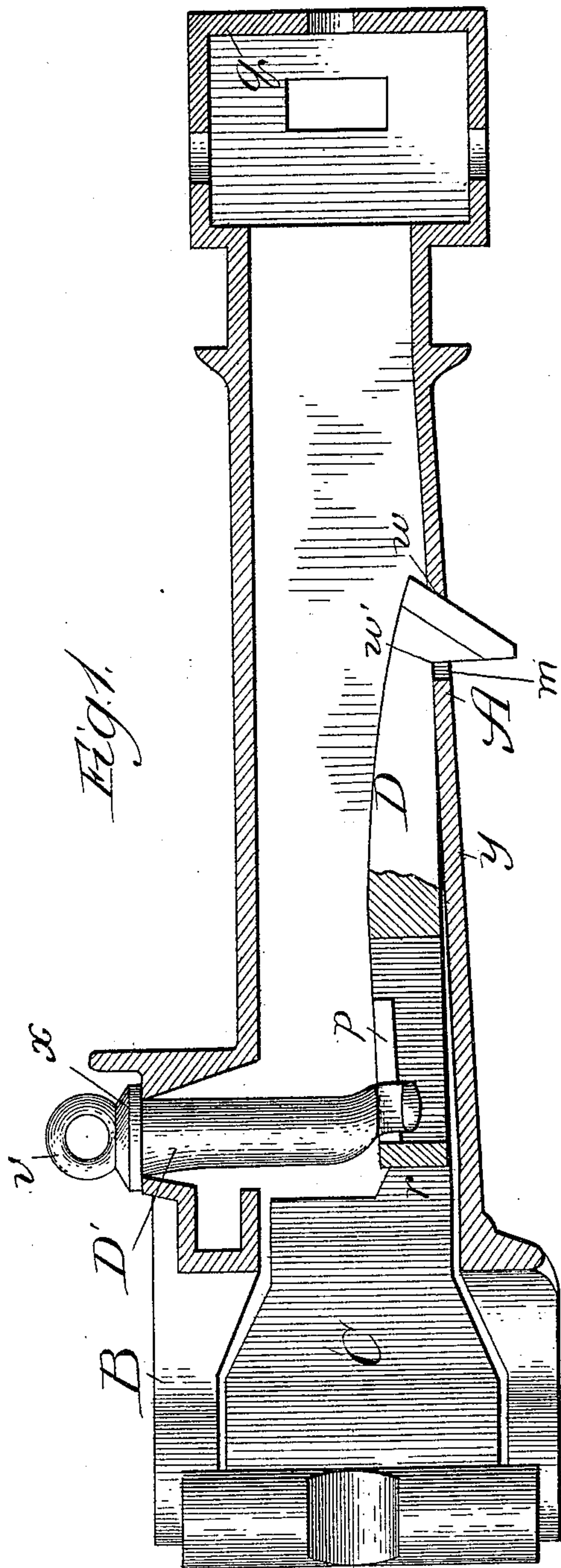


(No Model.)

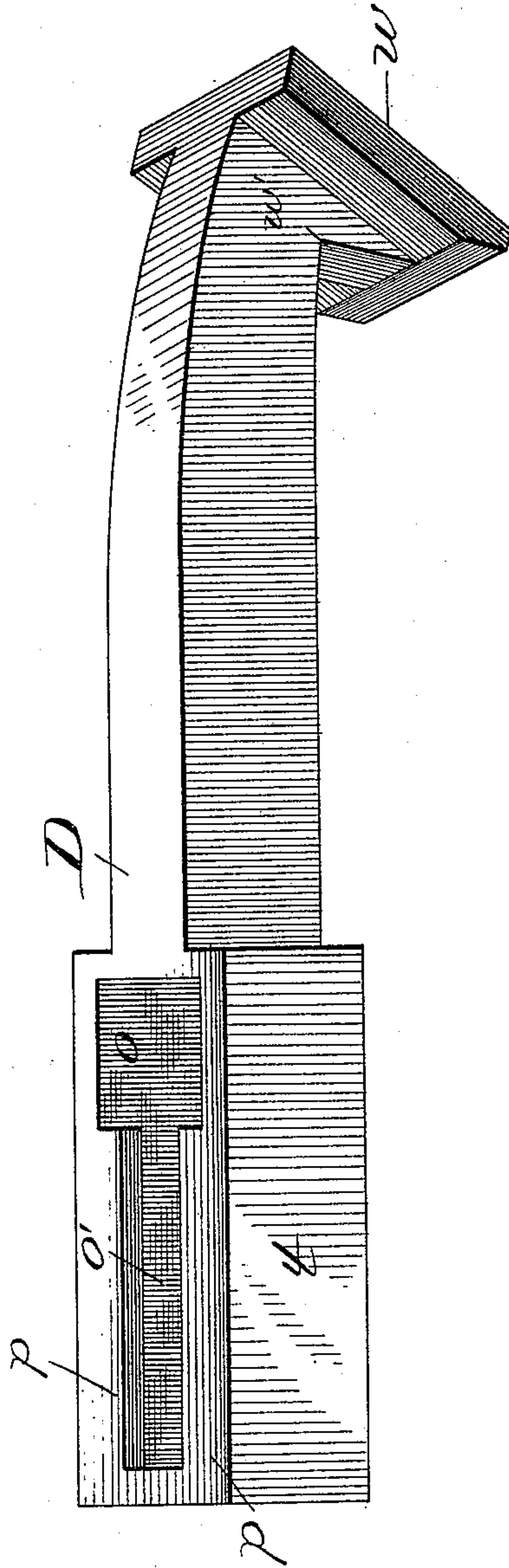
P. M. REAGAN.  
CAR COUPLING.

