R. G. TAYLOR.

DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED APR. 9, 1910.

1,068,187.

Patented July 22, 1913.

3 SHEETS—SHEET 1.

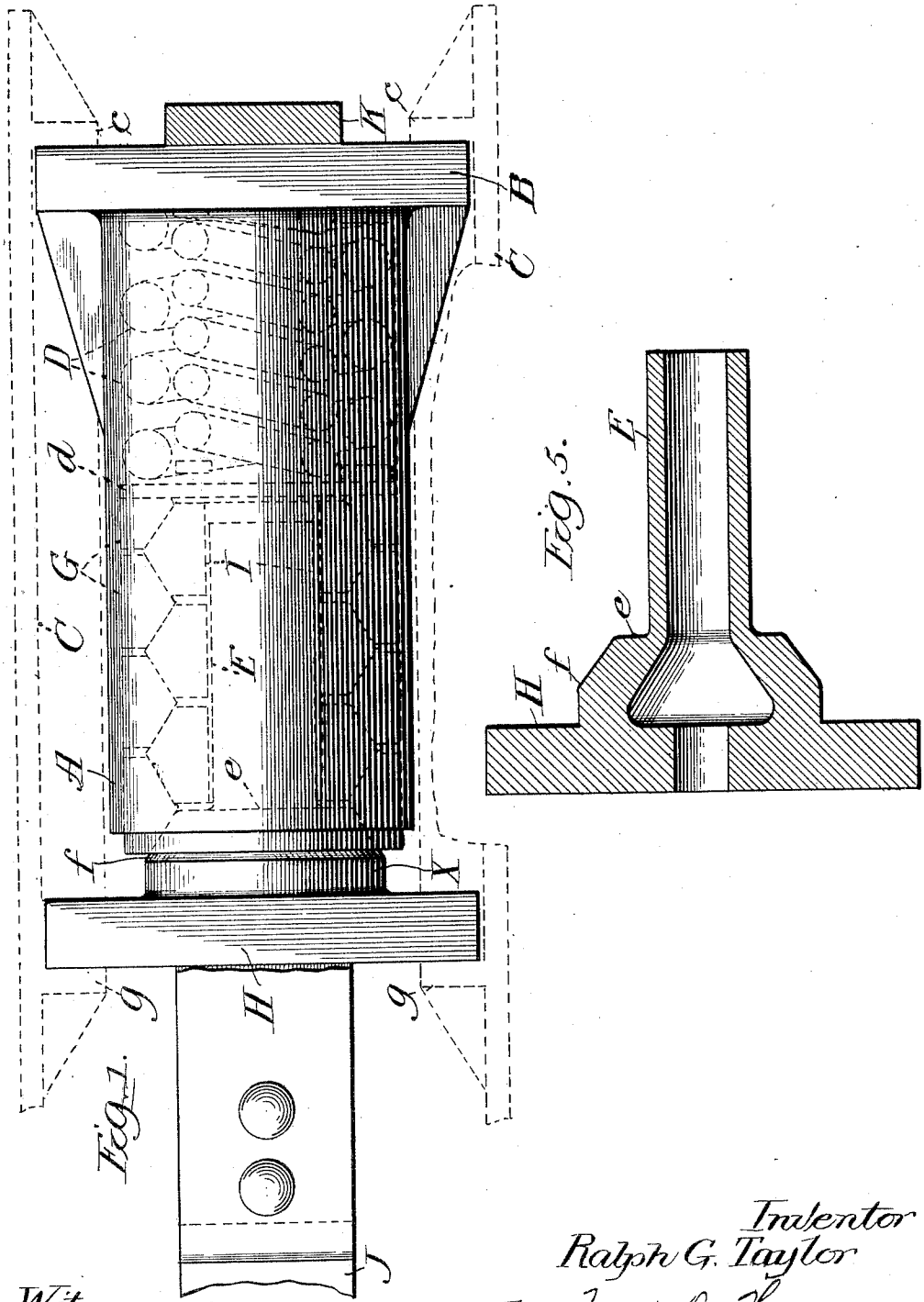


Fig. 1.

Fig. 5.

