(No Model.)

2 Sheets—Sheet 1.

C. E. GALLANORE.

CAR COUPLING.

No. 565,735. Patented Aug. 11, 1896.

Fig. 1.

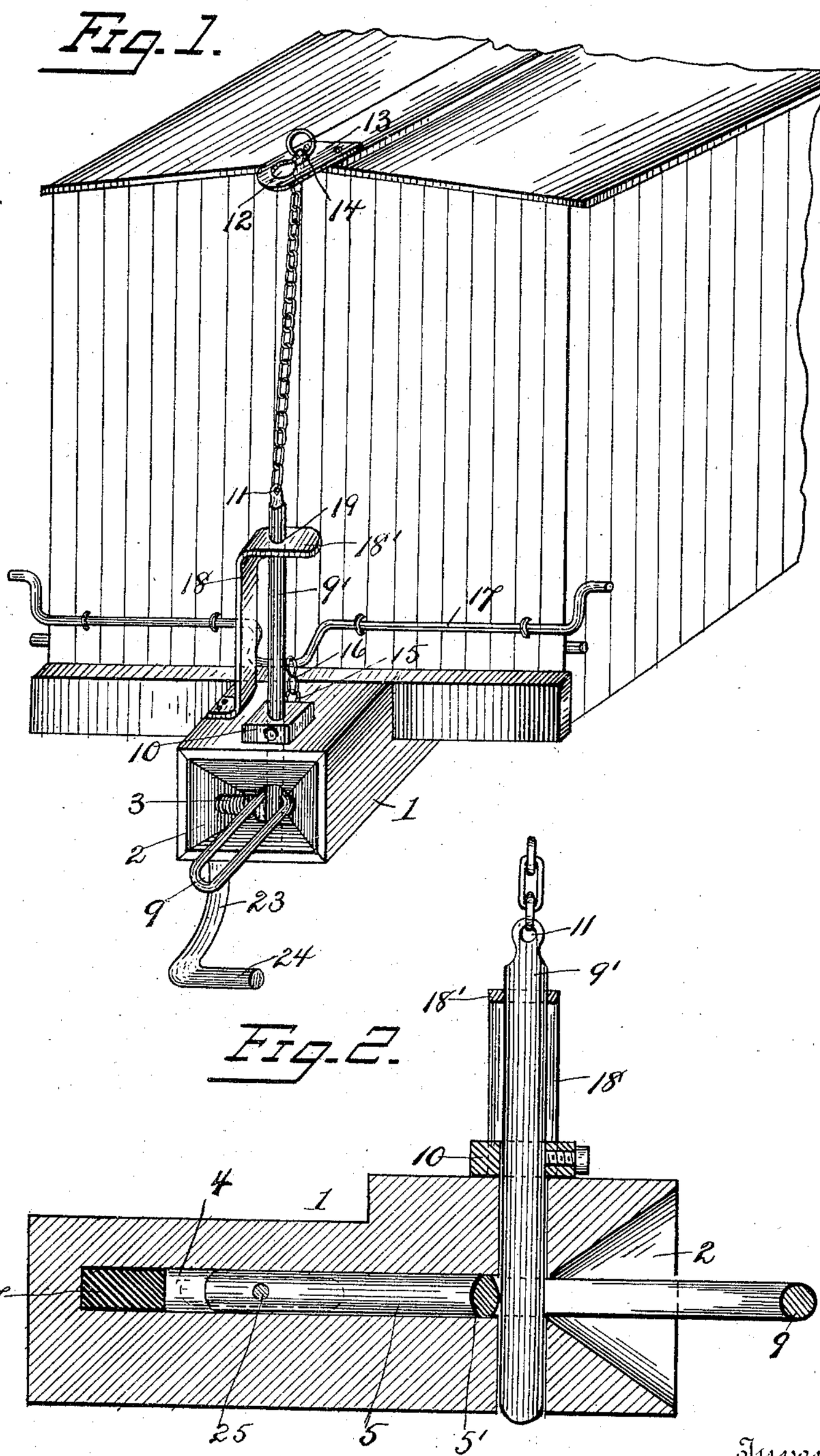

Fig. 2.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

Fig. 4.

