

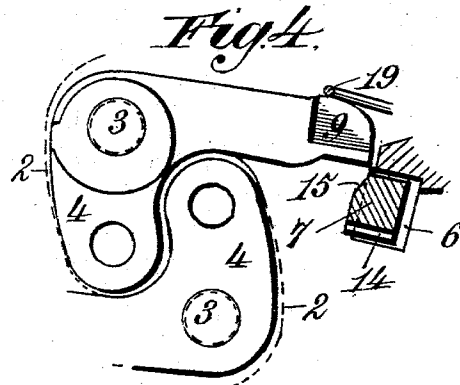
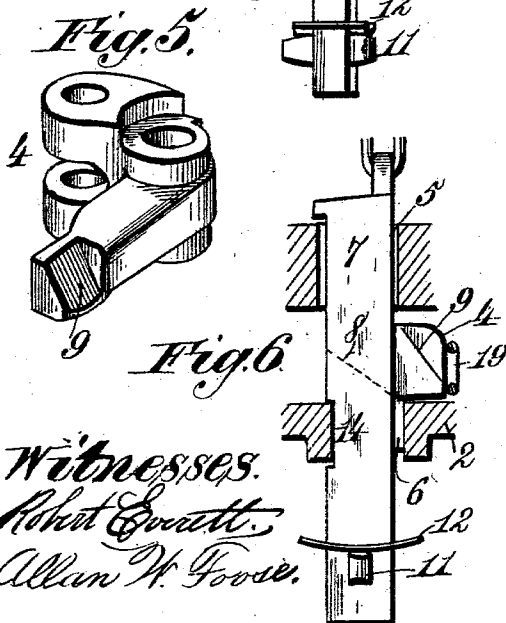
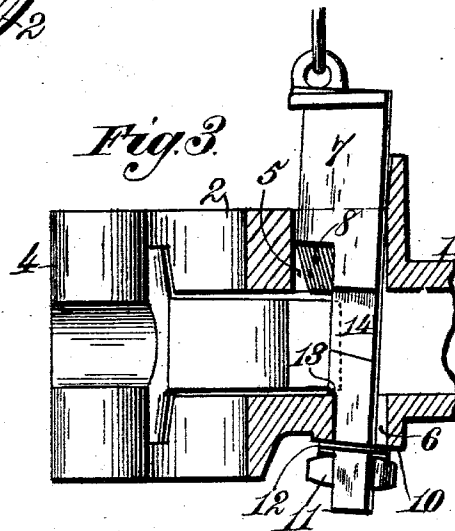
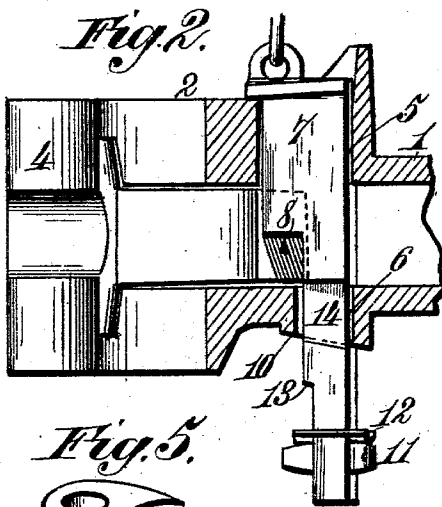
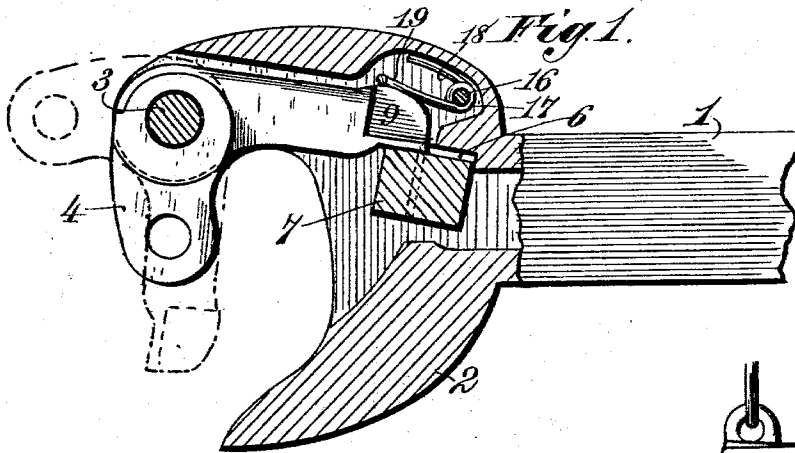
No. 717,686.

PATENTED JAN. 6, 1903.

E. H. JANNEY.
CAR COUPLING.

APPLICATION FILED MAY 2, 1901.

