R. G. TAYLOR.

DRAFT RIGGING.

APPLICATION FILED SEPT. 13, 1907.

1,033,212.

Patented July 23, 1912.

3 SHEETS—SHEET 1.

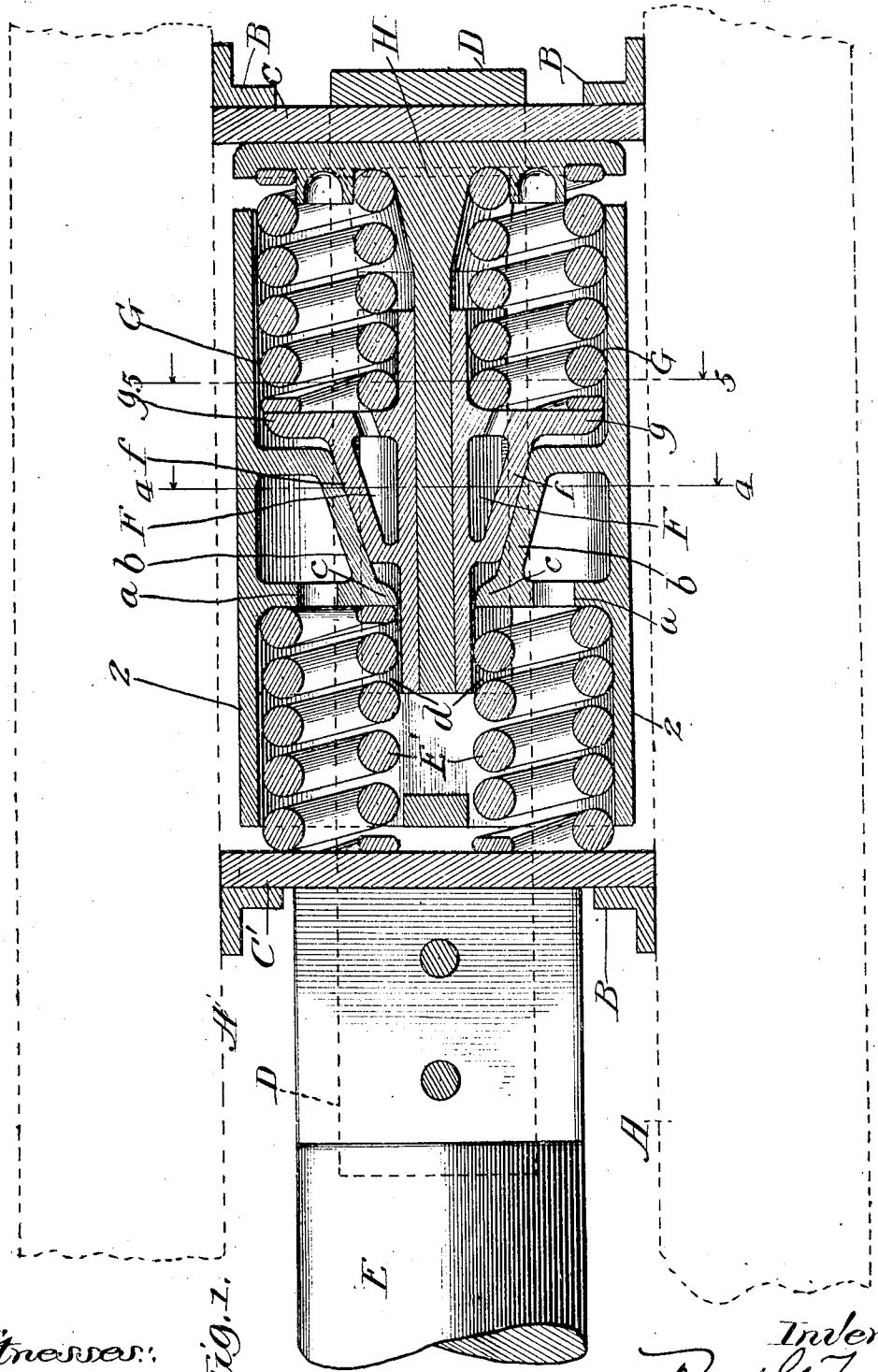

Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 4.

