H. F. WOERNLEY.

AUTOMATIC CAR COUPLING.

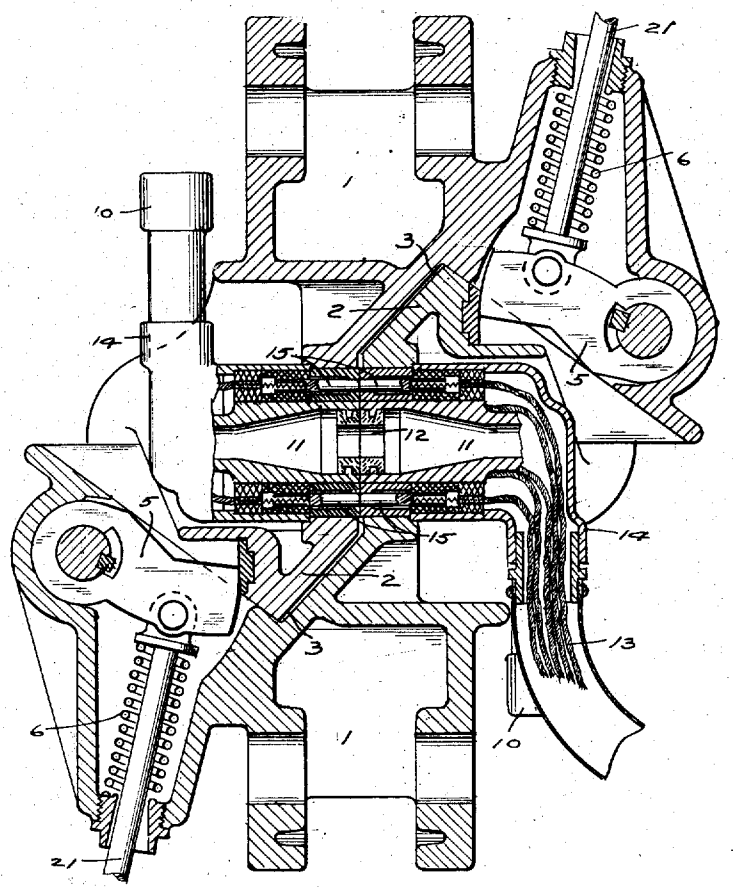
APPLICATION FILED SEPT. 16, 1905.

1,045,489.

Patented Nov. 26, 1912

3 SHEETS—SHEET 1.

Fig 1.



WITNESSES

J. L. Custer

J. B. MacDonald

INVENTOR

Harry F. Woernley

by E. Wright

Att'y.

H. F. WOERNLEY.

AUTOMATIC CAR COUPLING.

APPLICATION FILED SEPT. 16, 1905.

1,045,489.

Patented Nov. 26, 1912.

3 SHEETS—SHEET 2.

Fig. 4.

