(No Model.)

J. A. HINSON.

CAR COUPLING.

No. 482,358. Patented Sept. 13, 1892.

Fig. 1.

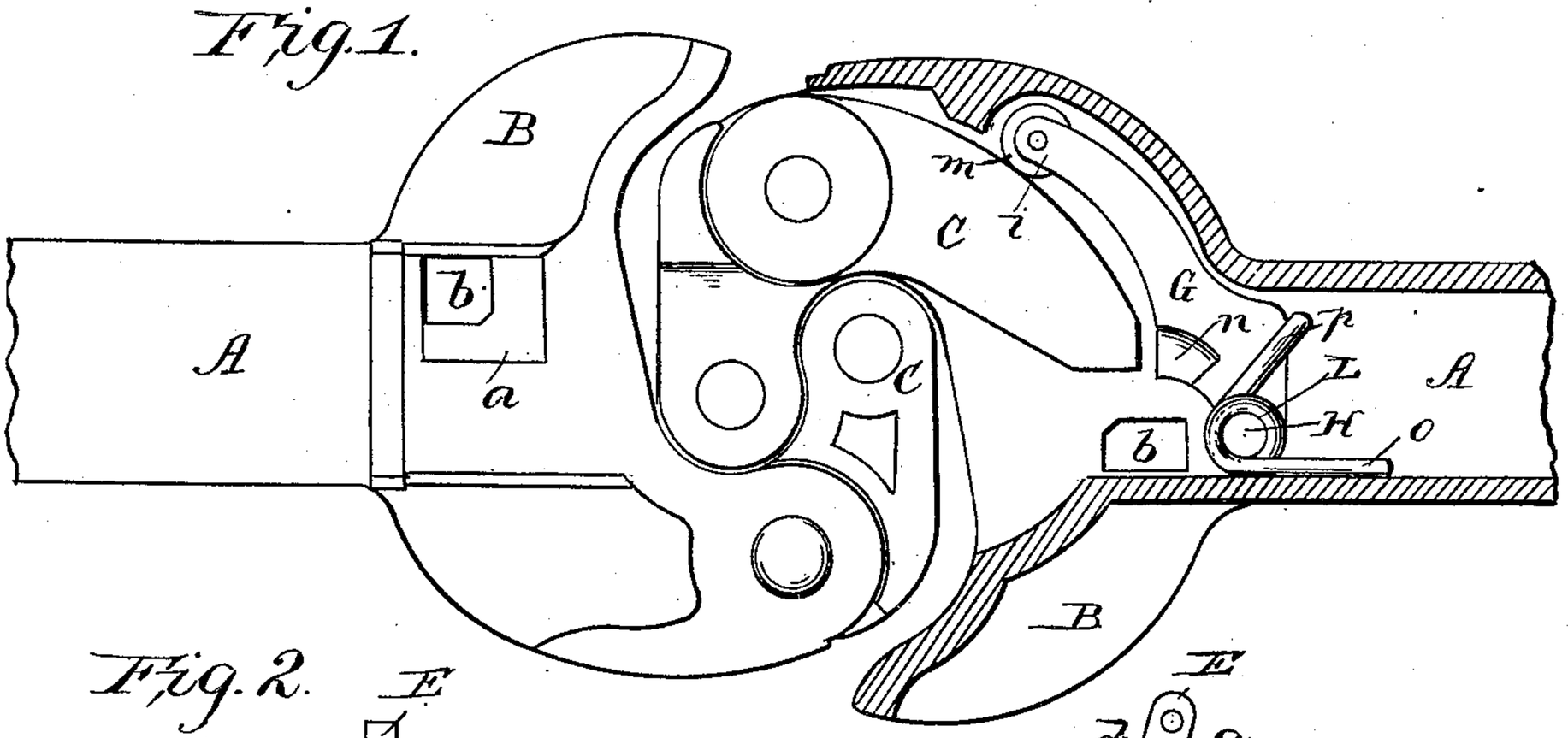


Fig. 2.

