(No Model.)

A. P. MASSEY.

CAR BRAKE.

No. 472,929. Patented Apr. 12, 1892.

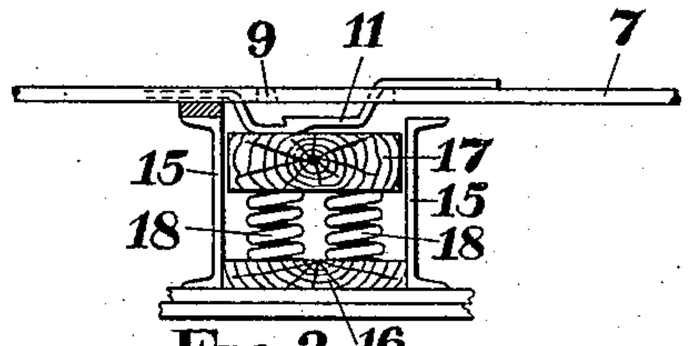

FIG. 3

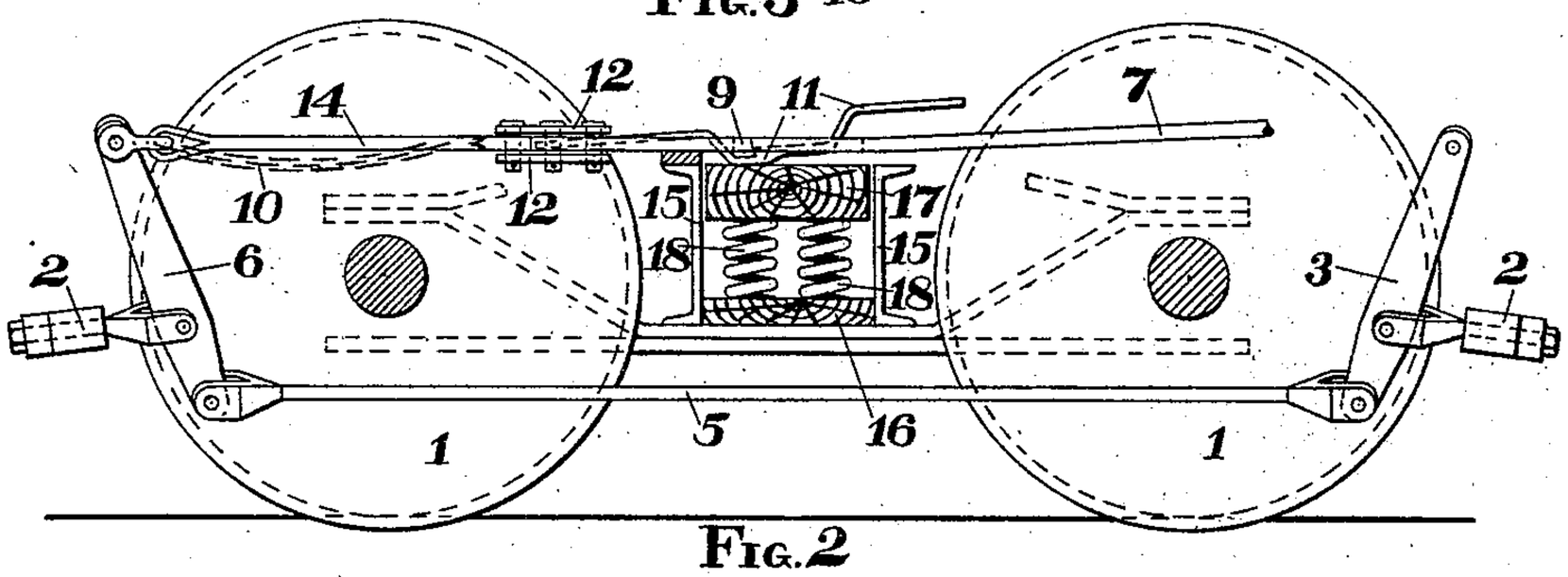

FIG. 2

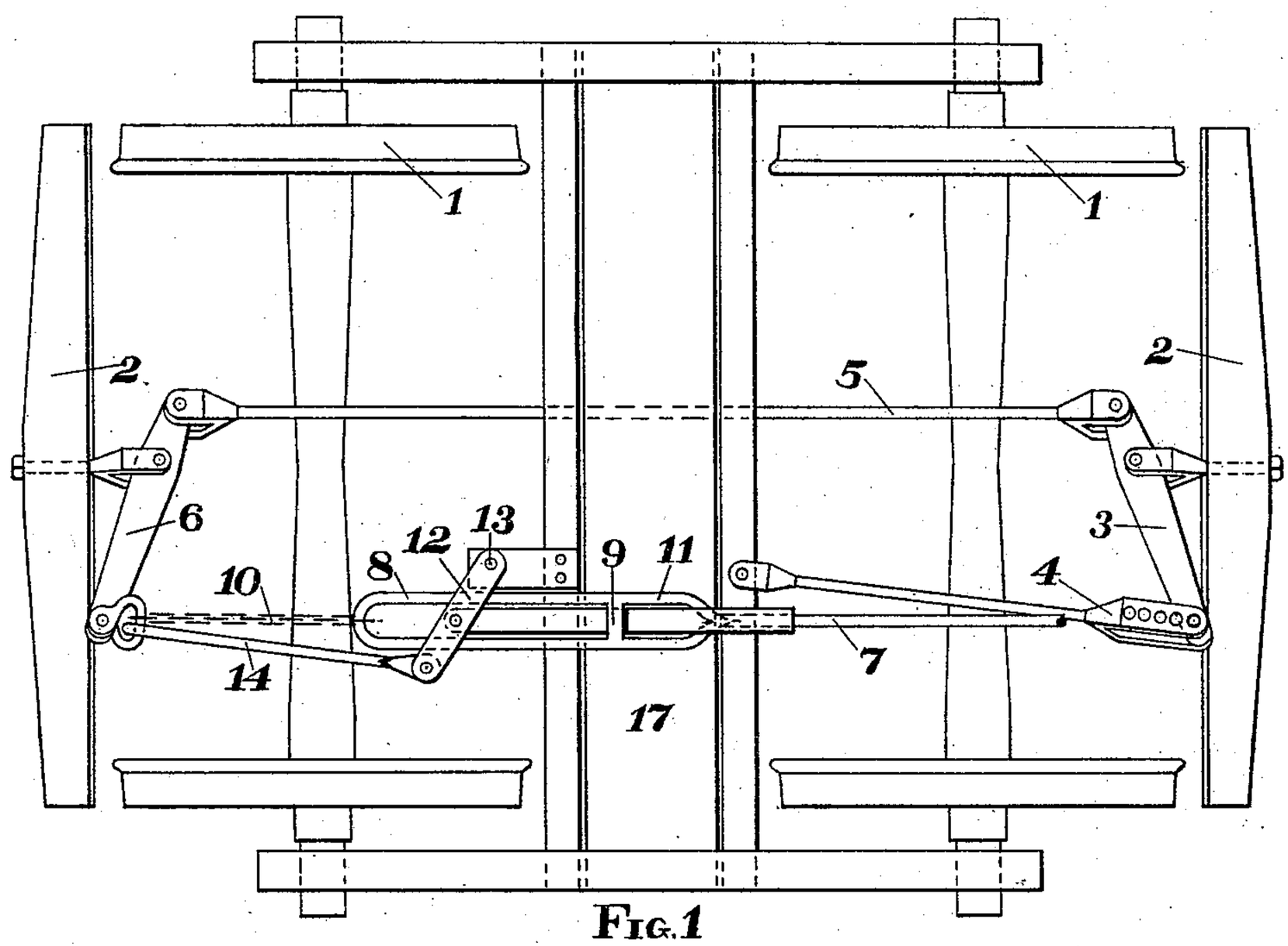

FIG. 1

WITNESSES:

H. A. Oberly.

F. L. Massey.

INVENTOR

Albert P. Massey

UNITED STATES PATENT OFFICE.

ALBERT P. MASSEY, OF WATERTOWN, NEW YORK, ASSIGNOR TO THE NEW YORK AIR BRAKE COMPANY.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 472,929, dated April 12, 1892.

Application filed November 12, 1891. Serial No. 411,667. (No model.)

