

No. 734,480.

PATENTED JULY 21, 1903.

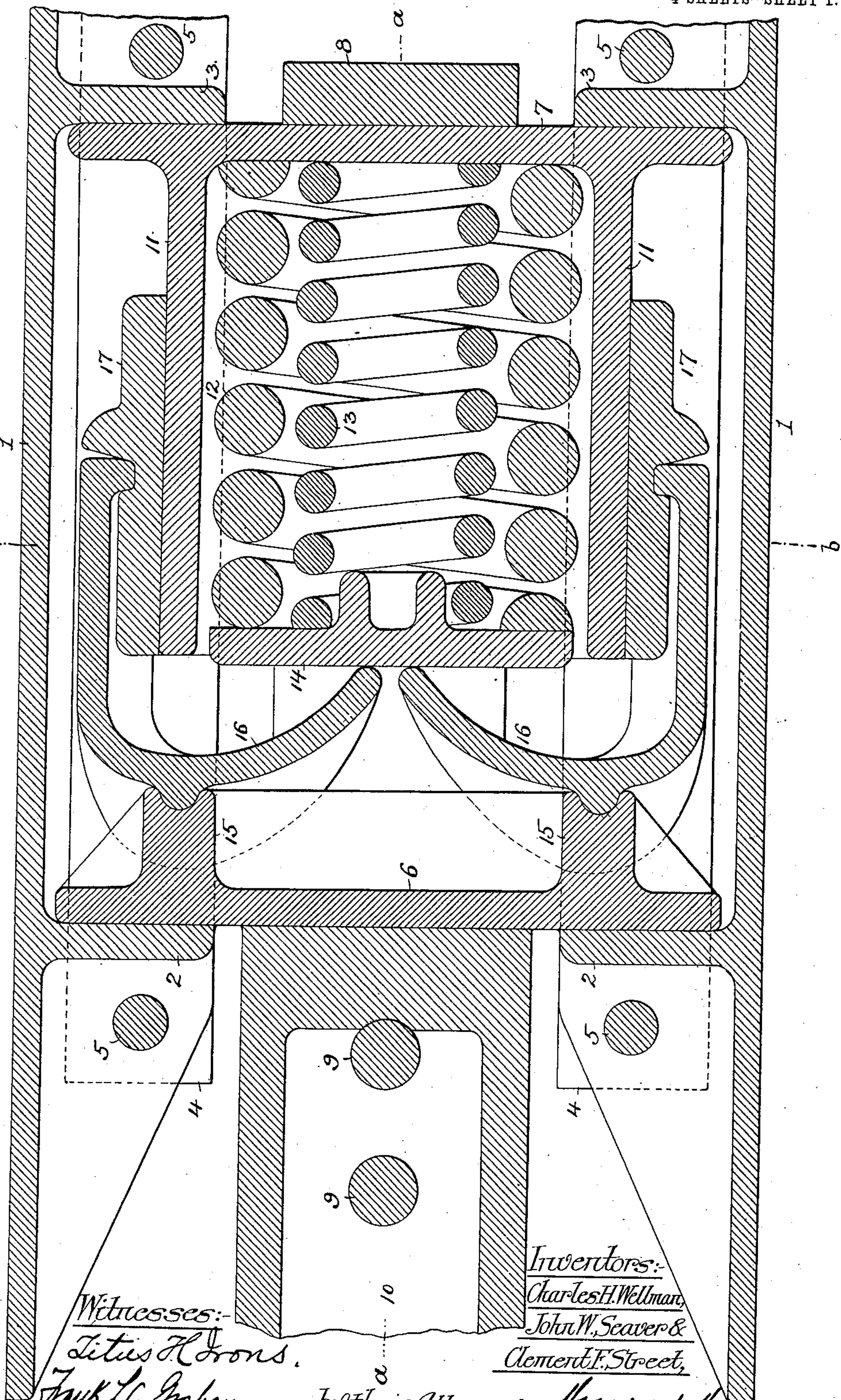
C. H. WELLMAN, J. W. SEAVER & C. F. STREET.
FRICTION DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED SEPT. 2, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

