

E. H. JANNEY.
Car-Coupling Draw-Bar.

No. 207,525.

Patented Aug. 27, 1878.

Fig 1.

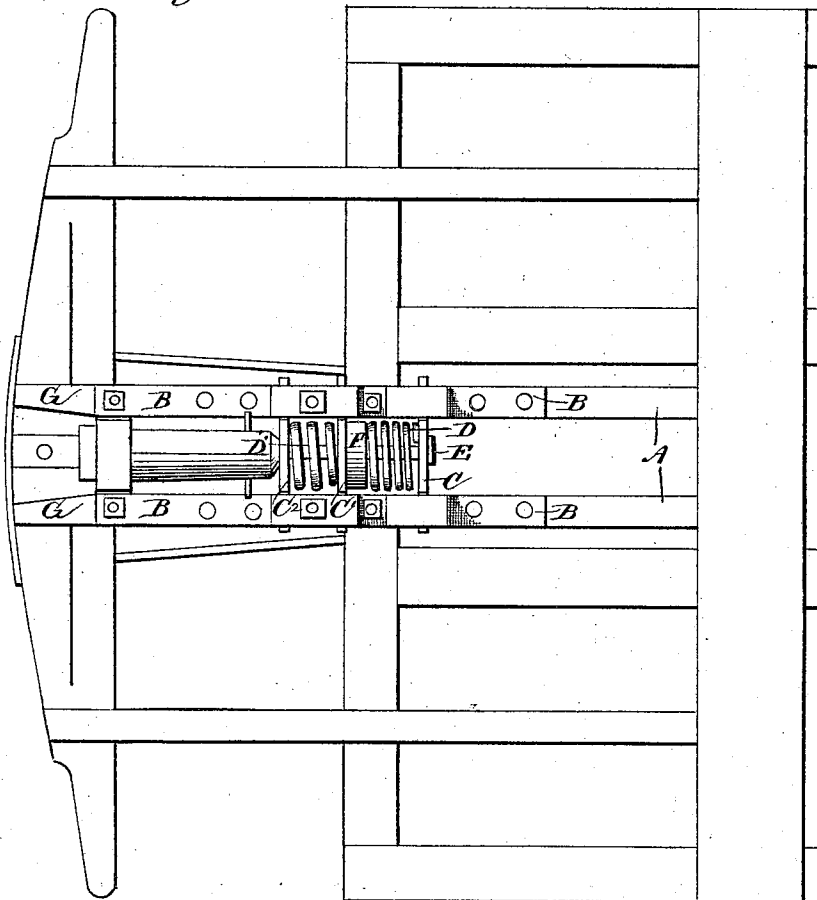
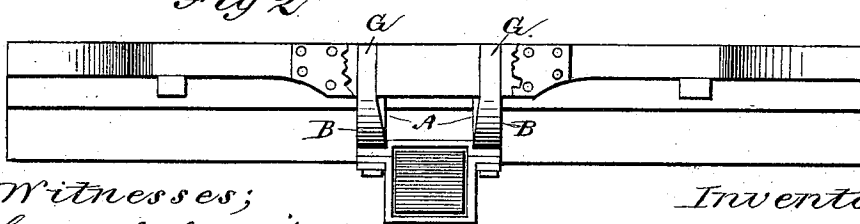


Fig 2.



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Fig 3

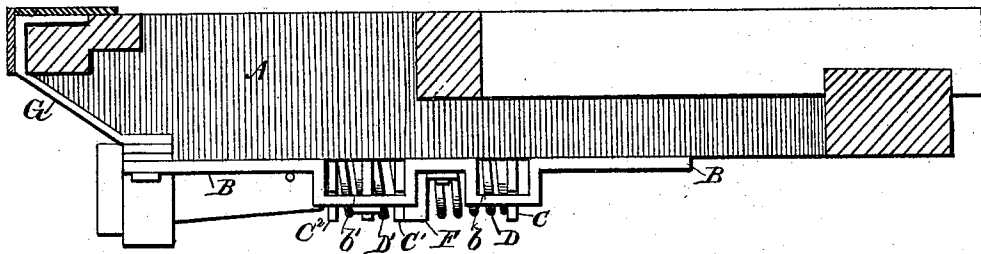


Fig 4

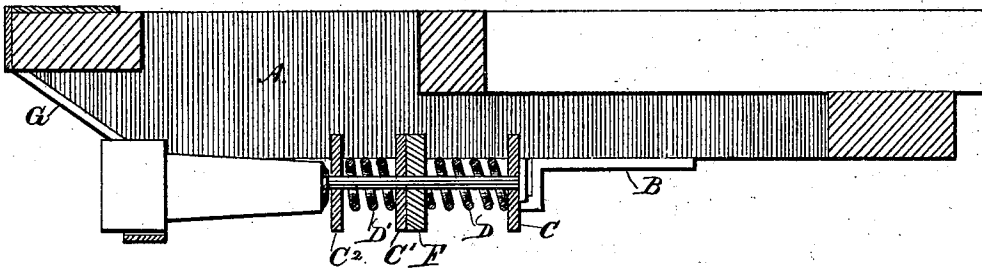
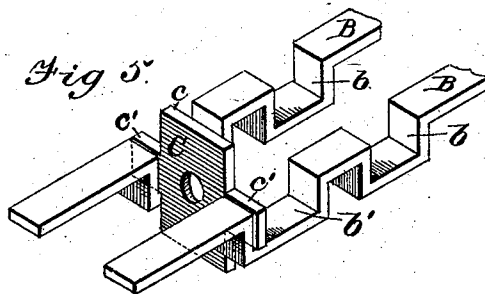


