(No Model.) 2 Sheets—Sheet 1.

J. A. HINSON.

CAR COUPLING.

No. 464,825. Patented Dec. 8, 1891.

Fig. 1.

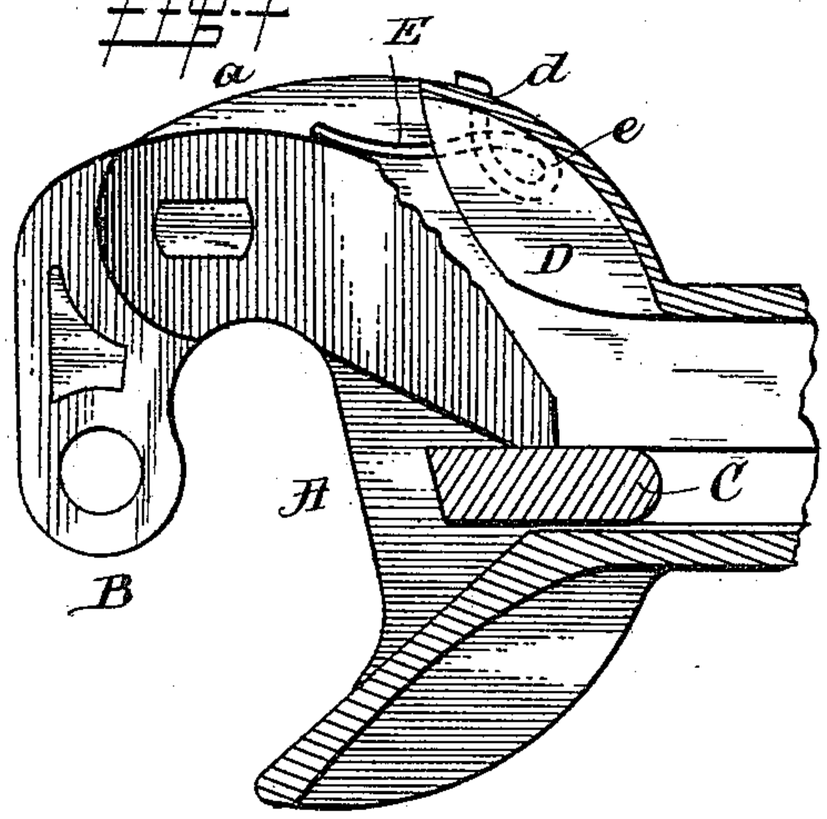


Fig. 2.