Fig 1



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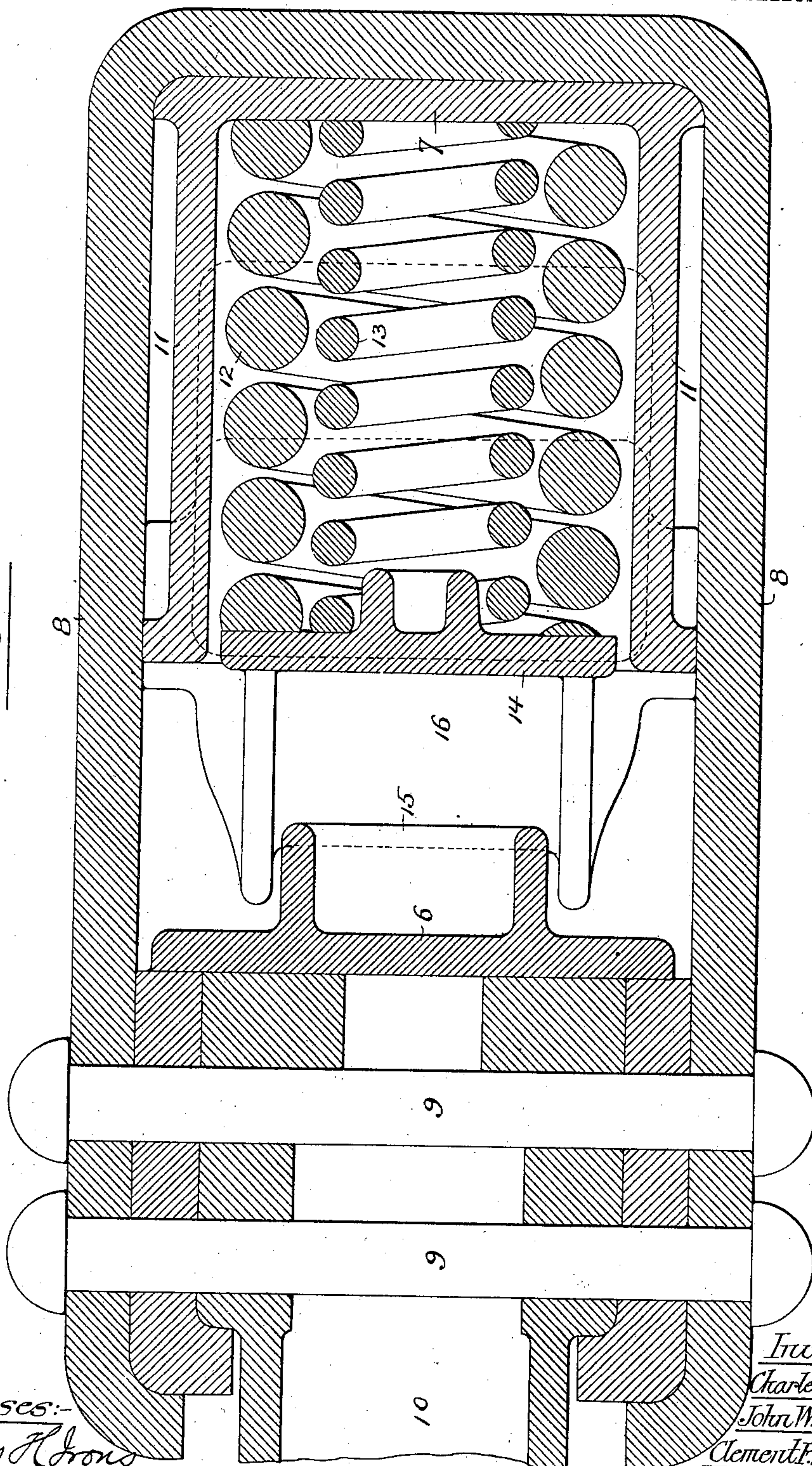
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Fig 2



