(No Model.)

W. THORNBURGH.

DRAFT APPARATUS FOR RAILWAY CARS.

No. 588,722. Patented Aug. 24, 1897.

Fig. 1.

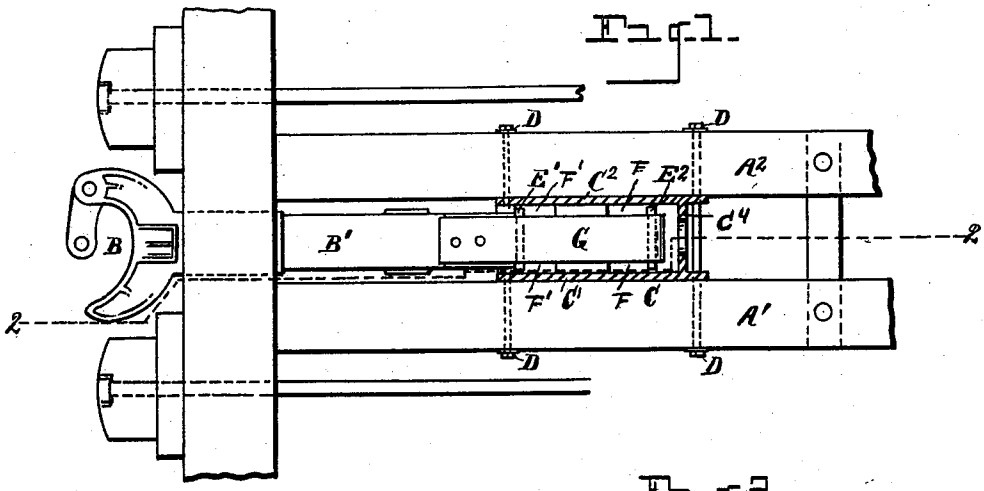


Fig. 2.

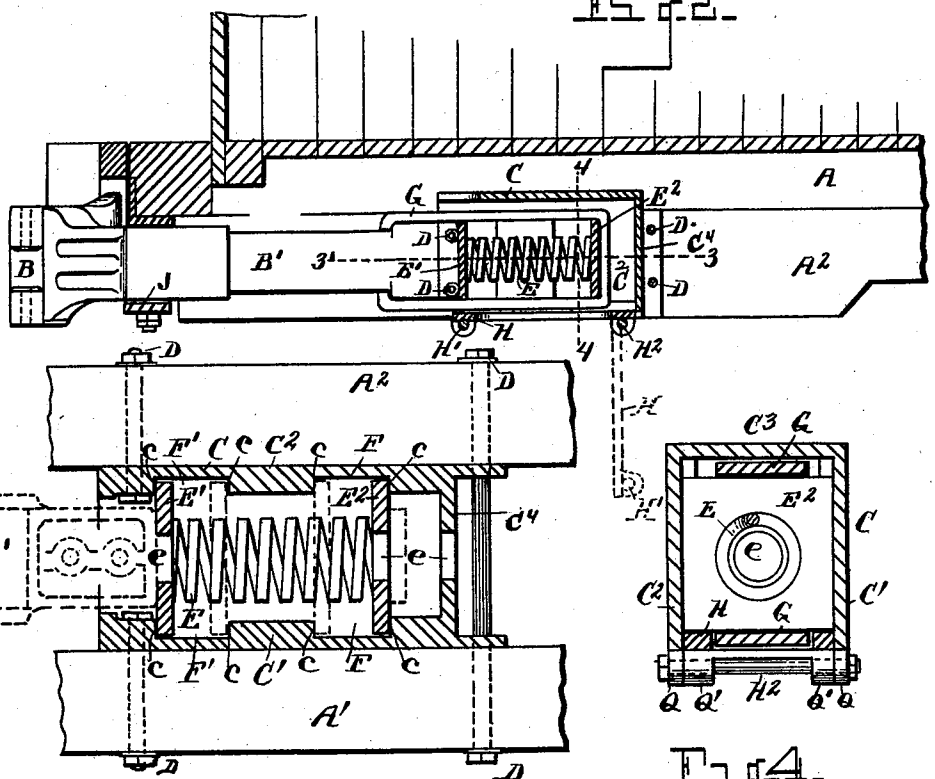


Fig. 3.

Fig. 4.

WITNESSES

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DRAFT APPARATUS FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 588,722, dated August 24, 1897.