To all whom it may concern:

Be it known that I, ALBERT P. MASSEY, a citizen of the United States, and a resident of the city of Watertown, in the county of Jefferson and State of New York, have invented a new and useful Improvement in Car-Brakes, of which the following is a specification.

The object of my invention is to provide an arrangement of brake-rigging which will automatically adjust the pressure on the brake-shoes to give a greater retarding power when a car is loaded than when the car is empty.

Figure 1 is a plan of a familiar form of truck used under freight-cars, showing my improvement in connection with the usual brake-rigging, where brakes are hung on the outside of the wheels. Fig. 2 is a vertical view of the same with the truck-bolster in section, with the brake-rigging adapted for empty cars. Fig. 3 shows position which the apparatus assumes when the car is loaded.

In the drawings, 1 represents the wheels of an ordinary car-truck.

2 2 are the brake-beams.

3 is the dead-lever, which is fulcrumed on the dead-lever guide 4.

5 is the tie-rod connecting the brake-levers.

6 is the live-lever, to which the pull-rod 7 is usually attached. The pull-rod 7 is connected to the source of power in a manner too well known to need description. In place of the ordinary connection between the pull-rod 7 and the live-lever 6 the end of the pull-rod is made with a long loop 8 and a cross-bar 9. This loop is connected to the upper end of the live-lever by a flexible connection 10. A second connection between the pull-rod and the live-lever may be made by means of the cross-bar 9, the hook 11, the lever 12, fulcrumed on pin 13, and the connecting-rod 14.

The channel-beams 15 are secured rigidly to the bearing-bars of the truck and carry the sand-plank 16. The bolster 17, on which the weight of one end of the car rests, is carried on springs 18. When the car is loaded, the springs are compressed and the top of the bolster is lower in relation to the top of the channel-bars 15 than when the car is empty.

I so adjust the hook 11, which is free to rise and fall with the bolster, in relation to the cross-bar 9 of the pull-rod 7, which normally rests on the channel-bar 15, that the hook will be in the same plane with the cross-bar when the car is empty and the bolster is up; but when the car is loaded and the springs are compressed the hook will be below the cross-bar, and therefore would not engage the cross-bar when the pull-rod was moved to apply the brakes. When the cross-bar engages the hook, the stress on the pull-rod will be communicated to the live-lever 6 through the lever 12 and the connecting-rod 14. When the cross-bar does not engage the hook, the stress on the pull-rod will be direct on the live-lever 6 through the loop 8 and the chain 10. If the lever 12 is divided into equal parts and the pull-rod connected to the center by means of the cross-bar and hook, one-half of the stress would be exerted on the fulcrum 13 and one-half on the live-lever 6 through connecting-rod 14. It follows, therefore, that a given stress on the pull-rod 7 will all be communicated to the live-lever 6 when the cross-bar 9 does not engage the hook 11, but only one-half of the given stress will be communicated to the live-lever 6 when the cross-bar does engage the hook, and as the hook will not engage the cross-bar when the load on the car compresses the springs, but will engage when the car is empty, the same stress on the pull-rod will produce twice as great a stress on the brake-levers when the car is loaded as it will when the car is empty. The proportions of the lever 12 may be varied to suit special cases. Its position may also be varied to suit a brake-rigging for inside-hung brakes without departing from the import of my invention. There are a great variety of trucks; but all have some portion that is mounted on springs and varies in height relative to the rigid portion in proportion to the load in the car. My invention can be varied to suit any truck by resting one part on the rigid portion of the truck and one part on the portion carried on the springs.

What I claim as new, and desire to secure by Letters Patent, is—

In a brake mechanism for railroad-cars, a lever with a fixed fulcrum interposed in the line of communication between the pull-rod and the foundation brake-rigging, a hook or pawl attached to said lever, a pull-rod having

a direct connection with the brake-rigging and having also a cross-bar or projection that may engage with the hook or pawl attached to said lever, and thereby make a connection to the brake-rigging through said lever, combined with two parts of the truck that vary in relative height when the springs are open or compressed.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 5th day of November, 1891.

ALBERT P. MASSEY.

Witnesses:
R. C. AUGUR,
FRANK A. FOSTER.