

No. 677,272.

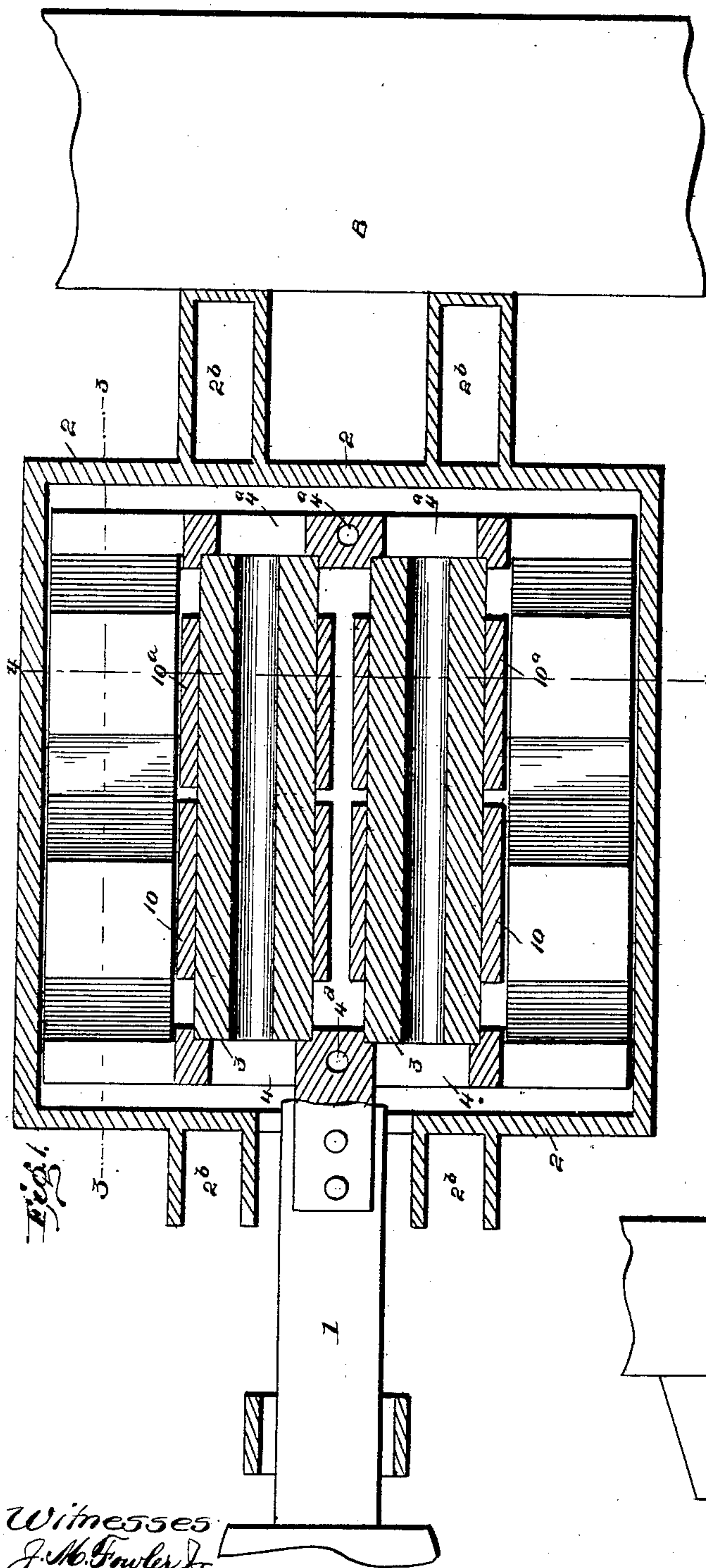
Patented June 25, 1901.

