No. 739,912. PATENTED SEPT. 29, 1903.

S. OTIS.

DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED JAN. 31, 1903.

NO MODEL.

Fig. 1.

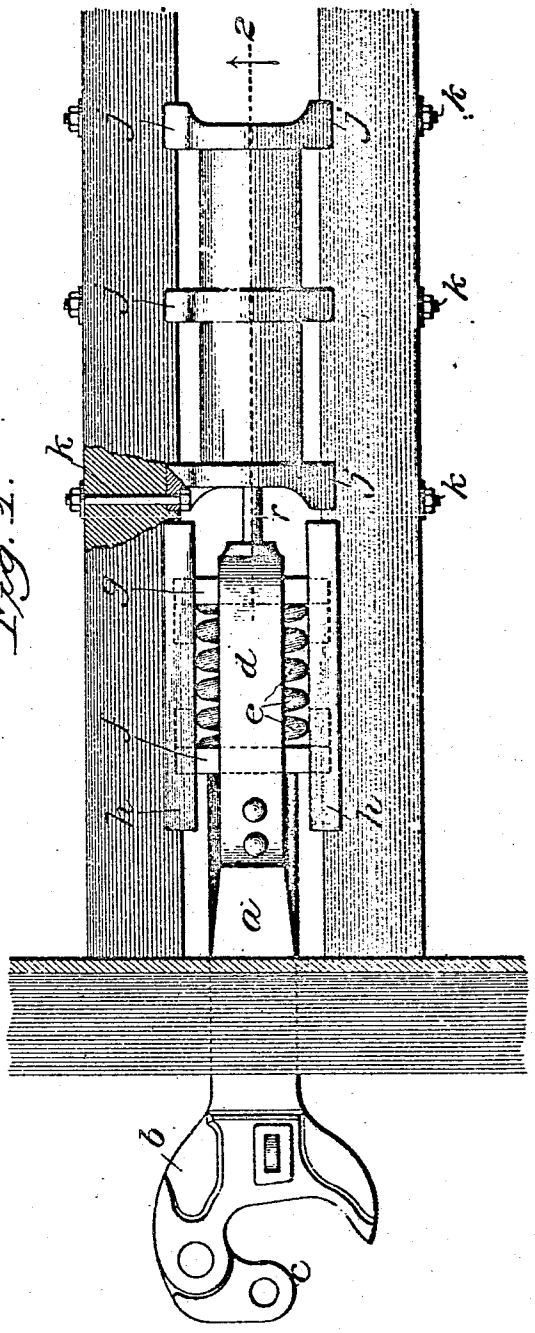
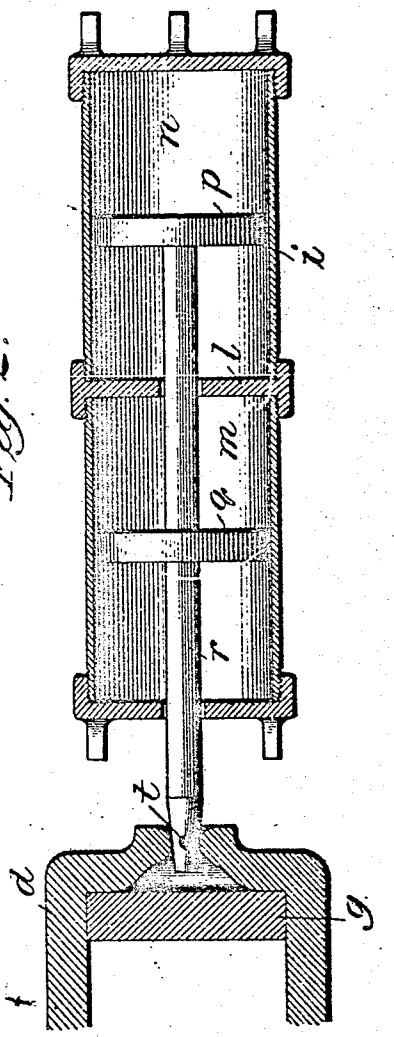


Fig. 2.



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UNITED STATES PATENT OFFICE.

SPENCER OTIS, OF CHICAGO, ILLINOIS.

DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 739,912, dated September 29, 1903.

Application filed January 31, 1903. Serial No. 141,239. (No model.)

To all whom it may concern:

Be it known that I, SPENCER OTIS, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Draft-Rigging for Railway-Cars, of which the following is a specification.