Fig. 5.

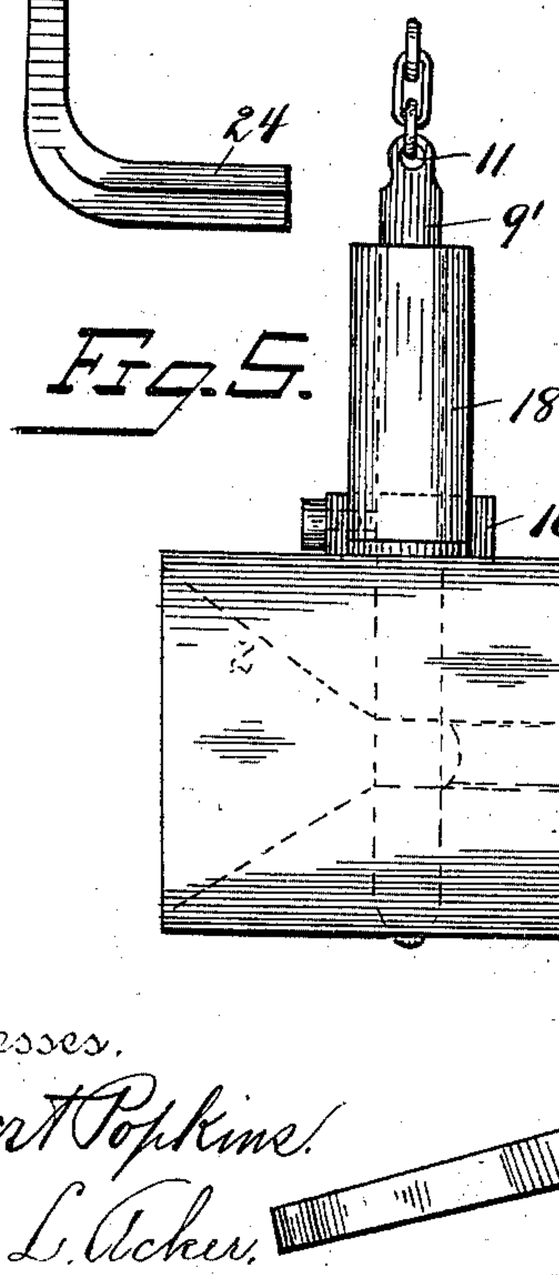
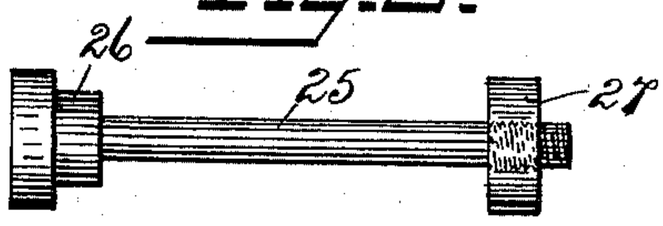


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES EDWARD GALLANORE, OF MOORE, OKLAHOMA TERRITORY, ASSIGNOR OF ONE-THIRD TO C. B. HALEY, OF OKLAHOMA, OKLAHOMA TERRITORY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 565,735, dated August 11, 1896.

Application filed May 5, 1896. Serial No. 590,268. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD GALLANORE, a citizen of the United States, residing at Moore, in the county of Cleveland, Oklahoma Territory, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do 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.

My invention relates to automatic or self couplers for railway-cars, and is more especially designed for use in connection with freight-cars.

The primary object of my invention is to construct an automatic coupling which shall be reliable in its action, durable and economical, and easily constructed and operated.

A further object is to utilize the old and well-known "link and pin," in connection with my improved coupling and uncoupling devices, and to provide means whereby the coupling-pin can be lifted either from the top or from either side of the car to uncouple.

These objects and such others as may occur from the ensuing description are attained by the mechanism illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view of my improved devices attached to a freight-car. Fig. 2 is a longitudinal vertical section of my car-coupling. Fig. 3 is a front elevation of the same. Fig. 4 is a side elevation of one side of the coupling. Fig. 5 is a side elevation of the other side of the coupling, and Fig. 6 is a view in detail of the pin which passes transversely through the draw-head and the sliding block or rod located within the same.

