F. HEAVENER.

CAR-COUPLINGS.

No. 194,758 Patented Aug. 28, 1877.

Fig. 1.

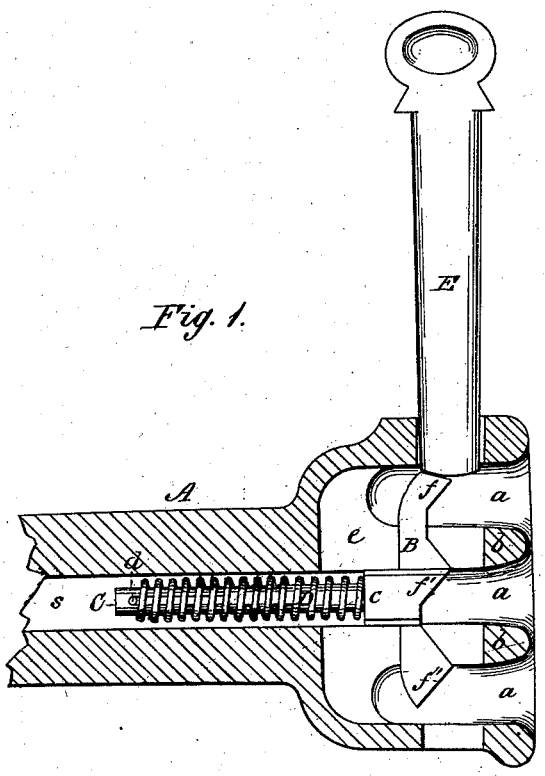


Fig. 3.

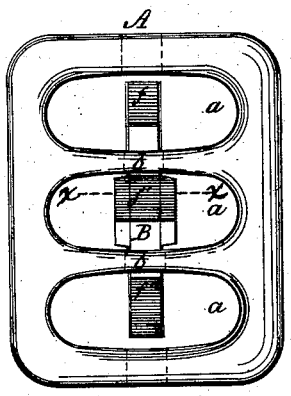
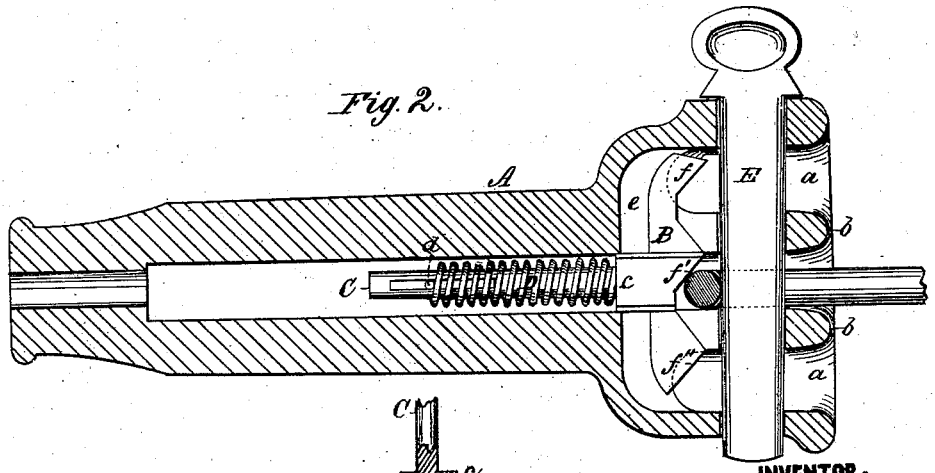


Fig. 2.



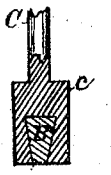


Fig. 4.

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IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **194,758**, dated August 28, 1877; application filed August 21, 1877.

To all whom it may concern:

Be it known that I, FLOYD HEAVENER, of Laramie city, in the county of Albany, Wyoming Territory, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of the draw-bar, showing the manner of sustaining the coupling-pin; Fig. 2, a similar view, showing the manner of sustaining the link in horizontal position; Fig. 3, an end view of the draw-bar. Fig. 4 is a sectional detail, showing the connection of the cross-head to its stem, the section being taken through the line *x x* of Fig. 3.

The object of my invention is to provide an improved car-coupling adapted to automatically couple cars of different heights with the common form of short link, and which shall always maintain the said links in proper horizontal position for entering the draw-bar of the next car.

The invention is an improvement upon that form of car-coupling which employs a series of link-throats for coupling with cars of different heights of draw-bar, and a spring-seated receding support for the coupling-pin, which is forced back by the entering-link to allow the coupling-pin to fall through and couple the cars.

