

For applying the brakes to the wheels by the ordinary hand-brake mechanism carried by the car body, a vertically arranged hand brake-lever 17 of the first order is preferably pivotally mounted in a suitable part of the truck-frame *a*, preferably to a bracket 18 formed on or attached to one of the transoms as shown particularly in Fig. 4, the upper part of the lever 17 being coupled to one end of the rod 19 which connects with the ordinary hand brake-gear (not shown) on the car body, while to the lower end of the lever 17 is coupled one end of a chain (or rod) 20 which is coupled at its other end, preferably by a clevis 21, to the joint pin of the push-rod 5 with the cylinder-lever 6 (or otherwise to the latter thereat), whereby the cylinder-lever 6, the push-rod 5 being free, is moved by the hand brake-gear in the same direction for pulling on the rods 14 and thereby applying the brakes to the wheels as in the case of the air brake-gear.

We do not limit ourselves to the particular combination and arrangement of the air brake operating parts 6, 7, 8, 10, and 11 between the cylinder push-rod 5 and the main pull-rod 14 as above described, nor to the hand brake operating parts between the push-rod 5 and the hand brake-gear on the car body, as it is obvious that analogous parts in each case may be otherwise arranged for applying the brakes to the car-wheels without departure from the principle of our invention.

By this invention the attachment of the brake-cylinder and combined parts of the brake-gear are transferred from the car body to the car-trucks and the car body thereby relieved from the weight and operating stresses thereof.

What we claim as our invention and desire to secure by Letters Patent is:—

1. In a railroad car, a truck-frame having an auxiliary member integral therewith and adapted for the attachment thereto of a brake-cylinder of the car air brake-gear.

2. The combination with a truck frame, of an air brake cylinder fixed to said truck frame and bearings integral with said truck frame for the pivotal journals of a pair of pull rod levers of the air brake gear.

3. The combination with a truck frame having an integral extension, of an air brake cylinder fixed to said extension, bearings integral with said truck frame, and pull rod levers of the air brake gear pivotally mounted in said bearings.

4. The combination with a truck frame having an integral bracket, of an air brake cylinder fixed to said bracket, bearings integral with the truck frame, pull rod levers pivotally mounted in said bearings and connections from said pull rod levers to the piston rod of the air brake cylinder.

5. In a railroad car, the combination of a truck-frame, a bracket integral with the said frame, a brake-cylinder of the car air brake-gear fixed to the said bracket, levers pivotally journaled in the said frame, means for connecting the said levers together, and means for connecting them to the push-rod of the said cylinder and the main pull-rod of the said gear.

6. In a railroad car, the combination of a truck-frame, a lever pivotally journaled to the said frame, and means for connecting the said lever with the pull-rods of the car air brake-gear on the said frame and with the hand brake-gear on the car body.

7. In a railroad car, the combination of a truck-frame, a bracket integral with the said frame, a brake-cylinder of the car air brake-gear fixed to the said bracket, levers pivotally journaled in the frame, means for connecting the said levers together, means for connecting the said levers to the push-rod of the said cylinder and the main pull-rod of the said gear, a lever pivotally journaled in the said frame, and means for connecting the last-named lever with the said pull-rod and with the hand brake-gear on the car body.

CLARENCE H. HOWARD.
HARRY M. PFLAGER.

Witnesses:
HAL C. BELLVILLE,
EDWARD W. FURRELL.