Similar numerals refer to similar parts throughout the several views.

Numeral 1 indicates the draw-head having a mouth 2, which is beveled inward toward the central or hollow portion thereof and provided with grooves 3. Extending longitudinally throughout the central portion of the draw-head is a hollow portion or chamber 4, adapted to receive a sliding block or rod 5, having a concaved forward end 5′, said sliding block serving as a support for the coupling-pin when the latter occupies the uncoupled position. Each side of the draw-head is slotted at 6 from the exterior of the same to and communicating with the aforesaid hollow portion or chamber.

It will be seen by reference to Figs. 2 and 5, respectively, that the rear portion of the draw-head may be cast solid and a rubber block 7 or coiled spring 8 inserted at the rear of the hollow portion, so as to serve, if desired, as a buffer for the sliding block or rod 5, or the hollow portion may run the entire length of the draw-head, as shown by dotted lines, Fig. 4.

9 indicates the coupling-link, and 9′ indicates the coupling-pin, having a weight 10 secured thereto by any suitable means. The upper portion of the coupling-pin is preferably provided with an eye 11, to which is attached one end of a chain, the other end of the chain being provided with a ring and leading to and passing through an opening 12 in a plate 13, which is attached to the upper portion or top of the car, said plate being slotted at 14 to receive one of the links of the chain in order to hold the upper end of the same in its proper position. At the rear of the weight 10 is attached an eye or loop 15, to which is secured a chain 16, connecting said weight with the crank-arm of a link-lifting rod or shaft 17, suitably secured to the front of the car and extending from the draw-head to and slightly beyond each side of the car, as shown in Fig. 1.

To the upper surface of the draw-head and projected vertically therefrom I secure in any suitable manner a plate 18, the upper part of said plate terminating in a laterally-projected portion 18′, perforated at 19 to receive the coupling-pin and act as a guide for the same during its upward and downward movement, said portion 18′ also serving as a stop to limit the upward movement of the coupling-pin when the latter is elevated or lifted during the uncoupling operation.

To one side of the draw-head at the point marked 20 is secured a gravity-lever 21, having a short arm 22 and a long arm 23, said long arm having an excess of metal constituting a counterbalance. The forward end

of the lever terminates with a portion 24, projected at right angles to the lever proper, and is adapted to contact with the under side of the draw-head during the coupling operation.

Extending through the slots in the draw-head and projecting laterally slightly beyond the same at either side thereof, and also passing diametrically through a perforation in the rear portion of the sliding block, is a headed pin or bolt 25, which bolt or pin is adapted to secure the sliding block or rod within the draw-head and arranged to slide back and forth therewith, and said bolt is provided at or near one end and outside of the draw-head with an enlarged portion 26, acting as a bearing-point for the forward portion of the short arm of the lever 21, the other end being adapted to receive a nut 27, Fig. 6, or a washer secured thereto by a suitable key, as shown in Fig. 5.

The operation of this device is as follows: To couple cars, it is to be understood that the link is in the position shown in Fig. 1, that is, in such position that it will enter an approaching draw-head. As soon as the approaching draw-head shall have come sufficiently near, the link will enter the beveled or inclined mouth of the same and be guided by the inclined portion until it reaches the grooves and contacts with the concave forward end of the sliding block 5, causing the block to move rearward, immediately allowing the weighted coupling-pin to drop into the coupled position, and through the medium of the pin or bolt 25, carried by the sliding block 5 and contacting at the point 26 with the short arm of the lever 21, causes the said arm to move rearward and the long arm of the lever to move forward and upward and to contact with the under side of the draw-head, as shown by dotted lines, Fig. 4, thereby immediately arresting further rearward movement of the sliding block, in view of the fact that the short arm of the lever is always in contact with the said pin or bolt carried by a sliding bolt, as shown. A soon as the rearward movement of the block is arrested the counterbalance end of the lever will immediately drop away from contact with the draw-head and assume a lower position, also shown by dotted lines, Fig. 4. The short arm of the lever will at the same time move forward, thereby forcing the sliding block forward and in contact with the coupling-pin, as shown by dotted lines, Fig. 5, and substantially simultaneously with the lifting of the coupling-pin to a height sufficient to clear or free the forward end of the sliding block, the counterbalance end of the lever will at once assume its lowermost position, (shown in full lines, Fig. 4,) and at the same time advance the sliding block to a position directly beneath the coupling-pin, allowing the latter to rest upon the upper surface of said sliding block, as clearly shown in the drawings.

