No. 698,413. Patented Apr. 22, 1902.

T. A. SAVAGE.

CAR COUPLING.

(Application filed July 5, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

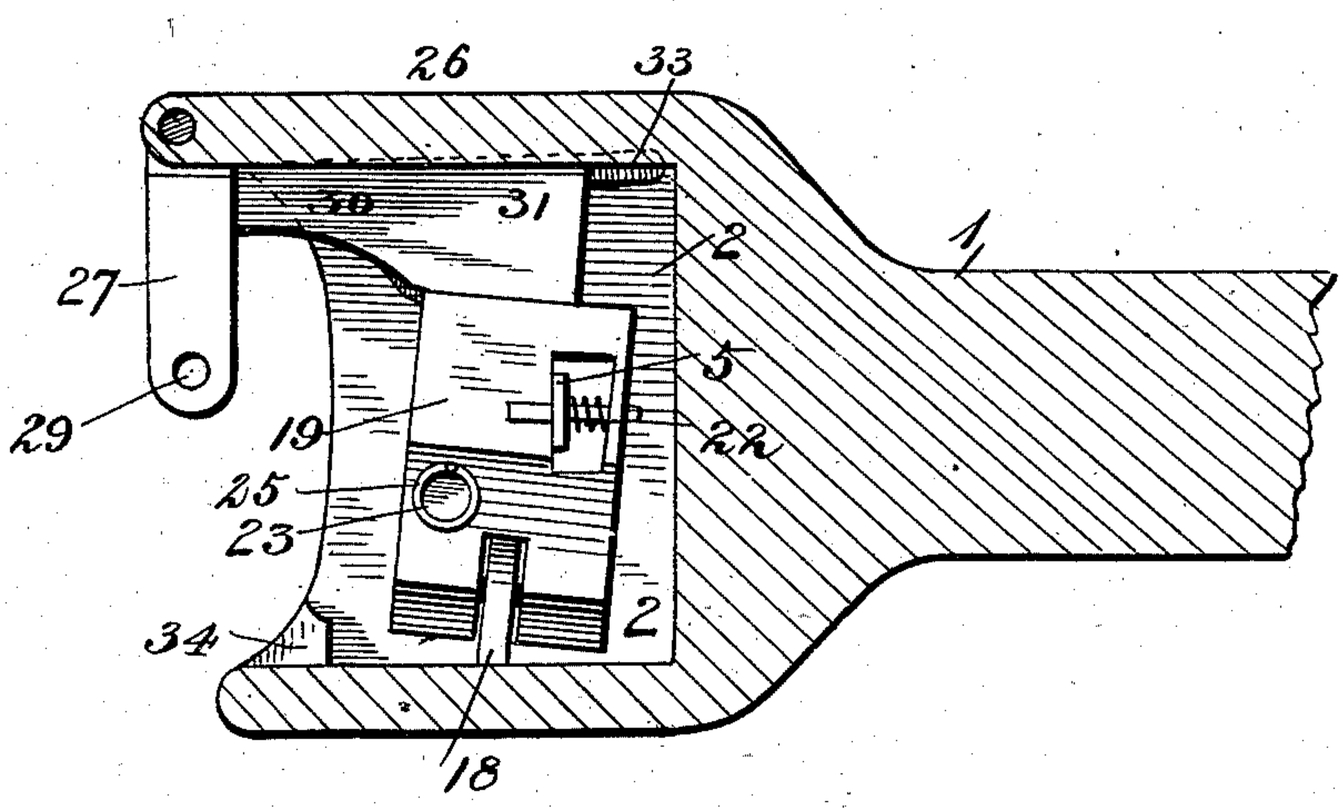


Fig. 2.