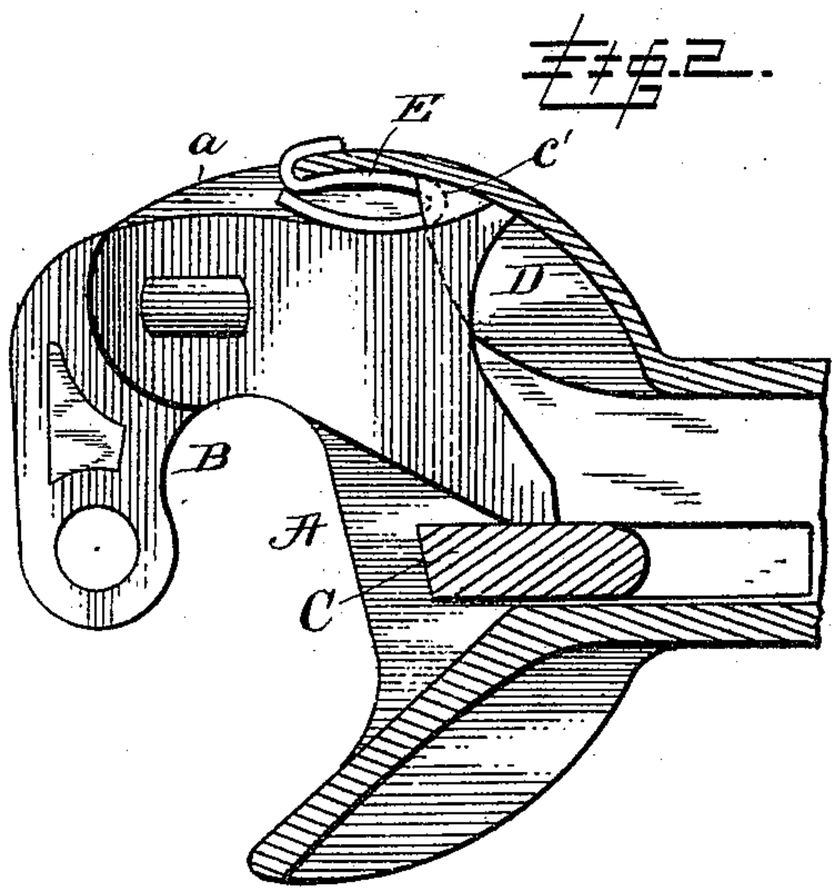
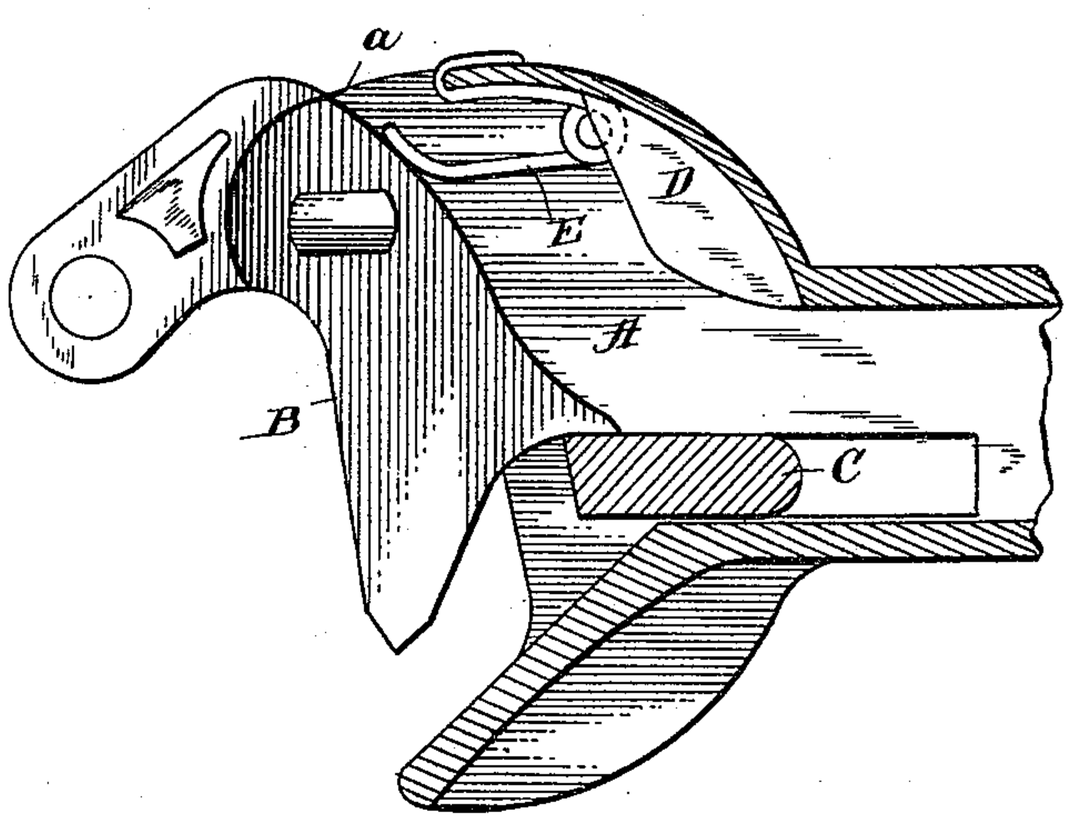


Fig. 3.



WITNESSES

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Fig. 4.

