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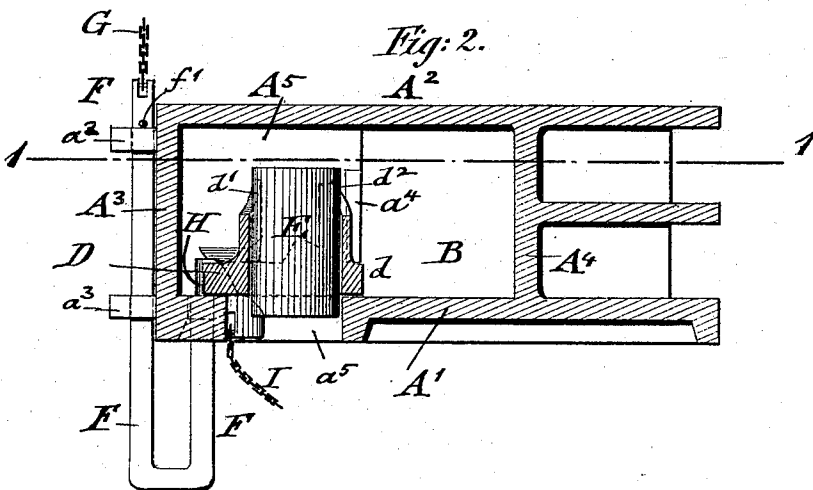
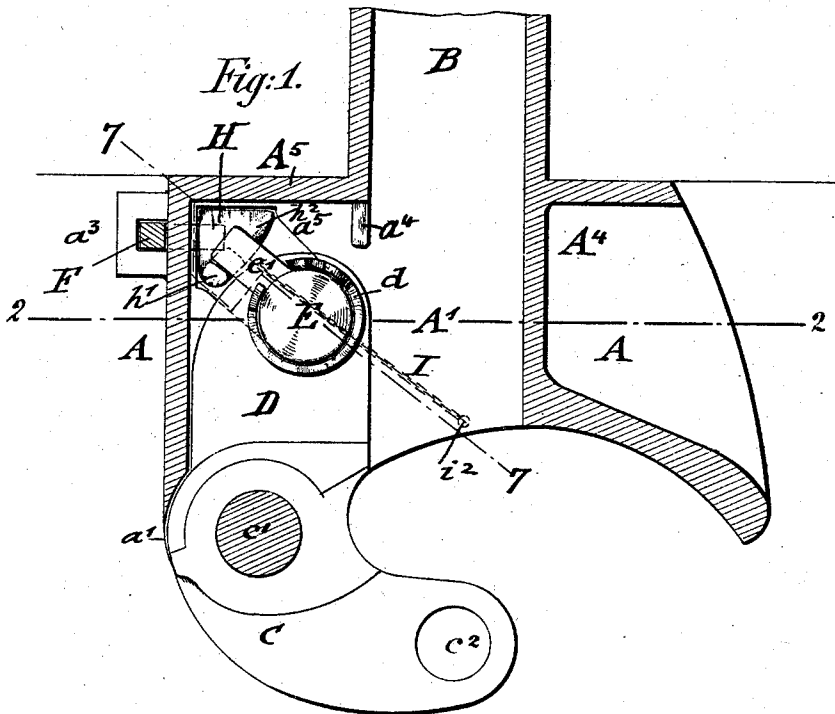
Patented Nov. 28, 1899.

J. MEYER.
CAR COUPLING.

(Application filed Oct. 26, 1898.)

(No Model.)