No. 467,282.

Patented Jan. 19, 1892.



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

PAUL M. REAGAN, OF CHICAGO, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,282, dated January 19, 1892.

Application filed September 30, 1891. Serial No. 407,230. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL M. REAGAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to an improvement in the class of car-couplers involving a hollow head on the draw-bar, provided with a laterally-swinging jaw to engage a similar jaw on a mating-coupler and a lock in the draw-bar to engage the jaw and hold it in its position of coupling, and which yields to the jaw to enable the latter to pass it in being turned to its locked position. More particularly stated, my invention relates to an improvement in the locking means in a coupler of the character referred to.

The main objects of my improvement are to enhance the assurance of the automatic returning of the lock to its normal locking position after having yielded to the strain of the pivotal jaw in passing it to assume its locked or coupling position; to provide an efficient safety-lock by causing it to operate reliably to unlock the jaw and permit it to yield or swing outward in case of fracture of the attachments holding the draw-bar in place, thereby in the event of such accident preventing dislodgment of the draw-bar and its falling on the track, where it would be liable to produce derailment of cars, and, generally, to provide a construction of the locking mechanism which shall greatly increase the efficiency and safety of couplers of the class mentioned.

In the accompanying drawings, Figure 1 is a view in longitudinal sectional elevation of a car-coupler provided with my improvement; and Fig. 2 is a perspective view of the lock, somewhat enlarged over the representation thereof in Fig. 1.

A is a car-coupler of the class comprising a hollow draw-bar terminating at one end in the so-called "tail-piece of the coupler" *q*, at which it is held in place by straps (not shown) and terminating at its opposite end in a hollow head B, carrying at one side a pivotal jaw C, provided with a tail-piece *r*. The parts thus described may involve the construction

illustrated or that of any car-coupler of the same class.

D is the lock. It comprises a bar terminating at one end in a hollow rectangular head *t*, open at the top and bottom and partly covered by flanges *p*, extending along its upper side from near the forward end of the head part way to the rear end thereof to produce the opening *o* and narrower elongated opening *o'*, and at the rear end of the bar, toward which it may curve on its upper side, as shown, is an expanded bearing-head *w*, inclining on its rear surface downward in the direction toward the front end of the lock and extending thus beyond the under side of the bar, where it affords a stop *w'*.

The lock D extends in its operative position normally along the base of the hollow draw-bar, with its head *t* in the path of the tail-piece *r* of the jaw C and with its oblique head *w* projecting downward through an opening *m* in the base of the draw-bar, the length of which opening should be materially greater than the width, in the direction lengthwise of the lock, of the head *w*, to the rear oblique side of which the adjacent end of the opening preferably conforms, as represented. The location of the opening *m* is essentially for the "safety" or automatic unlocking function of my improvement nearly midway between the heads *q* and B, where it is close to the hanger-strips. (Not shown, but located about at *y*.)

D' is a pin inserted through an opening in the top at the rear of the coupler-head B and provided with a flat seating-flange *x* and ring *v*. At its lower end the pin is notched, as indicated, and wider than the opening *o'* in the lock-head *t*, the flanges *p* of which enter the notched portion of the pin and prevent its withdrawal, the adjustment in place of the pivotal supporting-pin D' being effected by introducing it at its lower end into the larger opening *o* and then drawing the lock D backward to bring the end of the pin into the opening *o'*, where it is confined by the flanges *p*. As illustrated, the pin supports the lock or suspends it toward its forward end, thereby causing the lock to rest only toward its rear end on the base of the draw-bar, which is preferable to having it rest thereon through-



out its entire length, since it thus more readily yields to the strain of displacing it by the jaw and to the gravity-action for its return, all as hereinafter described.