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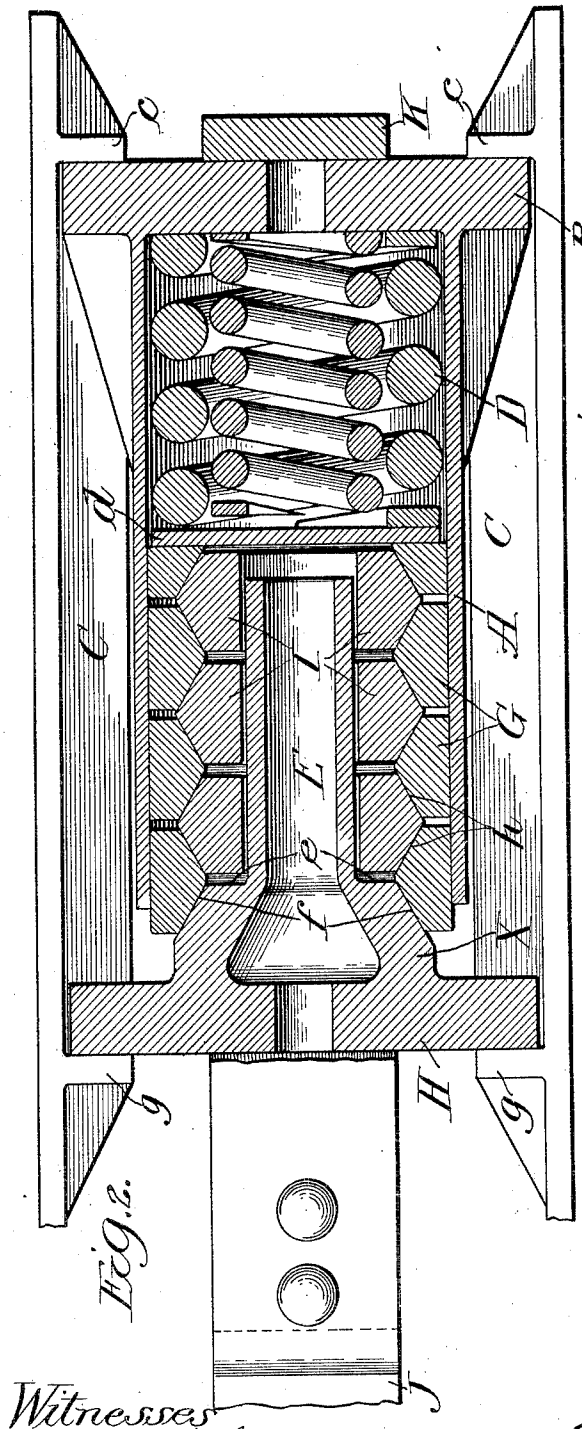


Fig. 2.

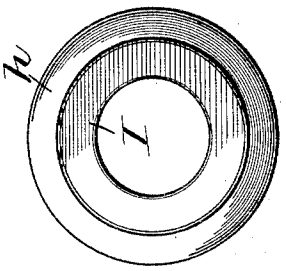


Fig. 4.

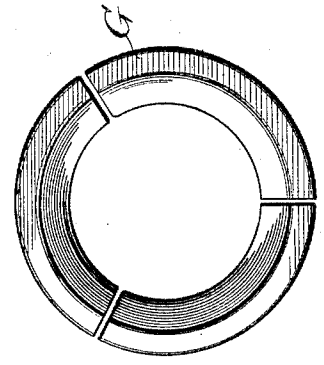


Fig. 5.

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3 SHEETS—SHEET 3.

