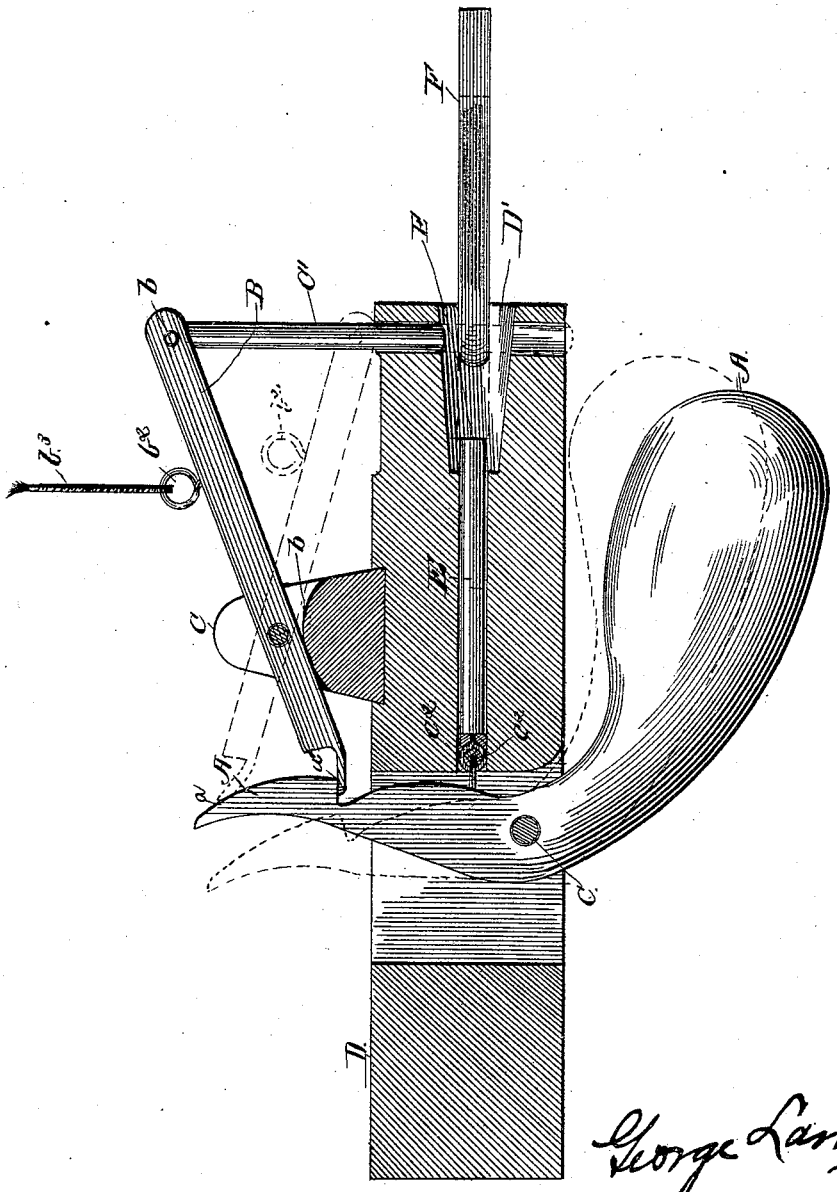
(No Model.) 2 Sheets—Sheet 1.

G. LARMAY.

CAR COUPLING.

No. 345,152. Patented July 6, 1886.



Witnesses
R. C. Laurie
W. L. Boyden

George Larmay
Inventor
by Chas. E. Barbour
his atty. in fact.