5 Sheets—Sheet 1.



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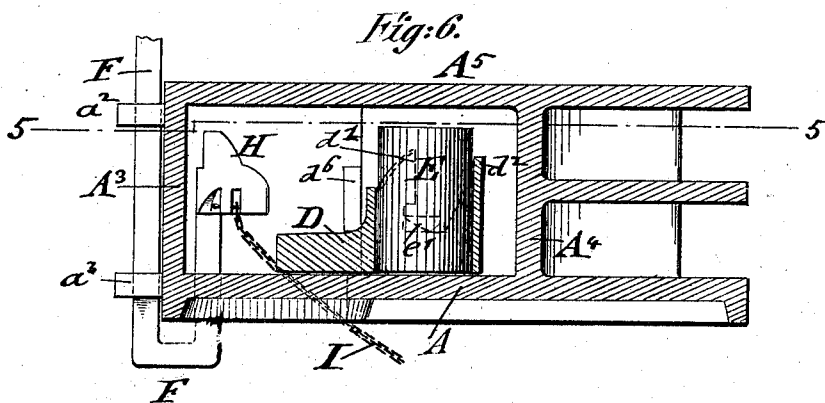
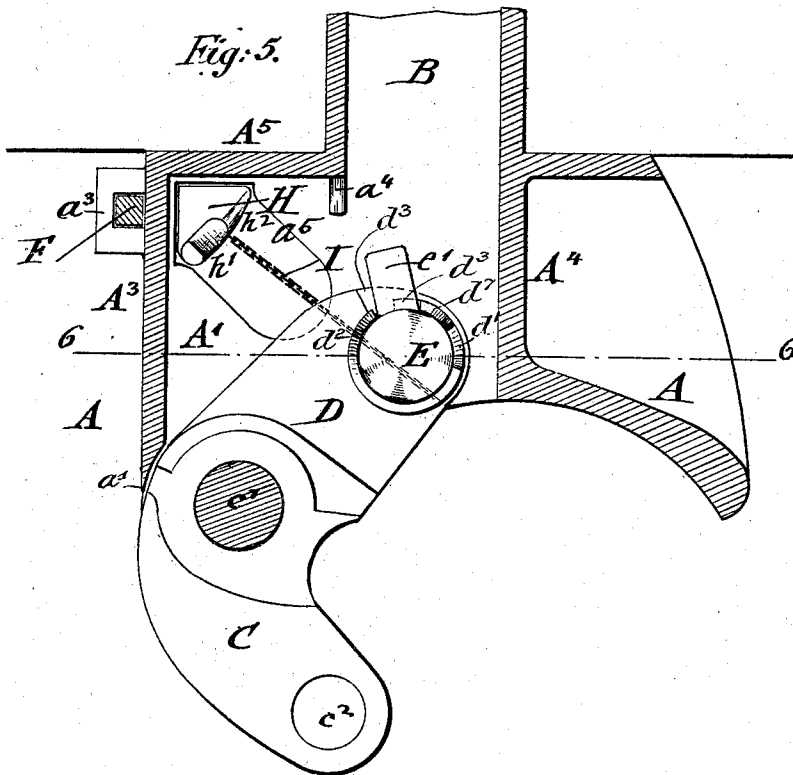
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5 Sheets—Sheet 3.



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5 Sheets—Sheet 4.

Fig: 7.
A²

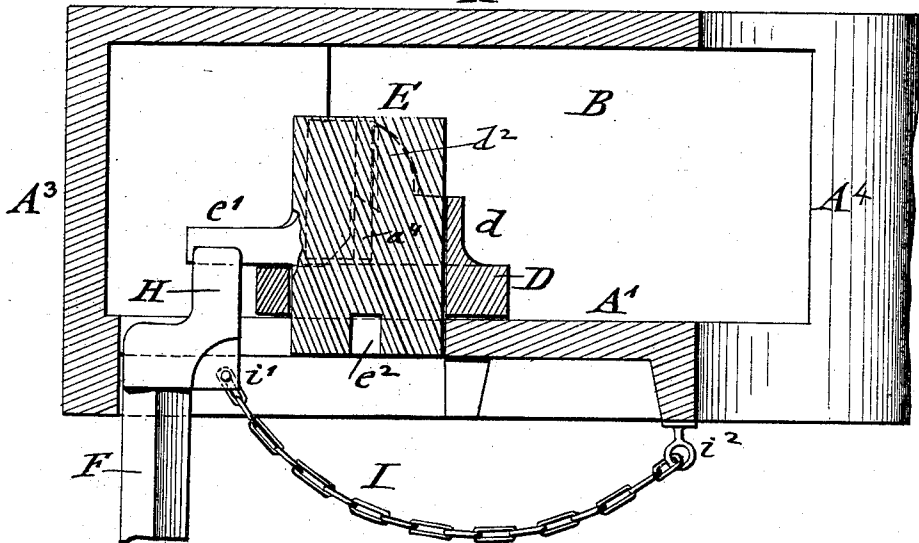
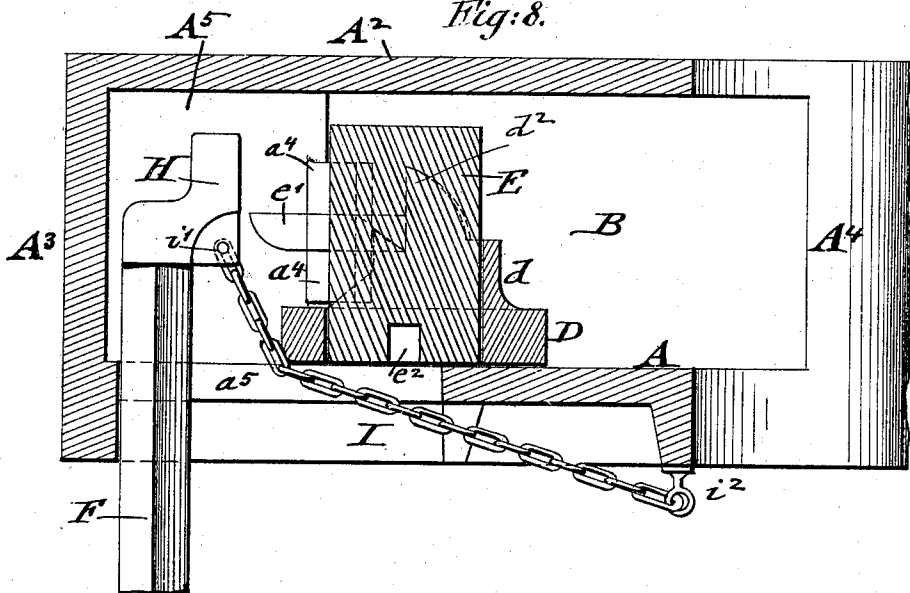


Fig: 8.



