(No Model.) 2 Sheets—Sheet 1.

H. M. GROVER.

CAR COUPLING.

No. 459,904. Patented Sept. 22, 1891.

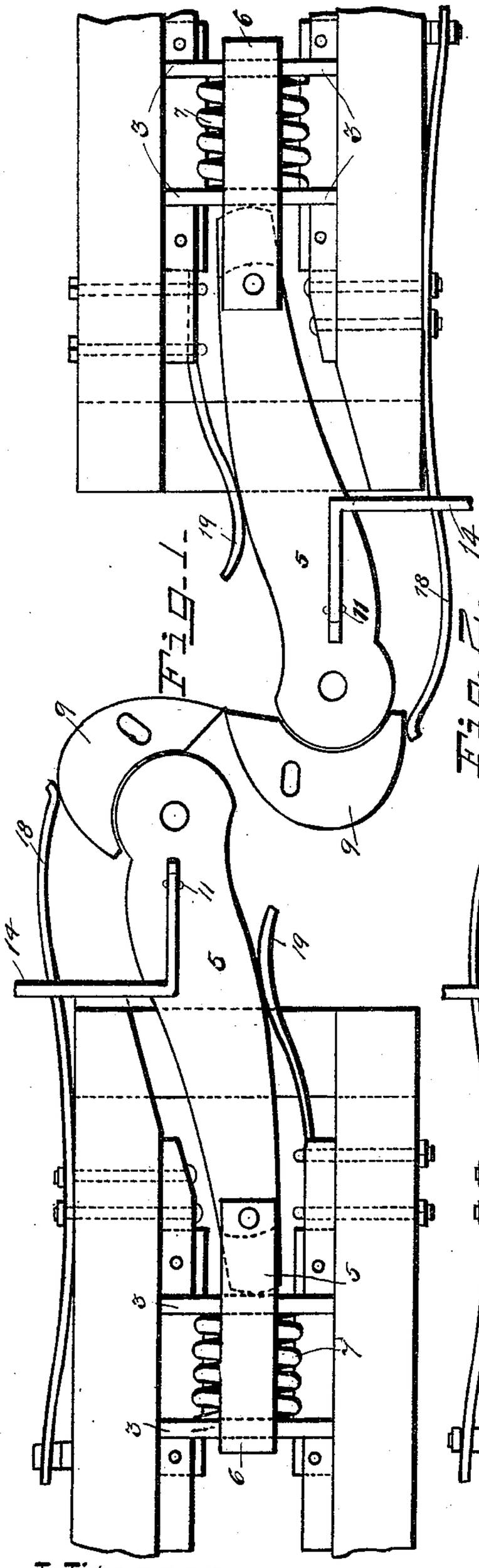


Fig. 1.

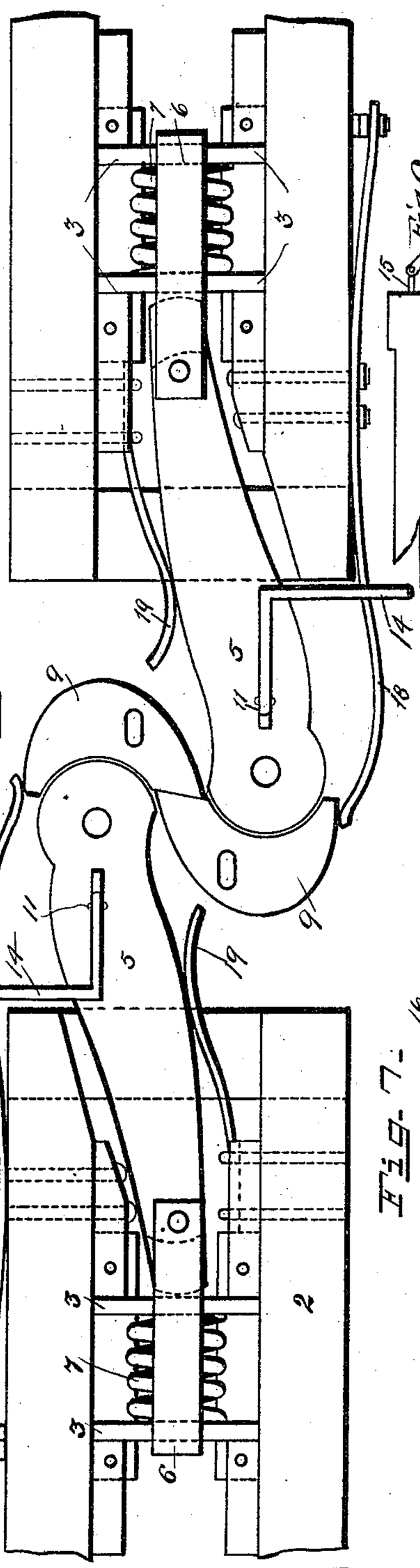


Fig. 2.