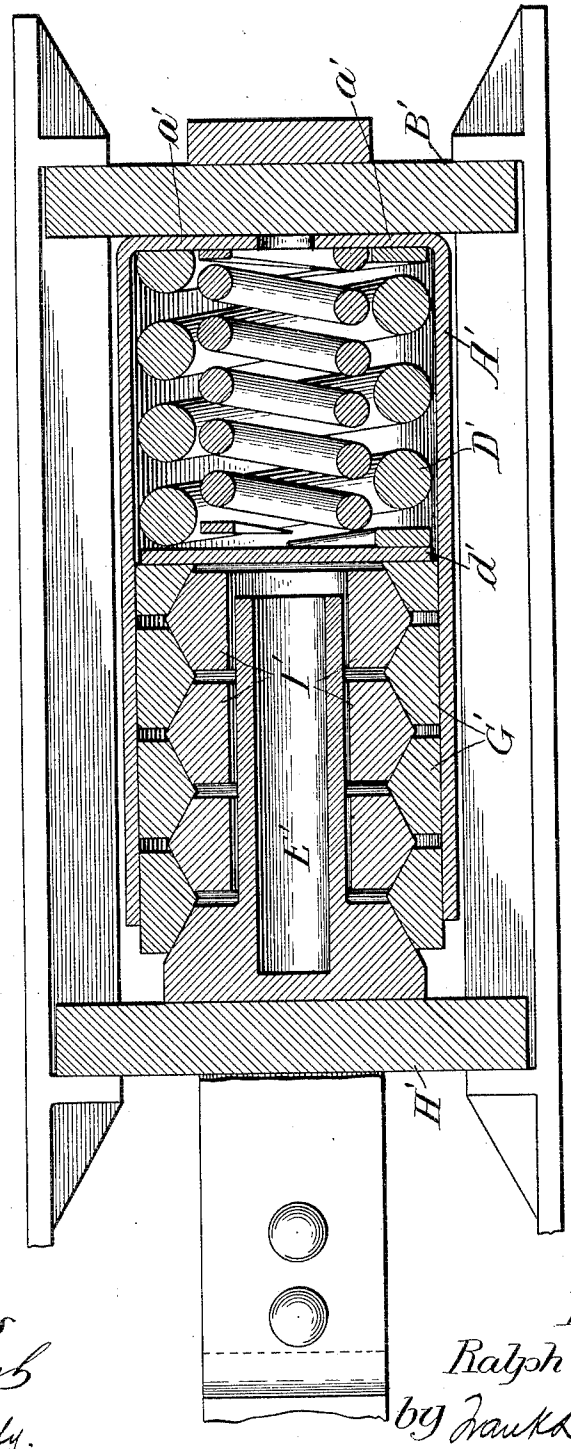


Fig. 6.

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UNITED STATES PATENT OFFICE.

RALPH G. TAYLOR, OF DAVENPORT, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE BETTENDORF COMPANY, OF BETTENDORF, IOWA, A CORPORATION OF IOWA.

DRAFT-RIGGING FOR RAILWAY-CARS.

1,068,187. Specification of Letters Patent. **Patented July 22, 1913.**

Application filed April 9, 1910. Serial No. 554,466.

To all whom it may concern:

Be it known that I, RALPH G. TAYLOR, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented new and useful Improvements in Draft-Rigging for Railway-Cars, of which the following is a full, clear, and exact description.

My invention relates to draft-rigging for railway cars, and particularly all kinds of freight cars.

The object of my invention is to provide the cushioning devices for the draw-bar of the car-couplers of said cars, which will resist the buffing and pulling strains by combined friction and spring mechanism that are arranged in tandem order and are simple in construction and very effective in operation in the performance of their functions. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings:—Figure 1 is a plan view of my invention together with a portion of the center-sills of the draw-bar and yoke thereof, in conjunction with which it is used. Fig. 2 is a transverse horizontal section thereof. Fig. 3 is a side view of the divided expansion friction annulus. Fig. 4 is a detail view of one of the wedging rings. Fig. 5 is a sectional detail view of the plunger. Fig. 6 is a view similar to Fig. 2 illustrating a modification of my invention.

Referring to the drawings A represents the cylindrical shell or casing of my invention, the front end of which is open and the rear end closed by an integral follower-plate B. The vertical dimension of this plate B corresponds, preferably, to the diameter of said casing, and its horizontal dimensions are such that the ends thereof project an equal distance beyond the side of the casing and engage the rear-stops *c*, *c*, of the conventional guide-plates C secured to or made integral with the draft-sills of the underframe of the car. Within the rear portion of case A, I place a coiled spring D, which is of such length that it occupies about one half of the bore of the casing, and I place against its front end a loose partition-plate *d*, the circumference of which latter is slightly less than that of the bore of the casing.

Between plate *d* and the front of the casing, I arrange a series of friction devices that consist of a longitudinally disposed plunger E, a series of ring-shaped wedges I, and a series of segmentally divided expansion friction annuli G. Plunger E comprises a cylindrical body or barrel which when the plunger is in its assembled position extends with the bore of the casing from near the plate *d* to a point near the front edge of the casing where it expands into a head X to provide transverse shoulders *e*. Head X is, preferably cast integral with the front follower-plate H and has about one-half of its outer circumference adjacent to said shoulders, beveled to provide a wedging surface *f*. The disposition and dimensions of said front rollower-plate correspond to those of the rear follower-plate B, and are adapted to engage the front stops *g* of the guide-plates C in the usual manner. Between shoulders *e* of the head of the plunger, and plate *d*, I arrange a series of corresponding rings I (preferably, three or more), the circumference of the outer edges of which are preferably, the same as the circumference of the inner edge of wedging surface *f* of the plunger, and the outer circumferential surface of which is provided with a double beveled or wedging surface, the angle of which to the axis of the plunger is the same as that of said wedging surface *f*. Constructing the rings in this manner permits them to be arranged at equal distances apart, and to be capable of a slight movement in the direction of the length of the casing independent of each other, according to the inequalities or slight differences in construction of the same, and the annular members G engaged thereby—which in practical use they are likely to have. These annuli G are interposed between the inner circumference of the casing, and the wedging surfaces of the head of the plunger and said rings I, and their inner surfaces are given a compound bevel to provide counterpart wedging surfaces *h*, the angles of which to the axis of the plunger correspond to that of the wedging surfaces of the plunger and rings, with which they come in contact. The width of these annuli correspond to the width of the rings, and in order to operatively fill the space between the partition plate *d* and the wedging surface *f* of the head of the plunger, the annulus next said

plate is only half as wide as the other annulus, substantially as shown. These annuli, are, as shown in Fig. 3 of the drawings, divided into three segments, and their operation is such that, when the follower-plates are subjected to the buffing or pulling action of the draw-bar, and the spring is compressed until its ever-increasing resistance causes the wedging surfaces of the head of the plunger and of said rings, to engage therewith, the sections of the annuli, will move radially outward and bind against the inner circumference of the bore and thus increase the frictional resistance to the pulling or buffing action of the draw-bar.