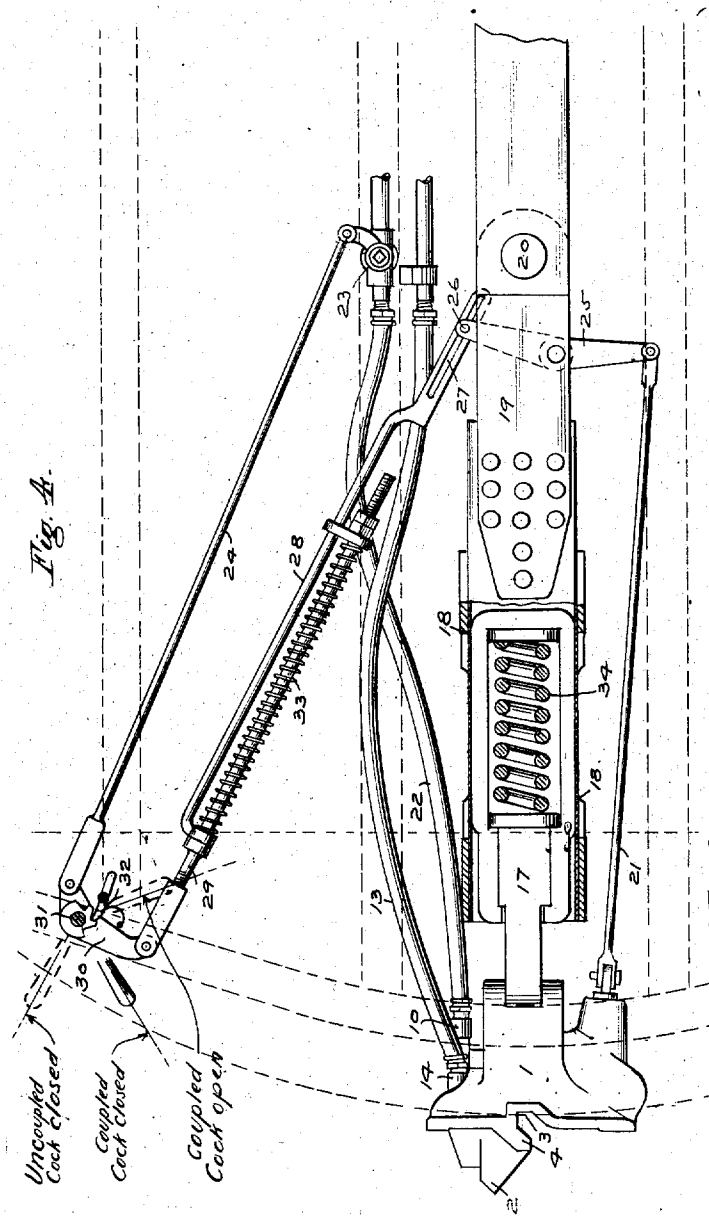


Fig. 2.

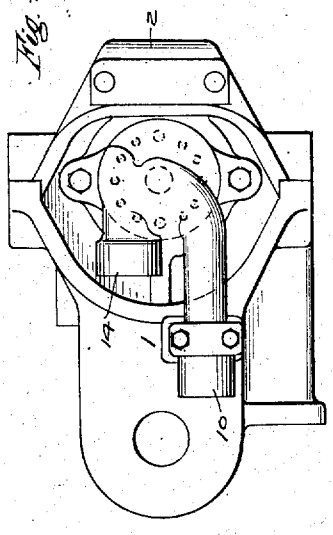
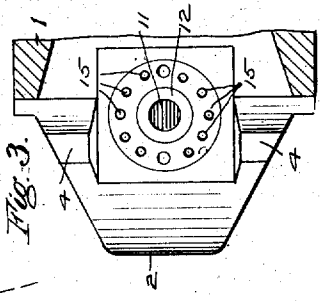


Fig. 3.



WITNESSES

J. Custer

J. B. MacDonald

INVENTOR

Harry F. Woernley

by E. Wright

Att'y.

H. F. WOERNLEY.

AUTOMATIC CAR COUPLING.

APPLICATION FILED SEPT. 16, 1905.

1,045,489.

Patented Nov. 26, 1912.

