(No Model.)

C. HALPIN.

CAR COUPLING.

No. 574,323. Patented Dec. 29, 1896.

Fig. 1.

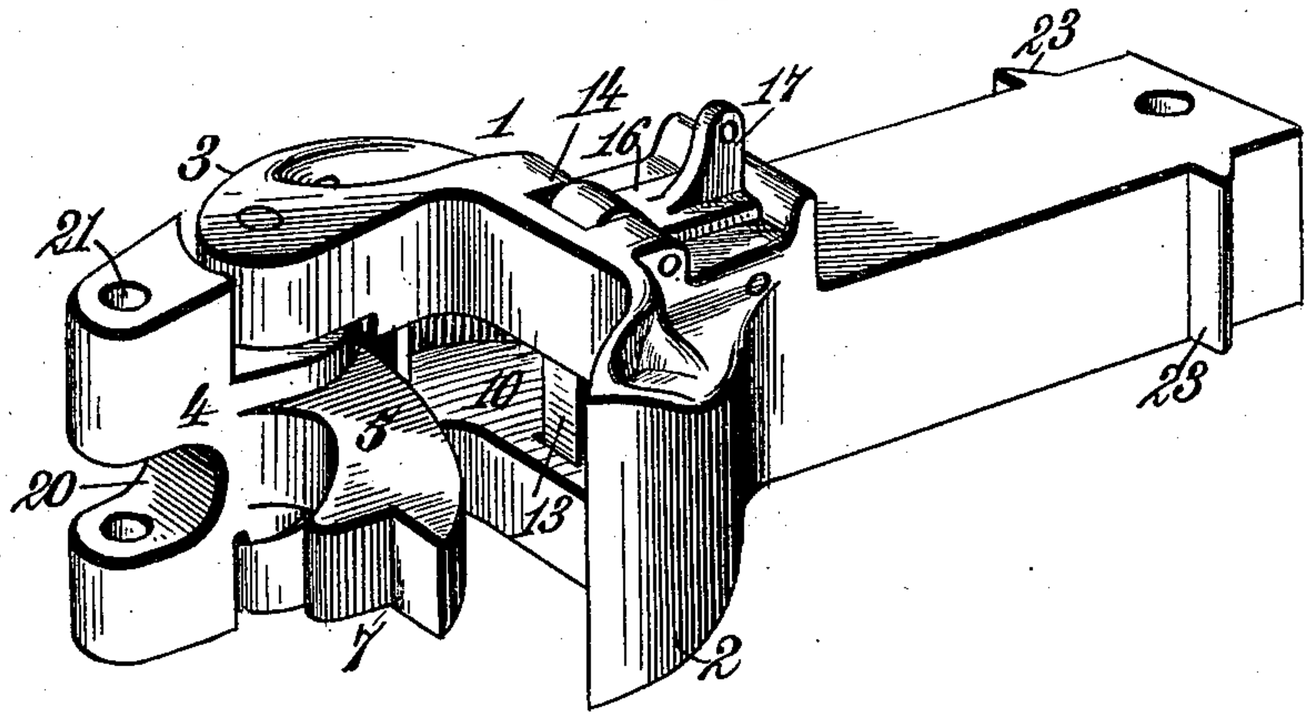


Fig. 2.