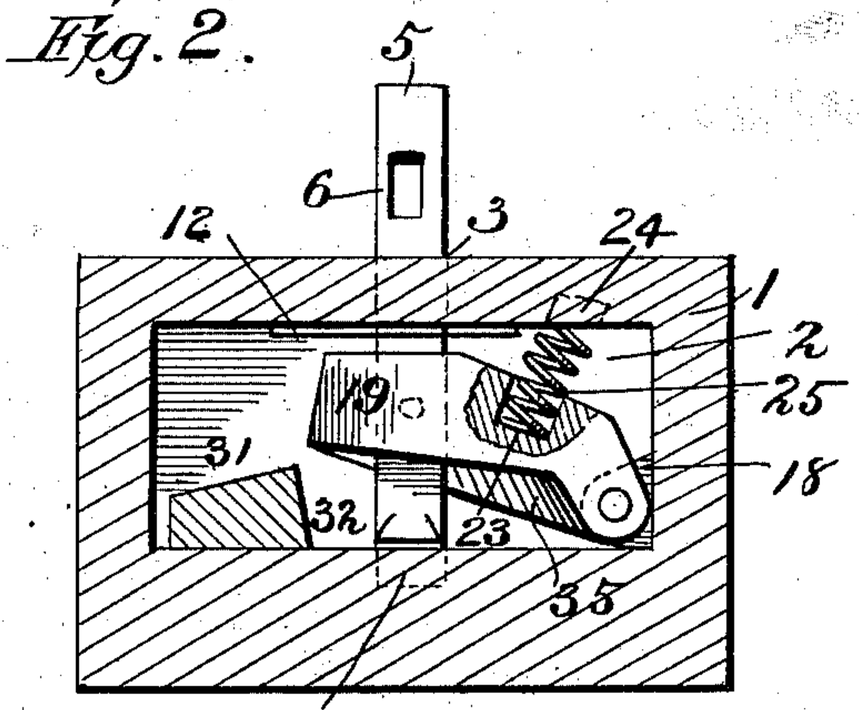
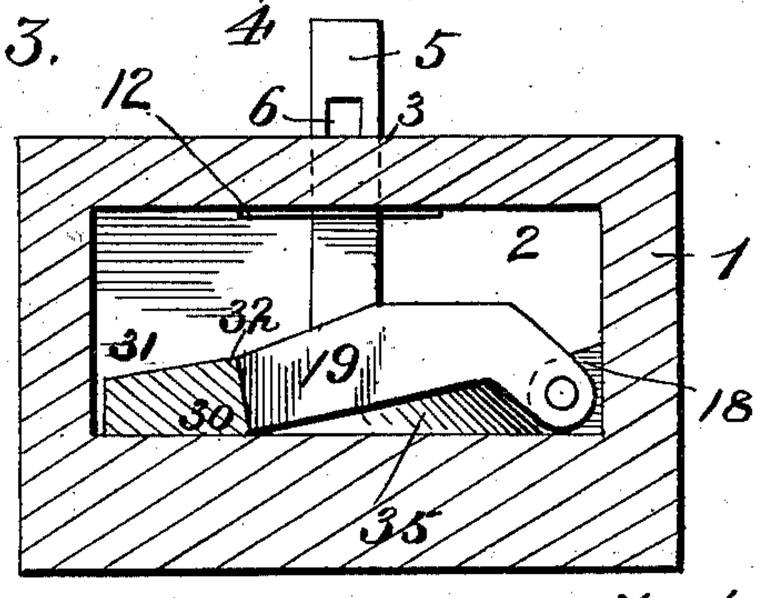


Fig. 3.



Witnesses
F. L. Ourand
J. E. Lambert

Inventor
T. A. Savage
by Edmund L. Dyrenforth. Attorney

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Fig. 4.

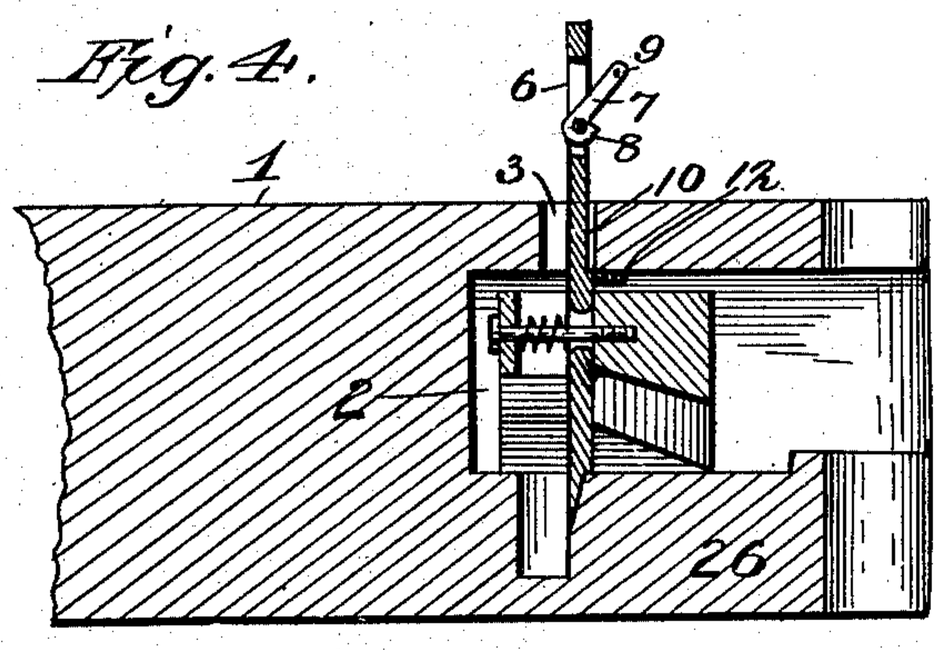


Fig. 5.