NO MODEL.



Witnesses.
Robert Smith.
Allan H. Foster.

Inventor.
Eli H. Janney
By Percy B. Hille
att'y.

UNITED STATES PATENT OFFICE.

ELI H. JANNEY, OF FAIRFAX COUNTY, VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 717,686, dated January 6, 1903.

Application filed May 2, 1901. Serial No. 58,405. (No model.)

To all whom it may concern:

Be it known that I, ELI H. JANNEY, a citizen of the United States, residing in the county of Fairfax, State of Virginia, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplings, and more particularly to that class known as the "Janney" type, wherein the tail of the coupling-hook is provided with an inclined plane that contacts with a similar inclined plane on the locking-pin, and has for its objects, first, to provide novel means for automatically retaining the locking-pin in its raised position until the tail of the coupling-hook has passed the same on its way to the open or unlocked position, said movement of the tail automatically releasing said locking-pin to permit it to drop again to the coupling position; secondly, to provide novel means for automatically retaining said locking-pin against upward movement while the coupling-hook is closed and the draft strain is exerted thereon, and, thirdly, to provide a novel spring mechanism for throwing said coupling-hook open when released by the locking-pin. These objects I accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a horizontal sectional view of my improved coupling, showing the same in its locked position. Fig. 2 is a vertical longitudinal sectional view, the coupling-hook and locking-pin being shown in full lines. Fig. 3 is a similar view, the locking-pin being shown raised and retained in the unlocked position. Fig. 4 is a detail view of two coupling-hooks, showing the tail of one of them in the act of moving to the open position and automatically releasing the locking-pin to permit it to drop to its lowermost position. Fig. 5 is a detail perspective view of the coupling-hook. Fig. 6 is a detail vertical transverse sectional view of the draw-head, showing the locking-pin retained against upward movement.

Similar numerals of reference denote corresponding parts in the several views.

In the drawings the numeral 1 denotes the draw-bar of the coupling, carrying the draw-

head 2 of the well-known Janney type, in which is pivoted, by means of pin 3, the usual coupling-hook 4. Passing vertically through upper and lower apertures 5 and 6 in the draw-head 2 is the locking-pin 7, the same being cut away on its front lower side and formed with an inclined or cam surface 8, as shown. The tail of the coupling-hook 4 is provided on its outer side with a similarly-inclined cam-surface 9, adapted to move in the path of the cam-surface 8, as shown. The under side of the draw-head 2 around the aperture 6 therein is formed into an inclined or cam surface 10, while the lower end of the locking-pin 7 has the usual cotter 11 therein, on which loosely rests a small spring-plate 12. The locking-pin 7 is also recessed on its front side from its lower end upward, said recess terminating in a shoulder 13, while on its side opposite to the tail of the coupling-hook 4 is a recess 14, slightly longer than the width of the draw-head 2 at that point, as shown in Fig. 6. Said locking-pin also has its edge or corner nearest the tail of the coupling-hook 4 beveled at 15.

Mounted on a vertical pin 16 and lying in a recess in the draw-head 1 is a spring of the type known as the "rat-trap" spring, said pin passing through the coil 17 of the same, its free ends 18 bearing against the wall of the draw-head, while a looped free end 19 bears against the tail of the coupling-hook 4 when in its closed position. It will be observed by referring to Fig. 1 of the drawings that one face of the recess containing said spring acts as a stop for the looped free end of said spring when not compressed by the coupling-hook tail, thus maintaining the same in position to properly engage said coupling-hook tail, as well as preventing its projecting in the path of downward movement of the locking-pin 7.

From the above description the operation of my improved construction will be understood to be as follows: When the parts are in their locked position, as shown in Figs. 1 and 2, the tail of the coupling-hook 2 will engage against the front half of the locking-pin 7—that is to say, against that portion of said pin opposite to the cam-surface 8 thereof—and said hook will be firmly retained in its locked