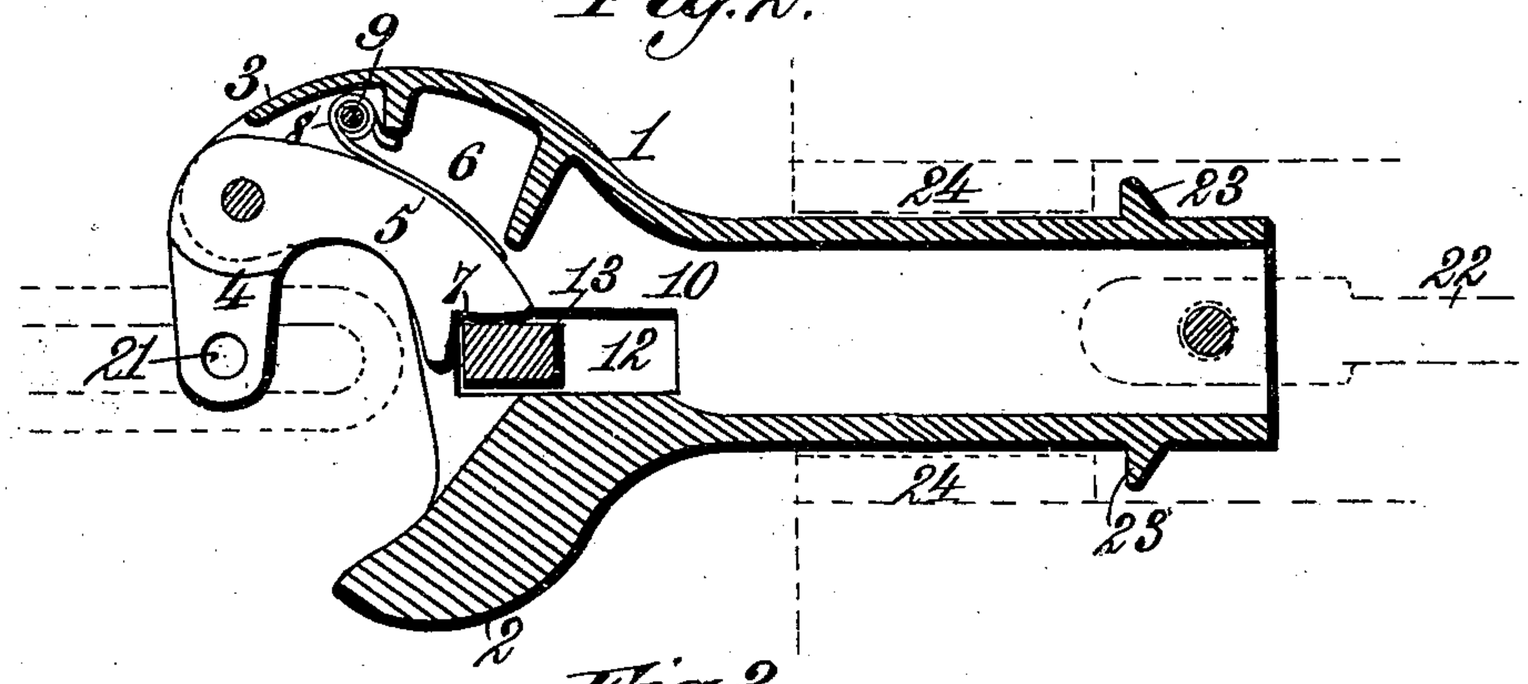
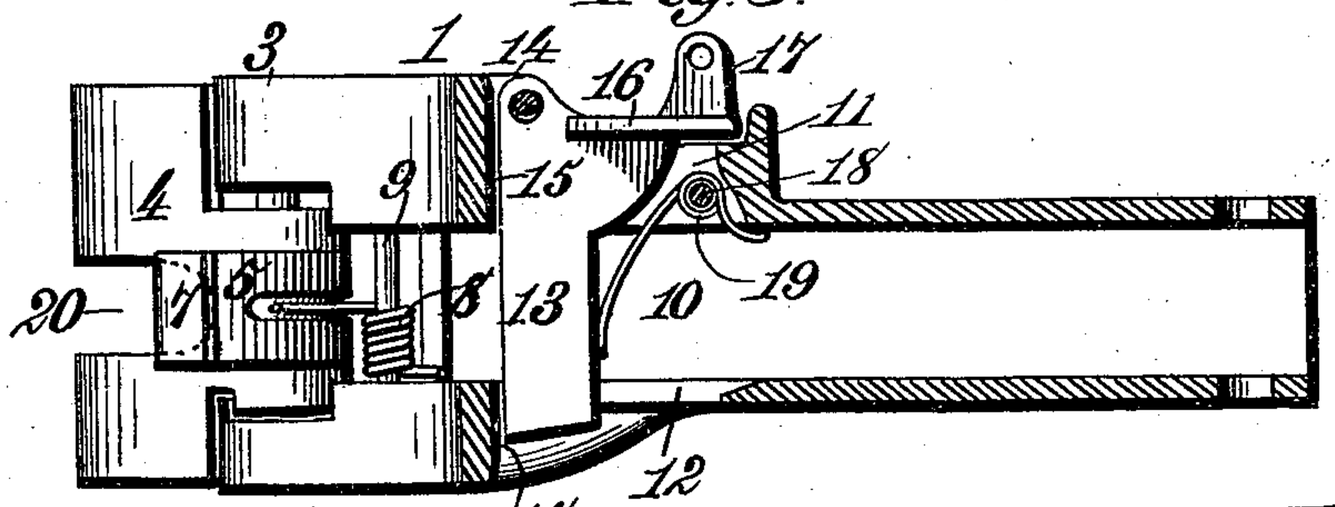


Fig. 3.