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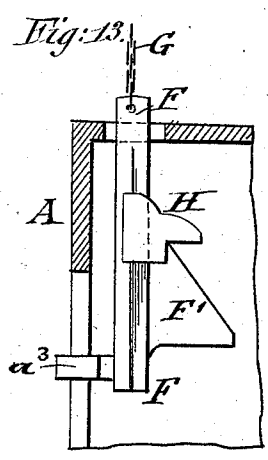
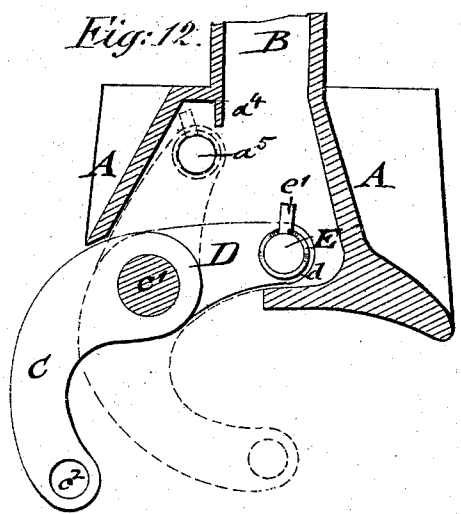
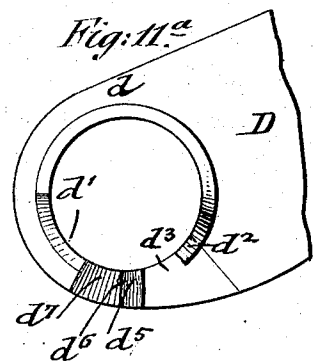
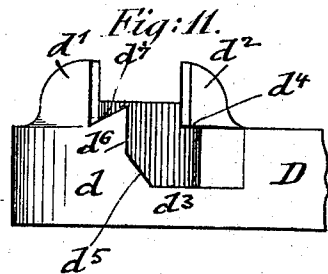
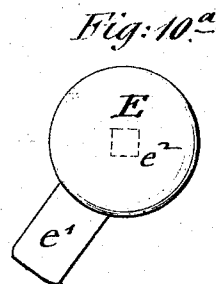
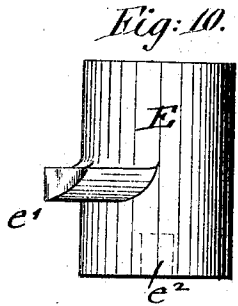
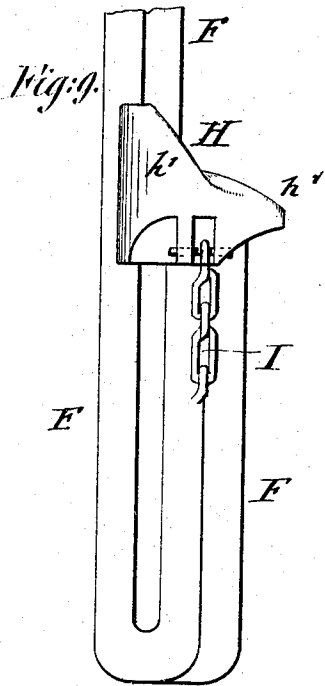
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(Application filed Oct. 26, 1898.)

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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

JULIUS MEYER, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 638,024, dated November 28, 1899.

Application filed October 26, 1898. Serial No. 694,617. (No model.)

To all whom it may concern:

Be it known that I, JULIUS MEYER, a citizen of the United States, residing in the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to certain improvements in car-couplings of that type in which a draw-head provided with an interior cavity, a knuckle pivoted to said draw-head and provided with an inwardly-extending tail end, and a lock-block by which said knuckle is locked to or unlocked from said draw-head are employed, said knuckle being adapted to interlock with a similar knuckle on the draw-head of an approaching car and couple automatically therewith.

My invention consists of a car-coupling which comprises a draw-head, a knuckle pivoted to the same, a gravity lock-block supported in the tail end of said knuckle and adapted to be supported by the tail end in interlocking position with the knuckle and the draw-head, thereby locking the knuckle in its closed or coupled position.