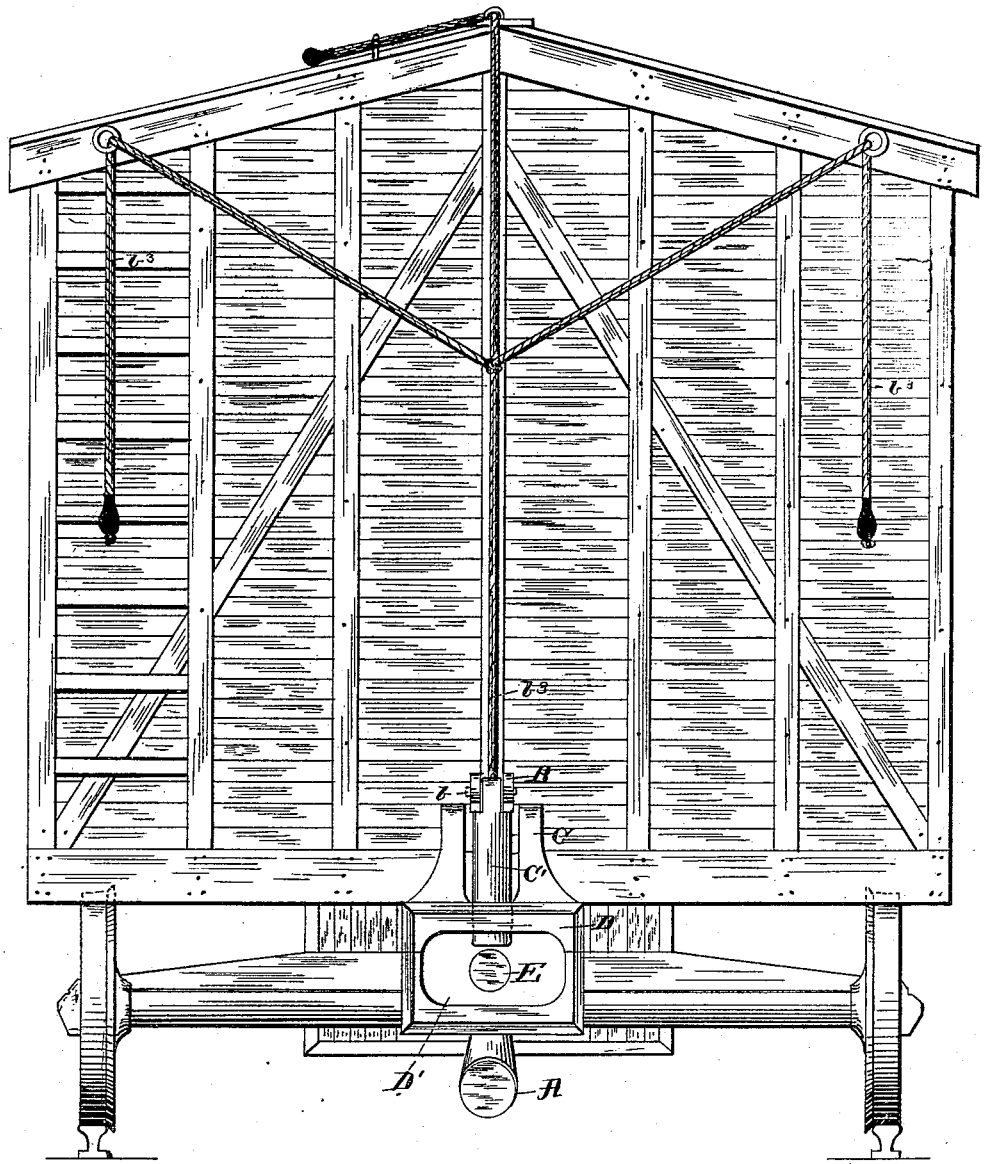
(No Model.) 2 Sheets—Sheet 2.

G. LARMAY.

CAR COUPLING.

No. 345,152. Patented July 6, 1886.

Fig. 2.



Witnesses:
J. Harry Stuart.
Edwin A. Ridley

Inventor:
George Larmay.
By Chas. E. Barber
His Atty.

UNITED STATES PATENT OFFICE.

GEORGE LARMAY, OF CHAZY, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 345,152, dated July 6, 1886.

Application filed April 22, 1886. Serial No. 199,832. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LARMAY, a citizen of the United States, residing at Chazy, in the county of Clinton and State of New York, have invented a new and useful Automatic Gravity Car-Coupling, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, which represent my invention.

Figure 1 is a longitudinal section of my device. Fig. 2 is an end view of a car provided with my improved coupler, showing cords for operating the same from the sides and top of the car.

The object of my invention is to provide a coupling which shall be automatic in its operation of putting the pin through the link when the latter is put into the draw-head.

Another object of my invention is to provide a coupling in which the pin shall never become disconnected and lost from the draw-head.

Another object of my invention is to provide a car-coupling which shall not require a person to insert the pin into the link with his hands.

Another object of my invention is to provide a coupling in which the coupling-pin will not be liable to become accidentally displaced.

Still another object of my invention is to provide a coupling which will not get out of order by use or careless handling, and to that end I construct it without springs or unnecessary joints.