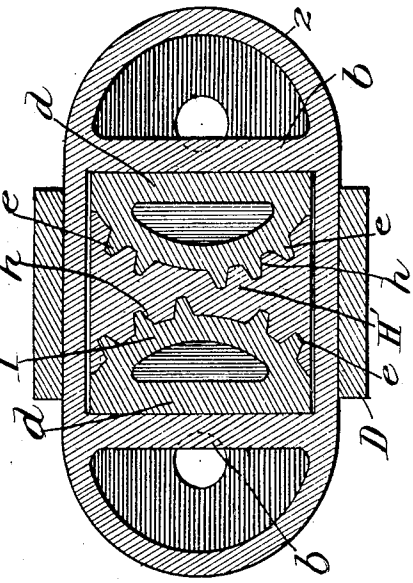


Fig. 5.

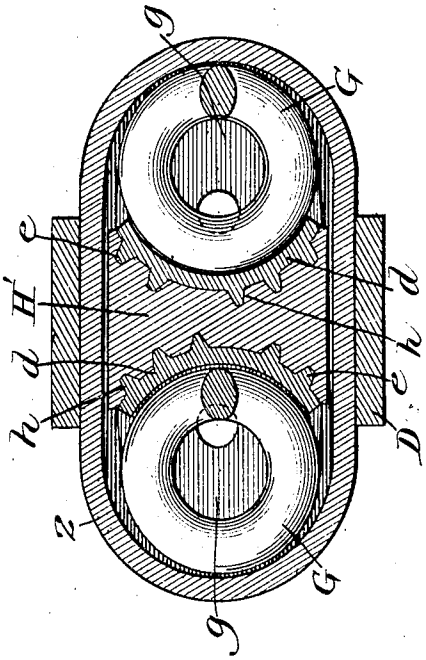


Fig. 2.

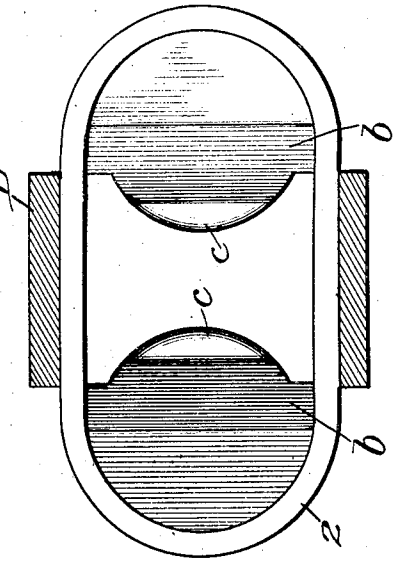
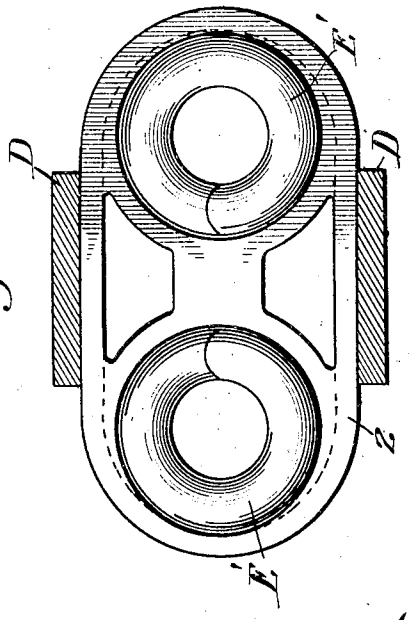


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 6.

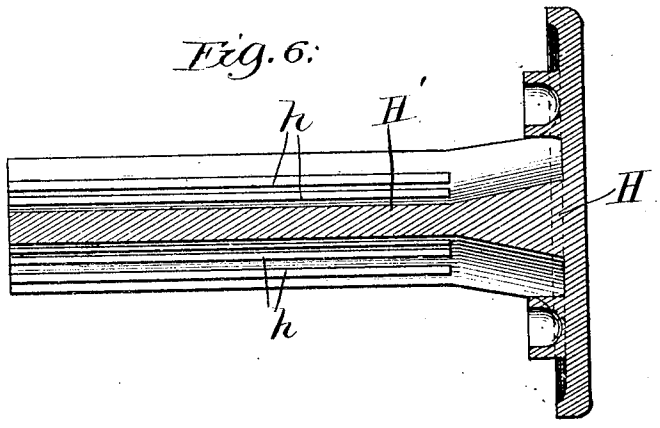


Fig. 7.

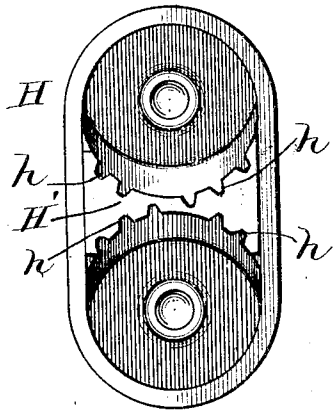


Fig. 8.