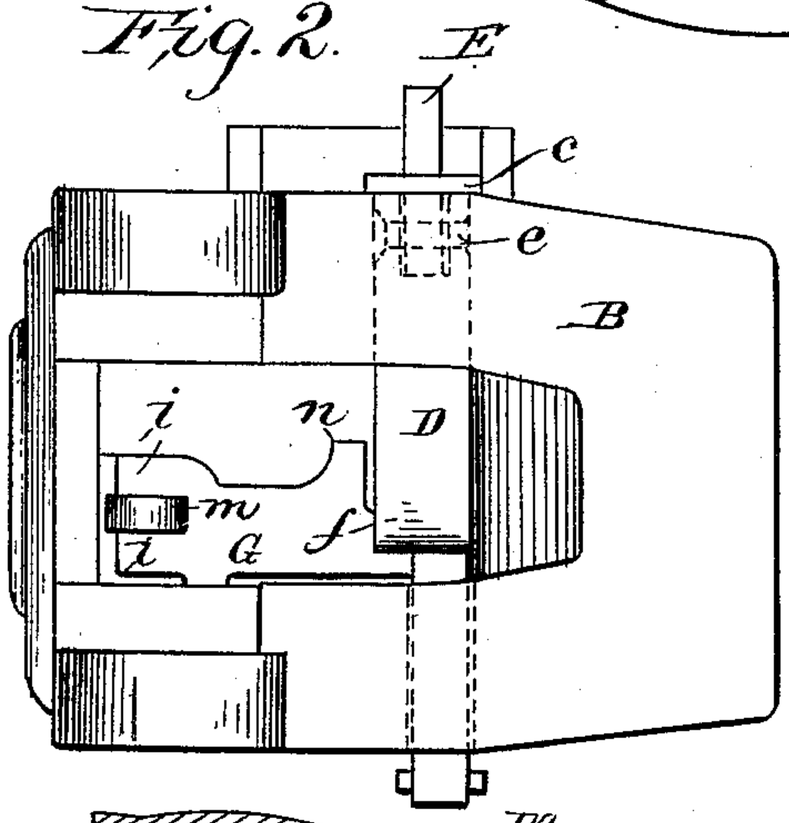


Fig. 3.

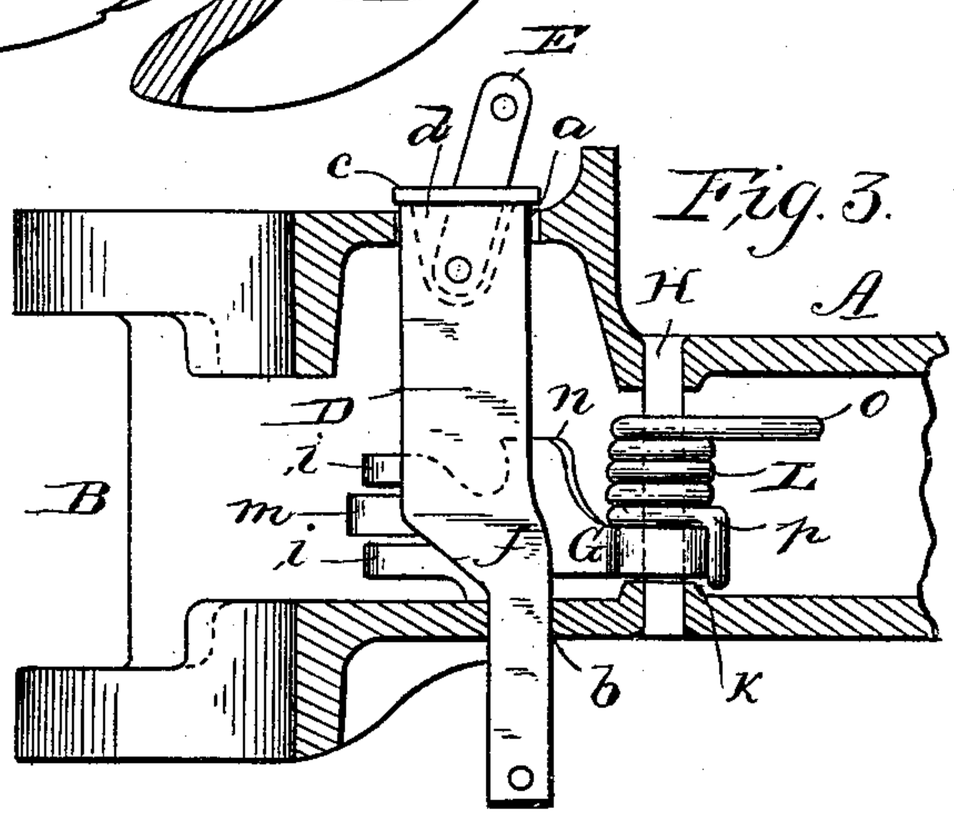


Fig. 4.