Fig 5



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Fig 6

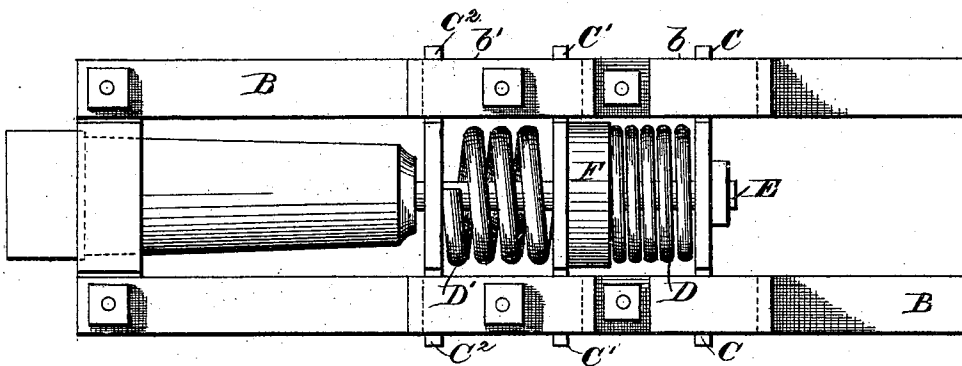
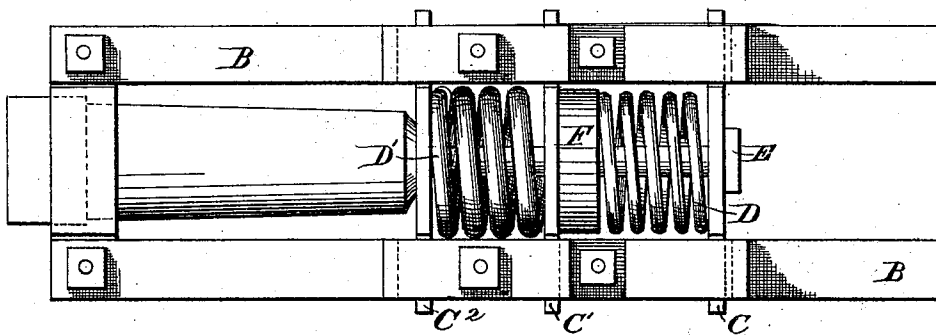


Fig 7.



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UNITED STATES PATENT OFFICE.

ELI H. JANNEY, OF ALEXANDRIA, VIRGINIA.

IMPROVEMENT IN CAR-COUPLING DRAW-BARS.

Specification forming part of Letters Patent No. 207,525, dated August 27, 1878; application filed May 12, 1876.

To all whom it may concern:

Be it known that I, ELI H. JANNEY, of Alexandria, in the county of Alexandria and State of Virginia, have invented a new and useful Improvement in Car-Coupling Draw-Bars; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention is designed to furnish an improved draw-bar for use in that class of couplings covered by my previous patents; and it consists, mainly, first, in the combination, with a car platform and a single draft-bar, of two independent springs, both of which are adapted to yield when strain is exerted in a forward direction, and one only when strain is exerted in a rearward direction, by means of which the draft-bar is adapted to move from its normal position relatively to the platform more readily and to a greater extent in a forward direction than in a rearward one, for purposes hereinafter explained; second, in the combination, with a platform and a single draft-bar, of two independent springs of unequal power, the stronger of which is adapted to receive all the buffing-strain and a portion also of the draft-strain, and the weaker the draft-strain only.

It further consists in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawings, Figure 1 represents a plan view of a car and platform-frame reversed having my invention applied thereto; Fig. 2, a front end elevation of the same in its proper position; Figs. 3 and 4, side elevations, partially in section. Fig. 5 represents a perspective view of the irons B B removed; Fig. 6, an enlarged view, showing the position assumed by the draw-bar when acted on by the engine in starting, and Fig. 7 the position assumed when the spring is compressed by a buffing-strain.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A A, Figs. 2, 3, and 4, represent the timbers or beams of the frame to which the draw-

bar and its connections are attached. B B, Figs. 1, 3, and 5, represent irons firmly bolted to the lower edges of the beams A A, which are so bent or otherwise shaped as to form the spaces *b b'*, Figs. 3 and 5, for holding the ends of the plates, and permitting them to have proper play. C C' C² represent the following-plates, of identical construction, each consisting of a main portion, *c*, Fig. 5, adapted to furnish a proper bearing-surface for the springs, and projecting ends *c'*, adapted to be held in the spaces of the bars B B, as shown. D represents a spring, of suitable construction, interposed between the following-plates C C', and D' a similar spring interposed between the plates C' C², as shown. E represents the draft bolt or bar, consisting of a rod having a head or shoulder at its rear end, which extends through the following-plates and springs, and is provided in front with any suitable draw-head or coupling device. F represents a washer, one or more of which may be employed, if desired, to regulate the tension of the spring D or the extent of its vibration.