Application filed October 14, 1896. Serial No. 608,806. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM THORNBURGH, a citizen of the United States, residing at Cleveland, county of Cuyahoga, State of Ohio, have invented a certain new and useful Improvement in Draft Apparatus for Railway-Cars; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object an improved draft apparatus or draw-bar attachment for passenger and freight cars and locomotives; and it consists of the construction, combination, and arrangement of devices hereinafter described and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view showing the draft-spring case or housing in horizontal section. Fig. 2 is a view in vertical section on the line 2 2, Fig. 1. Fig. 3 is a view in horizontal section on the line 3 3, Fig. 2. Fig. 4 is a cross-section on the line 4 4, Fig. 2.

My invention is designed to reduce the number and complication of parts in draft-riggings now in general use and thereby to simplify the construction and lessen the expense of the maintenance of such apparatus; to make it possible also to employ what is known as a "Master Car-Builders'" yoke, spring pocket or housing, and springs for draw-bars, and to do away with the tail-pin, following near the line of safety; to avoid an undue compression of the draft-springs either in pulling or buffing, keeping the same within the limits guaranteed by spring-makers; to make it possible in case of a breakage of the draw-bar or spring to easily and readily replace the same by simply removing the carrier-iron and one bolt which holds up the spider in engagement with the draft-spring housing, and thereby to take out the broken part and to replace it without further disturbance of the other parts of the apparatus, which is an impossibility with the most modern attachments or draft apparatus now in use.

My invention is also designed and adapted to make it possible, without any change in the principle of construction, by simply enlarging the draft-spring housing, to use additional springs, as the increased capacity of equipments may require, either side by side or tandem, without any change to the Master Car-Builders' standard yoke.

My improved device or apparatus is also so designed that it may be made a part of and used in combination with draft-irons, thereby doing away with what is known in car construction as "draft-timbers," this being an entirely new feature in the construction of draft apparatus.

I carry out my invention as follows:

In the drawings, A represents the car-sills, and A′ A^2 the customary draft-timbers.

B denotes the draw-head, and B′ its shank.

My invention relates more particularly to the construction of the draft-spring housing and its related parts.

C represents my improved draft-spring housing, the two vertical sides C′ C^2 together with the top C^3 and the rear end piece C^4 of which are preferably constructed in a single integral casting, horizontal bolts D uniting said vertical sides C′ C^2 of the housing to the draft-timbers. E denotes a draft-spring within said housing, and E′ and E^2 follower-plates at the extremities of the spring. The extremities of the two sides C′ C^2 are formed with integral inwardly-projecting ribs or stops C^5 C^5 and C^7 C^7. The inner faces of the two sides C′ C^2 of the housing intermediate their ends are constructed with inwardly-projecting integral ribs or stops C^6 C^6, forming front and rear vertically-projecting recesses, (indicated at F and F′,) within which said recesses the follower-plates E′ E^2 have a desired movement longitudinally of the car, the recesses being of the required width to permit the proper movement of the follower-plates and the consequent desired compression of the spring either in pulling or buffing. At the front and rear edges of said recesses the adjacent ribs or stops obviously form shoulders *c* on each side of each of the follower-plates to limit the movement of said plates and the compression of the spring, so as, as above

stated, to keep the compression of the spring within the limits guaranteed by spring-makers, and preventing the coils of the spring from unduly closing upon themselves after the spring has been properly compressed, and thus overcoming the liability of a further strain, compression, or concussion from breaking the spring. This limitation of the compression of the spring in pulling or buffing is an important feature of my invention, the construction, notwithstanding, allowing the follower-plates to play back and forth a required distance.

G denotes a yoke which may conform to the Master Car-Builders' standard yoke, said yoke engaging with the rear end of the shank B′ of the draw-bar and passing about the rear follower-plate E^2.

To close the under side of the housing C, I provide a spider H, which may be united to the sides C′ C^2 of the housing by means of front and rear bolts H′ and H^2. These bolts may engage the spider with the sides of the housing in any suitable manner—as, for example, by providing the housing with ears Q and the spider with ears Q′, through which the bolts may pass. When the spider is fastened in position, the follower-plates play back and forth thereupon and are supported thereby. When it becomes necessary or desirable to remove the follower-plates, the spring, the yoke, or other parts from the housing, it may obviously be readily accomplished by simply removing the forward bolt H′, allowing the spider to swing down, the bolt H^2 acting as a hinge-bolt, allowing the spider to be dropped down out of the way and the ready removal of said parts, so that in case of the breakage of the draw-bar spring or other parts they may be easily removed and replaced, requiring only the removal of the carrier-iron J and the one bolt which holds the forward end of the spider in engagement with the housing.

