2 Sheets—Sheet 1.

J. A. HINSON.

Car-Coupling.

No. 197,851 Patented Dec. 4, 1877.

Fig. 2.

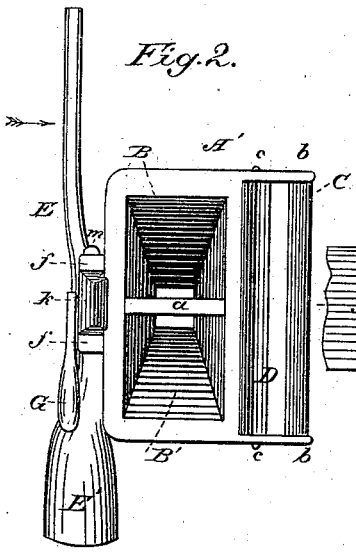


Fig. 1

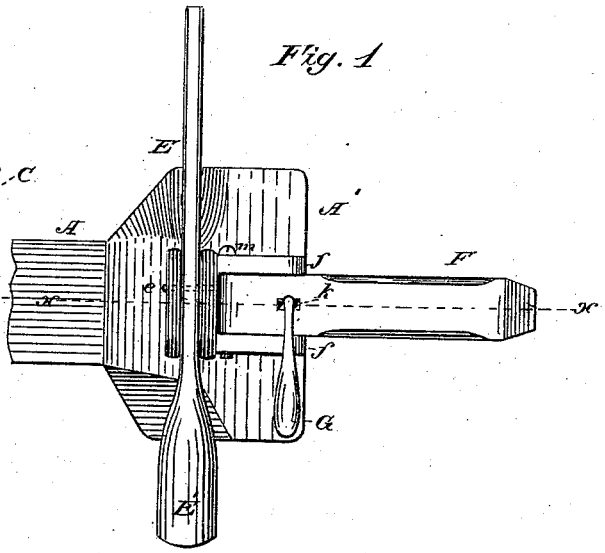
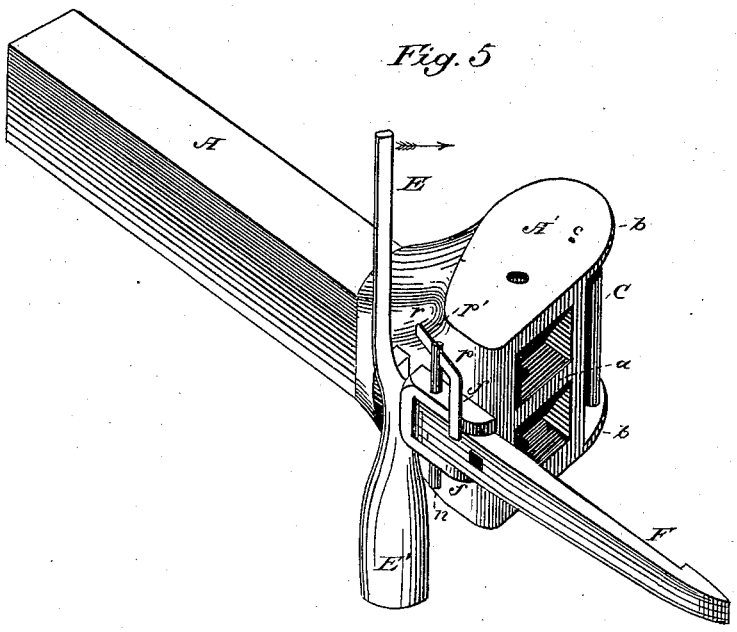


Fig. 5



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2 Sheets—Sheet 2.

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Fig. 3.

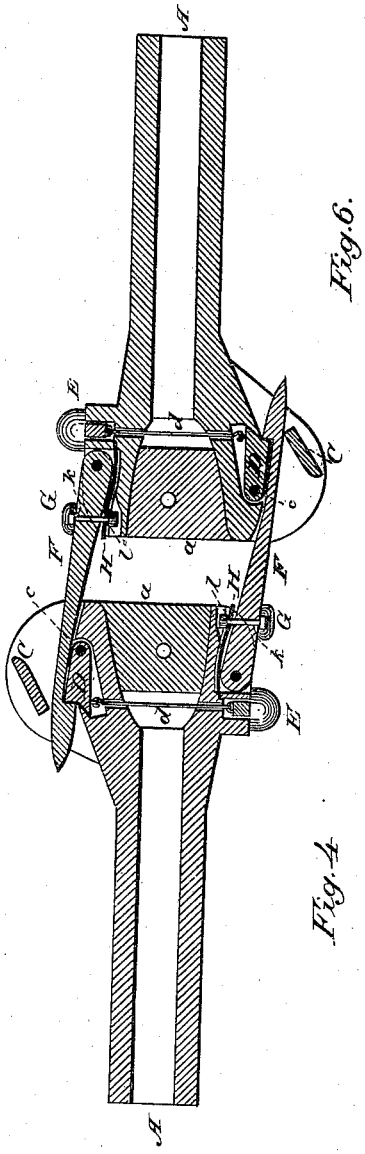


Fig. 6.

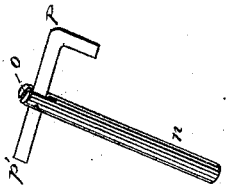
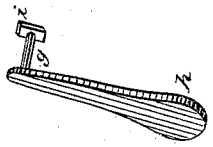


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF OSKALOOSA, ASSIGNOR OF ONE-HALF HIS RIGHT TO A. A. JUDSON, OF FAIRFIELD, IOWA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **197,851**, dated December 4, 1877; application filed May 18, 1877.