3 SHEETS—SHEET 3.

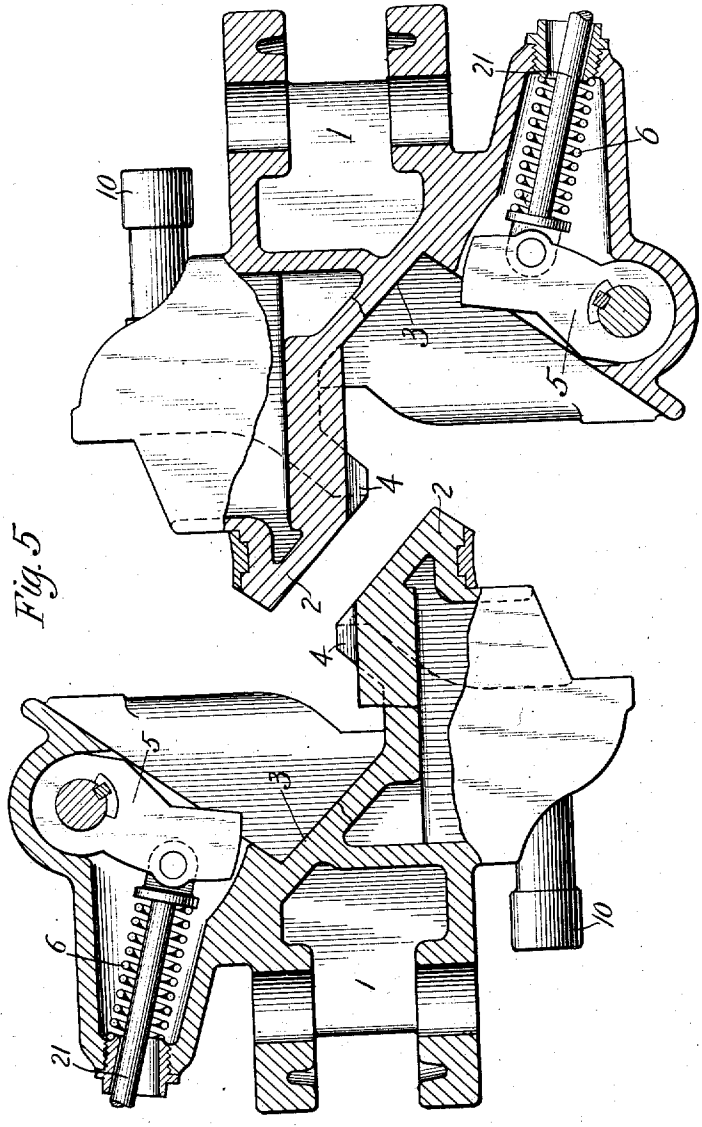


Fig. 5

WITNESSES

Wm. M. Cady

R. C. Grantzmiller

INVENTOR

Harry F. Woernley

by E. A. Wright Att'y.

UNITED STATES PATENT OFFICE.

HARRY F. WOERNLEY, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HENRY HERMAN WESTINGHOUSE, OF NEW YORK, N. Y.

AUTOMATIC CAR-COUPLING.

1,045,489. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed September 16, 1905. Serial No. 278,827.

To all whom it may concern:

Be it known that I, HARRY F. WOERNLEY, a citizen of the United States, residing in Allegheny, county of Allegheny, and State of Pennsylvania, have invented a certain new and useful Improvement in Automatic Car-Couplings, of which the following is a specification.

This invention relates to automatic car coupling devices for cars or other railway vehicles, and more particularly to that type in which draw bar coupling mechanism is combined with means for coupling the air brake pipe, or other fluid pressure conduits, and electrical conductors, such as shown in prior patent to Geo. Westinghouse, No. 708747, of Sept. 9, 1902.

One of the objects of my improvement is to improve the arrangement of the electrical contact terminals with reference to the fluid pressure conduits, whereby space and material are economized and a more efficient electric coupling secured.

Another object is to provide a hand operated device at the side of the car or upon the platform, and connections from said device to the cock or cocks of the fluid pressure conduits and to the lock release of the coupler, whereby when applied to a mechanism having a pivoted or swinging draw bar, the device may be manipulated at any time to either open or close the fluid pressure conduits or to release the lock of the coupler, as desired.

In the accompanying drawings, Figure 1 is a central horizontal section showing the two counterpart members in coupled position; Fig. 2 a side elevation of the coupler head; Fig. 3 a vertical section of end portion of a coupler head, showing in elevation the face which engages a corresponding face of a counterpart coupler head; Fig. 4 a plan view, partially in horizontal section, showing the coupler attached to a swinging draw bar, and mechanism operated from the platform, or side of the car, for opening and closing the cock in the fluid pressure conduit and for releasing the coupler and Fig. 5 a horizontal sectional view of two coupler heads in position for coupling up.

