(No Model.)

G. F. GAGE.

DRAW BAR FOR CARS.

No. 458,569. Patented Sept. 1, 1891.

Fig. 1.

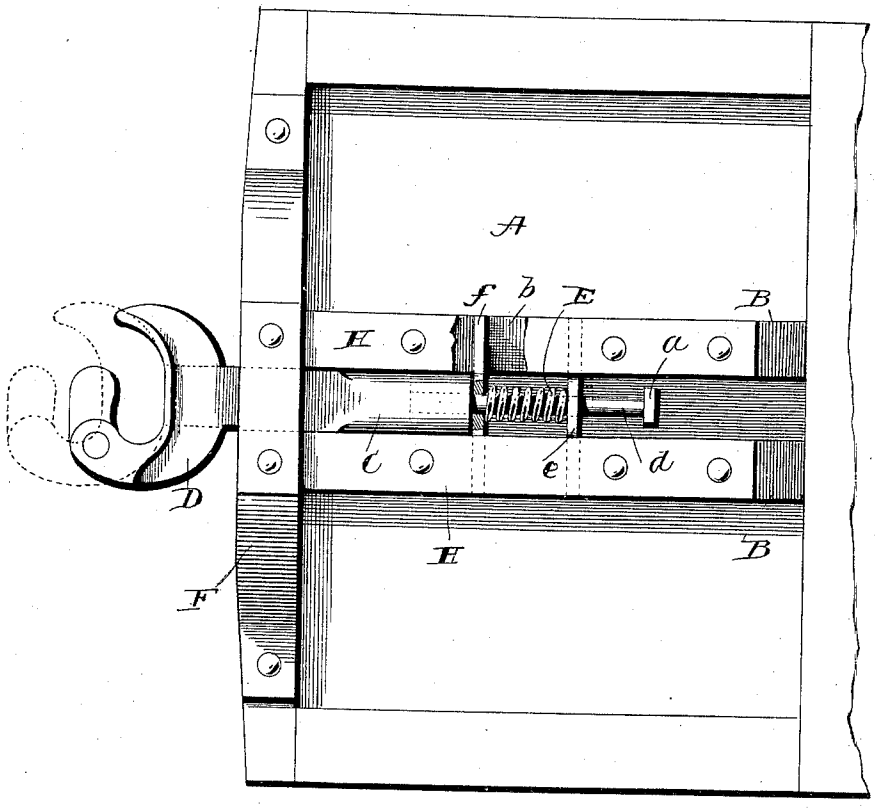


Fig. 2

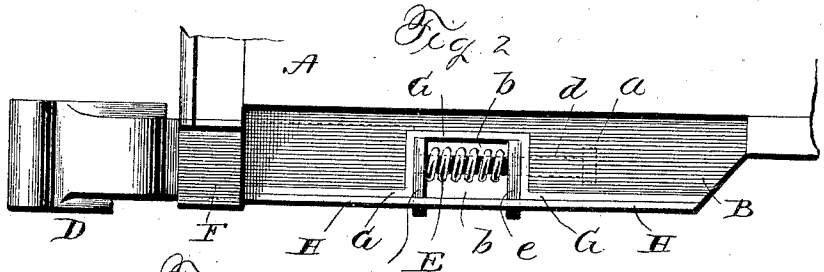


Fig. 3.

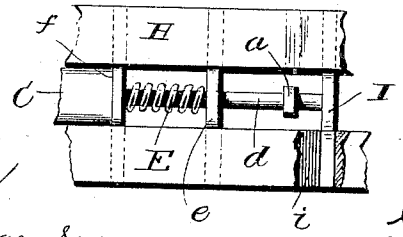
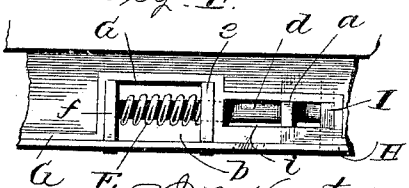


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE F. GAGE, OF HUNTINGDON, PENNSYLVANIA.

DRAW-BAR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 458,569, dated September 1, 1891.

Application filed May 18, 1891. Serial No. 393,202. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. GAGE, a citizen of the United States, residing at Huntingdon, in the county of Huntingdon and State of Pennsylvania, have invented certain new and useful Improvements in Draw-Bar and Mechanism for Automatic Car-Couplers; and I do 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, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to provisions for connecting cars in making up a train.