5 The device operates as follows: In order that the jaw C may reach the locked position in which it is represented from its open or unlocked position, its tail-piece *r* must pass the forward end of the lock D. In doing this  
10 the tail-piece *r* bears against the head *t* and the strain causes the lock to yield in a backward direction, the inclined surface of the rear head *w* rising obliquely and the pin D' yielding accordingly by swinging backward,  
15 resting then only on the forward side of its seating-flange *x*. As soon as the tail-piece of the swinging jaw C has passed the lock the lock's own gravity, assisted by that of the pivotal pin D', returns it instantly to its normal position, wherein its forward head end *t*  
20 is in the path of the tail-piece *r* and obstructs the jaw against unlocking by the draft-strain exerted in pulling the car provided with the coupling.

25 The provision of an oblique head *w* on the rear end of a lock D is not in itself new; but alone it is not effective nor reliable in producing the desired automatic return of the lock to its locking position after being forced  
30 therefrom in the manner described, and to cause it to operate at all would require it to be formed much longer than shown to afford to it the necessary great weight. By the pin-connection I provide, even if the lock lay normally, as it may, throughout its length against  
35 the inner surface of the base of the draw-bar, whence it will be raised toward its forward end with the backward swinging of the pivotal pin by the impact of the tail-piece of the  
40 jaw, both the backward or unlocking and the forward or locking movements of the lock are easy and thoroughly reliable.

For the safety or automatic unlocking function of my improved device, but not necessarily for its other functions, the lock D is of  
45 a length which will cause its beveled rear end *w* to protrude through its opening *m* near the hanger-strap at *y*, that is sufficiently near the same (without being near enough to be affected by the normal longitudinal play of the  
50 draw-bar) to cause the stop *w'*, in case of fracture of the attachments holding the coupler in place at its tail-piece *q*, to strike the hanger before the coupler is pulled out far  
55 enough to cause it to drop. By my construction, when such an accident occurs, the pull on the still coupled or locked jaw C draws out the coupler till the stop *w'* on the lock D strikes the rigid hanger and the continued  
60 pull thereon forces the lock back out of the path of the tail-piece *r* of the jaw C, thereby unlocking the latter and permitting it to be swung outward by the draft strain, and thus

preventing withdrawal of the fractured coupler and its falling down upon the track. 65

It should be further stated that the lock D is adapted to be operated by hand for unlocking it either from above by suitable or ordinary means for raising the lock through the  
70 medium of the pin D' or from below by similar means applied to the lower projecting end of the rear oblique head *w*.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler of the class described, 75 the combination, with the draw bar and head provided with a swinging jaw, of a lock comprising a bar normally extending at its forward end into the path of the said jaw and having a rear head provided with an inclined  
80 rear bearing-surface and normally protruding below the base of the draw-bar near the point of its hanger-support, substantially as described.

2. In a car-coupler of the class described, 85 the combination, with the draw bar and head provided with a swinging jaw, of a lock comprising a bar normally extending at its forward end into the path of the said jaw and having a rear head provided with an inclined  
90 rear bearing-surface and normally protruding below the base of the draw-bar, and a pivotal pin engaging at its end the locking-bar toward its forward end, substantially as described. 95

3. In a car-coupler of the class described, the combination, with the draw bar and head provided with a swinging jaw, of a lock comprising a bar normally extending at its forward end into the path of the said jaw and  
100 having a rear head provided with an inclined rear bearing-surface and normally protruding below the base of the draw-bar, and a pin pivotally supported to hang in the forward head of the coupler and engaging at its lower  
105 end the locking-bar and supporting it toward its forward end normally above the surface of the base of the draw-bar, substantially as described.

4. In a car-coupler of the class described, 110 the combination, with the draw-bar having the head B, provided with a swinging jaw C and tail-piece *q*, of a lock D, comprising a bar having at its forward end a head *t*, provided with the openings *o* and *o'* and at its rear end  
115 with a head *w*, provided with an inclined rear bearing-surface and normally protruding through an opening *m* in the base of the draw-bar, and a flanged pin D', seated at its flange on the head B and engaging at its lower end  
120 the lock D at the opening *o'* in its head *t*, substantially as described.

PAUL M. REAGAN.

In presence of—

M. J. FROST,

J. W. DYRENFORTH.