

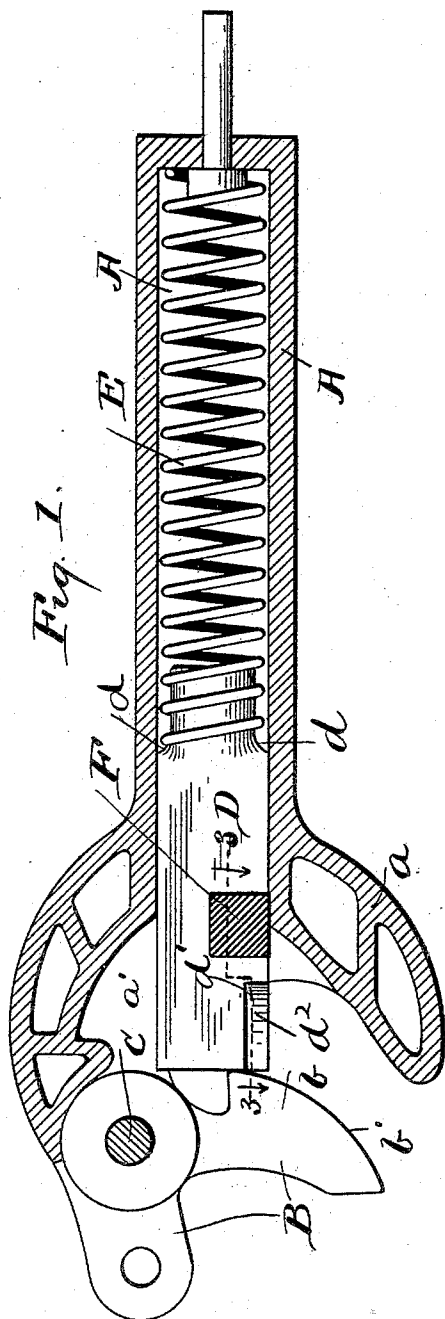
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2 Sheets—Sheet 1.

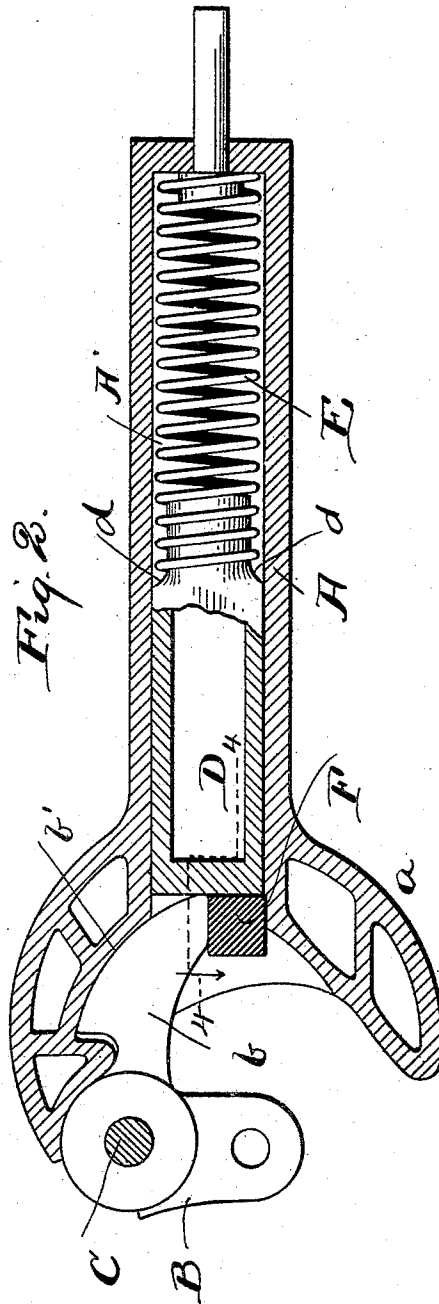
T. W. RANSON.
CAR COUPLING.

No. 489,661.

Patented Jan. 10, 1893.



Witnesses.
E. B. Gilchrist
[Signature]



Inventor.
Thomas W. Ranson
By Seggett & Seggett
his attorneys.

