

W. F. RICHARDS.
DRAFT GEAR FOR RAILWAY CARS.
APPLICATION FILED NOV. 11, 1910.

1,076,912.

Patented Oct. 28, 1913.

2 SHEETS—SHEET 1.

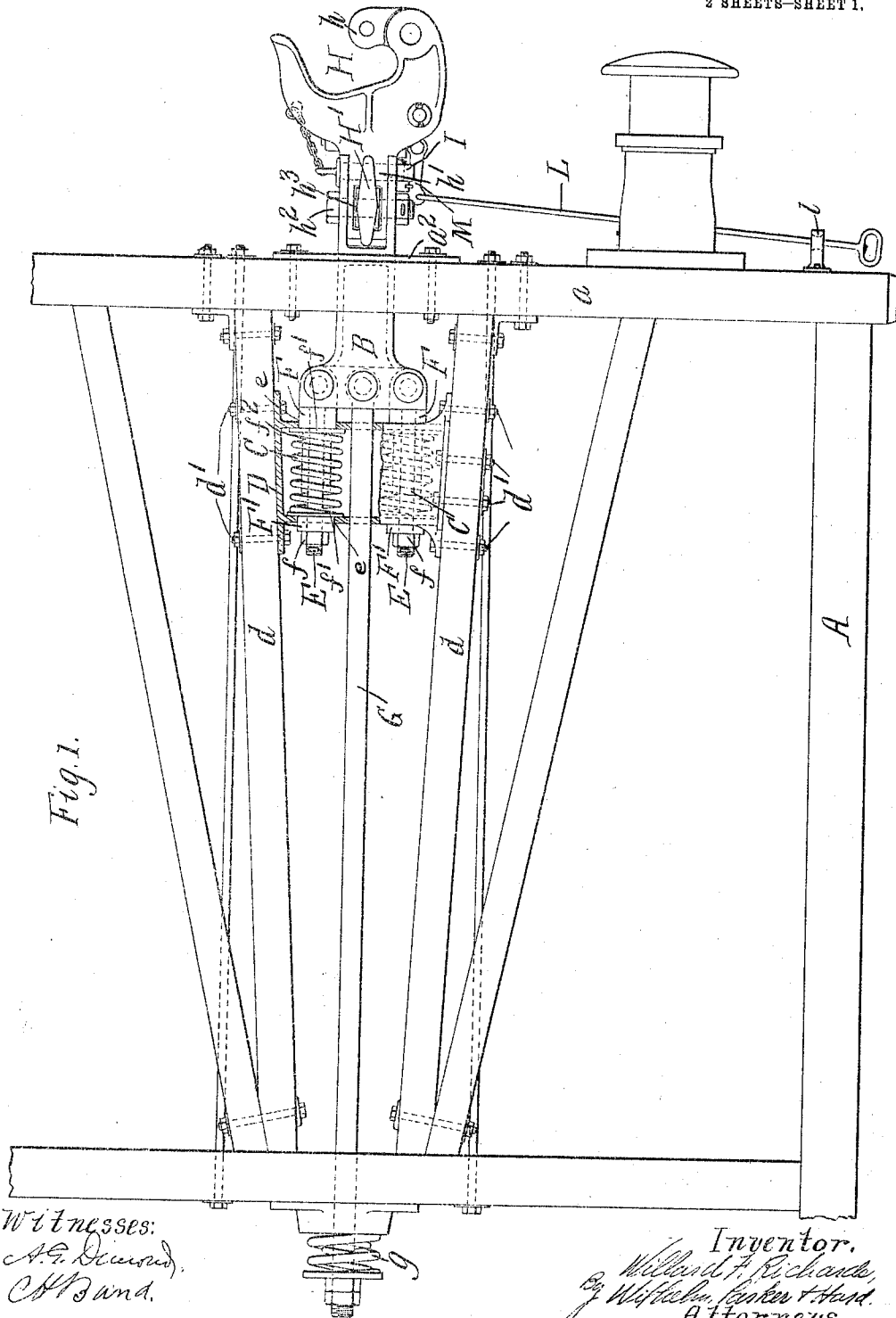


Fig. 1.