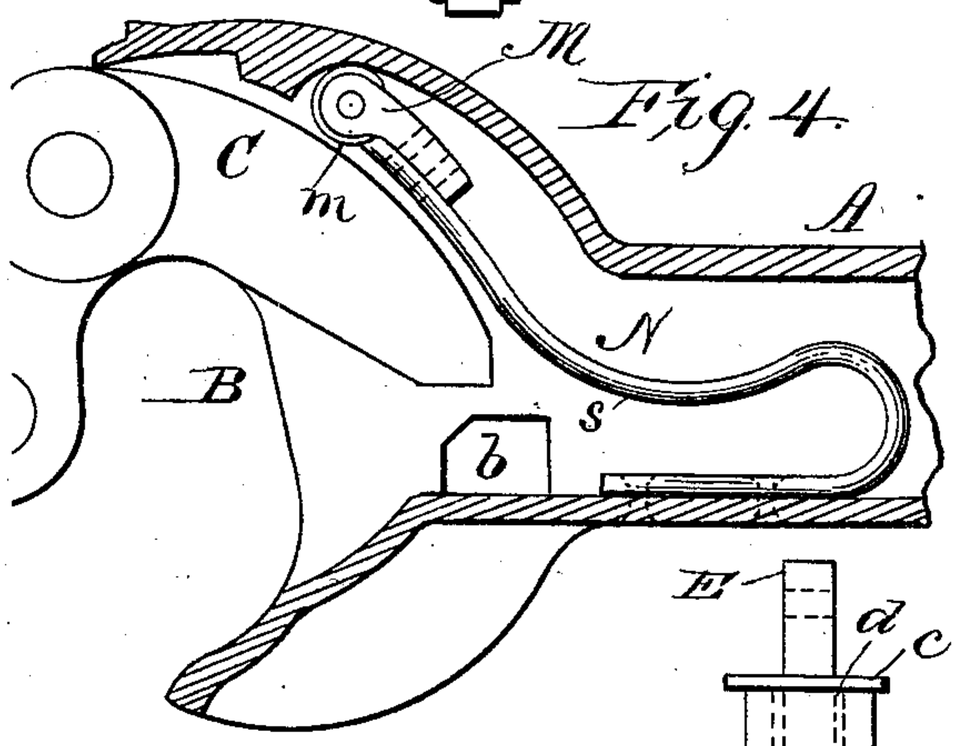


Fig. 5.