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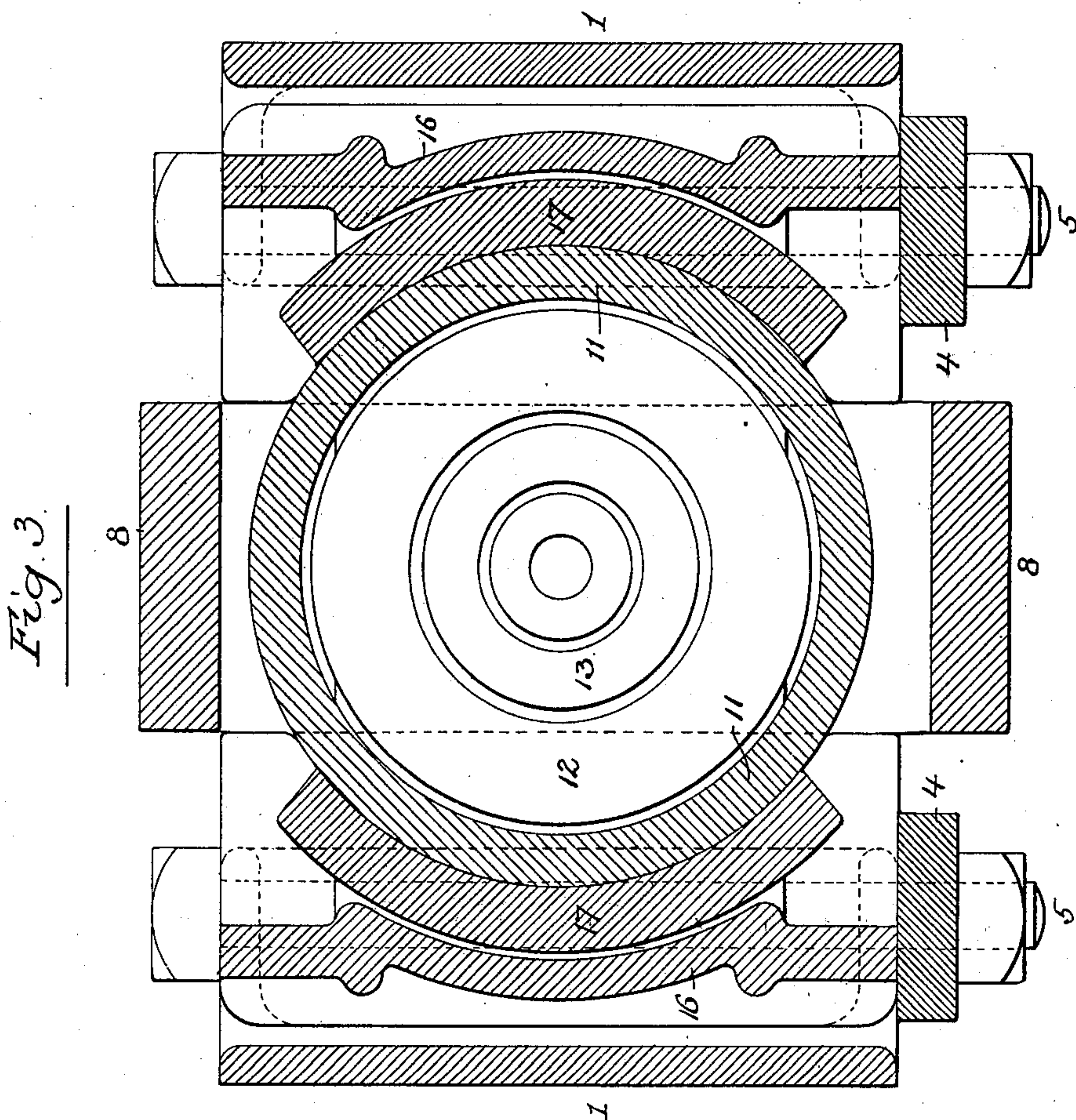
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4 SHEETS—SHEET 3.