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UNITED STATES PATENT OFFICE.

CORNELIUS HALPIN, OF TARRYTOWN, NEW YORK, ASSIGNOR OF ONE-HALF TO FREDERICK WILLIAM SMITH, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 574,323, dated December 29, 1896.

Application filed October 10, 1896. Serial No. 608,481. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS HALPIN, a citizen of the United States, residing at Tarrytown, in the county of Westchester and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplings of that class in which each draw-head is provided with a pivotal hooked jaw adapted to automatically couple, when in proper position, with the corresponding pivotal hooked jaw of another draw-head, and each pivotal jaw being formed with a notched tailpiece that will press against and interlock with a locking-dog which is pivotally supported in a vertically-slotted portion of the draw-head.

The invention consists in features of construction and novel combinations of parts in a pivotal-hook car-coupling, as hereinafter described and claimed.

In the annexed drawings, illustrating my improvements, Figure 1 is a perspective of one draw-head, showing its pivotal hooked jaw in an open or unlocked position in readiness for coupling automatically with the closed or locked jaw of another draw-head having the same construction. Fig. 2 is a horizontal section of the draw-head, showing its hooked jaw locked in its closed position and indicates in dotted lines the manner of coupling with an ordinary link and pin, and shows also the means for preventing access of the link to the locking-dog that secures the hooked jaw. Fig. 3 is a vertical longitudinal section of the draw-head with the pivotal hooked jaw in uncoupled position.

Referring to the drawings, it will be seen that the outer end of the draw-head 1 is provided with two lateral and forward projecting horns 2 and 3, one on each side. The horn 2 is short and flared somewhat outward, while the horn 3 is longer and extended more directly forward. In the bifurcated extremity of the longer horn 3 is pivoted a horizontally-swinging hooked jaw 4, that is adapted to be engaged with a similar hooked jaw carried by an opposing draw-head.

The pivotal hooked jaw 4 has formed thereon a tailpiece 5, which projects transversely toward the center line of the draw-head when the hooked jaw is in its opened position. When the hooked jaw is closed in coupled position, the tailpiece 5 is received in a housing or recess 6, that is formed in the horn 3, to which the said jaw is pivoted. It will be seen that the tailpiece 5 is curved horizontally forward and that in its extremity is formed a V-shaped notch 7, which is extended from the top of said tailpiece to its under side.

For the purpose of holding the hooked jaw 4 in an open or forward position there is provided a spring 8, that is coiled around and supported by a pin 9, which is secured vertically in the forward portion of the recess or housing 6, one end of said spring being provided with a fixed bearing, while the other end is extended and made to bear against the rear surface of the tailpiece 5, so as to force the jaw 4 to open and hold the said tailpiece in its forward position, as shown in Fig. 1.

The interior of the draw-head is formed with a recess 10, communicating with the draw-head mouth. In the top forward portion of the draw-head is a longitudinally-arranged slot 11, and in the lower forward portion is a similar slot 12, both slots being in communication with the draw-head interior. These slots 11 and 12 provide for the required movements of a forwardly and rearwardly swinging dog 13, that is adapted to lock back the hooked coupling-jaw 4 in its closed position, as shown in Fig. 2. The locking-dog 13 is pivotally supported at its forward upper corner in bearings 14 on the upper side of the draw-head, and it occupies a normally vertical position with its front vertical face in bearing contact with abutments 15 at the forward ends of the slots 11 and 12, in which it is arranged to swing. The upper end of this locking-dog 13 is formed with a flanged cap 16, that serves to normally close the slot 11 and exclude snow and rain. On the top of the cap 16 is a perforated lug 17 for attachment of a chain that may be extended to any required point for use in raising the dog 13, so as to swing it backward and thereby release the hooked jaw 4 in the act of uncoupling.