As shown in the drawings, the coupler head is formed of a casting 1 of the desired size and configuration having a projecting portion 2 and a recess 3 for engaging the corresponding parts of a counterpart coupler head on an adjacent car.

Centrally arranged, transversely of the coupler, is a vertical and longitudinal plane surface through which openings are made for fluid pressure conduit and electrical connections. Above and below this plane surface are formed transverse projections or hooked portions 4 having inclined surfaces adapted to engage and interlock with corresponding portions of a counterpart coupler head, each head being provided with a pivoted latch or locking lever 5 having a cam surface for engaging a corresponding curved surface on the projecting portion 2 of the counterpart coupling head, and a spring 6 acting to force said lever into locking position.

As thus far described, the structure corresponds substantially with that shown in the prior patent above referred to.

Each coupler head is provided with a nozzle 10 connected with the air brake pipe, or other fluid pressure conduit, and communicating by a passage 11 with the opening in the face of the coupler, in which is mounted a gasket 12 for making a tight joint.

In order to economize space and material, and make the structure compact and symmetrical in form, the terminal contact points of the electrical conductors are preferably located around the opening of the fluid pressure conduit.

As shown in the drawings, the wires or conductors 13, in the form of a cable, enter a nozzle 14 of the coupler head and each terminates in a spring pressed plunger 15 adapted to make electrical contact with a corresponding plunger of the adjacent coupler, the plungers being arranged in an annular ring around the gasket 12 of the air pipe conduit.

Fig. 4 shows the coupler head 1 pivoted horizontally to the draw bar 17, which is connected to the housing 18 through any desired form of draft gear 34, that shown being of the ordinary spring type, the housing being carried by a bar 19, which is pivoted at 20 to the car frame, whereby the

draw bar and coupler may swing laterally upon a large radius. This construction is particularly adapted for use upon electric traction cars, such as elevated and underground roads, where sharp curves in the track are employed.

The train pipe, or fluid pressure conduit, is provided with a flexible portion, or hose, 22 connected to the nozzle 10 of the coupler head and contains a cock 23. A lever 25 is pivotally mounted upon the swinging bar 19 and is connected at one end by a rod 21 with the locking lever 5 in the coupler head, while the other end is provided with a pin 26 adapted to work in a slot 27 of the rod 28.

For operating the coupler and angle cock from the car platform a hand actuated lever 30 may be pivoted at 31 and connected with the angle cock by a rod 24 and with rod 28 by means of rod 29, a spring 33 being inserted between the two latter rods in order to provide an extensible and yielding connection to compensate for extreme movement of the parts.

Any desirable form of clamping device, such as a spring actuated latch or pawl 32, may be employed for holding the hand lever in any one of its positions.

When a coupling is to be made with an adjacent car, the handle is placed in the intermediate position shown in full lines, in which the cock 23 in the air pipe is closed and the locking lever of the coupler head is held out in locking position by its spring. The adjacent coupler heads are then swung to the proper position and brought together by impact, so that the projecting portion 2 of each head enters the recess 3 of the other, depressing the locking levers until the hooked portions 4 pass one another, whereupon the springs 6 force the locking levers with their cam-shaped end faces out into engagement with the corresponding curved surfaces in the notches of the coupler heads, thereby pressing the two counterpart members together with the gasket openings of the fluid pressure conduits in register and the terminal plungers of the electric conductors making contact with each other. The handle may then be thrown to the position indicated in dotted lines and marked "coupled-cock open," in which the cock 23 is opened to establish communication through the air pipe. During this movement the rod 28 is moved inward but the pin 26 merely slides in the slot 27, so that no movement is imparted to lever 25 and rod 21 connected to the locking lever 5 of the coupler head. The slot 27 in bar 28 is of sufficient length to permit the free movement of the pin 26 therein during the lateral swinging motion of the draw bar and coupler when the train is passing around sharp curves in the track. This slot also allows the free movement of lever 25, due to the longitudinal movement of the coupler head produced by draft or buffing strains in compressing the draft gear spring 34. When it is desired to uncouple, the handle may be thrown to the position indicated in dotted lines and marked "uncoupled-cock closed," in which the air pipe is closed. During the latter part of this movement of the hand lever the pin 26 engages the end of the slot 27 in rod 28 and the lever 25 operates the rod 21 to release the locking lever 5 of the coupler head. If at any time, when the pin 26 occupies the end of the slot 27, the mechanism should be subject to a movement produced by a compression of the draft spring or a swinging of the draw bar, or other cause, the rod sections 28 and 29 would slide upon each other and compress the spring 33, thereby compensating for all such extreme movements without injury to the connecting mechanism.

