(No Model.)

W. M. EDWARDS.

AUTOMATIC AIR BRAKE COUPLING.

No. 527,838. Patented Oct. 23, 1894.

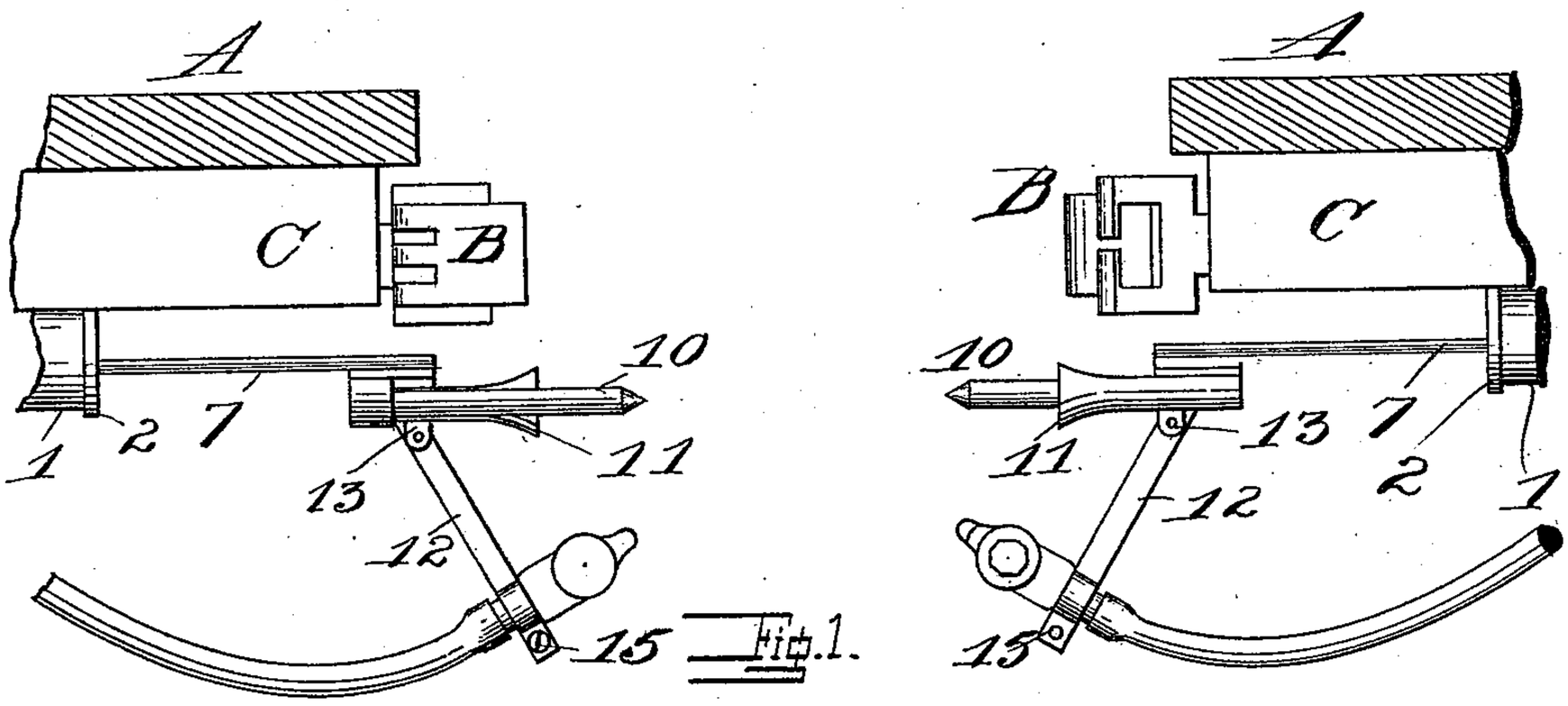

Fig. 1.