My improved draft-rigging is applied to a car in a manner similar to any of the approved M. C. B. draft-riggings, and is connected to the draw-bar J by the yoke K. When the pulling strain on the rear follower takes place the springs first compress, and then, through the medium of the partition plate *b*, the segments of the annular members are expanded outward by the initial action of the adjacent or rear split annulus, and the rear ring, which affects the remaining annulus and the rings by virtue of the fact that the forward movement of the front follower is arrested by the front stops G in the usual manner.

In the modification shown in Fig. 6 of the drawings the construction and arrangement of the springs D′, the annuli G′, rings I′, and partition plate *d*′, are the same as in the preferred form heretofore described. The plunger E′ and the adjacent follower-plate H′ are made of separate portions of metal as shown, and the casing A′ and the rear follower-plate B are also made separately. The end of said casing adjacent said follower-plate B′ is closed by inwardly turned annular flanges or lips *a*′ against which one end of each of the springs D′ contained within said casing abut. The operation of this modified construction is substantially the same as in the preferred form.

What I claim as new is:—

1. A draft rigging comprising a suitable casing having a follower plate made integral with and closing one end thereof, a coiled spring inclosed within one-half of said casing, a separate follower plate, a head made integral with one side thereof having a beveled circumferential portion, a series of rings, and a series of annuli each divided transversely into several segments and engaging said rings and adapted to be expanded by the engagement of said head with the outer member thereof to contact with the inner circumference of said casing.

2. A draft rigging comprising a suitable casing having a follower plate made integral with one end thereof, a coiled spring inclosed within one end portion of said casing, a separate follower plate at the other end of said casing, a head having a plunger extending centrally therefrom into said casing and having a circumferential beveled portion, a series of rings having a double beveled outer circumference and a series of annular members that are divided into segments and have their inner circumferences provided with a double bevel and adapted to be engaged by said head and said rings and expanded to bring their outer circumferences in contact with the inner circumference of the open end portion of said casing.

3. A draft rigging comprising a suitable casing, a rear follower plate made integral therewith, and a front follower, a head made integral with said front follower and having a beveled circumferential portion, and a series of annular members each divided into segments which are expanded by the engagement of the beveled portion of said head with the adjacent end member to bring their other circumferences in contact with said casing.

4. A draft rigging comprising a suitable casing, a rear follower plate made integral with one end thereof, a front follower-plate, a head made integral with said front follower plate having a plunger extending centrally therefrom, the stem of which is provided with a beveled enlargement that enters said casing, a series of rings surrounding said plunger having a double beveled outer circumference, a series of annular members each divided into segments and having doubled beveled inner circumference, and adapted to be expanded by said head, and rings to engage the inner circumference of said casing, and yielding means arranged in tandem order within said casing to resist the longitudinal movement of said rings and annular members.

5. A draft-rigging comprising a suitable casing, a follower-plate at one end thereof, a coil-spring inclosed within one end portion of said casing, a separate follower-plate, a plunger the stem of which enters said casing and is provided with a beveled circumferential portion at the point where said stem is connected to the head of the plunger that enters said casing, and friction devices expanded by the beveled circumference of said head to engage the inner circumference of the other end portion of said casing.

6. A draft-rigging comprising a suitable casing, a follower-plate at one end thereof, a coil-spring inclosed within one-half of said casing, a separate follower-plate, a plunger the head of which is provided with a beveled circumference, a series of annular members, several of which are divided transversely into segments and adapted to be expanded by the engagement of the head of said plunger with the forwardmost of said

divided annular members and move all the outer of said annular members into contact with the inner circumference of said casing.

7. A draft-rigging comprising a suitable casing, a rear follower plate made integral therewith, a front follower-plate having a plunger extending centrally therefrom toward an intermediate plate, an intermediate plate, a spring element for said rigging confined between the rear follower and intermediate-plate, a series of friction devices arranged between said intermediate plate and front follower and consisting of a series of inner rings surrounding said plunger and a plurality of outer annular members surrounding and engaged by said rings and adapted when compressed in the direction of length of said draft-rigging between said intermediate plate and front follower to expand circumferentially and engage said casing.

In witness whereof I have hereunto set my hand this 6th day of April 1910.

RALPH G. TAYLOR.

Witnesses:
A. B. FRENIER,
O. C. STABY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."