It will now be apparent that my improvement combines the advantages of being applicable to cars in which a lateral swinging movement of the draw bar is a necessity, and also that the cock in the fluid pressure conduit and the locking mechanism may be operated from the platform of the car, thereby rendering it unnecessary to go upon the track between the cars during the operation of coupling or uncoupling. It will also be obvious that a plurality of fluid pressure conduits may be coupled in like manner by merely providing additional passages and gaskets in the face of the coupler head.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. An automatic coupling for cars comprising a casting having an opening through a face thereof for coupling a fluid pressure conduit, a gasket in said opening for making a tight joint, and a plurality of terminal contact points located in an annular form around the outer side of said gasket for connecting electrical conductors.

2. In an automatic coupling, the combination with a laterally swinging draw bar carrying a coupler head having a locking device and an opening connected to a fluid pressure conduit, of a lever pivotally mounted on the swinging bar with a connection for releasing the locking device, and manually operated means mounted on the car body for controlling communication through the conduit and having a sliding connection with said lever adapted to permit a free lateral swinging movement of the draw bar.

3. In an automatic coupling, the combination with a housing pivoted to the car, a draw bar and coupler head carried by said housing and having an opening connected to a fluid pressure conduit and a yielding draft gear interposed between the housing and draw bar, of a locking device for the

coupler head, a lever pivotally mounted on said swinging housing and having a connection for releasing the locking device, and a manually operated rod having a slotted connection with said lever and adapted to control communication through said conduit.

In testimony whereof I have hereunto set my hand.

HARRY F. WOERNLEY.

Witnesses:
R. F. EMERY,
J. B. MACDONALD.

Corrections in Letters Patent No. 1,045,489.

It is hereby certified that Letters Patent No. 1,045,489, granted November 26, 1912, upon the application of Harry F. Woernley, of Allegheny, Pennsylvania, for an improvement in "Automatic Car-Couplings," were erroneously issued to Henry Herman Westinghouse, of New York, N. Y., as assignee by mesne assignments, whereas said Letters Patent should have been issued to *Westinghouse Air Brake Company, of Pittsburgh, Pennsylvania, a corporation of Pennsylvania*, as shown by the record of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of December, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

coupler head, a lever pivotally mounted on said swinging housing and having a connection for releasing the locking device, and a manually operated rod having a slotted connection with said lever and adapted to control communication through said conduit.

In testimony whereof I have hereunto set my hand.

HARRY F. WOERNLEY.

Witnesses:
R. F. EMERY,
J. B. MACDONALD.

Corrections in Letters Patent No. 1,045,489.

It is hereby certified that Letters Patent No. 1,045,489, granted November 26, 1912, upon the application of Harry F. Woernley, of Allegheny, Pennsylvania, for an improvement in "Automatic Car-Couplings," were erroneously issued to Henry Herman Westinghouse, of New York, N. Y., as assignee by mesne assignments, whereas said Letters Patent should have been issued to *Westinghouse Air Brake Company, of Pittsburgh, Pennsylvania, a corporation of Pennsylvania*, as shown by the record of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of December, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.