

(No Model.)

2 Sheets—Sheet 1.

W. A. & B. S. H. HARRIS.  
AIR BRAKE COUPLING.

No. 472,190.

Patented Apr. 5, 1892.

Fig. 1.

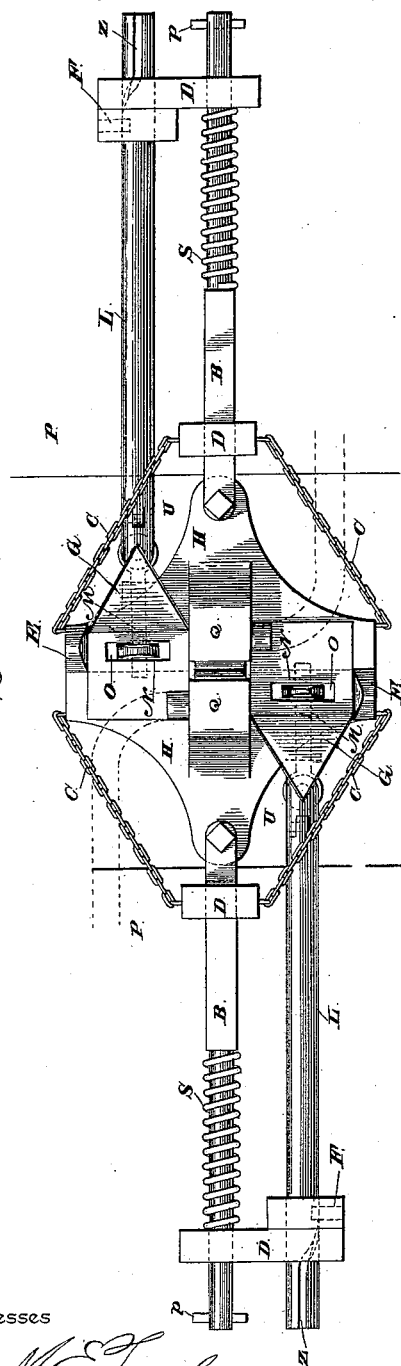
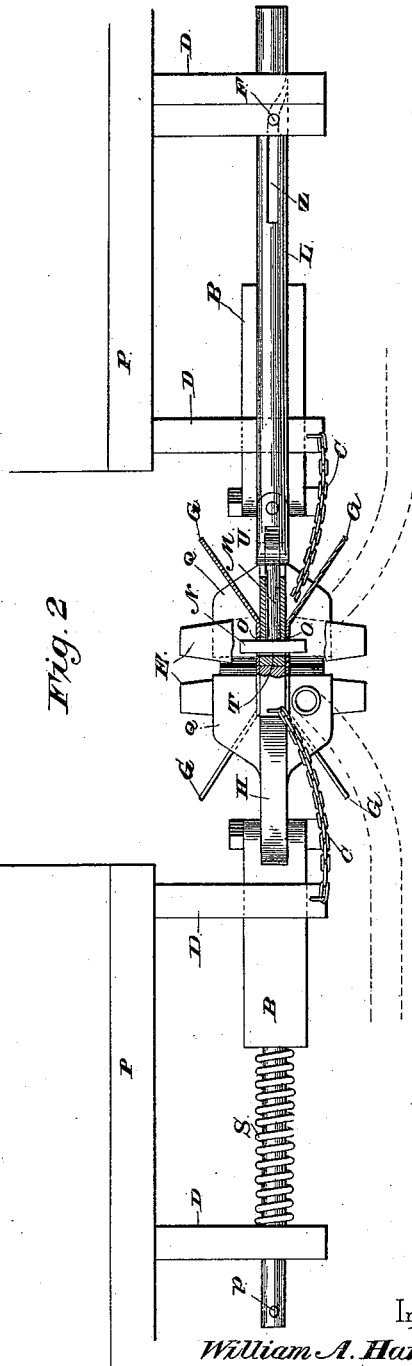


Fig. 2.