G. P. RITTER.  
DRAFT GEAR FOR RAILWAY CARS.

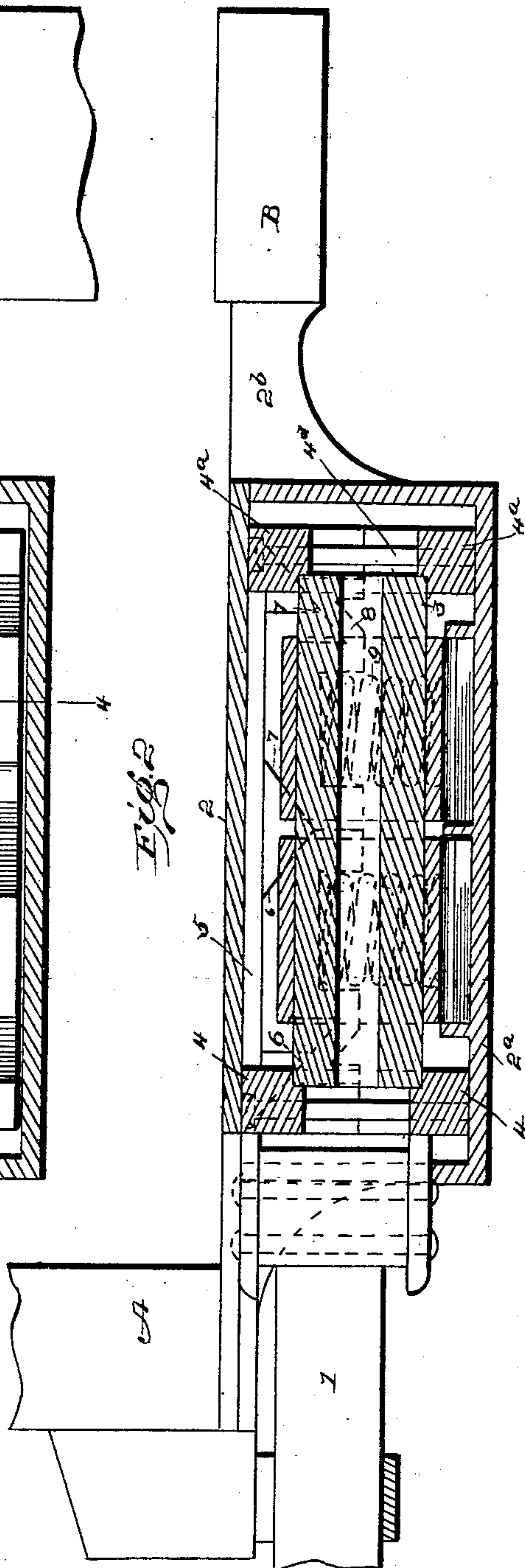
(No Model.)

(Application filed May 8, 1901.)

2 Sheets—Sheet 1.



Witnesses  
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Allan H. Goose.



Inventor:

Gilbert P. Ritter

No. 677,272.