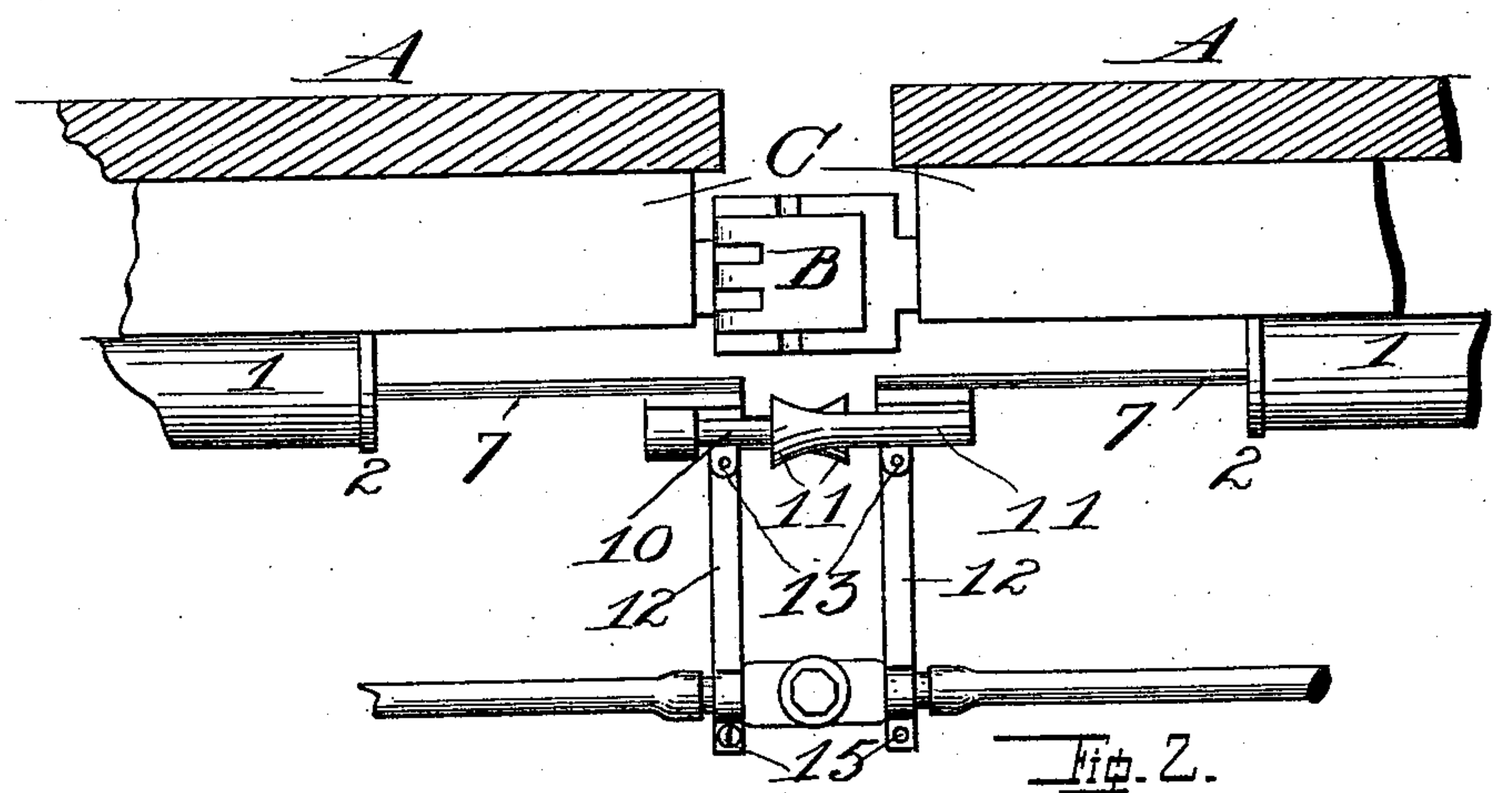

Fig. 2.