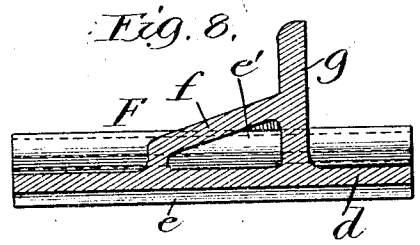
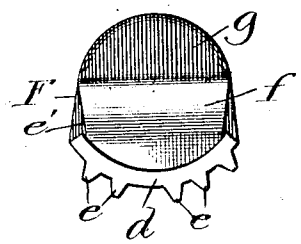


Fig. 9.



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UNITED STATES PATENT OFFICE.

RALPH G. TAYLOR, OF DAVENPORT, IOWA, ASSIGNOR TO BETTENDORF AXLE COMPANY, OF BETTENDORF, IOWA, A CORPORATION OF IOWA.

DRAFT-RIGGING.

1,033,212. Specification of Letters Patent. Patented July 23, 1912.

Application filed September 13, 1907. Serial No. 392,689.

To all whom it may concern:

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

My invention relates to the draft-rigging of draw-bars for car-couplers. Heretofore draft-rigging has been constructed which brought into play, successively, the resistance of several coil-springs or several series of coil-springs, but considering the very limited movement it is deemed advisable to permit a car-coupler to have, the maximum resistance which these springs were capable of exerting has not been utilized.

The object of my invention is to permit the resistance of the coil-springs of the draft-rigging to find the fullest expression, and to oppose the thrust and pull of the car-coupler by a gradually increased resistance, which will not terminate in a sudden shock or jar, and to thereby greatly increase the life of the car and its draft elements. This I accomplish by the means hereinafter fully described and as more particularly pointed out in the claims.

In the drawings:—Figure 1 is a longitudinal horizontal central section through my improved draft-rigging, showing it applied to the broken away rear end portion of the draw-bar of a car-coupler. Fig. 2 is a rear end view of the housing of my invention with the springs removed, drawn to a slightly larger scale. Fig. 3 is a front end view of the same with the springs in place. Fig. 4 is a transverse section taken on dotted line 4—4, Fig. 1, drawn to a slightly larger scale. Fig. 5 is a similar section taken on dotted line 5—5, Fig. 1. Fig. 6 is a longitudinal central horizontal section of the plunger, removed from its housing. Fig. 7 is an end view of the same. Fig. 8 is a longitudinal central horizontal section of one of the clamping wedges of my invention removed from the housing. Fig. 9 is an end view of the same.

In the drawings, A, A, represent the center-sills of a car; B, B, angle-iron stop-plates secured to the inner or opposing surfaces of said sill; C, C′, the forward and rear transverse follower-plates, the vertical edges of which engage said stop-plates; and D is the yoke of the draw-bar E of the car-coupler. All of these parts of the draft-rigging may, if desired, be patterned after any of the well-known and extensively used draft-riggings, or may be constructed otherwise without departing from the spirit of my invention, which, as will be explained, relate solely to the cushioning of the draw-bar.

The springs used in connection with my invention are inclosed and confined in a hollow casing or cage 2, which is, preferably, of an elliptical shape in cross-section, and is of a length about two or three inches less than the normal distance between the follower-plates. At about its center of length the bore of this housing is provided with corresponding shelves that dam up the sides of the bore intersected by the major axis of the ellipse described by the transverse shape of the housing, and leave a restricted central passage between them. The ends of these shelves facing one end of the casing project nearer each other than at the opposite ends thereof, and form transverse seats *a*, *a*, against which one end of the coil-springs E′, E′, bear that engage follower plate C′. The surfaces of said shelves opposed to each other are made oblique to the axis of the casing and extend outward from the ends constituting the seats *a*, *a*, toward the opposite ends to form inclined planes *b*, *b*. These inclined-planes are engaged by longitudinally movable wedges F, F, as will hereinafter be more fully described, and the ends thereof, nearest each other terminate in lugs *c*, *c*, the edges of which are correspondingly convexed, substantially as shown in Fig. 2 of the drawings, and are engaged by the concaved surface of the guide-shoes of said wedges. There are two of these wedges F, and they, preferably, correspond with each other in every particular. Each comprises a channel-shaped plate or shoe *d*, which is concavo-convex in cross-section, and has its convexed surface (which is opposed to the convex side of the shoe of the other wedge) provided with a series of suitably separated