Witnesses

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Fig. 3.

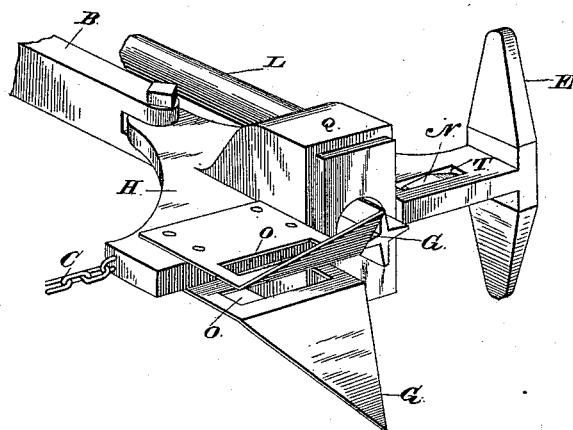


Fig. 4.

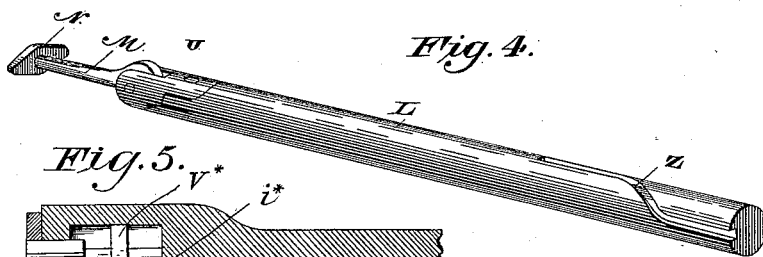
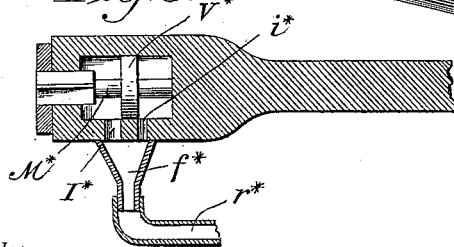


Fig. 5.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM A. HARRIS AND BENJAMIN S. H. HARRIS, OF SPARTANBURG, SOUTH CAROLINA, ASSIGNORS OF ONE-THIRD TO WHITEFOORD S. THOMASON, OF SAME PLACE.

## AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 472,190, dated April 5, 1892.

Application filed July 2, 1891. Serial No. 393,283. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM A. HARRIS and BENJAMIN S. H. HARRIS, citizens of the United States, residing at Spartanburg, in the county of Spartanburg and State of South Carolina, have invented a new and useful Air-Brake Coupling, of which the following is a specification.

This invention relates to air-brake couplings, and more especially to that class thereof which are adapted to automatically uncouple when the cars are separated.

The invention consists of the specific details of construction hereinafter more fully described and claimed, and as illustrated in the drawings, in which—

Figure 1 is a bottom plan view of two of our improved air-brake couplings connected. Fig. 2 is a side elevation of the same. Fig. 3 is a perspective view of the head of one of said couplings. Fig. 4 is a detail perspective of the locking-bar. Fig. 5 is a section of one head with its valve open.

Referring to the said drawings, the letter P designates the car-platform, having depending hangers D, in which moves freely the draw-bar B of our improved air-brake coupling, which is pressed normally forward by the coiled spring S, but whose forward movement is limited by the pin *p*. Pivoted to the front end of the draw-bar B is the head H, which is preferably of the construction shown in our United States Letters Patent No. 442,621, granted to us December 16, 1890, except as to the details of construction hereinafter specified. From the front hanger D two chains C lead forwardly and are loosely connected to the front corners of the head H, whereby the latter is permitted to have a certain lateral movement, but is prevented from moving to too great an extent, so as to cramp the locking and unlocking mechanism. At one side of the head a pair of guides G projects beyond its face, their tips being bent upwardly and downwardly, as shown in Fig. 3, and whose bodies just inside the tips are provided with slotted openings O, as best seen in Fig. 1. At the other side the head is provided with an end piece E, between which and the coupling devices

proper Q at the center of the head there is sufficient space for the reception of the guides G of another draw-head when coupled thereto. In the body of the head between the coupling devices and this end piece is mounted a button N, turning in a transverse slot T in the head H and supported by a shank M.