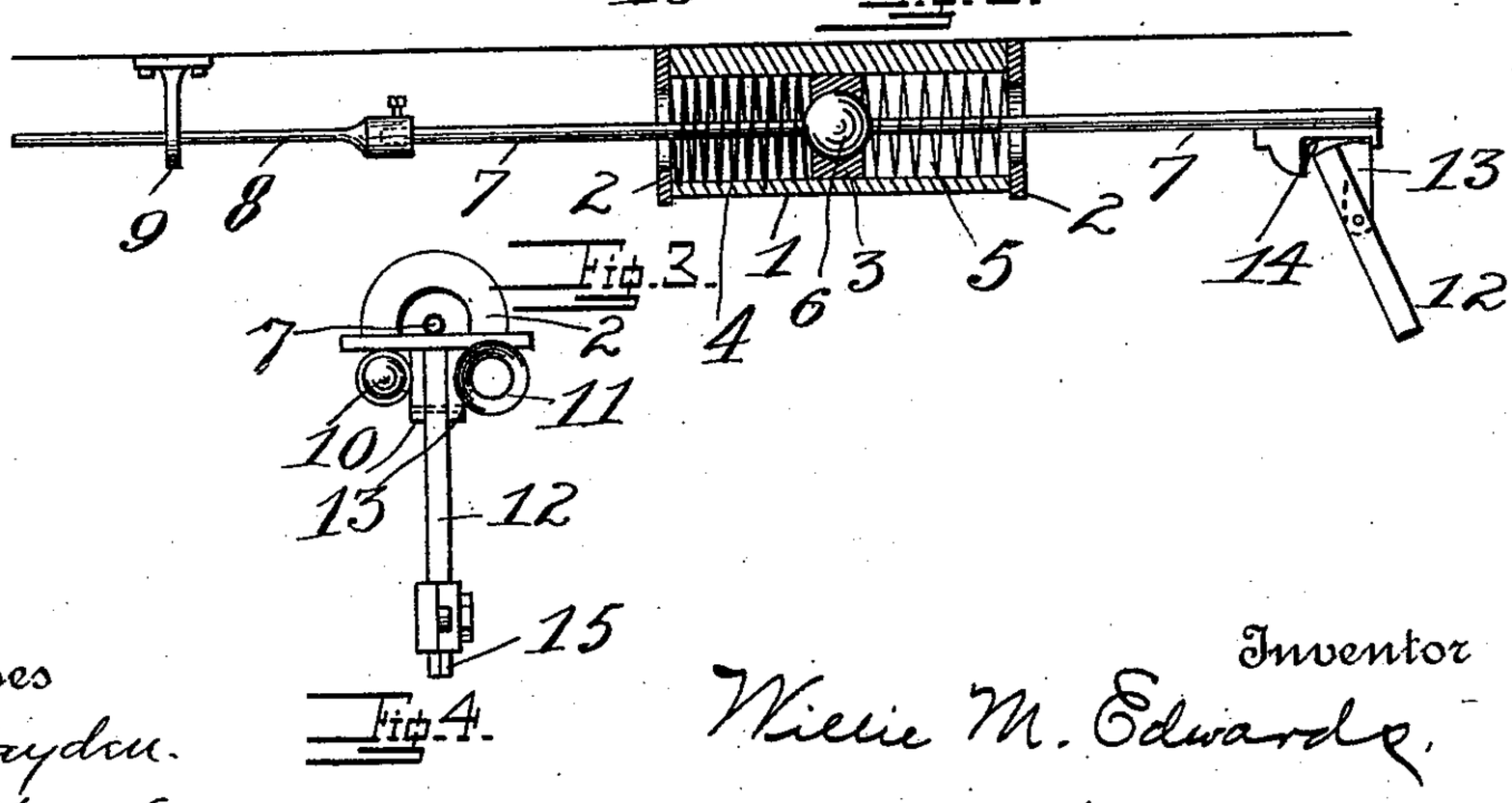

Fig. 3.

Fig. 4.

Witnesses
L. F. Haydon.
S. M. Wood.

Inventor
Willie M. Edwards.
By Attorneys
Atwood & Son.

UNITED STATES PATENT OFFICE.

WILLIE M. EDWARDS, OF ATLANTA, GEORGIA.

AUTOMATIC AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 527,838, dated October 23, 1894.

Application filed October 5, 1893. Serial No. 487,246. (No model.)

To all whom it may concern:

Be it known that I, WILLIE M. EDWARDS, a citizen of the United States of America, and a resident of Atlanta, in the county of Fulton and State of Georgia, have made certain new and useful Improvements in Automatic Air-Brake Couplers; and I do hereby 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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to devices for coupling the hose of air-brake train pipes automatically on the coupling of the cars on their near approach to each other, the invention consisting of means for sustaining the said hose, of holding the couplings thereon in the desired position and of imparting thereto the desired motion as the cars near each other, finally effecting the coupling and holding coupled the two couplings until the cars are again separated, the details of each of which will be hereinafter fully specified.

In the accompanying drawings—Figure 1, is a side elevation of the contiguous ends of two cars, showing the device in the normal uncoupled position, and ready to effect the coupling on the contacting of the two couplings. Fig. 2 is also a side elevation showing the hose coupled. Fig. 3 is a sectional figure, the cut being taken through the spring-casing showing the interior arrangement of springs and universal joint, and also showing the straight guiding spring on the end of the rod. Fig. 4 is an end elevation of Fig. 3, further showing the arrangement of parts.

In the figures, like reference characters are uniformly employed to designate corresponding elements of construction.