It will be observed that the pin or bolt 25, contacting with the draw-head at the forward end of the slots, will limit the forward movement of the said block, thus preventing the block from extending too far into the mouth of the draw-head.

To uncouple the cars, it is simply necessary to lift the link by manipulating the chain secured at the upper portion or top of the car or by operating either end of the rod or shaft secured to the front of the car.

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

1. The combination of the draw-head having slotted sides and a hollow central portion adapted to receive a sliding block, with a coupling-pin having a weight secured thereto, a plate projected vertically from the upper surface of the draw-head and serving both as a guide and stop for the coupling-pin, means for lifting said coupling-pin from the top or either side of the car, and a pin carried by the sliding block and passing through the slotted sides of the draw-head, substantially as shown and described.

2. In a car-coupling, the combination with a draw-head slotted at either side thereof and having a central hollow portion, of a sliding block adapted to support a coupling-pin, a headed pin carried by said block and projected laterally beyond the draw-head at either side, said sliding block being provided with a concaved forward end, substantially as shown and described.

3. In a car-coupling, the combination of a draw-head having a central hollow portion and slotted sides, of a sliding block adapted to support a coupling-pin, a pin carried by said block and projected laterally beyond the draw-head at either side, a counterbalance-lever pivoted at one side of the draw-head, the long arm of said lever being adapted to contact with the under side of the draw-head and the short arm having contact normally against one end of said pin, substantially as shown and described.

4. In a car-coupling, the combination with a draw-head having a central hollow portion and slotted sides, of a sliding block adapted to support the coupling-pin, a headed pin carried by said block and projected laterally beyond the draw-head at either side, a counterbalance-lever pivoted at one side of the draw-head and provided with an upper short arm and a lower long arm, the said lower arm of the lever being provided at its extremity with a right-angled portion adapted to contact with the under side of the draw-head, substantially as shown and described.

5. In a car-coupling, the combination with a draw-head having a central hollow portion and slotted sides, of a sliding block concaved at its forward end and adapted to support a coupling-pin, a headed pin carried by said block and provided with an enlarged bearing portion near one end thereof, said pin being projected laterally beyond the draw-head at either side, a counterbalance-lever pivoted at

one side of the draw-head and having a short arm normally resting against the enlarged portion of said pin and adapted to assume three positions in respect to the draw-head, substantially as shown and described.

6. In a car-coupling, the combination with a draw-head having a central hollow portion and slotted sides, of a weighted coupling-pin, a sliding block adapted to support the coupling-pin, a pin carried by said block and projected laterally beyond the draw-head at either side, a counterbalance-lever pivoted at one side of the draw-head and having a long and short arm, the short arm of said lever resting at all times against the pin carried by the sliding block, said lever serving as a stop for the sliding block and also serving to automatically cause the sliding block to assume its extreme forward position in the draw-head, substantially as shown and described.

7. In a car-coupling, the combination with a draw-head having a central hollow portion and slotted sides, of a weighted coupling-pin, a sliding block within the draw-head, said block having a concaved forward end, a pin carried by said block and projected through the slotted portions of the draw-head, and a counterbalance-lever pivoted at one side of the draw-head, the upper arm of said lever normally bearing against the pin carried by the sliding block, said lever serving to arrest the rearward movement of the block and to automatically control the forward movement of said block by the positions assumed in respect to the draw-head, substantially as shown and described.

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

CHARLES EDWARD GALLANORE.

Witnesses:
EDWARD RUEDY,
J. L. SHROYER.