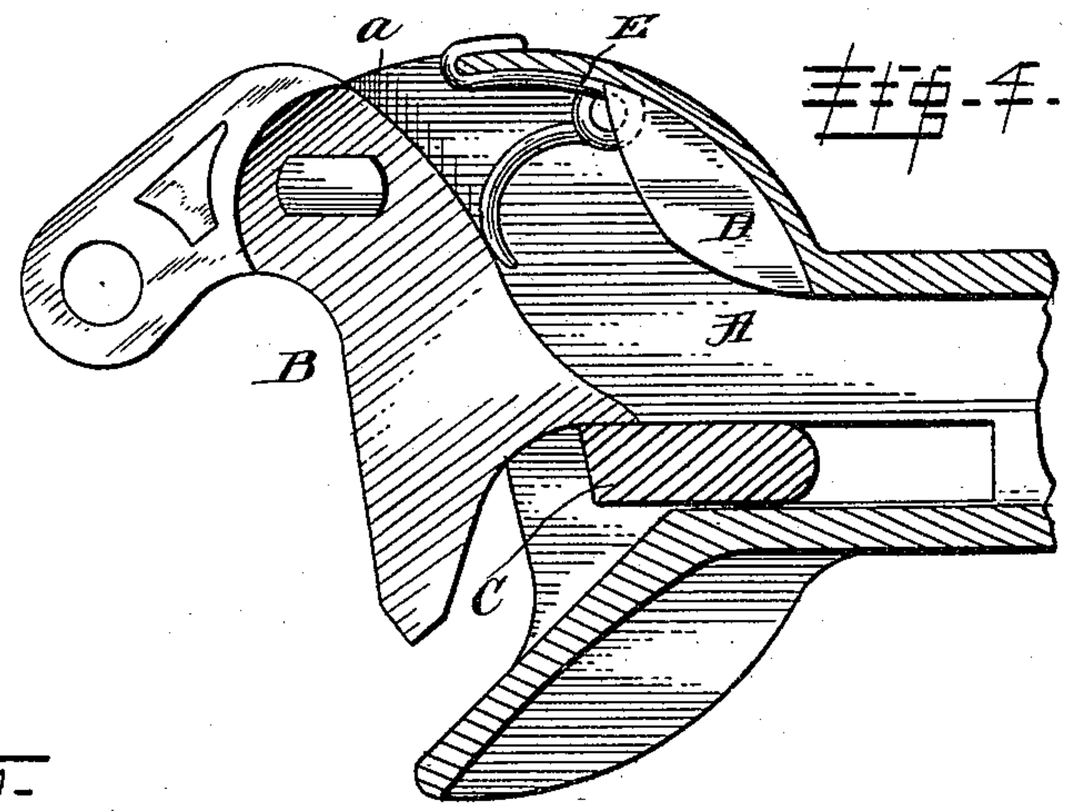


Fig. 5.

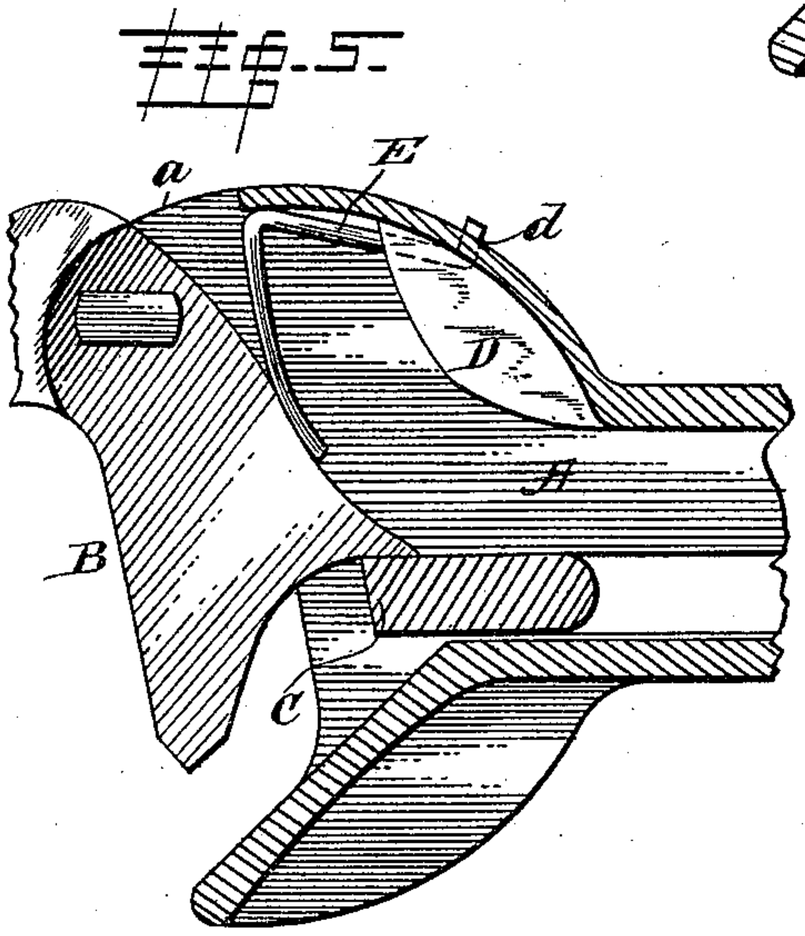


Fig. 6.