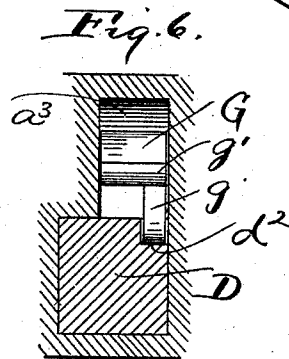
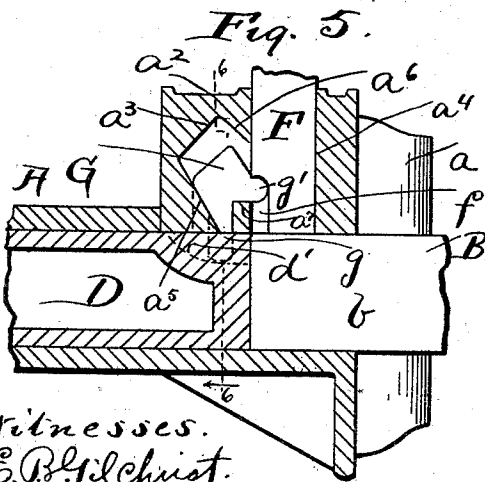
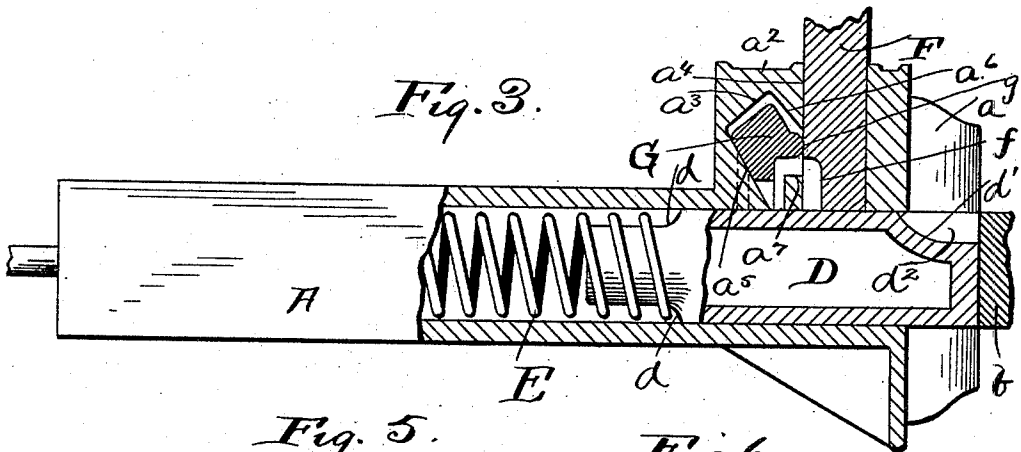
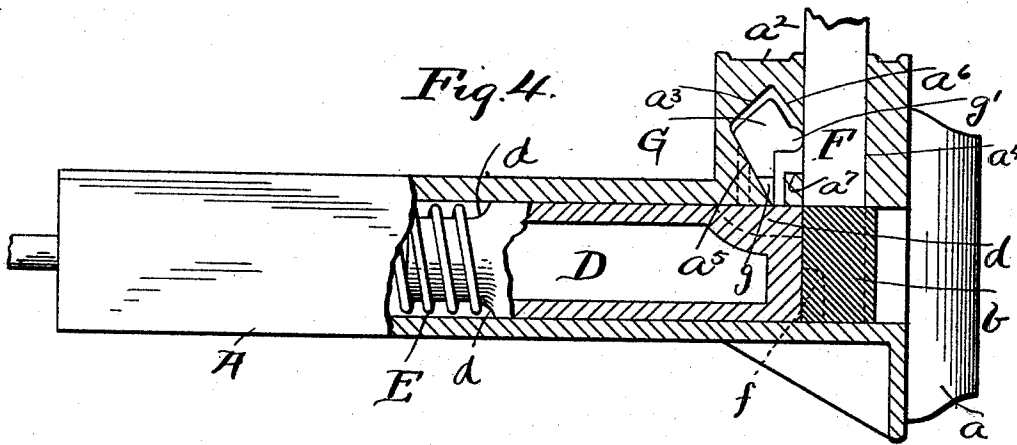
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2 Sheets—Sheet 2.

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CAR COUPLING.

No. 489,661.

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Witnesses.
E. B. Gilchrist.
Chas. W. W. W.

Inventor.
Thomas W. Ransom
By Leggett & Leggett
his attorneys

UNITED STATES PATENT OFFICE.

THOMAS W. RANSON, OF HORNELLSVILLE, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 489,661, dated January 10, 1893.

Application filed July 16, 1892. Serial No. 440,202. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. RANSON, of Hornellsville, in the county of Steuben and State of New York, have invented certain new and useful Improvements in 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 pertains to make and use the same.