The following-plate C', it will be observed, when in its normal position, as shown in Figs. 1 and 3, rests against the rear wall of the space *b'*, and hence is not capable of moving in a backward direction, but is free to move in a forward one when acted on by the spring D in its forward movement.

The following-plate C, on the other hand, it will be observed, does not rest against the rear wall of the space *b* when in its normal position, but is held a short distance from it, the spring D, between it and the following-plate C', consequently being slightly compressed. The plate is adjusted to this position to compress the spring by properly regulating the distance intervening between the head of the draft-bolt and the shoulder of the draw-head attached thereto, as shown.

G G, Figs. 1, 2, and 3, represent strengthening bars or plates, which may, if desired, form a part of the irons B B, but are preferably independent of them. These are secured at one end, however, to a common bolt, so that the advantages of a continuous plate are obtained, while the construction at the same time is made more simple. They extend about the ends of the beams A and the buffer-beam

in the manner shown, for the purpose of binding the two strongly together, and also to give increased strength and rigidity to the platform as a whole.

The operation of my invention is substantially as follows: When the engine starts to move the train both springs yield readily under the strain, and permit the cars to be moved at successive intervals, by which means the engine is aided in overcoming the inertia, the entire train not being started at the same instant.

When the movement, however, is in a reverse direction, and the cars come together with great violence, both springs do not yield beyond their normal position; but one of them, D', possessing great strength, resists alone the buffing-strain.

The operation in detail is as follows: When strain is exerted in a forward direction the spring D, being more elastic than its fellow, yields first, and also moves the greatest distance, as indicated in Fig. 6, the spring D', however, yielding also when the strain is increased, the intermediate following-plate C' permitting this movement.

When motion has been communicated to the entire train and the unusual strain incidental to starting has ceased, the springs, of course, react and return to their normal position. When the cars come together forcibly the strain is borne by the spring D', which, being of great strength, is adapted to receive it, the action of the parts being represented in Fig. 7. No strain is communicated to the spring D, because the following-plate C' has no backward movement. This spring, however, being slightly compressed when in its normal position, follows the head of the draw-bolt in its rearward movement, and prevents lost motion, so that in starting forward again the bolt has no play, but always acts against the tension of the spring. The construction of the parts is such also that in buffing the platforms will take the concussion before the spring D' is entirely compressed, and so prevent it from being injured or destroyed.

From this description it will be understood that although the cars of a train may be united by a coupling having no longitudinal play, still, by means of this invention, they are permitted to move at successive intervals to aid the engine in starting.

It will also be understood that the extent of vibration in a forward direction from the normal position does not determine the extent of the vibration in a rearward direction from the same point, as is the case in the ordinary coupling, but that the former is much greater in extent than the latter, this being a result of great importance in couplings having no longitudinal play.

Some of the advantages of the described construction are as follows: The coupling is practically rigid in a longitudinal direction, and hence has all the advantages arising from this construction, while, at the same time, it is capable of yielding, when necessary, to aid the engine in starting. The buffing-spring D' is protected from undue strain by the relative arrangement of the platforms. The spring D is protected in one direction by the following-plate C' and in the other by the elasticity of spring D'.

The strengthening-irons G, in connection with the irons B, give great strength and rigidity to the platform, this being essential when couplings having no longitudinal play are employed. By means of the washer F a spring of greater or less length may be employed, as may be desired.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a car-platform and single draft-bar, of two independent springs, both of which are adapted to yield when strain is exerted in a forward direction and one only when strain is exerted in a rearward direction, substantially as described.

2. The combination, with a car-platform and single draft-bar, of two independent springs of unequal power, the stronger of which is adapted to take all the buffing-strain and a portion also of the draft-strain, and the weaker the draft-strain only, substantially as described.

3. In combination with a platform overhanging the coupling, the strengthening-plates G, as described.

4. In combination with a draw-head draft-bolt, the compressed spring D and the following-plate C, the construction being such that the lost motion of the draw-head in buffing is taken up by the expansion of the spring, as described.

5. In combination with a single draw-bar and two independent springs, and the following-plates C' C² at the ends of the draw-bar, the intermediate plate C', adapted to yield when strain is exerted in a forward direction, but to resist strain in a rearward direction, substantially as described.

6. The combination of the springs D D' with the following plates C C' C² and draw-bolt, substantially as described.

This specification signed and witnessed this 3d day of May, 1876.

ELI H. JANNEY.

Witnesses:

HARRY C. CLARK,
M. E. STALLINGS.