Witnesses:
A. S. Diamond,
C. H. Band.

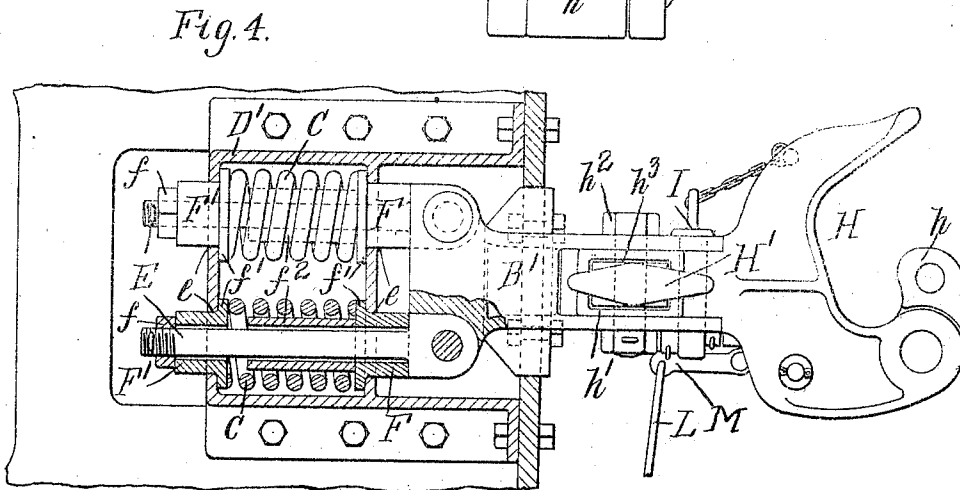
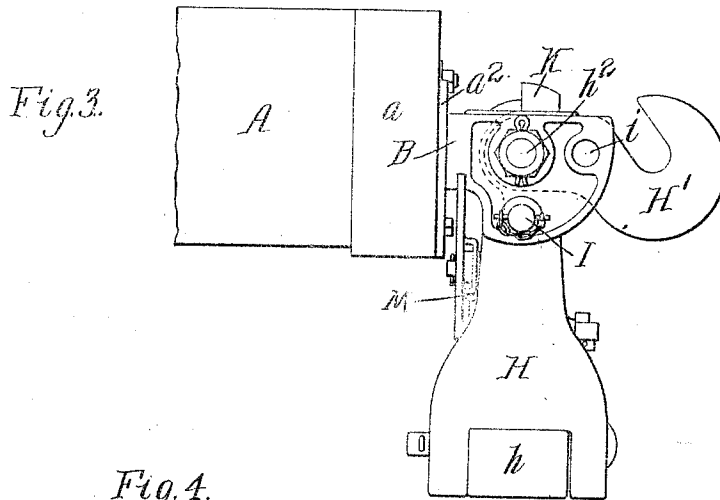
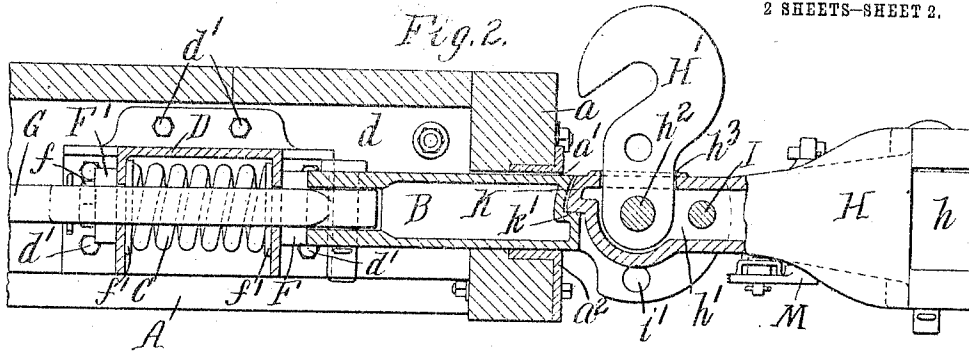
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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DRAFT-GEAR FOR RAILWAY-CARS.