This invention relates to that class of mechanisms commonly termed "draft-rigging" and adapted to be used in connection with railway-cars, and particularly to the means by which the injurious effect of the shocks usually imparted to the draft-rigging during the stopping and starting of a car is largely minimized, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a draft-rigging with a simple, economical, and efficient air-cushion by which the injurious effects due to the shocks of stopping and starting the car are largely minimized.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a draft-rigging for railway-cars in which there are combined a draw-bar, a supplementary air-cylinder, and a piston in such air-cylinder connected with the draw-bar, whereby the usual injurious effects due to the stopping and starting of the train on the draft-rigging are largely minimized.

The invention consists, further, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a draft-rigging as it appears when constructed and arranged in accordance with these improvements; and Fig. 2 an enlarged sectional elevation of the air-cylinder and a part of the draw-bar mechanism, taken on line 2 of Fig. 1 looking in the direction of the arrow.

In the art to which this invention relates it is well known that in the use of draft-rigging cushioning and tension springs are employed to minimize the effects of the shocks and jars on the draft-rigging mechanism incident to the sudden stopping and starting of the cars when they form part of a heavy train or trains. It is further well known that this spring mechanism does not absorb enough of the shocks due to the sudden stopping and starting of the cars and that as a consequence the springs or part of the draw-bar mechanism are liable to become broken.

The principal object of this invention therefore is to provide a draft-rigging with supplementary mechanism, such as an air cushion or cushions, which will allow a certain amount of movement before compression takes place and permit such a cushioning effect as will largely minimize the shocks due to stopping and starting of the train, thus preserving the mechanisms from the injurious effects thereof, while permitting the cushioning-springs to perform their usual functions, all of which will be thoroughly understood and appreciated by those skilled in the art.

In constructing a draft-rigging in accordance with these improvements I provide a draw-bar *a*, having the usual twin coupler-head *b* and interlocter ; knuckle *c*, all constructed and arrang in the usual manner. This draw-bar is provided with a U-shaped end strap *d*, bolted or otherwise secured to the draw-bar, providing a space in which the usual cushioning spring or springs *e* are inserted and arranged between follower-plates *f* and *g*. These follower-plates, as is usual, are guided and held in position by means of "cheek-plates" *h* let into the draft-timbers of the underpinning of a railway-car.

In order to absorb the sudden or unusual shocks or jars and minimize their injurious effects on the draft-rigging, I provide supplementary mechanism in the shape of an air-cylinder *i* and arrange it in the rear of the draw-bar and in line therewith. This air-cylinder is provided with bands or strengthening members *j*, which are let into the draft-timbers and held therein by means of the bolts *k*. The air-cylinder is further provided with a transverse partition *l* at or near its transverse center, which divides it into two air-chambers *m* and *n*, arranged in tandem relation. Each of these air-chambers is provided with a movable piston *p* and *q*, loosely fitting therein. A piston-rod *r* is provided and rigidly secured to each piston, passing loosely through the transverse partition and

the front end of the cylinder and pivotally connected at *i* with the rear of the draw-bar mechanism.

From an examination of the drawings and a consideration of the foregoing description it will be seen that as the pistons and piston-rod mechanism are loosely fitted in their respective chambers, partition, and end of the cylinder the air may be rapidly cushioned by any sudden or unusual shock or jar, but can eventually pass from one chamber into the other, and thereby permit the parts to stay in the desired operative position, while, as above suggested, any sudden or unusual shock or jar is largely absorbed, thereby tending to preserve the mechanisms from any injurious effects therefrom, as will be understood and appreciated by those skilled in the art.

I claim—

1. In draft-rigging of the class described, the combination of a draw-bar, cushioning-spring mechanism therefor, an air-cylinder in the rear of such draw-bar, a dividing-partition in such cylinder dividing it into two air-chambers, a piston in each of such chambers loosely fitted therein, and a single stem or rod connected with both of said pistons and with the draw-bar, substantially as described.

2. In draft-rigging of the class described, the combination of draw-bar mechanism, a cylinder arranged in the rear of and in line therewith and provided with two cylindrical air-chambers arranged in tandem relation, a piston in each of such chambers loosely fitting the same, and a single piston-rod connected with both of such pistons loosely passing through the walls thereof and pivotally connected with the draw-bar mechanism, substantially as described.

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Witnesses:
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