Across the rear end of the upper slot 11 is supported a transversely-arranged pin or axle 18, on which is coiled a spring 19, one end of which has a fixed bearing beneath the top of

the recessed draw-head, while the other end is extended forward and downward in bearing contact with the rear side of the dog 13, and thus holds the said dog so that it cannot be swung rearward by jolting or vibration of the draw-head or by shock of two draw-heads coming together in the operation of coupling.

When it is desired to set the coupling in readiness for automatic action, the pivotal hooked jaw 4 on one draw-head is pushed inward and rearward, so that the tailpiece 5 will bear against the pivotal locking-dog 13 and swing it rearward against the pressure of its spring 19, and it will be seen that as soon as the rear face of the tailpiece has cleared the forward face of the dog 13 the said dog will, under the influence of gravity and by the action of the spring 19, immediately swing forward into firm locking engagement with the V-shaped notch 7, thereby securing the jaw 4 in closed position, as shown in Fig. 2. On the other draw-head the pivotal hooked jaw 4 is left in open position, as shown in Figs. 1 and 3. Now on bringing together the two draw-heads the closed jaw 4 on one draw-head will impinge against the tailpiece 5 of the open jaw on the other draw-head and thereby bring the two jaws into engagement, at the same time swinging rearward the locking-dog 13 of one draw-head until the tailpiece 5 is in position to have its notch 7 engaged by the said dog as its swings forward into locking position, thus automatically coupling the two cars together. In order to uncouple, it is only necessary to lift or swing rearward the locking-dog 13 of either draw-head, when immediately the spring 8 of the hooked jaw 4 on that draw-head will swing or throw the said jaw out of engagement with the other jaw.

It will be observed that the springs 8 and 19 hold the jaw 4 and locking-dog 13 of each draw-head so firmly that they are not affected by vibrations or shocks when the draw-heads are coupled, and thus the risk of accidental uncoupling is avoided.

The vertical engaging faces of the draw-heads are of such depth as to afford ample vertical play, due to inequalities of track, without liability of uncoupling, and yet, should one car go though a bridge or trestle, it need not pull the other down, as the couplings will then readily drop apart. When coupled, the hooked jaws afford ample room for lateral play and for turning curves.

In order to provide for coupling this draw-head with one having the ordinary link-and-pin coupling, there is formed a notch or recess 20 in the hooked jaw 4 and pin-holes 21 that intersect said notch, so that when the jaw is closed and locked the said notch 20 will afford passage for an ordinary link to be engaged by a pin dropped through the holes 21, as usual. In the closed and locked position of the jaw 4 the front face of the tailpiece 5 extends so far across the draw-head mouth that a link could not get access to the dog 13 to swing it rearward, and consequently the use of a link would not incur the risk of unlocking the jaw, as is possible with some hook-jaw couplings. By reference to Fig. 2 it will be seen that if the link entered far enough it would take bearing on the inner side of the horn 2 and on the front face of the tailpiece 5, the draw-head mouth being so contracted by the form and position of the said tailpiece that a link cannot impinge against the locking-dog.

The rear end of the draw-head receives the draw-bar 22 and is bolted or otherwise secured thereto in any suitable manner. On the sides of the draw-head, near its rear or inner end, are vertical flanges 23, the purpose of which is to prevent the draw-head from being pulled out of the framing 24 in case of disconnection of the draw-head from the draw-bar. These flanges 23 are located in such relation to the framing 24 as will afford ample room for longitudinal play or yielding of the draw-head and draw-bar and yet serve as stops to arrest withdrawal of the draw-head in event of becoming disconnected at the point of draw-bar attachment or in case the draw-bar should be broken.

What I claim as my invention is—

In a car-coupling, the combination of a recessed draw-head slotted at top and bottom, a pivotal hooked jaw provided with a tailpiece normally projecting across the draw-head mouth and having in its end a V-shaped notch with squared vertical sides, a locking-dog pivoted to swing forward and rearward in the slotted and recessed draw-head and adapted to be swung back by said tailpiece and become interlocked with the V-notch therein to secure the hooked jaw in a closed and locked position, a spring to hold the said dog to its engagement with the notched tailpiece, a transversely-arranged pin to support said spring, means for swinging the said dog rearward to release the closed jaw, and a spring to throw the released jaw outward, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CORNELIUS HALPIN.

Witnesses:
JAMES L. NORRIS,
THOS. A. GREEN.