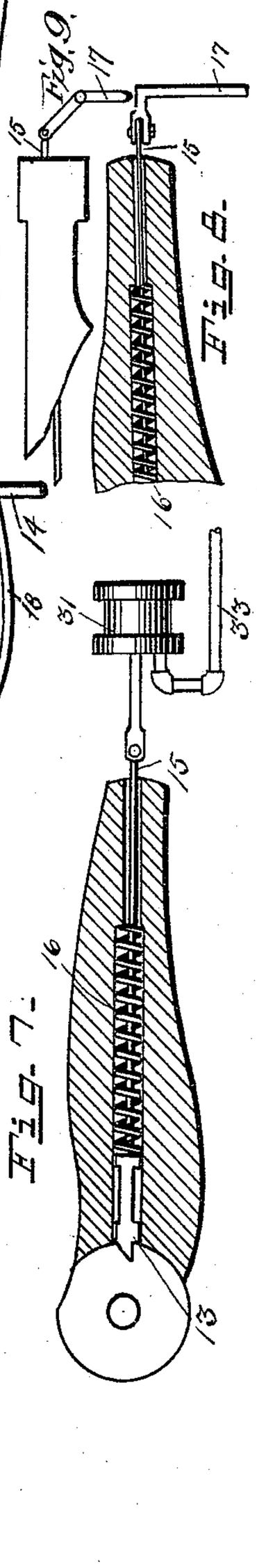


Fig. 3.

Fig. 4.

Fig. 7.

Witnesses.
Chas. E. Van Doren.
O. G. Hawley

Inventor.
Henry M. Grover.
By Paul & Dennis Attys.

(No Model.)

2 Sheets—Sheet 2.

H. M. GROVER.

CAR COUPLING.

No. 459,904. Patented Sept. 22, 1891.

Fig. 3.