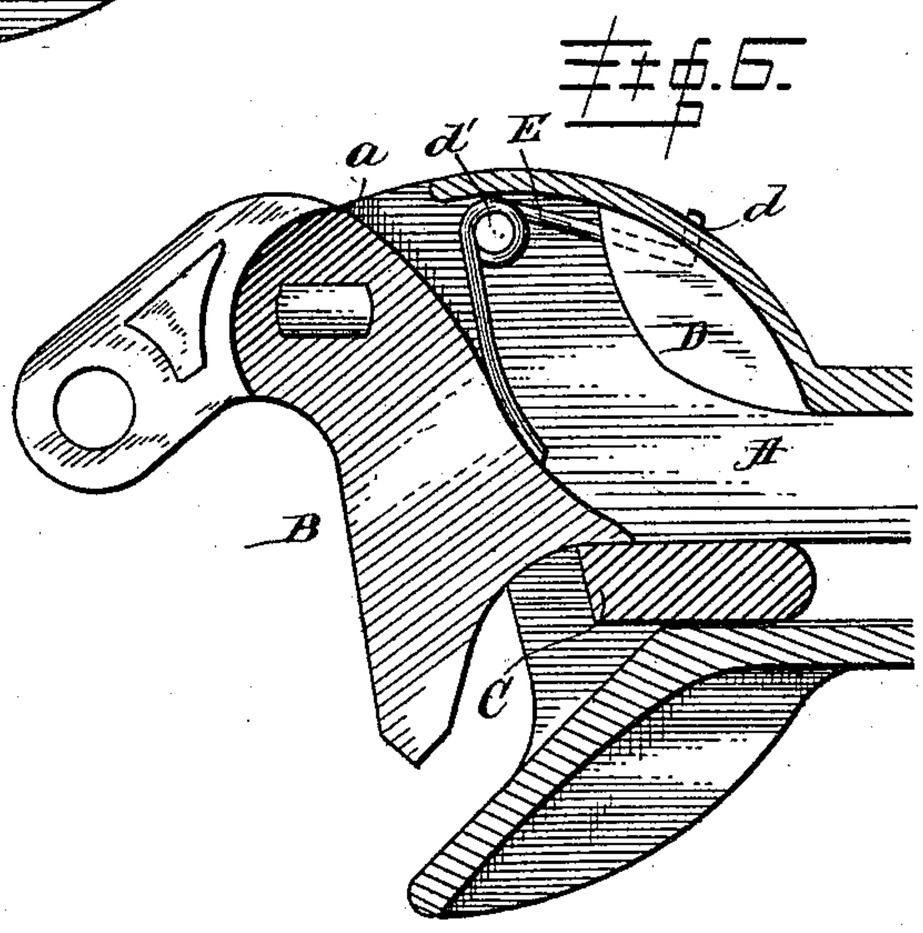
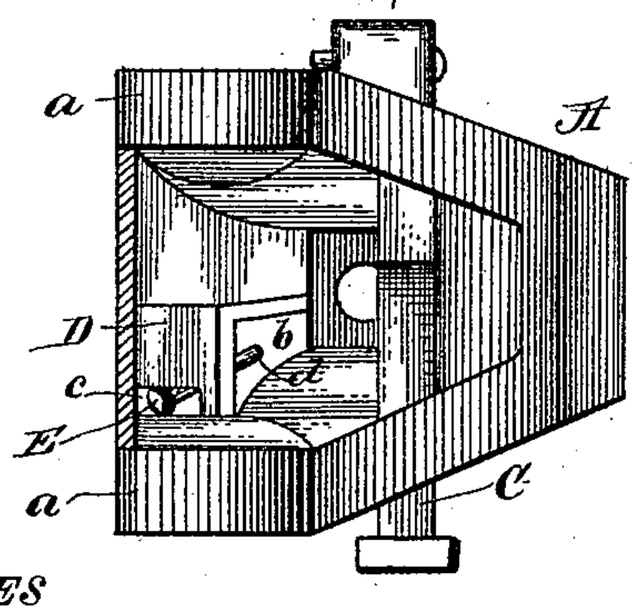


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF DES MOINES, IOWA, ASSIGNOR TO THE HINSON CAR COUPLER COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 464,825, dated December 8, 1891.

Application filed April 9, 1891. Serial No. 388,252. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Devices for Automatically Opening the Knuckles of Vertical-Plane Car-Couplers; and I do hereby 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.