My invention consists, further, of the means employed for securely holding the lock-block in said interlocking position, so as to prevent its accidental release therefrom.

My invention consists, further, of a car-coupling comprising a draw-head, a knuckle pivoted thereto, a lock-block supported in the tail end of the knuckle and adapted to lock the same to the draw-head, and means for releasing the lock-block from its interlocking position, so as to unlock the knuckle from the draw-head and permit the swinging of the knuckle into open or uncoupled position.

The invention consists, further, of means by which the lock-block can be set at different heights relatively to the bottom of the draw-head, so as either to interlock with said bottom or be carried by the knuckle above the same or be dropped on the bottom.

My invention consists also of a car-coupling which comprises a draw-head, a knuckle pivoted to the same, a gravity lock-block located in the tail end of said knuckle, and shelves at the end of said tail end, said lock-block being adapted to be supported on the

lower shelf, so as to interlock with said knuckle and draw-head, thereby locking the knuckle in its closed or coupled position.

My invention consists, further, of a car-coupling comprising a draw-head, a knuckle pivoted to the same, a gravity lock-block located in the tail end of said knuckle, and shelves at the end of said tail end, said lock-block being adapted to be transferred from the lower to the upper shelf and to be supported on the latter clear of the bottom of the draw-head, so as to be unlocked from the same.

My invention consists, further, of a car-coupling which comprises a draw-head, a knuckle pivoted to the same, a gravity lock-block located in the tail end of said knuckle, and means for producing a position of the lock-block which enables it to lock the knuckle to the draw-head when the former is returned into coupled position; and the invention consists, further, of the specific construction of the draw-head, knuckle, and lock-block, as well as of means for actuating the lock-block, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a horizontal section of my improved car-coupling on line 1 1, Fig. 2, showing the knuckle in its locked or coupled position. Fig. 2 is a vertical transverse section on line 2 2, Fig. 1. Fig. 3 is a horizontal section of the car-coupling on line 3 3, Fig. 4, showing the position of the knuckle after it is unlocked from the draw-head and ready to swing into open or uncoupled position. Fig. 4 is a vertical transverse section on line 4 4, Fig. 3. Fig. 5 is a horizontal section of my improved car-coupling on line 5 5, Fig. 6, showing the knuckle in open position ready for coupling. Fig. 6 is also a vertical transverse section on line 6 6, Fig. 3. Figs. 7 and 8 are vertical transverse sections on lines 7 7, Fig. 1, and 8 8, Fig. 3, showing the lock-block in locked and unlocked position, respectively, drawn on a larger scale. Fig. 9 is a perspective view of the key-rod and key-head for operating the lock-block. Figs. 10 and 10^a are respectively a side view and a top view of the lock-block detached from the car-coupling. Figs. 11 and 11^a are a rear view and a plan view of the tail end of the knuckle. Fig.

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12 is a horizontal section of a simplified form of my improved car-coupling, and Fig. 13 is a side elevation of a modified form of key-rod and key-head.

5 Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the draw-head of my improved car-coupling, which draw-head is provided with the usual 10 shank B, by which it is attached to the bottom of the car. The draw-head has an interior cavity, at one side of which the forwardly-extending lugs $a' a'$ are arranged, between which the knuckle C is pivoted at c' . The 15 interior cavity of the draw-head is formed by the bottom A^1 , top A^2 , side walls A^3 and A^4 , and the rear wall A^5 . On the outside of the side wall A^3 are arranged the keepers a^2 and a^3 , in which is guided the outer leg of a U- 20 shaped key-rod F, that is provided at the end of its shorter inner leg with a key-head H. Within the cavity of the draw-head is arranged a forwardly-extending abutment a^4 , which is preferably located at the corner 25 formed by the rear wall A^5 and the side wall of the shank B, as shown in Figs. 1 and 3. At the corner formed by the side wall A^3 and the rear wall A^5 is arranged in the bottom a slotted opening a^5 , of which the end adjacent 30 to the corner corresponds to the outlines of the key-head H, while the opposite end of the slot a^5 is rounded off. The sides of the hole a^5 , connecting the free ends of the aforesaid outlines, are straight. The knuckle C is provided 35 at its outer recessed end with vertical holes c^2 , which serve for receiving an ordinary coupling-pin when the knuckle is to be coupled with a draw-head having the old-style coupling-pin and link. The knuckle 40 C is provided with a rearwardly-extending tail D, which has near its end a circular hole surrounded by a raised or thickened portion d . In this raised portion d is located a gravity lock-block E, which is capable of 45 vertical as well as of axial motion therein. The lock-block E is provided with a projecting nose e' at its side and with a central key-hole e^2 in its bottom. That portion of the raised portion d which is adjacent to the corner formed by the side and rear walls $A^3 A^5$ 50 is recessed and provided with noses $d^1 d^2$, which extend in an upward direction, so as to terminate near the top A^2 of the draw-head. The noses $d^1 d^2$ limit the axially-turning motion of the lock-block. When the nose e' of 55 the lock-block E is on the bottom shelf d^3 of the recess of the portion d , it rests with its horizontal top face directly below a shoulder d^4 , which is formed below the upwardly-extending nose d^2 . The shoulder d^4 prevents 60 the accidental unlocking of the knuckle, which may occur by the sudden jumping up or gradual creeping up of the lock-block E when the car is in motion. The nose e' of the lock- 65 block E has one vertical side and is rounded off at the opposite lower corner. When the nose e' is located at the bottom shelf d^3 of the