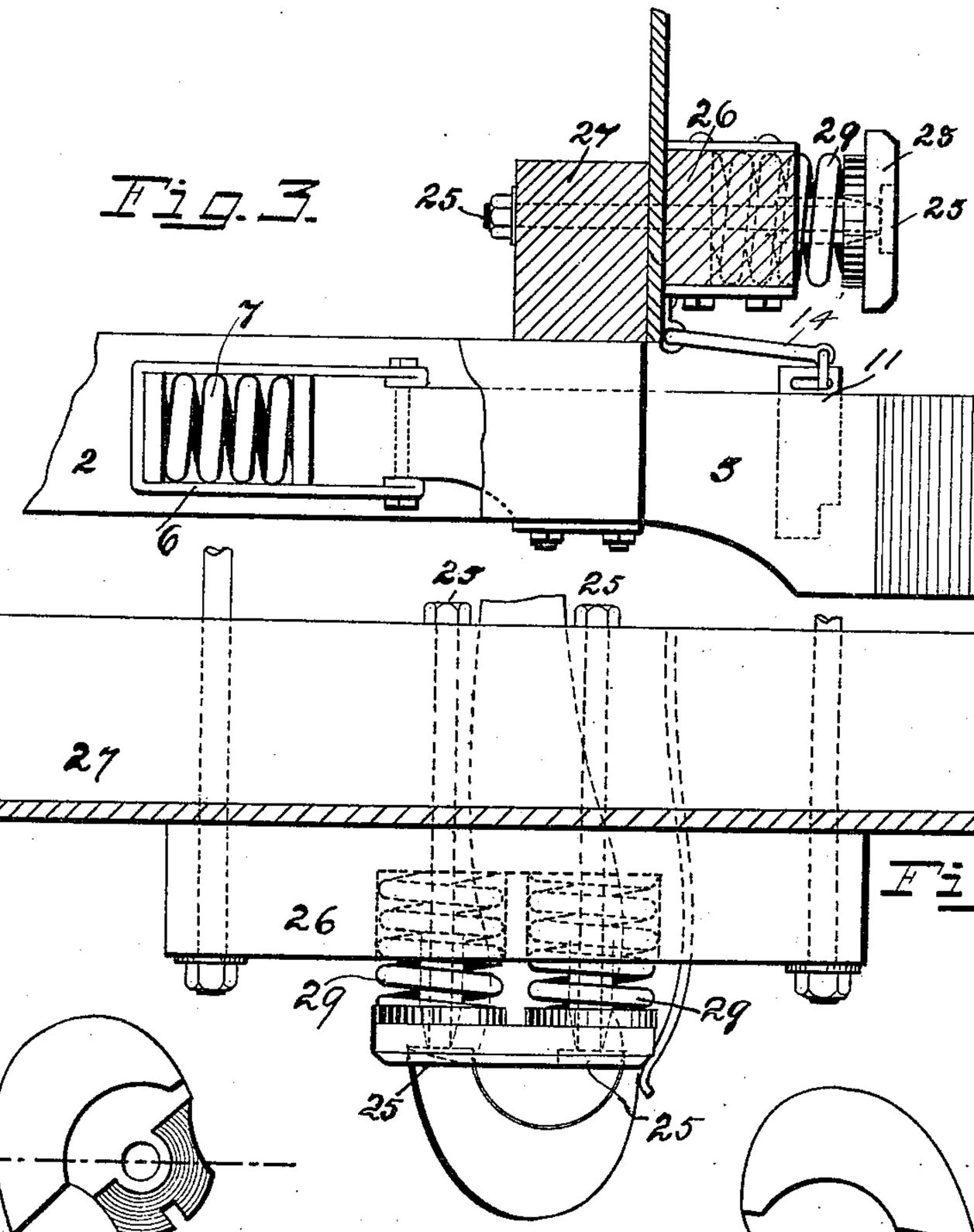


Fig. 4.

Fig. 10.

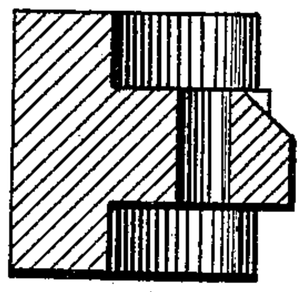


Fig. 11.

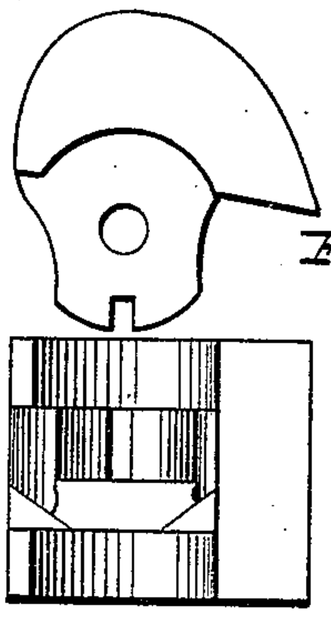
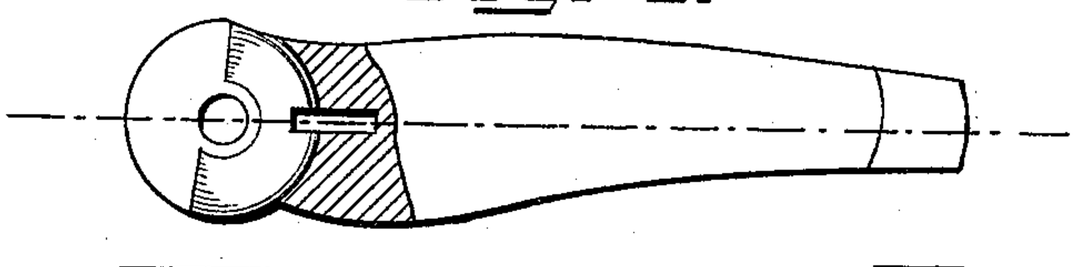


Fig. 12.

Fig. 13.

Fig. 5.



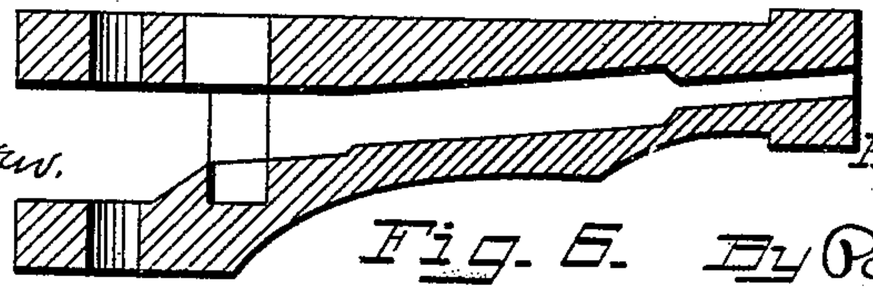


Fig. 6.

Witnesses.
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C. G. Hawley.

Inventor.
Henry M. Grover.
By Paul & Brown Attys.

UNITED STATES PATENT OFFICE.

HENRY M. GROVER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE EUREKA CAR COUPLER COMPANY, OF WATERLOO, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 459,904, dated September 22, 1891.

Application filed September 13, 1890. Serial No. 364,833. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. GROVER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Car-Couplings, of which the following is a specification.

My invention relates to that class of automatic car-couplings that are provided with a hook that engages a similar hook on the opposite coupling. Couplings of this kind are known as the "Miller" type.

The object of my invention is to provide a coupling that can be used equally well on freight or passenger cars; that can be made of ordinary cast-iron; that will never require any one to go between the cars for any purpose; that is always in position for coupling, and that is simple and inexpensive and can be readily substituted in place of the ordinary link-and-pin coupler on freight-cars without changing the draft-timbers or follower-plates.