In order to construct a coupling which shall be automatic in its operation, and which shall always act, I employ the first and surest factor in mechanics, which is gravity, and to that end I provide a gravity-latch, A, which is pivoted to the draw-head D at *e*. The upper portion of the gravity-latch above the pivotal point *e* is provided with a tapered head having an inclined face, *a*, below the front portion of which is a recess, *a'*. This recess engages a corresponding projection, *b'*, on the gravity-pin lever, whose inclined face *b* slides freely over the inclined face *a* of the gravity-latch. This gravity-pin lever B is pivoted to the top of the draw-head D in the bracket C. This pivotal point is considerably to one side of the center of gravity of the gravity-pin lever, and pivotally supports this lever, to which is secured the coupling-pin C', which is pivotally connected at the front end of the gravity-pin lever at *b*. The front portion of the draw-head is provided with a recess, D', which has inclined faces all tapering toward the center of the opening or recess in the draw-head. Back of the recess in the draw-head I provide a hole, which receives and accommodates the tripping-bar E. This tripping bar is pivotally secured to the gravity-latch at its inner end through the medium of the eyebolts a^2 a^2. This tripping-bar E slides freely through the hole in the draw-head, and serves as a means of tilting the gravity-latch A when the operation of coupling the cars together is performed.

On the top of the gravity-pin lever B, I provide an eyebolt, b^2, which in turn is provided with a cord or rope, b^3. This rope may be divided at the upper portion into three strands, one of which extends to the top of the car, and each of the other two extending to the side of the car on opposite sides, which will enable the operator to couple the coupling without getting in between the cars either from the top or from the side.

By constructing the gravity-latch A with its heavier lower portion curved out of the center of gravity the latch has a tendency to always fall forward in a locked position, and it serves, in consequence of this, to keep the pin in position, whether locked or unlocked, by its engagement with the gravity-pin lever B, in the one instance by engaging the rear of the gravity-pin under its recess *a'*, and in the other instance by its engagement with the outer inclined face, *b*, with the inclined face *a* of the gravity-latch.

The operation of my device is as follows: Through the medium of the cord *b* the gravity-pin lever B is raised until it is engaged at its rear portion by the recess *a'* in the upper portion of the gravity-latch. In this position the link F is inserted into the recess in the front of the draw-head, where it strikes the front end of the tripping-bar E. This tripping-bar forces the gravity-latch A back far enough to release the rear portion of the gravity-pin lever, when the coupling-pin by its gravity and the unbalanced weight of the front portion of the gravity-pin lever B drops down through the link F, and this makes the coupling. The gravity-latch then tilts forward again and en-

gages with the rear portion of the gravity-pin lever, and there keeps it in position until it is unlocked again through the medium of the rope or by hand.

From the foregoing it will be observed that there is little or no machinery to get out of order, and that all bumping of the train has no action upon any portion of the coupling, except upon the coupling-pin and the draw-head, which are always made strong enough to resist the strain of the cars. It follows, then, that there is little or no liability of the coupling getting out of order, and the great danger which has heretofore been experienced and the frequent occurrence of accidents caused to persons who were coupling the cars in the usual old manner will be entirely obviated.

The first and greatest reason why these devices should be constructed so as to be operated from the top or the side is, that in coupling freight-cars there is great danger of their coming together with great force when the cars are being switched and where the trains are being made up, as the modern appliances in the shape of brakes, which are so admirably adapted to use, are only applied to the better class of cars, and the great mass of freight-cars are still more or less cumbersome and unwieldly. The construction employed in my coupling is designed especially to overcome this disadvantage, and by its use the great danger heretofore experienced is greatly lessened.

It will be readily understood that the cords which are shown in Fig. 2 may extend outside of the line of the sides of the cars, as well as down at the end, without departing from the spirit of my invention.

Having now described the objects, advantages, and construction of my device, and having set forth in detail a preferred means of carrying out my invention, what I desire to secure by Letters Patent of the United States, and what I therefore claim, is—

1. In an automatic gravity car-coupling, the combination of the gravity-latch, the gravity-pin lever, and the pin with the tripping-bar and the recessed draw-head, substantially as described.

2. In an automatic gravity-coupling for cars, the combination of the gravity-latch, the gravity-pin lever, and the coupling-pin with the tripping-bar and the eyebolts which connect the tripping-bar and gravity-latch, substantially as described.

3. In an automatic gravity-coupling for railway-cars, the combination of the gravity-latch and the gravity-pin lever having the inclined faces where the two come in contact with each other, with the locking-bolt, the coupling-pin, and the tripping-bar, all constructed and combined to operate substantially as described.

In testimony that I claim the above as my invention I have hereunto set my hand and seal in presence of two subscribing witnesses.

GEORGE LARMAY. [L. S.]

Witnesses:

P. F. NORTH,

LESTER A. CHILDS.