1,076,912.

Specification of Letters Patent.

Patented Oct. 28, 1913.

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To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Depew, in the county of Erie and State of New York, have invented a new and useful Improvement in Draft-Gears for Railway-Cars, of which the following is a specification.

This invention relates to railway car draft gears having both an automatic and a hook coupler arranged so that they can be moved to place either of the couplers out of operative position and the other into position for use, thereby adapting a car equipped with the draft gear to be coupled to other cars either equipped with a hook coupler only or an automatic coupler.

The objects of this invention are to produce a draft gear of this kind which is of simple, strong and durable construction and in which the hook and automatic couplers are pivoted to the drawbar to swing vertically in such a way that the automatic coupler will be held rigidly in the operative position and that when the hook is in position for use the automatic coupler will be in a position where it will not interfere with the operation of the screw-shackles which are commonly used with the hook couplers for drawing the cars together; also to connect the hook and automatic couplers to the drawbar so that if either part is broken it can be quickly replaced at small expense; also to construct the draft gear so as to allow an extended sidewise motion of the drawbar and provide a combined draft and buffing spring mechanism which in addition acts as a centering device for returning the drawbar to and holding it in a central position and which is arranged so that the continuous drawbar commonly used with hook couplers can be retained if desired; also to provide means for operating the lock of the automatic coupler which does not have to be disconnected from the coupler to allow the coupler to be moved into and out of operative position.

In the accompanying drawings, consisting of two sheets: Figure 1 is a fragmentary plan view, partly in section, of a car provided with a draft gear embodying the invention, showing the automatic coupler in position for use. Fig. 2 is a central sectional elevation thereof. Fig. 3 is a fragmentary side elevation showing the hook

coupler in operative position. Fig. 4 is a plan view, partly in section, showing the draft gear applied to an engine frame.

Like reference characters refer to like parts in the several figures.

A represents a portion of a car frame and *a* the end sill thereof.

B represents the drawbar which extends through and is adapted to swing sidewise of the car in an opening *a'* in the end sill. *a*² is a plate secured to the end sill and having a flanged guide opening for the drawbar, to protect the end sill from wear.

The drawbar is connected at its inner end to a combined draft, buffing and centering spring mechanism comprising two springs C C in a box or container D. This spring box may be constructed as required to suit cars of different construction. As shown in Figs. 1 and 2, the spring box has an open bottom to enable inspection of the springs and is located between oblique car timbers *d* to which it is secured by bolts *d'*. Fig. 4 shows a spring box D' of different shape adapted for use on a steel locomotive frame. Two bolts E E pivoted to the opposite sides of the widened inner end of the drawbar B pass through holes *e* in the opposite ends of the spring box and through the springs C, each bolt having two loose sleeves F F' thereon bearing against the opposite end of one of the springs. The outer sleeves F project through the holes in the outer end of the spring box and bear against the inner end of the drawbar, and the other sleeves F' project through the holes in the inner end of the spring box and bear against nuts *f* on the ends of the bolts. The sleeves have flanges *f'* adapted to engage the ends of the spring box and each sleeve F preferably has an extension *f*² adapted to strike the other sleeves F' to limit the inward movement of the sleeves and also to limit the compression of the springs. When the drawbar is drawn outwardly in pulling the car, the outer sleeves F are held stationary by the spring box and the other sleeves F' move with the bolts E and compress the springs C, whereas when the drawbar is pushed inwardly in buffing, the sleeves F' are held stationary by the box and the other sleeves F are pushed inwardly by the drawbar and compress the springs. If the drawbar is swung sidewise in either direction, one of the springs is compressed by the pull of

its bolt E and its inner sleeve F', while the other spring is compressed by its outer sleeve F being pushed inwardly by the drawbar, so that when the side pressure on the drawbar is relieved both springs act to return the drawbar to its central position. The springs C therefore operate both as draft and buffing springs and also as a centering device for the drawbar.