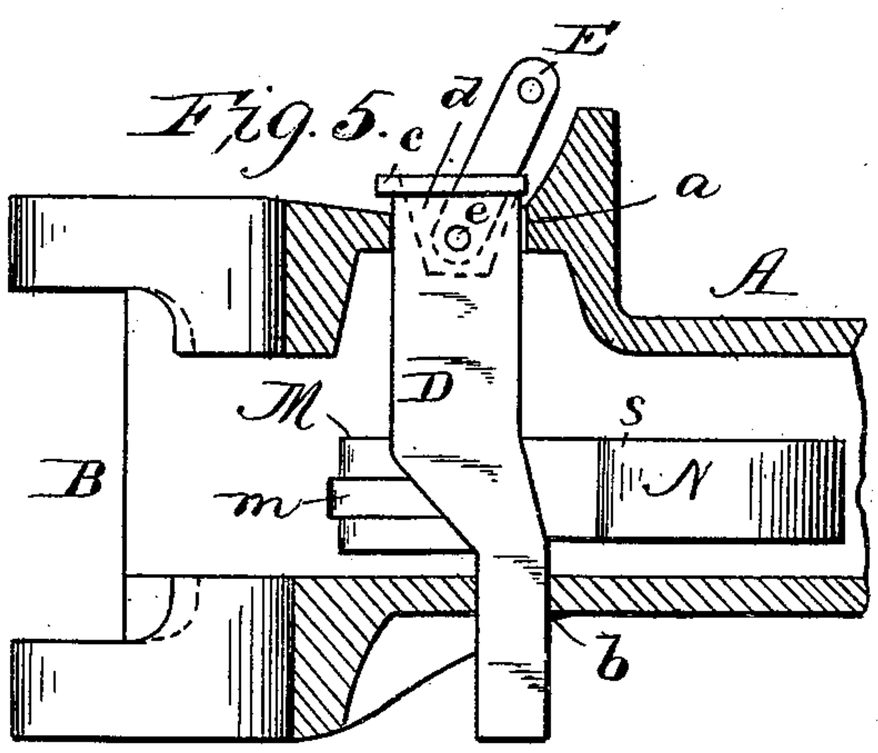
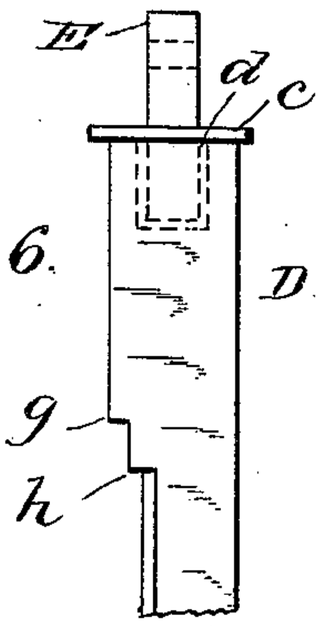


Fig. 6.



Witnesses

W. E. Bowen

Daniel Scott

Inventor

James A. Hinson

by W. A. Redmond

Attorney

UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 482,358, dated September 13, 1892.

Application filed November 13, 1891. Serial No. 411,801. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplings; 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-couplings, and particularly to automatic couplings of that type or class known as the "twin-jaw car-coupler;" and it has for its object to provide a simple, durable, and effective coupling of few parts adapted to automatically lock the swinging knuckle back to form a coupling and to swing the same forward or outward in position for coupling with a mating coupler immediately upon its release from the retaining-latch; and it consists, first, in providing a vertically-movable latch of peculiar construction adapted to form a coupling on a curve and to permit of the longitudinal movement of the draw-bar without liability of injury to the uncoupling device; second, in providing means adapted to support said latch in its raised position and to swing the knuckle outwardly immediately upon its release from the retaining-latch, and, third, in other details of construction and arrangement of parts, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 shows two mating couplers coupled together, one of which is shown in plan and the other in horizontal longitudinal section; Fig. 2, a front elevation of a draw-head with the knuckle removed; Fig. 3, a longitudinal vertical section of Fig. 2; Fig. 4, a longitudinal horizontal section of a modification; Fig. 5, a longitudinal vertical section of Fig. 4; and Fig. 6, a front elevation of my improved latch.

Similar letters refer to similar parts throughout the several views.

A represents a draw-bar, B a draw-head, and C a swinging knuckle pivotally mounted in the draw-head, all of which may be of the conventional type of automatic car-couplers, except as hereinafter pointed out.

D represents a latch inserted through an opening *a*, formed in the top of the draw-head and extending through a smaller opening *b*, formed in the lower wall of the draw-head. The latch is cast or formed with a flange *c* at its upper end, by which it rests on and is supported by that portion of the draw-head surrounding the opening *a* when said latch is down or in its locking position, thus excluding dirt, snow, &c., from the draw-head. At the center of the upper end of the latch is formed a cavity *d*, the end walls of which taper inwardly or converge toward each other, as clearly shown by dotted lines in Figs. 3 and 5, in which one end of a link or bar E is pivotally secured by a pin *e*, passing through the latch from side to side.