My invention relates to improvements in automatic hook car couplers; and it consists in certain features of construction and in combination of parts hereinafter described and pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are top plans mostly in horizontal section, the former showing the knuckle of the coupler in its open position ready for coupling, and the latter showing the coupling in its closed or locked position. Fig. 3 is a left hand side elevation, partly in longitudinal section on line 3—3, Fig. 1. Fig. 4 is a left hand side elevation, partly in longitudinal section on line 4—4, Fig. 2. Fig. 5 is a vertical longitudinal section showing the knuckle in its closed position with the coupling-pin held elevated as desired, for instance, in pushing cars about the yard or on side-tracks without coupling the cars. Fig. 6 is an elevation, partly in vertical section, on line 6—6, Fig. 5.

Referring to the drawings, A represents a draw-bar and a the head thereof, the head being chambered, as at a' , to receive knuckle B that is pivotally connected with the draw-head in the usual manner by means of a vertical pin or bolt C. Knuckle B has a lateral inwardly-projecting arm b , and chamber a' of the draw-bar-head is of suitable size to receive said arm of the knuckle in the closed or locked position of the same. The draw-bar is chambered longitudinally, as at A' , said chamber at its forward end being in open relation with the chamber of the draw-bar-head.

D represents a block or plunger adapted to reciprocate endwise of the chamber of the draw-bar. Sliding-block or plunger D is reduced in size at or near its rear end, forming shoulders, as at d , between which and the rear wall of the chamber of the draw-bar is con-

fining a coil-spring E that is adapted to act in the direction against shoulders d of the sliding-block or plunger.

Arm b of the knuckle, at its inwardly-presenting side, is preferably rounded or convex, as at b' . In the closed position of the knuckle shown in Figs. 2 and 4, (wherein the knuckle is shown locked by means of coupling-pin F), sliding-block or plunger D engages the inner extremity of arm b of the knuckle, and the arrangement of parts is such that this engagement takes place at such a point relative to the axis of the knuckle that when the coupling-pin is elevated or withdrawn in uncoupling cars, sliding-block or plunger D, by means of spring E, will be actuated forwardly to cause the knuckle to be automatically opened, as shown in Fig. 1, and said sliding-block or plunger will hold the knuckle in the proper open position, ready for coupling.

By the construction just described, it will be observed that when two opposing couplers come together there is no clashing of the parts, but by means of the spring-cushioned sliding-block or plunger the knuckles of the opposing couplers engage each other gently and there is no liability of the parts being broken or in any wise injured.

The draw-head is enlarged upwardly and rearwardly, as at a^2 . Said enlarged portion of the draw-head has a pocket or chamber, a^3 , that at its lower end is in open relation with the chamber of the draw-bar, and at the front side is in open relation with vertical perforation a^4 provided for the passage of the coupling-pin that rests upon sliding-block or plunger D preparatory to coupling. Within pocket or chamber a^3 is located a movable block G. This block is preferably of the shape shown (see Figs. 3, 4, 5, and 6), the block being adapted to ride up and down a rearwardly-extending incline a^5 at one side of pocket or chamber a^3 , and a rearwardly-extending incline a^6 being also provided at the forward side of the top of chamber a^3 , the block having a depending member g adapted to be engaged by the rearwardly inclining bottom or floor d' of a recess d^2 in the top of the forward end of sliding-block or plunger D. Block G has also a forwardly-projecting lug or mem-

ber, g' , that is adapted to engage the top wall of a recess f in the rear side of the lower end of the coupling-pin, whereby the latter is held elevated when it is not desired to couple the cars, as for instance, in pushing cars about a yard or on side-tracks. The lower part a^7 of the front wall of pocket or chamber a^3 affords bearing for block G in the position of the latter holding the coupling-pin elevated.

From the foregoing description of the various parts it is believed their operation will be readily understood.

Briefly described, the operation is as follows: The parts being in the position shown in Figs. 1 and 3, in coupling, arm b of the knuckle is swung inward, into the chamber of the draw-head. Sliding-block or plunger D that holds the coupling-pin elevated is thereby forced rearward into the chamber of the draw-bar and having been forced to its rearward limit, the coupling-pin drops by gravity at the inner side or forward of the free end of the knuckle and forward of the sliding-block or plunger, as shown in Figs. 2 and 4, thereby securely locking the knuckle and sliding-block or plunger in said position. In uncoupling, the coupling-pin is merely withdrawn or elevated to the position shown in Fig. 3 whereupon the sliding-block or plunger, by the action of spring E , is forced forward, resulting in the opening of the knuckle, as hereinbefore indicated.

During the operation of coupling and uncoupling, block G performs no function, but is supported idly upon incline a^5 that, as aforesaid, is provided at the side of pocket or chamber a^3 .