recess, its vertical side is adjacent to an inclined portion d^5 of the recess. (Shown in Figs. 11 and 11^a.) In this position of the nose e' 70 the lock-block E is in its lowermost or locking position. The nose e' of the lock-block E projects over the key-head H, the key-rod of which is of a square cross-section, so as to prevent the turning of the key-rod in the 75 keepers a^2 and a^3 . The key-rod F is provided with a projecting pin f' , which rests on the upper keeper a^2 and supports thereby the key-rod in its lowermost position. The pin f' fixes the key-head H at such a distance from 80 the nose e' of the lock-block E that any upward jumps of the key-head while the car is in motion will not touch the nose e' . The key-head H is formed of an inclined portion h^1 and a pointed or beak-shaped portion h^2 . 85 The key-head H is so located below the nose e' of the lock-block E that it is capable of exerting a vertically-lifting action and a side pressure on the bottom of the nose e' . When by an upward pull on the chain G the key- 90 rod F and key-head H are lifted, the slanting face of the portion h^1 engages the nose e' and turns it in a horizontal direction until its lower edge reaches the foot of the inclined portion d^5 of the recessed portion d . The 95 beak-shaped portion h^2 is next brought into action and, together with the wedge-shaped portion h^1 , moves up the nose e' along the inclined portion d^5 , then up the vertical face d^6 of the recess, and lifts it over the apex of 100 the same. The correspondingly-curved ridge of the beak-shaped portion h^2 of the key-head H delivers then the nose e' onto a shelf d^7 of the recess. The lock-block describes, therefore, by the lifting action of the key-head, 105 first, a horizontally-turning motion, then an upwardly-slanting motion, the turning continuing, then a vertical motion, the turning stopping, and then a downwardly-slanting motion, the turning again continuing in the 110 same direction as before. When the nose e' has been placed on the shelf d^7 , the lock-block E is held in its raised and unlocked position, its bottom being above the opening in the bottom A^1 of the draw-head and clearing said 115 bottom A^1 . A chain I is fastened at one end at i^1 to the key-head H and at the other end at i^2 to the bottom, near the face-wall of the draw-head A. The chain I extends diagonally across the bottom of the draw-head in 120 the direction of the longitudinal center line of the hole a^5 . When the key-head H has been lifted to the height at which it delivers the nose e' upon the shelf d^7 , the chain I comes into contact with the tail end D of the 125 knuckle, and when the lifting is continued it comes in contact with the edge of the hole a^5 at the under side of the bottom of the draw-head through a slot in the rim around the 130 edge of said hole. Before the latter contact takes place the chain stretches in nearly straight lines from its fastening i^2 with the draw-head to the edge of the tail end D, and thence to its fastening i^1 on the key-head.

When the contact of the chain with the knuckle takes place, it forms two angles, one at the edge of the hole a^3 and the other at the shifting point of contact with the tail end D of the knuckle. During this operation the chain bears continuously on the tail end D and exerts a side pressure on the same, which turns it inwardly, and thereby swings the knuckle on its pivot. While the knuckle is thus turned, its tail end D carries the lock-block E along, the same being retained in the recess d^7 at some distance from the bottom A' until the nose e' strikes against the abutment a^4 at the rear wall A⁵ of the draw-head. The striking of the nose e' against the abutment a^4 while the movement of the tail end D continues moves the shelf d^7 from under the nose e' until the latter clears the vertical edge d^6 , whereupon the lock-block drops into the recessed portion d to the bottom of the draw-head. This is effected at the beginning of the swinging motion of the tail-end D in order to make the subsequent automatic locking of the knuckle independent of the angle through which the knuckle swings. When the knuckle is unlocked, as described, the key-rod F and the key-head H drop down by their own weight to their normal positions in the draw-head. When by the approach of the cars to be coupled or for some other cause the knuckle C is pushed in, it takes along the lock-block E, which by its nose e' is held on the face d^6 in the position given to it before by the abutment, and therefore moved past the abutment a^4 until the hole in its tail end D registers with the hole in the bottom A' of the draw-head. The lock-block E will then drop into the hole a^5 , its nose e' being guided along the inclined portion d^5 under the shoulder d^4 of the portion d to the bottom shelf d^3 of the recess, at which point the lock-block remains suspended in interlocking engagement with the draw-head and tail end. The pull on the knuckle C is transferred by the pin c' to the lugs a' and by the engagement of the tail end D with the lock-block E to the bottom of the draw-head A. The brakeman may readily see by looking under the draw-head whether or not the knuckle is in locked position. He can readily move by hand the lock-block into its locking or unlocking position by inserting a portable key from below into the key-socket e^2 in the bottom of the lock-block E and then turning the lock-block by means of said key.