position. Now when it is desired to release said hook the engine of the train is backed slightly to force the tail of the coupling-hook 4 away from its locking-pin 7, when the latter 5 may be freely drawn upward until the lower edge of cam-surface 8 thereon passes the upper edge of the tail of the coupling-hook 4, when the latter will be free to move to its open position as the cars are drawn apart, 10 said movement being automatically accomplished, moreover, through the tension of the looped end 19 against the rear of the tail of the coupling-hook when the car is not coupled to another car. It will be observed, however, that as said locking-pin 7 is raised to 15 its unlocking position the spring-plate 12 thereon will contact with the cam-surface 10 on the under side of the draw-head 2, thus automatically throwing the lower end of the 20 locking-pin 7 forward, so that the shoulder 13 thereon will engage over the edge of the draw-head 2, as shown in Fig. 3, thus retaining said locking-pin 7 in its raised or unlocking position. This forward movement of the 25 locking-pin 7, however, brings it into the path of movement of the tail of the coupling-hook 4, as shown in Fig. 4, and the latter in its movement to the open position will contact with the beveled edge 15 thereof and 30 automatically force said locking-pin 7 backward again, so that the shoulder 13 will be released from its engagement with the draw-head and the locking-pin will again drop to its locking position. As seen in Fig. 6, when 35 the parts are in their locked position the pressure of the tail of the coupling-hook against one side of the locking-pin 7 will force the latter in the opposite direction, so that the recess 14 therein will engage with 40 the edge of aperture 6 in the draw-head 2, and thus effectually prevent any upward movement of said locking-pin 7. It will be observed that the recess 14 is so located as to engage the lower part of the draw-head, which 45 permits an accurate fit of the wider portion of the locking-pin 7 in the upper part of the draw-head, on which is exerted the main draft strain, said strain being a torsional one, due to the engagement of the coupling-hook 50 tail against a portion only of said locking-pin, as shown in Fig. 1.

While I prefer to employ the spring-plate 12 on top of the cotter 11 to contact with the cam-surface 10 on the under side of the draw-head 2 to force the lower end of the locking-pin 7 forward, the use of the same is not essential, as the cotter 11 alone by contacting with said cam-surface will perform the same function.

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

1. In a car-coupling, the combination with the draw-head having a cam-surface on its 65 under side, and the coupling-hook pivoted in said draw-head, of a vertically-movable locking-pin for said coupling-hook adapted in its

movement to the unlocking position to contact with said cam-surface and be forced forward to engage the draw-head and be retained 70 in its unlocking position.

2. In a car-coupling, the combination with the draw-head having a cam-surface on its under side, and the coupling-hook pivoted in said draw-head, of a vertically-movable locking-pin for said coupling-hook having a shoulder 75 on its front side and adapted in its movement to the unlocking position to contact with said cam-surface and be forced forward to engage said shoulder thereon with the 80 draw-head and retain it in its unlocking position.

3. In a car-coupling, the combination with the draw-head having a cam-surface on its under side, and the coupling-hook pivoted in said draw-head, of a vertically-movable locking-pin for said coupling-hook having a shoulder 85 on its front side, and a spring-plate carried by said locking-pin and adapted to contact with said cam-surface during the upward 90 movement of said locking-pin to force the latter forward to engage said shoulder thereon with the draw-head and retain said locking-pin in its unlocking position.

4. In a car-coupling, the combination with 95 the draw-head having a cam-surface on its under side, and the coupling-hook pivoted in said draw-head, of a vertically-movable locking-pin for said coupling-hook, adapted in its movement to the unlocking position to contact 100 with said cam-surface and be forced forward to engage the draw-head and be retained in its unlocking position, said locking-pin, when in its unlocking position, lying in the path of movement of the tail of the coupling-hook and adapted to be tripped thereby to resume its locking position as said tail moves 105 to the open position.

5. In a car-coupling, the combination with the draw-head, and the coupling-hook pivoted 110 therein, of a vertically-movable locking-pin having a recess in its side opposite the tail of the coupling-hook adapted to be engaged with the lower part of the draw-head by the pressure of said coupling-hook tail to prevent vertical movement of said locking-pin. 115

6. In a car-coupling, the combination with the draw-head, the coupling-hook pivoted therein, and the locking-pin, of a spring 120 mounted in a recess in said draw-head and adapted to contact with and be placed under tension by the tail of the coupling-hook when in its locked position, one face of said recess limiting the movement of said spring when not in contact with said coupling-hook tail. 125

7. In a car-coupling, the combination with the draw-head, the coupling-hook pivoted therein, and the locking-pin, of a pin in the draw-head, and a spring mounted on said pin, said spring lying in a recess in the draw-head 130 and adapted to contact with and be placed under tension by the tail of the coupling-hook when in its locked position, one face of said recess limiting the movement of said spring

when not in contact with said coupling-hook tail.

8. In a car-coupling, the combination with
5 the draw-head, the coupling-hook pivoted
therein, and the locking-pin, of a pin in the
draw-head, and a spring mounted on said pin,
said spring lying in a recess in the draw-head
and having its free ends contacting with the
10 draw-head and a looped free portion contact-
ing with the rear of the tail of the coupling-
hook when in its locked position, one face of

said recess limiting the movement of said
looped free portion when not in contact with
said coupling-hook tail.

In testimony whereof I have hereunto set 15
my hand in the presence of two subscribing
witnesses.

ELI H. JANNEY.

Witnesses:

M. J. HAMILTON,
E. W. HAMILTON.