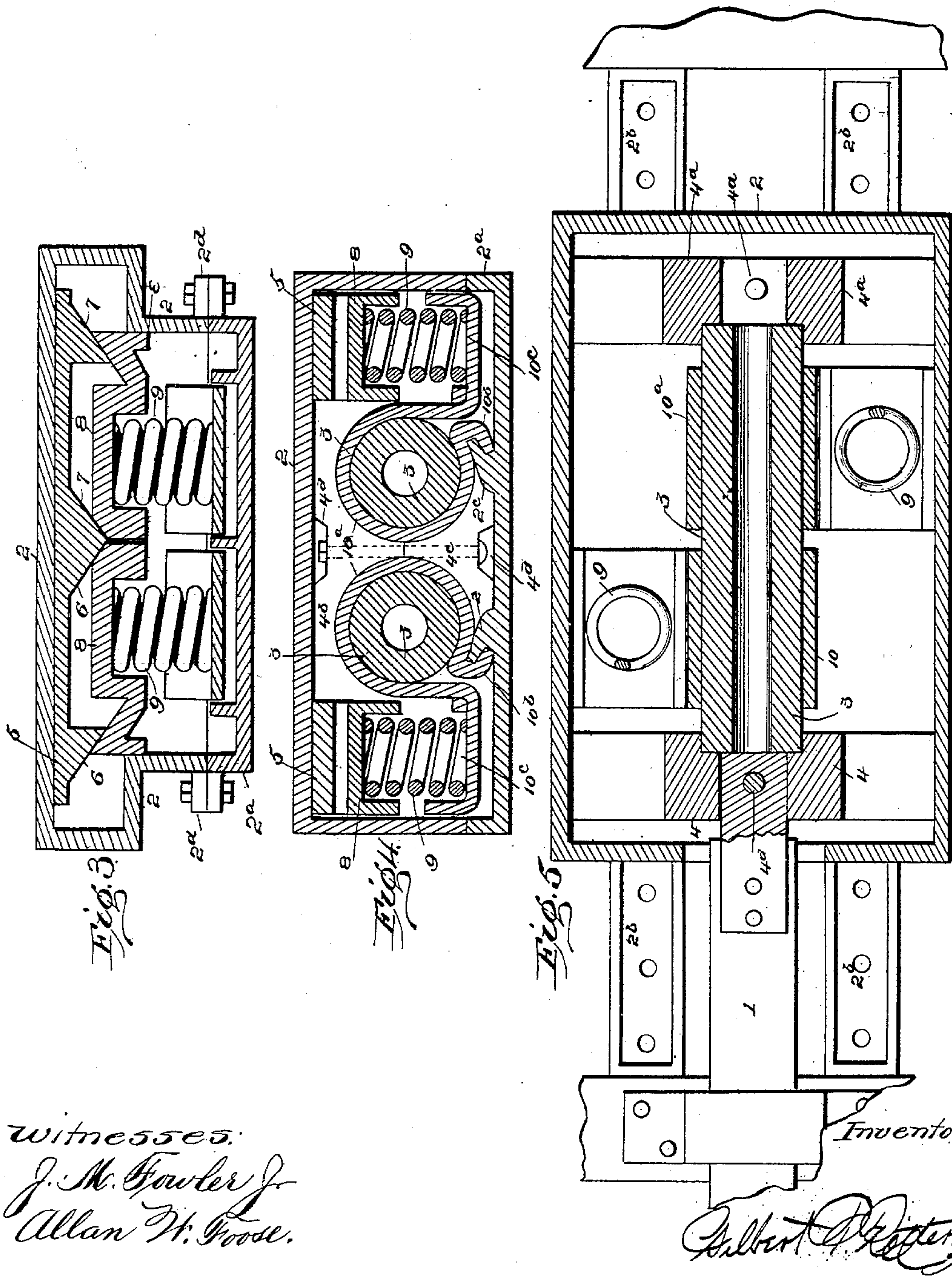
Patented June 25, 1901.

G. P. RITTER.  
DRAFT GEAR FOR RAILWAY CARS.

(Application filed May 6, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

GILBERT P. RITTER, OF CHICAGO, ILLINOIS.

## DRAFT-GEAR FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 677,272, dated June 25, 1901.

Application filed May 6, 1901. Serial No. 59,012. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT P. RITTER, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Draft-Gear for Railway-Cars: and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a horizontal section of a draft-rigging embodying my invention, said section being taken in two planes, the upper plane being just below the top of the casing or housing, so as to show the top of the spring-caps with their inclines, whereby the springs are put under compression to cause the straps or split sleeves to increase their frictional grip on the cylinders of the draw-bar, and the lower plane being through the axes of the cylinders of the draw-bar and the split sleeves which surround the same. Fig. 2 is a vertical longitudinal section on the axis of one of the cylinders of the draw-bar, the split sleeves, the cross-heads of the draw-bar, and the adjacent casing or housing, the springs and the spring-caps, with their inclines, being shown in dotted lines. Fig. 3 is a vertical longitudinal section on the line 3 3, Fig. 1, showing the relation of the spiral springs which bear on the split sleeves, the spring-caps, with their inclines, and the inclines movable with the draw-bar and which compress the spiral springs. Fig. 4 is a vertical transverse section, taken on the line 4 4, Fig. 1, of the friction-cylinders of the draw-bar, the friction-sleeves, the springs which act on the friction-sleeves, the spring-caps, with their inclines, and the inclines movable with the draw-bar which compress the spiral springs. Fig. 5 is a horizontal section, looking from below, of a modified form of draft-gear embodying my invention in its typical form—that is to say, having a single friction-cylinder on the draw-bar and two friction-sleeves coacting therewith. In this figure the spring-caps appear, but the inclines which coact therewith are hidden.

Like symbols refer to like parts wherever they occur.