G represents a draw rod, such as commonly used with hook couplers, which is pivoted to the drawbar B between the springs C C and extends to a draft spring g located at the central portion of the car. This draft rod does not interfere with the described operation of the draft gear which is thus adapted for use with a long draw rod G or a continuous draw rod which is sometimes demanded.

H represents an automatic coupler and H' a hook coupler, both of which are secured to the outer end of the drawbar. As this invention relates to the manner of connecting the couplers to the drawbar and not to the construction of the couplers themselves, an automatic coupler of any suitable construction may be used. The coupler H shown is of that type having a pivoted jaw h and an automatic lock in the coupler head for releasably holding the pivoted jaw in coupling position. The two couplers H and H' are arranged at right angles to each other. The automatic coupler has a shank h' which is pivoted to swing vertically in the bifurcated outer end of the drawbar by a bolt h², and the shank of the hook coupler H' is detachably seated in a socket h³ in the shank of the automatic coupler and is pivoted to the drawbar by the same bolt h². The two couplers are thus held rigid with respect to each other and adapted to swing together vertically on the bolt h² to place the automatic coupler in position for use, as shown in Fig. 2, or to place the hook coupler H' in position for use as shown in Fig. 3. The couplers are held in the first position by inserting a pin I through holes i in the end of the drawbar and a registering hole in the shank of the coupler H, and they are held in the other position by inserting the pin I through other holes i' in the drawbar and the hole in the shank of the coupler H. When the hook coupler H' is in position for use the automatic coupler H hangs down in a position where it will be out of the way and will not interfere with the operation of the screw shackle frequently used with hook

couplers for drawing together two cars. The described connection of the couplers enables the hook coupler to be readily detached if broken and replaced by a new hook without change in the drawbar or automatic coupler.

K is a projection on the end of the shank of the automatic coupler adapted to strike a stop K' on the drawbar to arrest the upward movement of the coupler when the pin hole in the coupler shank registers with the pin holes i in the drawbar, to thereby enable the automatic coupler to be quickly secured in operative position.

L represents a rod extending to the side of the car for operating the lock of the automatic coupler. This rod passes through a bearing bracket l on the car and is pivoted at its inner end to a lock operating lever M pivoted on the bottom of the automatic coupler H. The lock (not shown) is operated to release the coupler jaw h by pulling the rod L outwardly. The lock-operating rod L is free to slide and swing in the bearing bracket and the couplers H and H' can therefore be swung vertically to place either coupler in position for use without disturbing the lock-operating rod.

Fig. 4 illustrates the draft rigging modified slightly to adapt it for different application, as, for instance, to a steel locomotive frame. The combined draft, buffing and centering spring mechanism is the same as described except that the spring box D' is of slightly different shape and the mechanism is made narrower as the supplemental draw rod G is omitted. The automatic and hook couplers H and H' are arranged and connected to the short drawbar B' and operate just as before described.

I claim as my invention:

The combination of a drawbar, an automatic coupler pivoted to said drawbar to swing vertically, a hook coupler having a shank removably seated in a socket in said automatic coupler and pivoted on the pivot for the automatic coupler to swing vertically with the automatic coupler, and means for holding said couplers rigid with the drawbar with either coupler in operative position, substantially as set forth.

Witness my hand in the presence of two subscribing witnesses.

WILLARD F. RICHARDS.

Witnesses:

EDWARD WILHELM,
A. L. MCGEE.