

W. H. GRUVER.
Car-Couplings.

No. 158,064.

Patented Dec. 22, 1874.

Fig. 1.

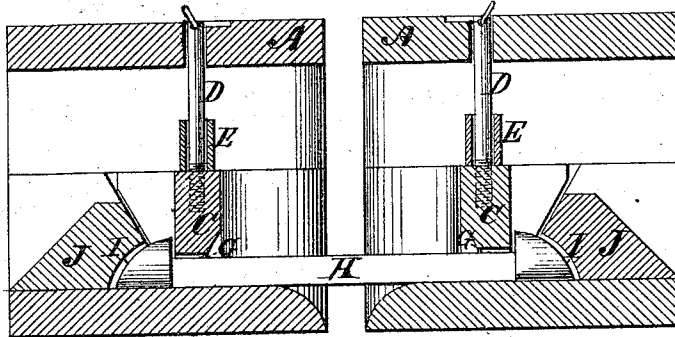


Fig. 2.

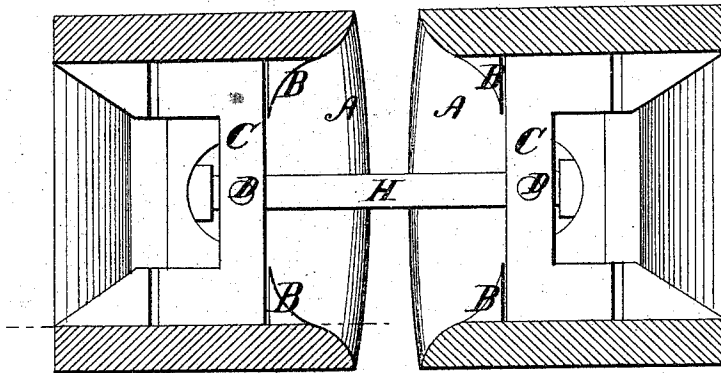


Fig. 3.

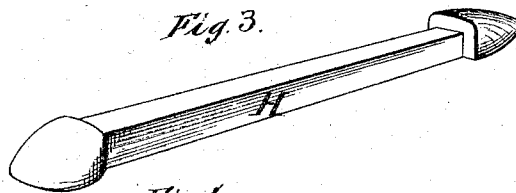
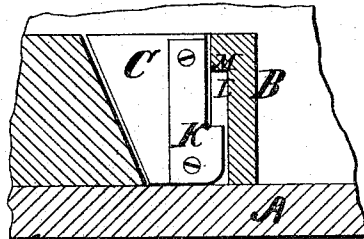


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. GRUVER, OF BALTIMORE, MD., ASSIGNOR OF TWO-THIRDS HIS
RIGHT TO JOEL MILLER AND ROBERT M. POWELL, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **158,064**, dated December 22, 1874; application filed
December 1, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. GRUVER, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of a car-coupling constructed in accordance with my invention. Fig. 2 is a horizontal section. Fig. 3 is a perspective view of the coupling-bar, and Fig. 4 is a detached view of the coupling-block.

Similar letters of reference in the accompanying drawings denote the same parts.

The object of my invention is to improve the construction and operation of that class of automatic car-couplings in which a double-headed coupling-bar is employed in connection with locking-blocks to hold it within the draw-heads. To this end the invention consists, first, in the combined details of construction, which go to increase the efficiency of the coupling. It also consists in constructing the locking-block with a vertical front bearing and an inclined rear bearing for the purpose of enabling the block to work easier and prevent it from being broken, and also to increase the play of the coupling-bar. It also consists in the provision of means to prevent the jar of the cars from casually throwing up the locking-block and uncoupling the cars.