If it is desired to push cars about, for instance, in yards or upon side-tracks, without coupling the cars, the coupling-pin is elevated to permit block G to slide down incline a^5 into the position shown in Figs. 5 and 6, depending member g of the block entering recess d in sliding-block or plunger D and forwardly-projecting lug or member g' of block G entering the recess in the lower end of the coupling pin, the arrangement of parts being such that in such position of block G , forwardly-projecting lug or member g' of the block will engage the top wall of the recess in the coupling-pin and hold the latter elevated as desired. In separating the cars, the tension of spring E will cause block or plunger D to be pushed forward, and incline d' will engage the lower end of depending member g of block G and cause the latter to be elevated to the position shown in Figs. 3 and 4, inclines a^5 and a^6 positively effecting the disengagement of block G from the coupling-pin during the elevation of the block by incline d' , the coupling-pin of course being lifted more or less during such engagement, whereupon the coupling-pin will return to its position resting upon sliding-block or plunger D ready to perform its function of locking the sliding-block or plunger and knuckle

of the coupler in the closed or coupled position of the knuckle.

What I claim is:

1. In a hook car-coupler, the combination with the draw-bar and draw-bar-head, chambered substantially as described, and a knuckle pivotally connected with the draw-bar-head, of a sliding-block or plunger adapted to move endwise of the chamber of the draw-bar and engage and hold the knuckle in open position preparatory to coupling, said block or plunger being reduced in size forming shoulders, as at d , and a coil-spring confined between said shoulders and the rear wall of the chamber of the draw-bar and acting in the direction forward against said sliding-block or plunger, substantially as and for the purpose set forth.

2. In a hook-car-coupler, the combination with the chambered draw-bar and draw-bar-head, and a knuckle pivotally connected with the draw-bar-head, of a spring-actuated block or plunger, adapted to operate endwise of the chamber of the draw-bar, the inwardly-presenting side of the knuckle being rounded or convex, as at b' , and the arrangement of parts being such that, in uncoupling, the knuckle will be automatically opened by said spring-actuated block or plunger, substantially as and for the purpose set forth.

3. In a hook car-coupler, the combination with the chambered draw-bar and draw-bar-head, the draw-bar-head being provided with a vertical perforation, a^4 , for the passage of the coupling-pin, and a knuckle pivotally connected with the draw-bar-head, of a spring-actuated sliding-block or plunger adapted to operate endwise of the chamber of the draw-bar and engage and hold the knuckle open preparatory to coupling, the arrangement of parts being such that the coupling-pin is adapted to rest upon the sliding-block or plunger in the open position of the knuckle and the closing of the knuckle forces said sliding-block or plunger rearward and permits the coupling-pin to drop in advance of said block or plunger and lock the knuckle in its closed position, substantially as set forth.

4. In a hook car-coupler, the combination with the chambered draw-bar and draw-bar-head, the draw-bar-head being provided with a vertical perforation for the passage of the coupling-pin, a knuckle pivotally connected with the draw-bar-head and a block or plunger adapted to slide endwise of the chamber of the draw-bar and hold the knuckle in its open position, of suitable means for holding the coupling pin elevated in the closed position of the knuckle, substantially as set forth.

5. In a hook-car-coupler, the combination with the draw-bar and draw-bar-head, chambered substantially as described, a knuckle pivotally connected with the draw-bar-head and a sliding-block or plunger adapted to operate endwise of the chamber of the draw-bar, the draw-bar-head having a perforation, as at

5 a^4 , for the passage of the coupling-pin and a pocket or chamber, a^3 , in open relation with the chamber of the draw-bar and in open relation with perforation a^4 , of a movable block located within said pocket or chamber and adapted to hold the coupling-pin elevated in the closed position of the knuckle and suitable means for automatically releasing the coupling-pin with the forward movement of the aforesaid sliding-block or plunger, substantially as set forth.

10 6. In a hook car-coupler, the combination with the draw-bar and draw-bar-head chambered substantially as described, a knuckle pivotally connected with the draw-bar-head and a sliding-block or plunger adapted to operate endwise of the chamber of the draw-bar, the draw-bar-head having a vertical perfora-

tion, as at a^4 , for the passage of the coupling-pin, and a pocket or chamber a^3 , in open relation with the chamber of the draw-bar, and in open relation with perforation a^4 , of a movable block located within said pocket or chamber, and adapted to hold the coupling-pin elevated in the closed position of the knuckle, and means substantially as indicated for automatically releasing the coupling-pin with the forward movement of the aforesaid sliding-block or plunger, substantially as set forth.

15 In testimony whereof I sign this specification, in the presence of two witnesses, this 2d day of July, 1892.

THOMAS W. RANSON.

Witnesses:

ALBERT V. RANSON,
WILLIAM T. RANSON.