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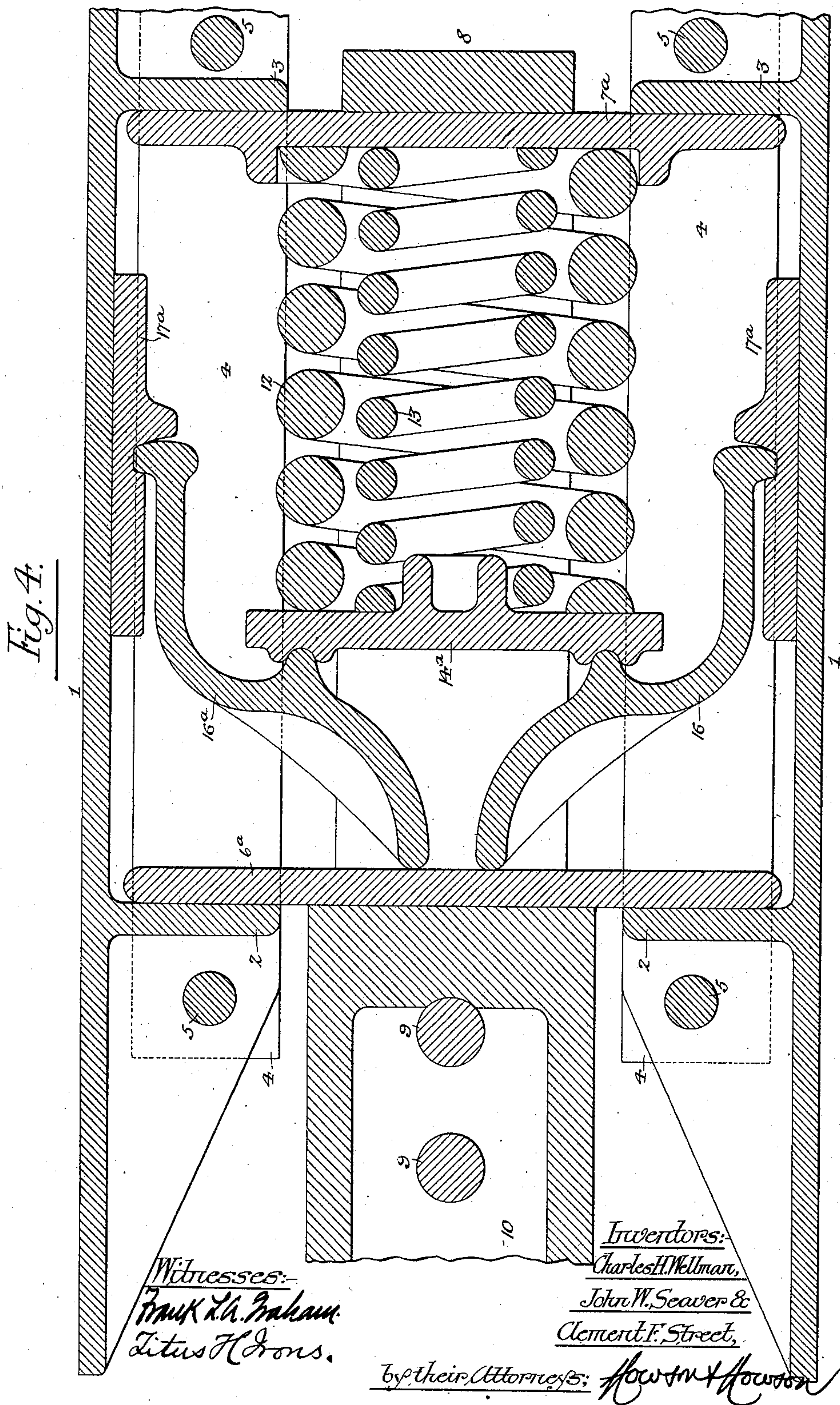
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. WELLMAN, JOHN W. SEAVER, AND CLEMENT F. STREET, OF
CLEVELAND, OHIO.

FRICTION DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 734,480, dated July 21, 1903.

Application filed September 2, 1902. Serial No. 121,849. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. WELLMAN, JOHN W. SEAVER, and CLEMENT F. STREET, citizens of the United States, and residents of Cleveland, Ohio, have invented certain Improvements in Friction Draft-Rigging for Railway-Cars, of which the following is a specification.

The object of our invention is to so construct draft-rigging for railway-cars that the strains upon the same will be resisted by friction as well as by the compression of the spring or springs employed, the frictional element also serving to prevent rapid expansion of the springs after the buffing or draft strains are relieved, whereby the movements of the draft mechanism are rendered smooth and easy, any sudden shock or jar being practically eliminated.

In the accompanying drawings, Figure 1 is a sectional plan view of friction draft-rigging for railway-cars constructed in accordance with our invention. Fig. 2 is a vertical section on the line *a a*, Fig. 1. Fig. 3 is a transverse section on the line *b b*; and Fig. 4 is a view similar to Fig. 1, but illustrating a modification of our invention.