My invention relates to that class of draft-rigging for railway-cars wherein frictional resistance is added to spring resistance, so that

the shock of draft or buffing is not only spring-resisted, but the action of the spring is so controlled as to counteract any shock incident to the reaction of the springs.

To this end the main feature of my invention embraces the combination, with an endwise-movable draw-bar having a cylindrical friction-surface, of curved coacting friction-surfaces preferably in the form of split sleeves or straps or their equivalent saddles or curved sections and yielding means for gradually increasing the pressure between the coacting friction-surfaces.

There are other minor features of invention relating to particular combinations and details of construction of the preferred application, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, 1 indicates the coupling, of any well-known character, and 2 a suitable casing or housing for inclosing the operative mechanism, which casing or housing is preferably in the form of a casting or box closed below by a detachable bottom 2<sup>a</sup>, secured to the box portion 2 by bolts or otherwise (see Fig. 3) and supported from the end sill A and body-bolster B or equivalent timbers by brackets 2<sup>b</sup>, which may be cast integral with the box 2, if desired.

The draw-bar, which has an endwise movement within the casing or housing for draft and buffing purposes, is composed of one or more sections 3, provided with friction-surfaces in planes parallel with the axis of the draw-bar, said sections 3 being preferably cylindrical tubular in form for sake of lightness and strength, which cylinders or sections are carried by two cross-heads 4 4<sup>a</sup>, which cross-heads are connected at each side of and parallel to the cylinders or sections 3 by bars 5, which move with the cross-heads and cylinders or sections 3, and said bars 5 are provided on their under surfaces with two sets of inclines 6 6 and 7 7, which engage corresponding inclines on spring caps or covers 8 8 for purposes which will hereinafter appear.

10 10<sup>a</sup> indicate fixed friction-plates which coact with the friction surfaces or sections 3 on the endwise-movable draw-bar. These



friction-surfaces 10 10<sup>a</sup> correspond in form to the sections 3 of the draw-bar, and in the present instance are therefore curved surfaces, the preferable form being a strap or what I shall hereinafter term a "split sleeve," provided with a spring-seat.

In the typical form (see Fig. 5) a single section or cylinder 3 is combined with two straps or split sleeves—that is to say, one, 10, for draft and the other, 10<sup>a</sup>, for buffing—which form may be multiplied within reasonable limits, consideration being had to the location and application of the devices, but by me are preferably limited to two parallel sections 3, each provided with a draft and a buffing-strap or split sleeve.

Each of the curved fixed friction-surfaces 10 and 10<sup>a</sup> is provided with a coiled or equivalent spring 9 so arranged as to be compressed by the incline or equivalent device movable with the draw-bar.

In the case of the split sleeve or strap shown in the drawings one end thereof is secured or anchored to the casing, preferably by a toe or flange 10<sup>b</sup>, (see Fig. 4,) which engages a projection 2<sup>c</sup> on the casing-closure 2<sup>a</sup>, the opposite portion of the strap or split sleeve 10 or 10<sup>a</sup> being bent to form a spring box or seat 10<sup>c</sup> for the reception of a coiled or equivalent spring 9, whereby yielding pressure is to be applied to the split sleeve or strap to increase its friction-grip on the draw-bar sections or cylinders 3. Resting upon said springs 9 are spring-caps 8, having upon their upper surfaces inclines corresponding and coacting with the inclines (or equivalent devices) 6 6 and 7 7 on the under sides of the bars 5 5, movable with the cross-heads and friction sections or cylinders 3.

The cross-heads 4 4<sup>a</sup>, to one of which, 4, the coupling is to be connected, are preferably each composed of two parts (see 4<sup>b</sup> 4<sup>c</sup>, Fig. 4) provided with seats for the reception of the ends of sections or friction-cylinders 3, (see Figs. 1 and 2,) and said parts 4<sup>b</sup> 4<sup>c</sup> are connected by bolts 4<sup>d</sup> or in equivalent manner after the friction cylinders or sections 3 have been placed in position.