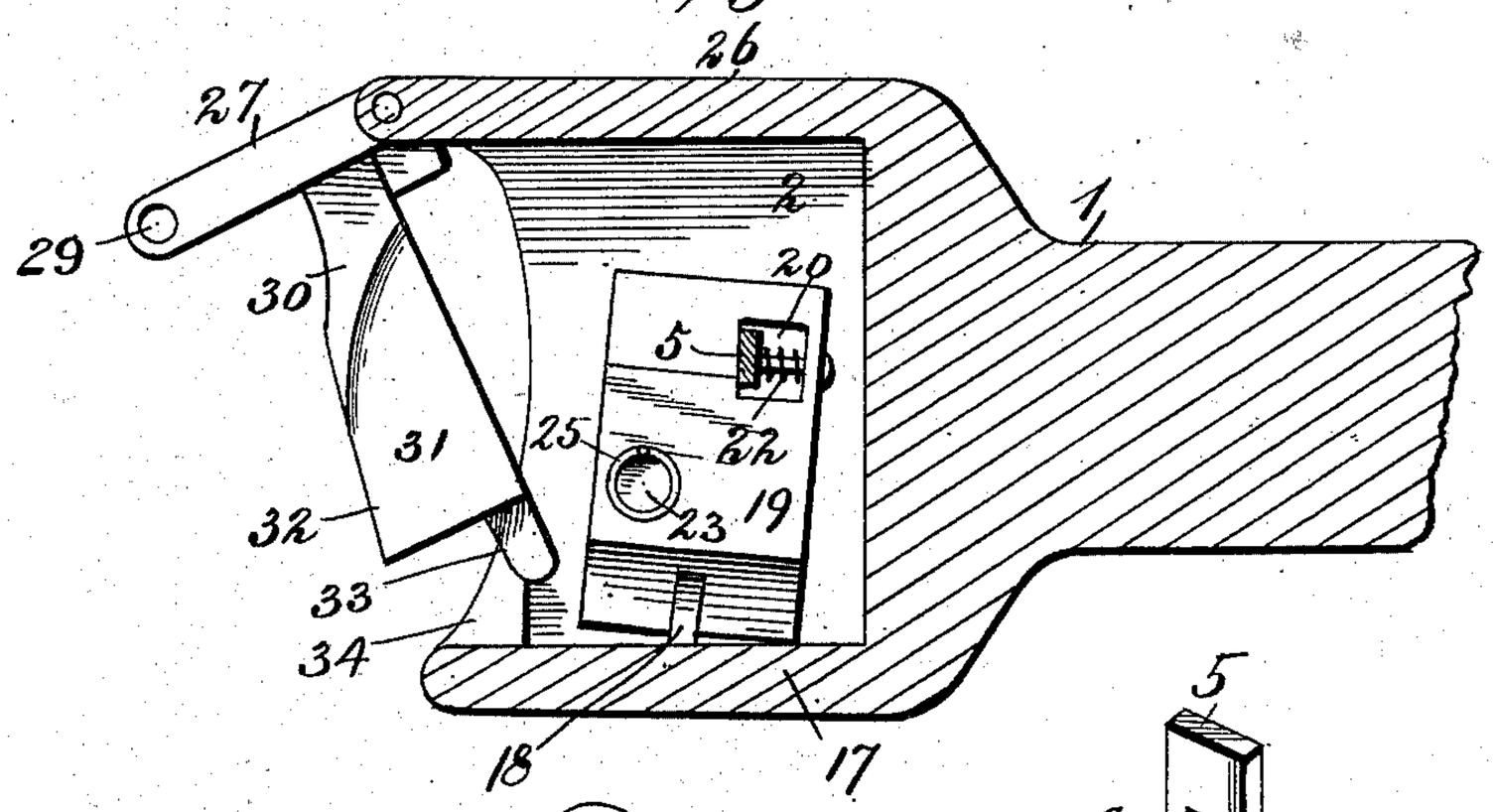


Fig. 6.