Another object is to provide an air or fluid pressure device for operating the coupler for the purpose of uncoupling the cars.

In the drawings forming a part of this specification, Figure 1 is a plan view showing a pair of the couplers in the act of separating or uncoupling. Fig. 2 is a similar view showing the parts coupled together. Fig. 3 is a side elevation, showing the buffer and showing a portion of the end of the car in section. Fig. 4 is a plan view of the parts shown in Fig. 3. Figs. 5, 6, 7, 8, and 9 are details of the draw-bar. Figs. 10, 11, 12, and 13 are details of the pivoted head.

In the drawings, 2 2 represent the draft-timbers of a suitable car. These timbers may be arranged in the usual manner.

3 3 represent the follower-plates arranged between the draft-timbers and supporting the rear end of the draw-bar 5 by any suitable means, as the strap 6, and having between them the usual spring 7. These parts, except the draw-bar, are preferably all of the usual construction and arrangement, and in applying my coupler to cars that are equipped with the ordinary coupler these parts may all be used with my coupler, the old draw-bar alone being removed. The draw-bar 5 is pivoted so as to have a lateral movement, and at its forward end it is divided, so as to form a fork in which is pivoted the swinging head 9. The lower part of the tenon or part on the head that fits into this fork is preferably rounded and the recess in the fork is of corresponding shape, so as to give a firm bearing in the fork for this head. The head projects laterally at one side, so as to form a hook, and the forward end or surface of the head is rounded off and is preferably provided with a recess and hole to receive a link and pin. When the head is closed, it is locked in position by a latch 11, that fits into a recess in the head. This may be a gravity-latch, as shown in Figs. 1, 2, and 3, or a sliding spring-latch, as shown in Figs. 7 and 8. In the first instance there is an opening in the top of the draw-bar and the latch passes through this, and is operated by the lever 14. In the latter the outer surface of the draw-bar is unbroken, and the draw-bar is provided with a longitudinal opening in which the sliding latch 13 is arranged, preferably provided with a beveled end, and a rod 15, surrounded by a spring 16, extends through the rear end of the draw-bar and operated by a lever 17. In either case the latch may be arranged to be operated from either side or from the top of the car.

A spring 18 is arranged on the car, usually on the draft-timbers, and it bears against the rear side of the pivoted head. This spring both holds the head closed and the draw-bar over in position for coupling. As soon as the head is closed by this spring the latch engages and locks it. A second spring 19 may be arranged on the opposite side of the draw-bar.

Above the coupler is a spring-buffer located, preferably, in front of the end of the car and preferably secured to the car-sill. This buffer consists of a plate 23, through which pass bolts 25. These bolts pass through the dead-wood 26 and the car-sill 27. Springs 29 surround these bolts, being arranged in the rear of the buffer-plate and having their rear ends preferably arranged in recesses in the dead-wood.

I may use an air or liquid pressure device 31, to which is connected an air or liquid pipe 33 for withdrawing the latch or moving the

draw-bar or otherwise uncoupling the device. The buffers on the opposite cars come into engagement when the cars are coupled together. The springs are thereby compressed. When the latch of the coupler is released, these buffers tend to separate and open the head, thus aiding in uncoupling. These buffers also permit the necessary slack between the cars.

As the coupler can be made entirely of cast-iron, it is very cheap, and as there is no need of moving the draw-bars laterally for uncoupling the device is especially applicable for vestibule-cars.

It will be understood that the device will couple when the head is closed and locked by the latch, and that to uncouple the latch is pulled and the cars drawn apart, thus turning the head, which immediately returns to its normal position.

I claim—

1. The combination, with the laterally-swinging draw-bar and the horizontally-swinging head pivoted thereto, of the latch arranged to lock said head and the spring secured upon the car and bearing upon the rear side of said head, whereby said head is held closed and the draw-bar is held in position for engagement with another draw-bar.

2. The combination, with the draw-bar having a longitudinal opening in its body, of the head pivoted to said draw-bar and a latch arranged in said draw-bar, engaging said head and provided with a rod for operating it, extending through the rear end of the draw-bar.

3. The combination, with the draw-bar having a longitudinal opening in its body, of the head pivoted to said draw-bar, a spring for automatically closing said head, and a latch arranged in said draw-bar and engaging said head, and provided with an operating-rod extending through the rear end of the draw-bar.

4. The combination, with the draw-bar, of the head pivoted thereto, the latch for locking said head, and the air or fluid pressure device connected with said latch.

5. The combination, with the draw-bar, of the head pivoted thereto, the spring for closing said head, the latch for locking said head, and the air or fluid pressure device connected with said latch.

In testimony whereof I have hereunto set my hand this 8th day of September, 1890.

HENRY M. GROVER.

Witnesses:
C. G. HAWLEY,
A. M. GASKILL.