In some cases, especially when a simpler construction is desired, the key-rod, with its accessories, can be dispensed with, as shown in Fig. 12, in which case the lock-block can be actuated either by the key inserted in the key-socket of the lock-block or even by hand only. In place of the knuckle-operating chain a stationary wedge-piece F' on the inner leg of the key-rod may be used, as shown in Fig. 13. Whatever, however, be the means for operating the lock-block, it is necessary in all cases that the knuckle and lock-block assume successively three distinct positions in dif-

ferent planes relatively to the bottom of the draw-head—first, the locked position, in which the lock-block is dropped into the hole in the bottom of the draw-head and locks the knuckle to the same; second, the unlocked position, in which the lock-block is raised onto the upper shelf of the recessed portion d of the tail end, so as to permit the starting of the opening movement of the knuckle, when the nose of the lock-block by striking the abutment at the rear part of the draw-head will turn the lock-block back to such an extent that it can drop in the portion d in the tail end of the knuckle onto the bottom of the draw-head, and, third, the ready-for-coupling position, in which the lock-block rests on the bottom of the draw-head and slides over the same when the knuckle is in the act of coupling, so as to drop back into the hole in the bottom of the draw-head and lock the coupling into closed or coupled position.

My improved car-coupling may be operated either mechanically from outside of the track—*i. e.*, from the side of a freight-car or the platform of a passenger-car—and it may be operated with equal facility by hand, in which case the brakeman has to step in between the cars when coupling. The lock-block may be unlocked mechanically and locked automatically, or it may be unlocked mechanically and locked by hand, or it may be unlocked by hand and locked automatically, or the unlocking as well as the locking of the same may be accomplished by hand by means of the portable key.

To unlock the closed knuckle mechanically from outside of the track, the key-rod, which in that case forms part of my improved car-coupling, is pulled up, so that its head engages the nose of the lock-block, turns it, and turns and lifts it out of its interlocking position with the knuckle and draw-head into a raised position in the tail end of the knuckle, in which it clears the bottom of the draw-head, and consequently permits the knuckle to swing freely on its pivot. The swinging of the knuckle is effected either by the pulling of the other knuckle when the cars are uncoupling or by imparting to the key-rod a second upward pull, whereby the chain I is also lifted. The chain is thereby first brought to a bearing with the outside of the tail end of the knuckle and then drawn taut, so as to exert a side pressure on the said tail end, whereby the latter is moved inwardly and the outer end of the knuckle outwardly. The chain can also move the knuckle from its intermediate unlocked position by the final lifting of the key-rod into uncoupled position whenever required. At the beginning of this pivotal motion the nose of the lock-block strikes the abutment on the draw-head and later leaves the upper shelf in the recess of the tail end, whereupon the lock-block drops down upon the bottom of the draw-head, the nose of the lock-block then being in contact with the vertical part of the recess and

being in the same relative position to the abutment to which it has been set before by the same. In this position it is guided past the abutment of the draw-head when the knuckle interlocks with another one—*i. e.*, when the tail end moves outwardly. During this return swing the lock-block glides along on the bottom of the draw-head until the hole in the knuckle registers with the hole in the bottom of the draw-head, when the lock-block drops and interlocks therewith. During the dropping of the lock-block its nose strikes the inclined part of the recess, and is thereby deflected further in the direction in which it has been turned in clearing the upper shelf, so as to slip under the projecting shoulder of the tail end. Should the lock-block jump up under a severe shock on the draw-head by the moving train or should the lock-block creep up in consequence of repeated lesser shocks, its nose will strike against this projecting shoulder and be returned thereby to the bottom of the recess.

My improved car-coupling has the advantage that the knuckle-pin and the lock-block moving in the tail end of the knuckle are located at one side of the center line of the draw-head and mutually correct each other in their straining effect on the draw-head. It has the further advantage that the middle portion of the interior cavity of the draw-head and the shank are unobstructed, offering no point of attack to a kicking link should my improved car-coupling be coupled with an old-style link-and-pin coupling and leaving the center free for the tail-bolt.

My improved coupling has the further advantage of a comparatively simple construction and that it can be readily operated either from the side or top of a freight-car or from the platform of a passenger-car without the brakeman going in between the cars.

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

1. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end, a lock-block within the cavity of the draw-head and located in the hole of said tail end and capable of a limited axially-turning motion, and means for limiting said axial motion, substantially as set forth.

2. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end, and a lock-block within said cavity and located in the hole of said tail end and capable of being simultaneously axially turnable and vertically movable in said hole of the tail end, substantially as set forth.

3. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end, and a lock-block within said cavity and located in the hole of said tail end and capable of being simultaneously axially

turnable and vertically movable in said hole of the tail end, and means for imparting said axially-turning and vertically-sliding motion to the lock-block, substantially as set forth.

4. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end placed in register with the hole in the bottom of the draw-head, a lock-block within said cavity and located in the hole of the tail end of the knuckle and adapted to interlock with the bottom of the draw-head, and means for axially turning the lock-block in said holes of the draw-head and tail end, substantially as set forth.

5. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end placed in register with the hole in the bottom of the draw-head, a lock-block within said cavity and located in the hole of the tail end of the knuckle and adapted to interlock with the bottom of the draw-head, means for vertically moving said lock-block in the holes of the draw-head and tail end, and means for axially turning said lock-block in said holes, substantially as set forth.

6. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end placed in register with the hole in the bottom of the draw-head, a lock-block within said cavity and located in the hole of the tail end of the knuckle and adapted to interlock with the bottom of the draw-head, and means for simultaneously turning and vertically moving the lock-block in the holes of the draw-head and tail end, substantially as set forth.

7. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole in its tail end placed in register with the said hole in the bottom of the draw-head, a lock-block in the said hole of the tail end of the knuckle adapted to interlock with the bottom of the draw-head and capable of a limited vertical motion while interlocked, and means located on said tail end for limiting the vertical motion of the lock-block while in the holes of the draw-head and tail end, substantially as set forth.

8. The combination, with a draw-head, of a swinging knuckle, supporting-shelves at the end of its tail end, and a lock-block located in said tail end and supportable on said shelves, substantially as set forth.

9. The combination, with a draw-head, of a swinging knuckle, supporting-shelves at the end of its tail end, and a lock-block supportable thereon and adapted to be axially turned on said shelves, substantially as set forth.

10. The combination, with a draw-head, of a swinging knuckle, supporting-shelves at the end of its tail end, and a lock-block supportable thereon and adapted to be axially turned between said shelves, substantially as set forth.

11. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle, shelves at the end of its tail end, and a lock-block supportable thereon and capable of being vertically movable from one shelf to the other, substantially as set forth. 70
12. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle, shelves at the end of its tail end, and a lock-block supportable thereon, capable of being vertically movable from one shelf to the other, and adapted to interlock with the bottom of the draw-head, substantially as set forth. 75
13. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle pivoted to said draw-head, and having a thickened portion at the end of its tail end and shelves in said thickened portion, and a lock-block supportable thereon, capable of being vertically movable from one shelf to the other, and adapted to interlock with the bottom of the draw-head, substantially as set forth. 80
14. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, and a lock-block within said cavity and located in the hole of the tail end, substantially as set forth. 85
15. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, said recess having an upper shelf and a lock-block within said cavity and located in the hole of the tail end, and a lower bottom shelf, substantially as set forth. 90
16. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, said recess having an upper shelf, a lower bottom shelf, a vertical face adjacent to the upper shelf and a slanting face that connects the vertical face with the bottom shelf of the recess, and a lock-block within said cavity and located in the hole of the tail end, substantially as set forth. 95
17. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, said recess having a bottom shelf and a shoulder projecting from the side wall of the recess over said bottom shelf, and a lock-block within said cavity and located in the hole of the tail end, substantially as set forth. 100
18. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole with a recess in its tail end, said recess having a bottom shelf and a shoulder projecting from the side wall of the recess over said bottom shelf, and a lock-block in the said hole of the tail end, adapted to interlock with the bottom of the draw-head and capable of a limited vertical motion in said holes of the knuckle and the draw-head and adapted to be limited in its vertical motion by the said shoulder in the said recess, substantially as set forth. 105
19. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end, a lock-block within said cavity and located in said hole, and a nose on the said lock-block, substantially as set forth. 110
20. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having a hole in its tail end, a lock-block within said cavity and located in said hole, and a nose on the said lock-block, said nose having one vertical side and one rounded-off lower edge, substantially as set forth. 115
21. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, a lock-block located in the said hole, and a nose on the lock-block, said nose projecting through said recess to the outside of the said tail end of the knuckle, substantially as set forth. 120
22. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, a lock-block located in the holes of the draw-head and tail end, a nose on the lock-block, said nose projecting through said recess to the outside of the said tail end of the knuckle, and means for engaging said nose so as to turn the lock-block on its vertical axis, substantially as set forth. 125
23. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, a lock-block located in the holes of the draw-head and tail end, a nose on the lock-block, said nose projecting through said recess to the outside of the said tail end of the knuckle, and means for engaging said nose for imparting a vertical motion to the said lock-block, substantially as set forth. 130
24. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole in its tail end and a recess in the side wall of said hole, a lock-block located in the holes of the draw-head and tail end, a nose on the lock-block, said nose projecting through said recess to the outside of the said tail end of the knuckle, and means for engaging said nose so as to impart simultaneously an axially-turning motion and a vertical motion to the lock-block, substantially as set forth. 135
25. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a hole with a recess in the side wall of the same in its tail end and a shoulder projecting from the said side wall over the bottom of the said recess, a lock-block capable of a limited vertical motion located in the

