(No Model.)

F. B. WOODMAN.

CAR COUPLING.

No. 457,447. Patented Aug. 11, 1891.

Fig. 1.

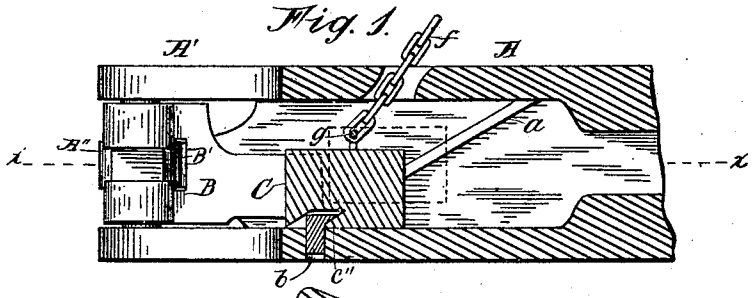


Fig. 2.

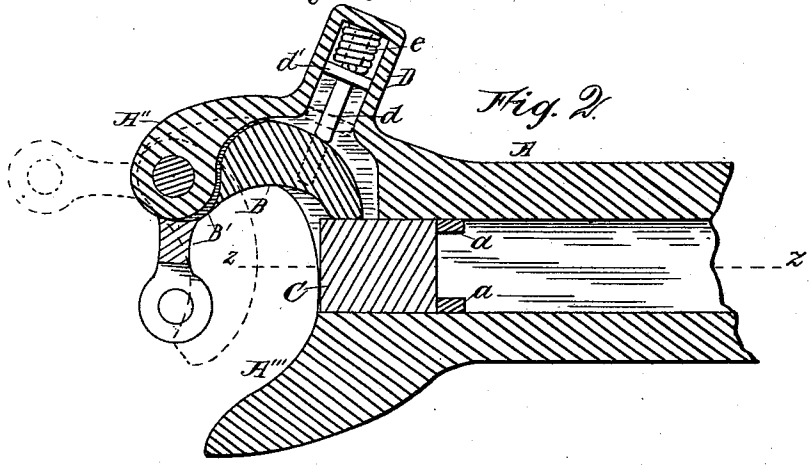


Fig. 3.

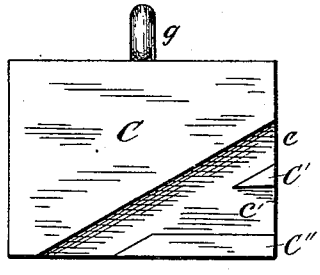


Fig. 4.

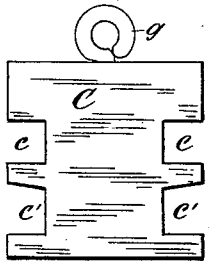
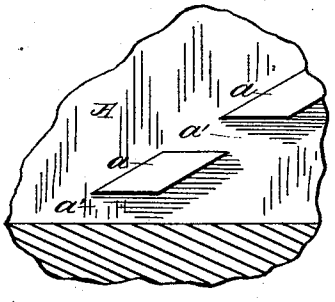


Fig. 5.



Witnesses:
W. H. Meyers
S. W. Brainerd

Inventor:
Frank B. Woodman,
By J. M. St. John,
Atty.

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UNITED STATES PATENT OFFICE.

FRANK B. WOODMAN, OF CEDAR RAPIDS, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 457,447, dated August 11, 1891.

Application filed November 24, 1890. Serial No. 372,509. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. WOODMAN, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that style of car-couplers known as the "Janney type," and the object of the invention is to improve the construction of the device for engaging and disengaging the "twin jaws."

The invention consists in the construction, combination, and arrangement of parts, as hereinafter fully set forth and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a vertical section of the outer end of a draw-head and its connections embodying my invention. Fig. 2 is a horizontal section of the same in the line *x x*, Fig. 1, being in the line *z z*. Fig. 3 is a side elevation of the gravity-block which locks the jaw in position. Fig. 4 is an end elevation of the same; and Fig. 5 is a fragmentary sectional view of the draw-head, showing a portion of one of its walls and the construction of a guide-rib for the gravity-block.