In the accompanying drawings, A A are the draw-heads or buffers, secured to the ends of a car in the usual or any preferred manner. Within the draw-head, upon opposite sides, are cast lugs B B, beveled inward from the front toward the center, and grooved vertically at the inner ends of the bevels to form guiding-grooves for the locking-blocks C. The locking-block extends entirely across the interior of the draw-head, and its front face is made vertical to correspond with the front bearing-surface of the guiding-grooves, while its rear face is beveled to correspond with the rear face of the guiding-grooves. D is a guide-pin, secured to the top of the locking-

block, and E is a tube or collar placed thereon to bear against the top of the draw-head and prevent the block from being drawn entirely out of the guiding-grooves. The lower edge of the block is cast with a square or angular opening or notch, G, to fit over the shank of the draw-bar, and around this notch the block is recessed to form a guiding-surface for directing the draw-bar into the notch. H is the draw-bar, cast or wrought with a square shank and an arrow-head upon each end, which heads are flattened upon the under side and rounded upon the upper side, as shown in Fig. 3. When the cars are to be coupled the heads of the coupling-bar are forced into the draw-heads, being guided by the beveled lugs B B, until they reach the locking-blocks. The beveled guiding-surfaces of the blocks direct the arrow-heads of the bar into the notches G, and so raise the locking-block until the arrow-heads have passed behind the blocks, when the latter drop down by gravity, so as to encompass the bar and form the coupling. The flat under sides of the coupling-bar heads rests upon the bottoms of the draw-heads, while the rounded upper surface of each plays within a circular recess, I, formed in the beveled edge of a block, J, secured to or cast within the back of the draw-head, as shown. K K are lugs projecting from the front face of the locking-block, so as to enter grooves L formed in the corresponding faces of the lugs B B, which grooves are provided with shoulders M, at a suitable point in their height, to arrest the upward movement of the locking-block. The blocks are held down by their own gravity, and are, therefore, liable to be casually thrown up by the jarring of the cars. The lugs K and shoulders M, however, while they prevent the blocks from being thrown up so high as to uncouple the cars, yet permit them to be thrown high enough to afford the necessary play of the coupling bar or link. The opening in the draw-head, through which the guide-pin D passes, is made in the form of a slot, so that when the locking-blocks are raised to uncouple the car, the guide-pin may be thrown forward in the slot. This throws the locking-block back against the inclined faces of the lugs B, so as to disengage the lugs K from

the shoulders M on the vertical face of the lugs B, and allow the locking-block to rise for the release of the link or coupling-bar. The square shank of the coupling-bar, and the flat under side of its head, combined with the angular notch in the edge of the locking-block and the flat bottom surface of the draw-head, serve to hold the coupling-bar in a horizontal position within one draw-head, so that it may readily enter the draw-head of an adjoining car without the necessity of being held up by hand. This, of course, is of great advantage, since it obviates all danger of accident in coupling the cars. The circular recess I within the beveled block J, together with the beveled lugs B and the circular guiding-surfaces in the locking-blocks, afford sufficient room for the play of the coupling-bar when the cars are in motion, while the beveled contact-surfaces of the locking-blocks and guiding-grooves allow the blocks to yield readily to increase the play of the coupling-bar and prevent both it and the blocks from being broken. By means of these beveled bearing-surfaces the locking-blocks have a locking motion when lifted by the coupling-bar, which causes them to yield more readily than they would if guided within grooves of uniform width. The blocks are raised to release the coupling-link by lifting up the pins D, which may be arranged to project upward through the platforms of the cars, and to be connected with suitable lifting-levers either upon the platform or side of the car. The center of the

coupling-link may, if desired, be cut out or otherwise constructed to form a link for use with the common draw-head and link-coupling. The front of the draw-head may also be enlarged to guide the coupling bar or link, if found necessary, so that cars of different heights can readily couple.

Having thus described my invention, what I claim as new is—

1. In an automatic car-coupling, the beveled guiding-lugs B B within the draw-heads A combined with the notched and recessed locking-blocks C, substantially as and for the purpose specified.

2. The locking-blocks C, with vertical front bearings, and beveled or inclined rear bearings to correspond with the front and rear bearings of the guiding-grooves in the draw-heads, substantially as and for the purpose specified.

3. The combination of the beveled lugs B B, the circular guiding-surfaces in the locking-blocks, and the beveled blocks J, provided with the circular recesses I to permit the play of the coupling-bar, substantially as described.

4. The combination of the locking-blocks and lugs K with the grooved and shouldered lugs B of the draw-head, substantially as and for the purpose specified.

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