To the upper end of the link or bar E is to be secured one end of the chain or link, the other end of which is attached to the unlocking-lever, as is customary, for raising the latch up to release the knuckle. The object of this construction is to permit of the free longitudinal play of the draw-bar when in use without injurious effect on the lever or chain, the link or bar E turning on its pin back and forth to permit of this play of the draw-bar without straining the unlocking chain or lever. The front edge of the latch is formed with an inclined shoulder *f*, and said latch is reduced at its lower end to enter the lower opening in the draw-head. At one side of the latch is formed two shoulders *g h*, adapted to support the latch in its raised position on the arm G, and also enabling the same to form a coupling when the car to which it is secured is on a curve. The arm G consists of a metal bar curved to correspond to the shape of the interior of the draw-head and having one end pivotally mounted on a pin H, secured in the draw-bar at a point immediately at or in rear of the junction of the draw-bar and draw-head, said draw-bar being cast with a boss *k* at the point where the pin passes through the same, which forms a bearing for the arm, so as to raise it above the interior surface of the draw-head, while a downwardly-extending projection near its outer end supports the same in a level position. At its free end the arm is notched or formed with perforated lugs *l*, between which a friction-roller *m* is secured, and near the pivotal point of the arm is formed a vertical projection *n*, adapted to come in contact with the latch when the same

is down, and thus limit the outward swing of the arm. The object of this projection is to hold the arm back, and thus prevent injury to the arm from the entrance into the draw-head of the link of a link-and-pin coupling when, as it sometimes happens, the knuckle is out and the latch is down. Immediately above the arm I mount a spiral spring L, one end *o* of which is carried back and rests against the wall of the draw-bar and the other end *p* extended outwardly or across the draw-bar and turned down at right angles against the rear end of the arm G, so as to press against the same and tend to throw or swing the same on its pin H, causing the roller *m* to bear against the rear side or edge of the tail-piece of the knuckle and to swing or turn the same outwardly when it is released from the latch. The arm is so arranged that when the latch is raised sufficiently to release the knuckle the spring immediately forces the free end of the arm outwardly (swinging the knuckle) and under the lower shoulder, thus supporting said latch in its raised position until a mating knuckle enters the draw-head and swings or forces the tail-piece back, causing the same to come in contact with and turn said arm on its pivot until it passes from under the shoulder and permits the latch to drop in front of the tail-piece, and thus complete the coupling.

In Figs 4 and 5 I show a modified construction of my invention, in which a casting M, carrying the roller, is riveted to the end of a flat or round spring N and the other end of said spring bent forwardly and secured to the side wall of the draw-bar. The spring is so shaped or formed with a bend, as at *s*, as to enter beneath the shoulder on the latch when the latter is raised and the knuckle swung out. In this case, it will be observed, I do away with the arm and cause the spring which forces the knuckle out to also support the latch.

Various modifications and arrangements of the parts of my invention may be made without departure from the spirit of my invention, and I do not therefore desire to be limited to the exact construction and arrangement herein described.

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

1. The combination, in an automatic car-coupler, of the knuckle, a vertically-movable latch, and means both for supporting said latch in its raised position and for swinging said knuckle on its pivots or bearings, substantially as described.

2. The combination, in an automatic car-coupler having a swinging knuckle, of a vertically-movable latch provided with a shoulder on its side and a horizontal arm pivoted within the draw-head and adapted to enter beneath said shoulder and support said latch and to swing said knuckle outwardly when said latch is raised, substantially as described.

3. The combination, in an automatic car-coupler having a swinging knuckle, of a vertically-movable latch, an arm pivoted within the draw-head, and means for holding said arm yieldingly in contact with said latch, substantially as described.

4. The combination, in an automatic car-coupler having a swinging knuckle, of a vertically-movable latch, a friction-roller, and means for holding said roller in yielding contact with said knuckle and adapted to support said latch when raised, substantially as described.

5. The combination, in an automatic car-coupler having a swinging knuckle, of a vertically-movable latch, an arm pivotally secured in rear of the latch and carrying a friction-roller in its free end, and a spring arranged to press against said arm, substantially as described.

6. The combination, in an automatic car-coupler having a swinging knuckle, of a vertically-movable latch, a curved horizontal arm pivotally secured in the draw-head, carrying a roller at its free end and having a vertical projection formed thereon near its pivotal point, and a spiral spring surrounding the pivot of the arm and exerting its strength against said arm, substantially as described.

7. The combination, in an automatic car-coupler, of a vertically-movable latch having a cavity with inclined end walls formed in its upper end and a link or bar pivoted at one end within said cavity for connecting the uncoupling-chain with said latch, substantially as described.

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

JAMES A. HINSON.

Witnesses:
GEO. W. RIGGS,
JAMES W. MEEKER.