Referring to the drawings, A is a draw-head similar in general outline and having the essential characteristics of the Janney type of draw-head—that is to say, it is provided with the usual lugs A′ to hold the twin jaw B, and on the other side has the deflecting-horn A‴. My invention, however, contemplates certain improvements in this draw-head, which will be hereinafter specifically pointed out. In this type of draw-head it is evident that a powerful breaking strain is brought to bear upon the lugs A′, insomuch that it is necessary to either make the lugs very wide and heavy, or else make the draw-head of some stronger material than cast-iron, as malleable iron or steel. This defect I seek to overcome by providing the draw-head with an intermediate lug A″ of substantially the same form as the others, and forming a recess B′ in the twin jaw B to receive it. The form and size of the jaw are such that this can be done without too much weakening it, while the addition of another lug to the draw-head tends greatly to strengthen it, as is evident. The twin jaw is locked in position by a gravity-block C, adapted to slide up and down in an incline between the two lateral walls of the draw-head. Its position for locking the jaw is indicated in Figs. 1 and 2, as is also the position of the jaw. It will be seen that it lies between one end of the twin jaw and one wall of the draw-head. The walls of the draw-head are provided with lateral ribs *a a*, which, as will be seen in Fig. 1, incline upwardly and backwardly. In the sides of the block are corresponding grooves *c c*, so that the block being placed in the proper position, it is guided in its movement by these ribs. The block is thrown back automatically by the swinging inwardly of the jaw B, and descends of its own weight as soon as the end of the jaw has passed it. For uncoupling it is provided with a suitable ring or eye *g*, to which connects a chain *f*, passing to the hand-lever. (Not shown.)

In order to get the block in position, the continuity of the ribs *a a* is broken by transverse channels *a′ a′*, permitting the passage through them of the projections C′ C″, the portion *a‴* of the rib passing through a channel *c′* in the block. This gives the block long bearings on the forward side of the ribs, and double bearings on the back side, the full bearing being on the side most exposed to wear and strain. The block is held from displacement on the front side by a catch *b*, fitting a hole in the bottom of the draw-head. The under side of the rear portion of the head of this catch corresponds to the angle of the ribs *a a*. The head of the catch itself enters a recess in the bottom of the block, which recess is also in the same angle, so that as the block slides down on the ribs or guides a lip *c″* engages with the under side of the head of the catch and holds it securely in position. This catch serves, furthermore, to steady the bottom of the block, and as an additional bearing for a short distance, so that when a sudden jerk is made on the chain *f* the block is not tilted, but carried directly and smoothly up the proper incline.

In Fig. 2 is shown a device for automati-

cally throwing the jaw outwardly as soon as the block is disengaged. The side of the draw-head is provided with a socket D, in which is mounted a plunger *d*, having a shoulder *d'*, and actuated by a spring *e*. The outer end of the plunger, when the jaw is locked, bears against the back side of the same, and as soon as the jaw is released the spring-actuated plunger forces the jaw outwardly to the position indicated by the dotted lines—that is to say, the quick action of the spring is such as to cause the jaw to fly to this position. A device of this nature is made necessary by the accidental or careless locking of the jaw when not coupled to another car and the desirability of throwing the jaw outwardly without going in between the cars to do so.

It is to be understood that I make no general claim to the gravity-block moving in an incline, as I know that principle to be old; but

What I claim is—

1. In a car-coupler, the combination of a draw-head and its pivoted jaw, substantially as herein described, the draw-head having parallel vertical inner walls with diagonal guide-ribs formed thereon, and a gravity-block with diagonal grooves formed in the sides to engage with the guide-ribs, and means for disengaging the same.

2. In a car-coupler, the combination of the draw-head A, jaw B, guide-ribs *a a*, with openings *a' a'* therein, and block C, having grooves *c c* and channels *c' c'*, substantially as and for the purpose set forth.

3. In a car-coupler, the combination of the draw-head A, jaw B, block C, having a diagonal recess on the under side and correspondingly-angled grooves in the sides, a horizontal channel leading from the back side of the block to the diagonal groove, guide-ribs formed on the side walls of the draw-head and fitting the diagonal grooves in the block and horizontal channels cut through said ribs, and a catch fitted to the under side of the draw-head inside with the rear portion of its head inclined to correspond with the recess in the bottom of the block, substantially as and for the purpose set forth.

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

FRANK B. WOODMAN.

Witnesses:

J. M. ST. JOHN,

J. V. H. MEYERS.