The object of the invention is to combine the advantages of the pin-and-link coupling and the automatic coupler in one device, whereby the capabilities of the engine in starting and stopping a train are increased and the cars may be coupled automatically when run together. Automatic couplings as generally constructed do not admit of any play between the cars, and as a result the engine must overcome the inertia of the entire train at the same time. Under these conditions it often happens that an engine is unable to start a train on a grade.

The purpose of the invention is to secure a limited play—as much as usually results with the use of the ordinary link and pin—between the cars, whereby the engine in starting will first overcome its own inertia and gain a momentum before moving the first car, which will acquire a momentum before the second car is started, and so on throughout the train, each car being started in turn, thereby allowing the engine to gain headway and take the load gradually, so to speak, and start a train which it could not move otherwise if it had to start each car of the train at the same time.

The invention consists of the novel construction and the combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a bottom plan view, parts being broken away, of the invention, showing one end of a car and showing the operation of the invention by dotted lines. Fig. 2 is a side elevation of the coupling. Fig. 3 is a bottom plan view of a modification. Fig. 4 is a side view of the same.

The car A is of ordinary construction and is provided at each end—only one end being shown—with parallel beams B, which are secured to the underside of the floor or platform of the car. The draw-bar C, having the coupling-head D, is arranged between the beams B, and has its rear end *d* reduced and passed through two cross-plates *e* and *f*, which extend across the space between the beams and have their ends let into a mortise *b* in each beam B. The buffer-spring E, mounted on the reduced end *d* of the draw-bar, is arranged between the two plates *e* and *f*, and relieves the cars of shock when run together and takes the strain when starting the car suddenly. The stop *a* on the reduced portion *d* strikes the cross-plate *e* and moves it forward against the tension of the spring E when the cars are in motion. The portion *d* is sufficiently long to permit a limited movement of the draw-bar before applying the draft to the car. The truss-brace F strengthens the front ends of the beams B and supports the front end of the draw-bar. The mortise *b* is formed in the under side of the beams B, and the plates G and H are arranged to extend around the four sides of the said mortise. The plate H projects across and closes the open side of the mortise and supports the cross-plates *e* and *f*. The plate G is deflected to lie close against the three sides of the said mortise and prevent wear of the beams.

In the modification shown in Fig. 3, the reduced portion *d* of the draw-bar is projected in the rear of the stop *a* and is provided with a cross-head I. The ends of this cross-head project into slots or mortises *i* in the beams B. Under normal conditions this cross-head works freely in the slots *i*; but in the event of the stop *a* giving away the cross-head I will sustain the draft. Again this cross-head will serve in a measure to support the rear end of the draw-bar.

From the foregoing disclosure it will be seen that the draw-bar has a limited play. Hence the inertia of one car will be partially or wholly overcome before the draft is applied to the succeeding car.

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

1. In a car-coupling, the combination, with the parallel beams B, having mortise *b*, and the draw-bar having the reduced portion *d*, of the cross-plates *e* and *f*, having their ends let into the said mortise and having openings through which the reduced end *d* is thrust and is adapted to have a limited play, the stop *a* on the reduced portion *d*, and the spring E, mounted on the said reduced portion and arranged between the plates *e* and *f*, substantially as shown, and for the purpose specified.

2. A car-coupler comprising the beams B B, having mortise *b* in the under side of each, the draw-bar arranged to work between the beams B B and having the reduced portion *d* and the stop *a*, the cross-plates *e* and *f*, having their ends inserted in the said mortises *b* and having the reduced portion *d* passed through them, the spring E between the cross-plates and mounted on the reduced portion *d*, the plates G and H, the plate G being deflected to lie close against the three sides of the mortise *b*, and the plate H extending across and closing the open side of the said mortise, substantially as described, and for the purpose specified.

3. In a car-coupling, the combination of the beams B B, having mortises *b* and *i*, the draw-bar having the reduced portion *d*, stop *a*, and cross-head I, the ends of the cross-head being projected into the mortises *i*, the cross-plates *e* and *f*, and the spring E between the cross-plates, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE F. GAGE.

Witnesses:
S. S. RODGERS,
WM. P. ORBISON.