To all whom it may concern:

Be it known that I, JAMES A. HINSON, of Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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, and in which—

Figure 1 is a side view. Fig. 2 is a front elevation. Fig. 3 is a horizontal section on the line *x x* in Fig. 1, showing two draw-heads coupled. Fig. 4 is a perspective view of the lock-pin used for retaining the coupling-hook in its place. Fig. 5 represents a modification of my invention, and Fig. 6 is a perspective view of the lock-pin used in the modified form of my invention represented in Fig. 5.

Similar letters of reference indicate corresponding parts in all the figures.

My invention relates to automatic car-couplings; and it consists in the construction and combination of parts, as hereinafter more fully shown and described.

In the drawing, A is the draw-bar, having a flaring head or mouth, A′, which is divided by a horizontal diaphragm, *a*, into two recesses, B B′. C is a strong bar or plate secured vertically between two ears or projections, *b b*, of the draw-head A′, and slanting toward the rear part of this, as shown. That side of the draw-head which faces plate C is recessed, and within the recess is pivoted, at *c c*, the vertical lock-plate D, which, therefore, faces guide-plate C, the two plates being placed at an angle to each other. *d* is a rod secured in plate D, and passing through perforations in the mouth A′ of the draw-head, back of the plate or diaphragm *a*, to the opposite side, where it is hooked onto a vertical lever, E, which has its fulcrum at *e*. This lever terminates in a weight, E′, so that the lock-plate D will be pressed or forced outward against the guide-plate C by rod *d* and weighted lever E E′ when the latter is in its normal or vertical position.

The coupling-hook F is hung between bearings *f f* on that side of the draw-head opposite to the lock-plate D and stationary guide-plate C. It is prevented from swinging out too far by a lock-pin, G, the construction of which is shown more clearly in Fig. 4. As will be seen by reference to that figure, this lock-pin consists of a shank, *g*, having at one end a weighted arm, *h*, and at the other a lug or button, *i*. The shank *g* and lug *i* are inserted through a slot, *k*, in the rear part of the coupling-hook F, and passed through a corresponding cut or slot, *l*, in the spring H, which latter is placed between the brackets *f f*, so as to form a cushion between the coupling-hook F and the side of the draw-head, against which it works and to which it is secured. After the lock-pin G has been passed through the slots *k* and *l*, to do which the arm *h* must be held in a horizontal position, parallel to that of the draw-bar and coupling-hook, it is allowed to drop into its vertical position, which prevents the withdrawal of the pin, and firmly locks the hook F and spring H together. It follows that the lateral play of the hook is limited or controlled by the length of the shank *g* of lock-pin G, by removing which and withdrawing bolt *m*, by which the hook is pivoted between its bearings or brackets *f f*, the hook may readily be removed from the draw-head.

In Figs. 5 and 6 I have represented a modified form of my invention, which consists of a round bolt, *n*, having a transverse slot, *o*, in its upper arm, into which is inserted a flat steel spring, *p p′*, the long end of which is bent at a right angle, as shown. Bolt *n* is inserted through the perforations in brackets *f f* and coupling-hook F, and serves as the pivot for the latter, the bent arm *p* passing down on the outside of hook F, while the short straight arm *p′* will abut against the shoulder *r* of the draw-head. By this arrangement, it will be seen that the tension of spring *p p′* will force hook F up against the draw-head, but yet allow sufficient elasticity for lateral motion of the hook in coupling. It is obvious that when this form of pin is used, the lock-pin G is dispensed with. In Fig. 5 I have represented bolt *n* as partly withdrawn. When in use the straight arm of spring *p p′* should rest upon the top edge of the hook F, the bent

arm *p* reaching down to the lower edge of the hook, so as to have the largest possible bearing-surface.

From the foregoing description, taken in connection with the drawing, the operation of my improved automatic coupling will be readily understood. When coupling, the hook F of one of the draw-heads will enter between the guide-plate C and lock-plate D of the other draw-head, pushing the latter aside into its recess in the side of the draw-head as i passes. As soon as the hook has entered, the lock-plate D will, impelled by the weighted lever E E′ and rod *d*, occupy its former or normal locked position, and thereby prevent the withdrawal of the hook, which effects the coupling. To uncouple, the top of lever E is pushed, by suitable rods and connections, so that it may be operated from the top or platform of the car, in the direction of the arrow, which will draw the lock-plate into its recess, flush with the side of the draw-head, thereby allowing the hook to pass it and slip out.

When used as an ordinary pin-and-link coupling, the hook F, lock-pin G, and lever E E′ are removed, and an ordinary link inserted into either one of the recesses B B′ in the draw-head, which is retained in place by a pin passing vertically through these recesses, in the usual manner.

This coupling, whether used as an automatic or as an ordinary link coupling, may be used with cars of different height, without any change of parts, with its resulting loss of time and inconvenience. It is simple in construction, and therefore strong and durable, and can be produced at a minimum cost as compared with other automatic couplings.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a car-coupling, the combination of the recessed draw-head A′, vertical slanting guide-plate C, pivoted vertical lock-plate D, rod *d*, and weighted lever E E′, substantially as and for the purpose herein shown and specified.

2. The combination of the draw-head A′, having brackets or bearings *f f*, pivoted coupling-hook F, lock-pin G, and spring or elastic cushion H, substantially in the manner and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES A. HINSON.

Witnesses:
D. G. WHITE,
W. C. GLAIZE.