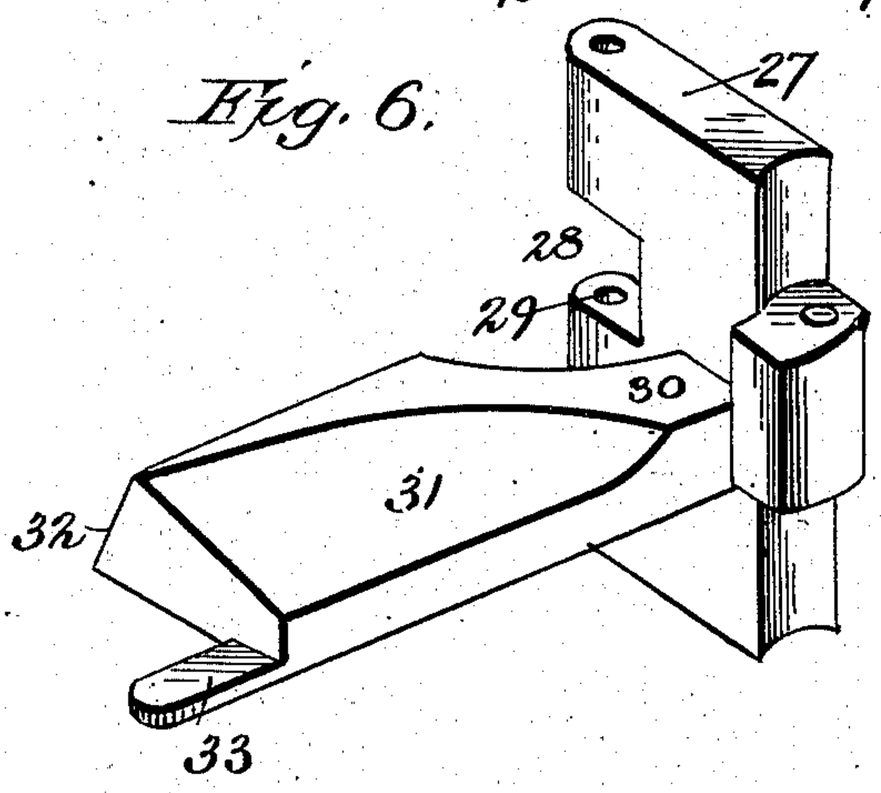
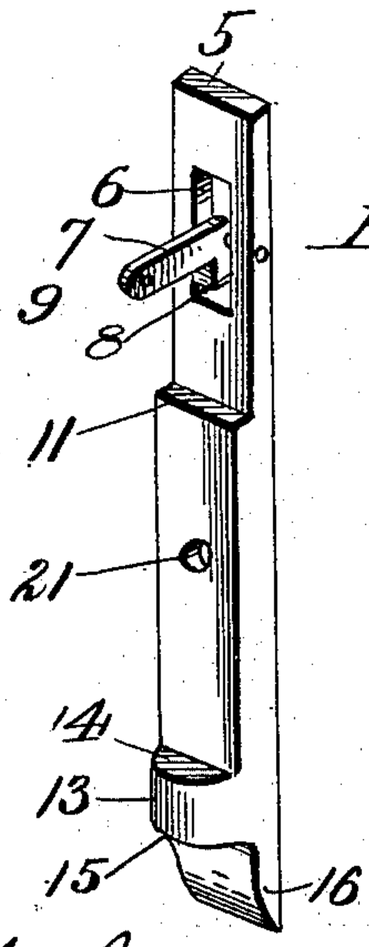


Fig. 7.



Witnesses
F. L. Ourand.
J. E. Lambert.

Inventor
T. A. Savage
by
Jno. A. Griffin
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS A. SAVAGE, OF CARROLLTON, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MORRIS S. EVANS AND JOHN W. WEAVER, OF MEDIA, ILLINOIS, DANIEL ARTHAUD, OF BURLINGTON, IOWA, CHARLES W. LAYMAN, OF LOMAX, ILLINOIS, AND ADOLPH MUELLER, OF DALLAS, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 698,413, dated April 22, 1902.

Application filed July 5, 1901. Serial No. 67,207. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. SAVAGE, a citizen of the United States, residing at Carrollton, in the county of Carroll and State of Missouri, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention is a car-coupler, and relates to that class of couplers known as the "Janney type."