The lower corners of the casing 2 are preferably let in, as at 2<sup>e</sup>, Fig. 3, in order to form guides for the spring-caps 8 and also allow for the projecting ends of the bars 5 5, which connect the cross-heads 4 4<sup>a</sup> and carry the inclines which act on the inclines of the spring-caps 8. This undercutting of the casing also provides for ears or lugs 2<sup>d</sup> for bolting the bottom 2<sup>a</sup> to the box 2 without the same projecting beyond the box or casing 2.

In setting up the draft-rigging the lower portions 4<sup>c</sup> (see Fig. 4) of the cross-heads 4 4<sup>a</sup> can be placed on the casing-bottom 2<sup>a</sup>, the cylinders 3 slipped into the split sleeves 10 10<sup>a</sup> or straps, and the straps or sleeves caused to engage the bottom plate, as at 10<sup>b</sup>, after which the top portions 4<sup>b</sup> of the cross-heads which carry the cross-bars 5 5 are applied and the sections of the cross-heads bolted to-

gether, the springs 9 and spring-caps 8 placed in position, and the whole inserted in the casing 2, the springs being given an initial compression by means of the bolts which connect the casing or housing 2 and its bottom 2<sup>a</sup>.

The devices, being constructed and combined substantially as hereinbefore pointed out, will operate in draft and buffing as follows: In either draft or buffing one set of inclines 6 6 or 7 7, according to the direction of travel of the draw-bar, will operate upon the inclines of the corresponding spring-cap 8 to force said spring-cap down, and thus compress the spring 9 beneath the same, which will exert a gradually-increasing though yielding pressure upon the free end of the split sleeve or strap by which said spring is supported and cause said split sleeve or strap to increase its friction-grip upon the draw cylinder or section 3 in proportion to the applied force and the movement of the draw-bar, the cylinders 3 being at that time moving endwise in the straps or split sleeves. While the compression of one set of springs (buffing or draft, as the case may be) is taking place, as before noted, the other set of springs is expanding, as the recession of the inclines 6 6 or 7 7, as the case may be, allows its spring-cap 8 to rise, so that the straps alternately grip and alternately release the traveling section or cylinder 3. As the inclines 6 6 and 7 7 are reversely arranged on the bars 5 5, which connect the cross-heads 4 4<sup>a</sup>, it is evident that in the change from draft to buffing, and vice versa, the application and reduction of the friction-grip on the draw-bar will be gradual toward and from the center of motion, so that all sudden and destructive shocks will be avoided.

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

1. In a draft-rigging for railway-cars, the combination with an endwise-movable draw-bar having a curved friction-surface, of correspondingly-curved fixed friction-surfaces, springs which bear on the curved fixed friction-surfaces, and means operated from the draw-bar for compressing said springs, substantially as and for the purposes specified.

2. In a draft-rigging for railway-cars, the combination with an endwise-movable draw-bar having a curved friction-surface, of an inclosing split sleeve or strap friction element, and means operated from the draw-bar for increasing the pressure between the strap and the draw-bar, substantially as and for the purposes specified.

3. In a draft-rigging for railway-cars, the combination with an endwise-movable draw-bar having a curved friction-surface, of an inclosing split sleeve or strap friction element, a spring which acts on said strap, and means operated from the draw-bar for compressing said spring and increasing the pressure between said strap and draw-bar, substantially as and for the purposes specified.

4. In a draft-rigging for railway-cars, the



combination with an endwise-movable draw-bar, of an inclosing strap anchored at one end and provided at its other end with a spring-seat, a spring seated on the free end 5 of the strap, and means operated from the draw-bar for compressing said spring, substantially as and for the purposes specified.

5. In a draft-rigging for railway-cars, the combination with an endwise-movable draw- 10 bar, of an inclosing strap anchored at one end and provided at its free end with a spring-seat, a spring seated on the free end of the strap, a spring-cap provided on its upper face with inclines or cam-surfaces, and 15 means operated from the draw-bar for de-

pressing the spring-cap, substantially as and for the purposes specified.

6. In a draft-rigging for railway-cars, the combination of a draw-bar comprised of separable cross-heads and an inserted friction 20 element, of an inclosing split sleeve coacting friction element, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 6th day of 25 May, 1901.

GILBERT P. RITTER.

Witnesses:

J. M. FOWLER, Jr.,

H. M. STERLING.