A is the car floor.

The couplings are marked B, and the timbers supporting same, C.

Secured to the under side of the timbers C or to any other suitable supporting device is a casing 1 provided with centrally perforated heads 2. Movable longitudinally in an inner chamber of said casing 1 is a block 3 which is provided with a spherical opening in its center. A heavy spring 4 resists the movement of said block 3 in one direction and a lighter spring 5 resists its movement in the other direction, the former spring being sufficiently strong to cause a movement of the coupling-carrying lever in coupling while the latter is not strong enough to resist the movement of the block 3 to an extent that will cause the uncoupling of the hose until said spring is fully compressed. This will be more clearly appreciated upon a further description of the device. A ball 6 is placed in the spherical opening in the block 3, and a rod 7 is passed through said ball and secured therein, by means of which construction it is obvious that the rod 7 will have motion within the block 3 on the ball as a universal joint, and it will be also obvious that many other forms of universal joint may be used to the same end. In order that the rod 7 may be returned to a position axial of said casing 1 after a deviation therefrom, a spring 8 is secured to the back end of said rod and passing through a stationary guide 9 acts by flexure to keep the said rod in the proper normal position, except when deflected during operation, of the device.

Carried on the outer or free end of the rod 7 is a guide-pin 10 and socket 11, which coact with like members of the approaching car to guide the hose-couplings to their proper correlative positions, the said rod having rotary, longitudinal, and lateral movement in obedience to said guides 10 and 11. A lever 12 projects downwardly from the end of the rod 7, being pivotally carried thereon by the lugs 13, and swings through the necessary arc of movement to couple the couplings of an ordinary air-brake hose, stopping at about a vertical position, and its actions being obstructed to the desired extent frictionally by the spring 14 which is secured between the lugs 13 and bears against the upper or shorter arm of the said lever 12. A clamping piece 15 secures the hose or coupling to the free end of said lever.

The operation of this device is as follows: The cars approaching have the parts in the position shown in Fig. 1, as when they come nearer together the guides 10 (pins) enter the flared mouths of the guide sockets 11 and move the rod 7 in the direction necessary to bring the sockets or couplings of the hose

into conjunction, which conjunction forms an engagement thereof such as will cause a swinging downwardly of the levers 12, imparting the usual coupling twist to the hose-couplings and causing the lips thereon to engage suitably to hold same. The levers 12, will then be in the position shown in Fig, 2 and they will so remain until the parting of the cars. As the cars pull apart after uncoupling the draw-heads thereof, the levers will by the engagement of the hose-couplings be caused to swing upwardly into the position shown in Fig. 1, when the lips of the said couplings will be disengaged and the same be easily separated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an air-brake hose coupling, a rod secured to the car, a lever carrying the hose-coupling head, and pivoted to the said rod on a pin passing through lugs thereon and through the upper end of said lever, a spring pressing against the upper end of said lever to retard its movement, and means for causing said coupling-head to register when elevated with an approaching coupling-head, for the purpose specified.

2. In an air-brake hose-coupling, a rod secured to and universally movable on the car, springs opposing end play thereof, a resilient rod secured to the back end of the aforesaid rod, a guide for said resilient rod, a lever carried on the opposite end of the universally movable rod and swinging pendent therefrom, means for retarding the full motion of said lever, a coupling-head carried on said lever, and means for guiding said head into an approaching head, for the purpose specified.

3. In an air-brake hose-coupling, a cylindrical casing secured to the car, a block having movement longitudinally thereof, springs opposing the said movement, a rod pivoted universally on said block, a lever pivoted to said rod, means for retarding the movement of said lever on its pivot, a coupling-head carried on said lever near its free end in such a position that the movement of the lever will join same to a co-operative approaching coupling-head, and means for causing the two heads to register on being brought together, for the purpose specified.

4. In an air-brake hose-coupling, a cylindrical casing secured to the car, a block having movement longitudinally thereof, springs opposing the said movement, a rod pivoted universally on said block, a lever pivoted to said rod, means for retarding the movement of said lever on its pivot, a coupling-head carried on said lever near its free end in such a position that the movement of the lever will join same to a co-operative approaching coupling-head, and means for causing the two heads to register on being brought together, consisting of coacting pointed plunger and flared sockets carried on said rod of each co-operative coupler, for the purpose specified.

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

WILLIE M. EDWARDS.

Witnesses:
ALBERT P. WOOD,
EDWARD PORTER WOOD.