longitudinal ribs *e*, *e*. This shoe is preferably slightly greater in length than one-half that of the casing and projecting from the concave side thereof, preferably nearer one end than the other, is a hollow enlargement or boss *e'*, which has a flat oblique outer surface *f* opposed to and engaging the inclined planes *b* on the same side of the casing. The widest end of boss *e'* is provided with a transverse flange *g*, the edge of which is curved and shaped to conform to the curvature of the portion of the bore inclosed within the ends of the major axis of the transversely elliptical-shaped bore of the casing, with the surface of which it contacts. Flange *g* provides a seat which faces in the opposite direction to seats *a* of the shelves of the casing, and has one of a series of two coil-springs G pressing against the same whose opposite end bears against the inner surface of the mushroom-shaped head of a plunger H.

Wedges F are located in the flattened sides of the casing diametrically opposite each other, and when they are moved longitudinally away from follower-plate C, the engagement of the oblique surface *f* thereof with the inclined plane *b* of the shelves forces them toward the center and causes them to engage and increase the friction against the concaved sides of the longitudinally and centrally disposed stem of said plunger H. The concavity of the sides of the greater part of the length of the stem of this plunger is the obverse of the inner convexed side of the shoes *d* of the wedges between which it extends, and said concaved sides are provided with longitudinal grooves *h* therein in which ribs *e*, *e* of said shoes have a sliding engagement. The outer surface of the head of the plunger H engages follower-plate C. When the draw-bar of the car-coupler reciprocates under the impact of bumping cars, spring E', E', are first compressed, and then follower-plate C, compresses spring G, which latter cause the wedges to have a relative longitudinally forward movement and at the same time move simultaneously inward toward each other and increase the resistance to the longitudinal movement of the plunger, and bring the same gradually to a dead stop before the edges of its mushroom head engage the adjacent end edges of the casing. Near the head of plunger H the stem thereof is shown to be gradually increased in diameter, but the point at which this enlarged diameter commences is at such a distance from the head that it can not wedge in between the adjacent ends of wedges F, and prevent the movement of the plunger just explained. When the draw-bar moves under the stress of the draft of the train, springs G are compressed and the plunger moves and its movement is resisted, before springs E are compressed, but if desired the casing and other assembled elements of my invention may be reversed and the same results will be obtained from its use.

What I claim as new is:—

1. Draft-gear for car-couplings comprising parallel coil-springs, and frictional restraining wedges, one of which incloses the others and forms a portion of a casing surrounding said springs, the resistance between said wedges increasing as said springs are compressed.

2. Draft-gear for car-couplings comprising parallel coil-springs, a longitudinally movable plunger having a stem on opposite sides of which latter said springs are arranged, and frictional restraining wedges, one of which incloses the others and forms an integral portion of a longitudinally vibratory casing surrounding said springs, the resistance between said wedges increasing as said springs are compressed.

3. Draft-gear for car-couplings comprising parallel coil-springs, a longitudinally movable plunger having a stem extending in axial alinement with the coupling between said springs, and frictional restraining wedges, one of which incloses the others and forms a portion of a casing surrounding said springs, the resistance between said wedges increasing as said springs are compressed.

4. Draft-gear for car-couplings comprising a longitudinally movable plunger having a stem provided with grooves, wedges having ribs that engage the grooves in said plunger-stem, an additional wedge-member having an integral portion that forms the housing for said draft-gear, and springs interposed between the head of said plunger and said wedges.

5. Draft-gear for car-couplings comprising a longitudinally movable plunger having a stem that is concavo-concave in cross-section and provided with grooves in said concave portions, wedges having convex faces provided with ribs that engage the grooves in plunger-stem, an additional wedge member having an exterior shell that forms the housing for said draft-gear, and springs interposed between the head of said plunger and said wedges.

6. Draft-gear for car-couplings comprising parallel coil-springs, a longitudinally movable plunger having a stem a portion of which is tapered, frictional wedges movable on said plunger normally removed from said tapered portion, and a coöperating oppositely arranged friction member having a portion that forms a casing surrounding said springs.

7. Draft-gear for car-couplings comprising coil-springs, a longitudinally movable

plunger having a stem a portion of which is tapered, frictional wedges movable on said plunger normally removed from said tapered portion, and an additional friction member that engages said wedges having a portion that forms a casing surrounding said springs.

In testimony whereof I have hereunto set my hand and seal this 9th day of September, A. D., 1907.

RALPH G. TAYLOR. [L. S.]

Witnesses:

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