The front end of the housing, it will be understood, is open. The rear end is closed by a rear end piece C^4. The follower-plates and rear end piece may be constructed with openings *e*. This construction enables me to use other fastening devices to engage the shank of the draw-head with the draft-bar attachment or apparatus. The apparatus thus conforms to the Master Car-Builders' standards, and the ease with which repairs may be made makes the apparatus of superior efficiency and utility.

I do not limit myself solely to the use of the yoke to engage the draw-head with the other features of the draft apparatus above described. Neither do I limit myself to any particular construction of the spider, nor to any specific means of fastening the same to the housing, as my invention contemplates any suitable support or spider removably connected with the housing, or hinged so as to be let down or be opened at the front end thereof for the removal of the parts inclosed in the housing. Other fastening means might be employed to secure the support or spider thereto.

Uniting the two side walls of the housing with a top or cover and preferably with a rear end piece or head integrally connected with said side walls securely braces the side walls and serves to strengthen the structure and to hold the side walls in place. The top or cover, thus integrally connecting the side walls, serves a special function in making a firmer structure than were the parts made separate and otherwise connected together.

It will be seen that by constructing the follower-plates and rear end piece with the openings *e* provision is made for the use of a tail-pin, if desired.

I prefer to project the side walls rearward beyond the end piece C^4 to receive the rear bolts uniting the housing with the draft-timbers, so that said rear bolts may pass through both timbers and the housing.

What I claim as my invention is—

1. In a draft apparatus, the combination of a draft-spring housing having two side walls, a top or cover, and a rear end piece, all formed of a single integral structure, a draft-spring provided with reciprocatory follower-plates located in said housing, and a removable support or spider carrying said follower-plates, said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, substantially as described.

2. In a draft apparatus, the combination of a housing having two side walls, a top or cover, and a rear end piece all formed of a single integral structure, a draft-spring provided with reciprocatory follower-plates located in said housing, a support or spider having a jointed connection at one end with said housing, and means to fasten the opposite end of the support to the housing, said support or spider carrying said follower-plates, said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, for the purpose set forth.

3. In a draft apparatus, the combination of draft-timbers A′, A^2, a housing having two side walls, a top or cover, and a rear end piece all formed of a single integral structure with the side walls projecting rearward of said end piece, a draft-spring provided with reciprocatory follower-plates located in said housing, and a removable support or spider carrying said follower-plates, said housing bolted at the front and rear to said draft-timbers, the rear bolts running through both draft-timbers and the housing, and said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming

recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, for the purpose set forth.

4. In a draft apparatus, the combination of draft-timbers A′, A², a housing having two side walls, a top or cover, and a rear end piece, all formed of a single integral structure, a draft-spring and follower-plates located in said housing, a support for said plates, and bolts to fasten the extremities of said support to the under side of the housing, whereby said support may be removed from the housing, said housing bolted at the front and rear to said draft-timbers, the rear bolts running through both draft-timbers and the housing, and said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, for the purpose set forth.

5. In a draft apparatus, the combination of draft-timbers A′, A², a housing having two side walls, a top or cover, and a rear end piece, all formed of a single integral structure, a draft-spring and movable follower-plates located in said housing, a draw-head, means of engaging the shank of the draw-head with said plates, a support for said plates, and fastenings for said support, one of said fastenings being removable to permit the disengagement of the follower-plates, the draft-spring and the shank of the draw-head from said housing, said housing bolted at the front and rear to said draft-timbers, the rear bolts running through both draft-timbers and the housing, and said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, substantially as described.

6. In a draft apparatus, the combination of a housing having two sides, a top or cover, and a rear end piece, all formed of a single integral structure, a draft-spring and movable follower-plates located therein, a draw-head, a yoke engaging the shank of the draw-head and passing about said plates, and a removable support underneath said follower-plates, said housing bolted at the front and rear to said draft-timbers, the rear bolts running through both draft-timbers and the housing, and said side walls formed with integral inwardly-projecting ribs or stops toward their extremities, and intermediate their extremities, forming recesses F and F′ to receive the lateral edges of the follower-plates and limit their reciprocation, for the purpose set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM THORNBURGH.

Witnesses:
N. S. WRIGHT,
JOHN F. MILLER.