This invention relates, generally, to car-couplers of the vertical-plane type, and particularly to devices for automatically throwing open or turning the knuckle outward after the same has been released from the locking device; and it has for its object to provide a cheap, durable, and effective device for the purpose named arranged within the draw-head and securely protected from all buffing blows; and it consists in providing a spring-metal bar of suitable form arranged in a peculiar manner within the draw-head in rear of the pivotal point of the knuckle and adapted to bear with its free end against the tail-piece in such manner as to force the same normally outward whenever it is released from the locking device, as will be hereinafter full described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal section through a draw-head, showing the knuckle closed or locked and my invention in operative position; Figs. 2, 3, 4, 5, and 6, similar views showing modified forms of springs adapted for use in my invention; and Fig. 7, a front end elevation of the draw-head, illustrated in Fig. 1.

Similar letters refer to similar parts throughout the several views.

A represents a draw-head of the type used in vertical-plane couplers, the knuckle B of which being suitably pivoted in the arms *a* of said head, as is usual, and C a latch adapted to retain said knuckle in a locked or closed position. Within the draw-head at one side is formed a shoulder D, adapted to engage a shoulder formed on the rear side of the tail-piece of the knuckle when the same is forced inwardly or turned, as in coupling, and thus take up or receive the blow given the knuckle in coupling and transmit the same to the draw-head in order to relieve the knuckle of the brunt of the shock. According to my invention the shoulder D is cast hollow and with its side open, as at *b*, and is formed with a slot *c* in its front wall, through which extends one end of a spring E, said spring being inserted in or under said shoulder through the side opening *b* and its free end extending through the slot *c* and bearing against the tail-piece of the knuckle in rear of its pivotal point and the other end of said spring being carried through a perforation *d*, formed in the wall of the draw-head and then bent back against the draw-head so as to retain said spring in position. The spring, as shown in Fig. 1, is formed with a coil or turn, as at *e*, which is protected from all shocks and blows from the knuckle by the shoulder D, so that there is no liability of the same being broken.

Referring to Fig. 2 of the drawings, the spring E is formed simply of a flat leaf or bar of spring metal having a bend or return therein, as at *c'*, said bent portion being located within the slot of the shoulder D and its free end bearing against the tail-piece of the knuckle, the other being brought forward and bent outwardly about the end of the draw-bar and against the outer surface thereof, so as to retain the spring in place.

In Fig. 3 I show the spring as formed with a double coil or bend therein, said bend or coil being located within the shoulder D, and the ends of the spring arranged and secured as in Fig. 2.

In Fig. 4 the spring is also formed with a coil, as in Fig. 3, and secured in the same manner, but the free end thereof is turned or bent backwardly in the draw-head and exerts its pressure forwardly instead of laterally, as in Fig. 3.

As shown in Fig. 5, I use merely a flat bar of spring metal bent backwardly and exerting its pressure forwardly, the other end of the spring passing through the slot in the shoulder D and out through a perforation or opening in the wall of the draw-head, where it is secured by bending or forming a head thereon.

In Fig. 6 I employ a round spring-metal

bar, similar in shape and arrangement to the spring shown in Fig. 5, except that it is formed with coil, as at *d'*, at the point where it is bent backwardly.

The effect produced by all the springs is the same, they each being arranged to throw the knuckle forward—that is, turn the same on its trunnions into a position for coupling with an adjacent knuckle. The springs formed with a coil are formed of round bars and those not having a coil of flat bars.

I am aware that a spiral spring has been secured or arranged in a draw-head to throw open a knuckle, and I do not therefore claim a spring broadly for this purpose; but in my invention I pocket or arrange the spring within the hollow shoulder in such manner as to protect the same from the impact blows of the knuckle in closing and having it at the same time in position to act instantly, upon release of the knuckle from its lock and force the same outward.

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

1. The combination, with the draw-head, of a vertical-plane car-coupler having a hollow shoulder formed on its interior and a knuckle pivotally secured to said draw-bar, of a spring-metal bar pocketed or inserted in said hollow shoulder and adapted to rotate or turn said knuckle outwardly, substantially as described.

2. The combination, with the draw-head, of a vertical-plane car-coupler having a hollow shoulder formed on its interior and a knuckle pivotally secured to said draw-head, of a spring-metal bar secured at one end to said draw-head within the shoulder and having its free end bearing against said knuckle, substantially as described.

3. The combination, with the draw-head, of a vertical-plane car-coupling having a hollow shoulder formed with a slot in its front wall and an open side and a knuckle pivoted to said draw-head, of a bent spring secured to said draw-head and arranged within said shoulder and having its free end projecting through said slot and adapted to bear against the knuckle, substantially as described.

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

JAMES A. HINSON.

Witnesses:
DAVID SECOR,
J. E. FORSYTH.