In the accompanying drawings, Figure 1 is a top plan view of the coupler with part of the top of the draw-head removed in order to show the inside mechanism. Fig. 2 is a front end view, the trip-lever removed and the lock-block up. Fig. 3 is a front end view, the trip-lever removed and the lock-block down. This is a modification of Fig. 2. Fig. 4 is a longitudinal vertical sectional view. Fig. 5 is a longitudinal sectional horizontal view showing the coupler unlocked. Fig. 6 is a perspective view of the knuckle and the locking-arm. Fig. 7 is a perspective view of the pin and trip-lever.

My invention is described as follows:

1 is a draw-head bifurcated at its front end and having in such bifurcated end and running back a considerable depth a recess 2. Running through the upper wall of said recess is an oblong rectangular opening 3, and in the lower wall of said recess and immediately under said rectangular opening is a depression or recess 4 to receive the lower end of the coupling-pin 5. The upper part of the said coupling-pin is rectangular and oblong in shape and has through its flat way a vertical slot 6, and in this vertical slot is pivoted a trip-lever 7. This trip-lever consists of a single bar of metal having a shorter bar 8 extending at right angles from this pivoted end, and in the free end is a perforation 9, and when this coupling-pin 5 is in place and down the front edge of the arm 8 rests against the front wall 10 of the rectangular opening 3. On this coupling-pin and some distance below the trip-lever is a shoulder 11, and this shoulder rests under a steel plate 12, that is secured to the under face of the upper wall of the recess 2, with its rear edge on a line with the front wall of the rectangular recess 3, so that when the said coupling-pin is down this shoulder 11 rests under and is kept from moving up by said plate 12, and when the free end of the trip-lever 7 is raised the right-angular arm 8 presses against the front wall of the rectangular opening 3, and this presses the pin back, and consequently the shoulder 11 out from under the steel plate 12, releasing the coupling-pin, so that it may be drawn up, and thus unlock the coupler. The said coupling-pin is provided with a lower enlargement 13, also an upper shoulder 14 and a lower shoulder 15, and the extreme lower end of this coupling-pin is beveled rearwardly, terminating in the edge 16, and hinged to the left-hand wall of the recess 2 by an arm 18 is a locking-block 19, and this lock-block is provided with a vertical perforation 20, and passing through said perforation 20 is the said coupling-pin 5, and passing through the wall of said perforation 20 and through a perforation 21 of said coupling-pin is a rod, and around this rod and against the rear face of the coupling-pin and the front face of the rear wall is a spiral spring 22, which holds said coupling-pin against the front wall of said opening. The result of this combination is that the said coupling-pin may move rearwardly, and thus be raised; but it is never raised enough to allow its tapered end to entirely escape from the recess 4, (see Fig. 2,) and the further result of this combination is that it only operates in conjunction with the lock-block—that is to say, when the coupling-pin is raised the locking end of the said lock-block is also raised, and when the locking end of the said lock-block is pressed down the pin is also carried down. This lock-block 19 is provided in its upper face with a recess 23, and corresponding to said recess 23 in the lower face of the upper wall of the draw-head is a recess 24, and a spiral spring 25 has its lower end embedded in the recess 23 and its upper end in the recess 24, so that said spring 25 forces the free end of said lock-block down against the lower wall of the recess 2. The forward

end of the right-hand wall 26 is bifurcated, and in this bifurcation is a hinged knuckle 27, and in the free end of said knuckle is a recess 28, and running through the two parts of this knuckle is a perforation 29 to accommodate a neighbor coach that does not use the Janney type, but uses the old-fashion "link and pin." Secured to the inner face and near the hinged part of said knuckle is an arm 30. Said arm has its rear part 31 beveled nearly to an edge, so that it may pass under the lock-block 19 when said arm is pushed back. The face of its front edge 32 is vertical, so that when the strain comes on the knuckle this front edge 32 rests against the locking end of the lock-block, and consequently this arm 30 is held securely in place and the coupler cannot be unlocked until the coupling-pin is raised. When said coupling is so raised, the lock-block is also raised, and then the said arm can escape, the knuckle fly back, and then the coupler is uncoupled. When the coupling-pin is raised to shoulder 15, said shoulder-pin rests on the front wall of the recess 4, and consequently holds the lock-block up, and thus, as said above, the arm 30 is permitted to escape from under the lock-block 19; but there is a finger 33 extending from the extreme end of said arm 30, which is arrested by a stop 34, secured to the lower wall of the recess 2, and this arm 30 is never allowed to escape entirely from the said recess 2.