- holes of the draw-head and tail end and adapted to interlock with the bottom of the draw-head, and a nose on the said lock-block projecting under said shoulder so as to be limited in its vertical motion by the same, substantially as set forth.
26. The combination, with a draw-head, of a swinging knuckle having in its tail end a hole with a recess in the side wall of the same, a lock-block pivoted in said tail end and having a projecting nose, and an upper shelf in the said recess adapted to support the lock-block clear of the bottom of the draw-head, substantially as set forth.
27. The combination, with a draw-head, of a swinging knuckle having in its tail end a hole with a recess in the side wall of the same, a lock-block pivoted in said tail end and having a projecting nose, a bottom shelf and an upper shelf in the said recess adapted to support the lock-block, and means for moving the lock-block by its nose from the bottom shelf of the recess to the upper shelf of the same, substantially as set forth.
28. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a swinging knuckle having in its tail end a hole with a recess in the side wall of the same, a lock-block within said cavity and pivoted in said tail end and having a projecting nose, an upper shelf in the said recess adapted to support the lock-block, and an abutment on the inside of the draw-head, substantially as set forth.
29. The combination, with a draw-head, of a swinging knuckle having in its tail end a hole with a recess in the side wall of the same, a lock-block pivoted in said tail end and having a projecting nose, an upper shelf in the said recess adapted to support the lock-block, and an abutment on the inside of the draw-head, said abutment arresting the nose of the lock-block so as to push it off the upper shelf and cause the lock-block to drop upon the bottom of the draw-head, substantially as set forth.
30. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a tail end, a lock-block guided in said tail end, mechanism for unlocking the lock-block from the draw-head, and vertically-moving mechanism actuated by said unlocking mechanism for swinging the tail end of the knuckle inwardly, substantially as set forth.
31. The combination, with a draw-head having a slotted hole in its bottom, of a swinging knuckle having a tail end, a lock-block located in said tail end, mechanism for unlocking the lock-block from said draw-head, and means actuated by said unlocking mechanism in the direction of and through said slotted hole for swinging said tail end with the lock-block inwardly, substantially as set forth.
32. The combination, with a draw-head having a hole in its bottom, of a swinging knuckle having a tail end, a lock-block guided in said tail end, mechanism for unlocking the lock-block from said draw-head, and means actuated by said unlocking mechanism for exerting a continuous side pressure on the tail end of said knuckle so as to swing it inwardly into the draw-head, substantially as set forth.
33. The combination, with a draw-head having an interior cavity and a hole in its bottom, of a knuckle pivoted to said draw-head, a lock-block guided in the tail end of said knuckle, means for interlocking the lock-block with the draw-head and tail end, and means for carrying the lock-block into three different planes relatively to the bottom of the draw-head, firstly interlocking with the bottom of the draw-head for coupling, secondly above said bottom for permitting the inward swinging of the tail end, and thirdly resting on said bottom in position ready for recoupling, substantially as set forth.
34. The combination, with a draw-head, of a knuckle pivoted to the same, a lock-block guided in the tail end of said knuckle, means for producing the interlocking of the lock-block with the draw-head and tail end, a key-rod and key-head adapted for turning and lifting said lock-block so as to unlock the knuckle from the draw-head, and means for engaging the tail end of the knuckle for swinging it inwardly into open or unlocked position, substantially as set forth.
35. The combination, with a draw-head, of a knuckle pivoted to the same, a lock-block guided in the tail end of the knuckle and having a projecting nose, a vertically-sliding key-rod having a key-head engaging the nose of the lock-block so as to impart an axially turning and lifting motion to the same, and a chain connected with said key-head and adapted to produce the swinging of the knuckle into open or uncoupled position, substantially as set forth.
36. In a car-coupling of the class described, a knuckle provided with a hole in its tail end, a recess at one side of said hole, and with upwardly-projecting noses at opposite sides of said recess, substantially as set forth.
37. In a car-coupling of the class described, a gravity lock-block, of less length than the interior height of the draw-head and provided with a projecting nose having a vertical side and a rounded-off lower corner, substantially as set forth.
38. In a car-coupling of the class described, a key provided with a key-head inclined at one end and beak-shaped at the other end, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JULIUS MEYER.

Witnesses:

PAUL GOEPEL,
M. HENRY WURTZEL.