In Fig. 1 of the drawings, 11 represent opposite sill-plates, which are intended to be secured to the center sills of the car-frame in any appropriate manner, each of these sill-plates having inwardly-projecting ribs or flanges 2 and 3 and a bottom bar 4, secured by vertical bolts 5, said bottom bar serving for the support of a pair of followers 6 and 7, one in advance and one in the rear of the spring structure of the draft-rigging, these followers being embraced by a yoke 8, to which is rigidly secured, by means of bolts or rivets 9, to the coupling-head 10.

Projecting forwardly from the rear follower 7 is a friction-drum 11, which in the present instance is in the form of a cylinder, although it may be rectangular or of other desired form, the cross-sectional shape of the drum being immaterial. Within this drum is contained the spring structure of the draft-rigging, which may also be modified in many different ways, this spring structure in the present instance comprising an outer heavy spring 12 and an inner lighter spring 13, both of which

bear at their rear ends against the follower 7 and at their front ends against a cap-plate 14.

Upon a suitable bearing 15, projecting rearwardly from the forward follower 6, are pivotally mounted a pair of bell-crank levers 16, the inwardly-projecting arms of which bear upon the cap-plate 14, while their rearwardly-projecting arms engage with shoes 17, the latter being thereby pressed against the surface of the friction-drum 11 with a pressure dependent upon the tension of the spring structure of the draft-rigging.

When the forward follower 6 is pushed rearwardly by a buffing strain, the shoes are caused to slide rearwardly to the same extent upon the friction-drum 11, and the frictional pressure of said shoes upon the drum gradually increases as they are forced rearward, owing to the gradually-increasing tension of the spring structure, which is compressed through the medium of the bell-crank levers 16 and cap-plate 14 and causes a rocking movement of said bell-crank levers upon their fulcrums, so as to effect corresponding inward pressure of the shoes upon the friction-drum. In like manner forward movement of the rear follower caused by a draft strain upon the coupling causes the friction-drum to slide forwardly between the shoes, and the gradually-increasing tension of the spring structure is imparted to said shoes through the medium of the cap-plate 14 and bell-crank levers 16 in order to cause a gradually-increasing frictional hold of the shoes upon the drum in the same manner as before. By this means a frictional retarding agency is added to the resistance of the spring structure to resist either buffing or draft strains, and this frictional retarding agency is also exerted to prevent rapid expansion of the spring structure when the strain is removed. Hence both the movements due to strain and the movements of recovery are rendered smooth and easy and sudden shock or jar upon any part of the draft-rigging is prevented.

It will be manifest that the disposal of the parts in our improved draft-rigging can be reversed, if desired—that is to say, the friction-drum can be carried by the forward follower and the bell-crank levers can be mount-

ed upon the rear follower, no change in operation resulting from such reversal of parts.

While we prefer in all cases also to use a pair of shoes and a pair of levers, one for each shoe, our invention may be embodied in draft-rigging having but a single lever and shoe, or, on the other hand, more than two levers and shoes may be employed.

In Fig. 4 we have illustrated a modification of our invention in which the action of the bell-crank levers 16^a is reversed, said levers being fulcrumed upon the spring-cap 14^a and having bearing upon the forward follower 6^a, the rearwardly-projecting arms of the levers in this case pressing outwardly instead of inwardly and the friction-shoes 17^a being pressed thereby against the sill-plates 1 instead of against a special friction-drum, as in the construction shown in Figs. 1, 2, and 3. While this modification illustrates a construction of friction draft-rigging within the broad scope of our invention, the construction shown in Figs. 1, 2, and 3 is preferred.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination in draft-rigging for railway-cars, of front and rear followers, a single spring structure contained between the same, one or more friction-shoes, and one or more levers acting on the same and interposed

between the spring and one of the followers, whereby the tension of the spring is transmitted to said shoe or shoes, substantially as specified.

2. The combination in draft-rigging for railway-cars, of front and rear followers, a spring structure, a friction-drum, one or more friction-shoes bearing thereupon, and one or more levers engaging the same and interposed between the spring and one of the followers, substantially as specified.

3. The combination in draft-rigging for railway-cars, of a pair of followers, a friction-drum projecting from one of said followers, a friction shoe or shoes bearing upon said drum, a spring structure contained within the drum, a cap on said spring structure, and one or more levers fulcrumed upon the other follower, engaging the friction shoe or shoes and having bearing upon said spring-cap, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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CLEMENT F. STREET.

Witnesses:

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