L is the locking-bar, connected by a universal joint U at its front end with the shank M and having a groove Z in its body near its rear end, engaging a pin F, extending inwardly at one side of the hole in the rear hanger D, through which the bar moves freely.

In operation when two cars are brought together the guides G of one head pass over the other head and their openings O register with the button N. As the heads normally project beyond the car-couplings, when the cars are brought together the heads are driven to the rear as they abut against each other. This movement causes the bar B to slide through the hangers D and compress the spring S, and the locking-bar L is also driven to the rear by this movement. The pin F, which engages the slot Z, travels along the straight rear portion thereof, down the cam portion, and into the other straight portion, and by this means the bar is given a quarter-turn. This turn is communicated through the universal joint U to the shank M and thence to the button N, and the latter is thereby caused to turn so as to engage the openings O in the guides G of the companion head H. In this condition the parts are firmly locked together, as will be understood. The expansive force of the two springs S presses the heads very tightly together, and the pivotal connection between each head H and its bar B and locking-bar L permits it to turn laterally to allow the cars to travel around curves. In this condition the stem *M*<sup>\*</sup> of each head is pressed to the rear, as seen in Fig. 5, and as explained in the patent referred to, whereby the valve *V*<sup>\*</sup> is moved so as to expose the inlet-opening *I*<sup>\*</sup>, and the air or steam passing in through the pipe *r*<sup>\*</sup> and funnel *f*<sup>\*</sup> passes through the head, as will be clear.

When the cars are uncoupled and commence to separate, the force of the springs S

moves the heads H outwardly, and consequently draws the locking-bars L through the rear standard, so that the grooves Z therein retravel over the pins F and turn the buttons N to their normal positions, thereby allowing the guides G to move from above and below the heads H, as will be readily understood, and the compressed air flowing in through the small inlet-opening  $i^x$  automatically closes the valve  $V^x$ .

What is claimed as new is—

1. In an air-brake coupling, the combination, with the spring-actuated bar B, moving in hangers D, depending from the platform, the head H, pivoted to the forward end of said bar, coupling devices Q at the center of said head, and guides G at one side thereof, having openings O, of the button N, mounted in a transverse slot T in the head at the other side of said coupling devices, and means, substantially as described, for automatically throwing said button into and out of engagement with the openings in the guides of a companion head, as set forth.
2. In an air-brake coupling, the combination, with the spring-actuated bar B, moving in hangers D, depending from the platform, the head H, pivoted to the forward end of said bar, coupling devices Q at the center of said head, and guides G at one side thereof, having slotted openings O, of the button N, mounted in a transverse slot T in the head at the other

side of said coupling devices, a shank M, journaled in the head and keyed in said button, a locking-bar L, connected by universal joint U to said shank, and means, substantially as described, for automatically turning said bar a quarter-revolution when the cars are brought together or separated, as set forth.

3. In an air-brake coupling, the combination, with the spring-actuated bar B, the head H, pivoted to the forward end of said bar, coupling devices Q at the center of said head, and guides G at one side thereof, having slotted openings O, of the end piece E at the other side of the head, the button N, mounted in a transverse slot T in the head between said end piece and coupling devices, a shank M, journaled in the head and keyed in said button, a locking-bar L, connected by universal joint U with said shank and provided with a groove Z, extending obliquely around one-quarter of its circumference, and a stationary pin F, engaging said groove, as and for the purpose hereinbefore set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

WILLIAM A. HARRIS.  
BENJAMIN S. H. HARRIS.

Witnesses:

C. L. HAMMETT,  
G. W. BENNER.