The improvement consists in forming the spring-seated receding support for the link in the form of a narrow cross-head of less transverse dimension than the link-pin hole, for facility in connecting the devices, and for the purpose also of securing an increased strength and improved shape to the draw-bar.

The improvement also consists in the particular means for limiting the movement of the cross-head, and for holding the link in a horizontal position when coupling, and yet allow it a free up-and-down movement when the cars are coupled and in motion, as hereinafter more fully described.

In the drawing, A represents the draw-bar, the front end of which is enlarged and formed with alternating throats *a*, and partition *b*, and with a vertical perforation for the coupling-pin. B is the cross-head, and C the stem, to the forward end of which said cross-head is attached.

The stem C is formed with a shoulder, *c*, and is located in a central longitudinal recess, *s*, in the draw-bar, in which recess it slides from the action of the spiral spring D, when the latter is compressed by the entrance of the link. This longitudinal recess *s* extends forward and opens into the central throat, and is of sufficient transverse dimension to receive the shoulder *c* of the stem.

The spring D encompasses the stem C, and bears at one end against its shoulder *c* and at the other end against a pin, *d*, which latter is fixed in the sides of the draw-bar and passes through a slot in the stem. This pin serves in this connection not only as an abutment for the spring, but operates as a guide for the rear end of the stem, and, furthermore, limits the forward movement of the cross-head B, so that it simply advances to its proper position beneath the coupling-pin without striking against the partition *b*, which would be objectionable on account of the wear to its face and its liability to become jammed by the entering-link.

The cross-head B is firmly attached to the front end of the stem by dovetailing, and extends vertically through the central partitions and the several throats of the draw-bar, the said draw-bar being recessed at *e* to accommodate the movement of the cross-head in receding from the entering-link. This cross-head B is in the nature of a relatively narrow bar, and in attaching it to the stem C by dovetailing, as shown in Fig. 4, the stem C is first inserted into its position in the recess *s* by being passed longitudinally through the middle throat until its dovetail slot is immediately below the coupling-pin hole. The cross-head B, which is made smaller than the coupling-pin hole, is then inserted through said hole and driven into the dovetail slot in the stem, and then secured by screws, rivets, or other suitable means.

The merit of this arrangement is as follows: The peculiar narrow form of cross-head permits the chambered draw-head to be made more nearly solid and much stronger, while the manner of connecting the cross-head to

its stem preserves the proper and usual shape of draw-bar close to the head, and also permits it to be formed all in one piece.

Upon the front side of the said cross-head are formed beveled or inclined faces *f f' f''*, corresponding in number to and arranged respectively in the several throats of the draw-bar. These beveled faces effect in this connection an important result, in that they press from the action of the spring upon the upper side of the inner end of the link, and force the said end down, which action holds the link against the pin in the proper horizontal position for entering the next draw-bar, as shown in Fig. 2.

While this result is attained by these bevels, however, the link is not rigidly held in this position, as in some other draw-heads, which have recesses to receive the link, but the beveled faces and the spring permit the link, when the cars are coupled and in motion, to move freely up and down to accommodate the vibration of the cars. The upper end of this cross-head is also inclined downwardly to the front, so that as it is driven from beneath the coupling-pin by the entering-link it does not throw the coupling-pin out, but insures the proper fall of the same.

In making use of my improved coupling, as thus described, the coupling-pin E, which is slightly flattened for greater strength, is supported in elevated position upon the end of the cross-head B, as shown in Fig. 1. Now, when the link from an approaching draw-bar strikes the cross-head in any one of the throats said cross-head moves to the rear against the tension of the spiral spring, and in passing from beneath the coupling-pin the latter drops through the entered link and couples the cars.

Having thus described my invention, what I claim as new is—

1. The combination, with the draw-bar A, constructed, as described, with several throats, and with a recess, *s*, opening into the central throat, of the stem C, adapted to be inserted into said recess through said throat, and the cross-head B made of less transverse dimensions than the coupling-pin hole, and adapted to be inserted through the same to be connected with its stem, substantially as described, and for the purposes set forth.

2. The combination, with the coupling-pin E and the draw-bar A, constructed as described, of the cross-head B, stem C having slot and shoulder *c*, the spring D, and the pin *d* arranged in said slot and fastened to the draw-bar for the purpose of holding the spring, guiding the stem, and limiting the forward movement of the cross-head, as described.

3. The combination, with the draw-bar having several throats, of the stem C, spring D, and cross-head B, having the faces *f f' f''* inclined so as to extend over the upper end of the link and hold the same in horizontal position without interfering with its freedom of movement, substantially as described.

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