The lower face of the lock-block is provided with a tapering recess 35, so that when the locking end of said lock-block is down the arm 31 may pass into said tapering recess, raise said lock-block, and pass beyond its end. As soon as this is done the spring 25 presses the said lock-block down, and the coupler is locked. When the coupling-pin is raised until the shoulder 15 rests against the lower wall of the recess 2, the lock-block is held up, as shown in Fig. 2, in which case the arm 31 is permitted to escape tripping the coupling-pin until the finger 33 reaches the stop 34, and thus it will be seen that the lock may be reset, so as to remain in an unlocked position. In case it is desired to couple the cars when the pin is set the finger 33 strikes against the enlargement 13 of the coupling-pin 5, pushing the pin to the rear, and thus the pin and the lock-block descend and secure the arm 30 back against the wall of the said recess 2, (see Fig. 3,) and thus the coupler is locked. The weight of the lock-block in connection with the pressure of the spiral spring 25 is such that the coupling-pin can under no circumstances be jolted out of its position no matter how rough the road or short the curves, and thus there is no danger of this coupler becoming accidentally uncoupled.

The spring 25 is especially adapted to couplers doing light work, such as in street-cars, &c.; but where the coupler is made for heavy work, such as freight-cars and the like, the weight of the lock-block will be sufficient without the spring 25. So in very heavy couplers I do not use the spring 25, and for this reason I claim the coupler without the spring as well as with it and claim the coupler without the spring as a modification, as shown in Fig. 3.

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

1. An automatic car-coupler, consisting of a draw-head having in its front end a recess, one of the side walls of said recess being bifurcated at its front end; a knuckle hinged in said bifurcation; an arm secured to the rear face of said knuckle, and having its rear side beveled down nearly to an edge; a finger extending forward from the free end of said arm, said arm adapted to lie close up against the inner face of one of the side walls of said recess; a lock-block adapted to work in said recess and hinged to the opposite wall, opposite the knuckle, and having in its lower face an inclined recess and a vertical rectangular perforation through its free end; a spiral spring, its lower end resting against the upper face of said lock-block, and its upper end against the lower face of the upper wall of said recess; a stop secured to the opposite wall to which the knuckle is hinged, adapted to arrest the finger of the arm mentioned above; an upper wall provided with a vertical oblong rectangular opening; a plate secured to the lower face of said upper wall and parallel with the front wall of said opening; a coupling-pin provided with a slot, and an enlargement at its lower end, forming an upper and lower shoulder and a perforation through its center; said coupling-pin passing through the perforation in the lock-block and rectangular opening; in the upper wall, its lower end resting in a depression in the lower wall; a bolt passing through said lock-block and the perforation in said coupling-pin; a spiral spring working around said bolt, and holding said coupling-pin against the front wall of said rectangular opening; a trip-lever pivoted in the slot of said coupling-pin, and adapted, when raised, to throw the upper shoulder from under the plate secured to said upper wall, thus permitting said coupling-pin and said lock-block to be raised, and the coupler unlocked, substantially as shown and described and for the purposes set forth.

2. An automatic car-coupler, consisting of a draw-head having in its front end a recess, leaving two side walls, an upper and lower wall, one of the side walls being bifurcated at its front end; a knuckle hinged in said bifurcation; an arm secured to the rear face of said knuckle, and having its rear side beveled down nearly to an edge; a finger extending forward from the free end of said arm; a lock-block hinged to the side wall opposite the bifurcated wall, and having in its under face an inclined recess, and provided with a vertical rectangular opening through its free

end; the lower wall, provided with a recess immediately under said opening, a stop secured to the lower wall, opposite the hinged knuckle, adapted to arrest the finger of said arm; the upper wall, provided with an oblong rectangular opening; a plate secured to the lower face of said upper wall and parallel with the front wall of said opening; a coupling-pin provided with a slot, a shoulder below said slot, an enlargement at its lower end, forming an upper and lower shoulder, and a perforation through its center; said coupling-pin passing through the perforation in the lock-block and the rectangular opening in the upper wall; a bolt passing through said lock-block and the perforation in said pin; a spiral spring working around said bolt and holding said coupling-pin against the front wall of said pin; a trip-lever pivoted in the slot of said coupling-pin, and adapted, when raised, to throw the upper shoulder from under the plate secured to said upper wall, thus permitting said coupling-pin and said lock-block to be raised, and the coupler unlocked, substantially as shown and described and for the purposes set forth.

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

THOS. A. SAVAGE.

Witnesses:
E. O. EVANS,
WM. HAZEN.