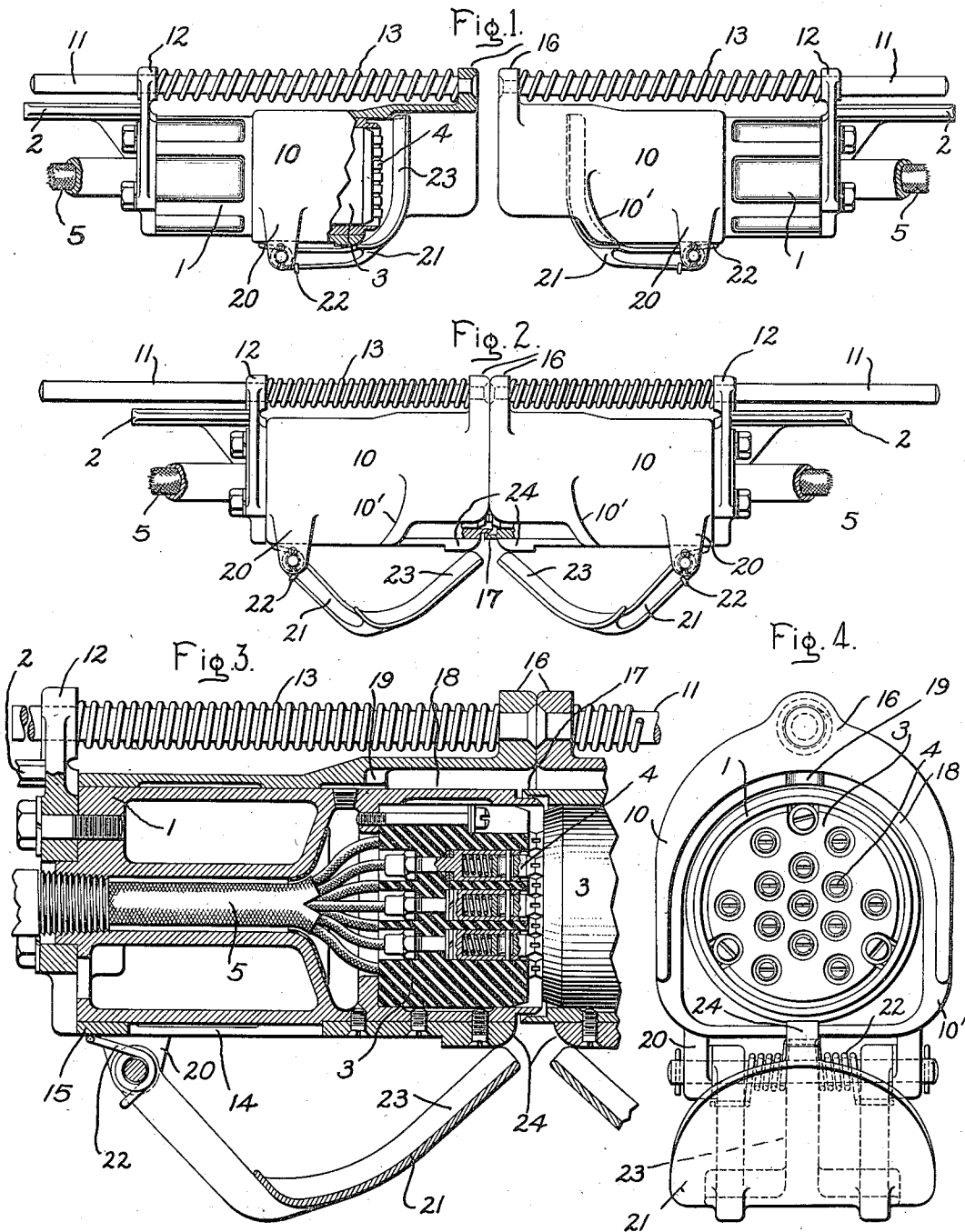


H. D. MEEKER.
ELECTRIC COUPLING.
APPLICATION FILED JUNE 26, 1914.

1,267,247.

Patented May 21, 1918.



Witnesses:

Margaret A. Delaney
Myron M. Davis

Inventor:
Herbert D. Meeker,
by *Albert G. Davis*
His Attorney.

UNITED STATES PATENT OFFICE.

HERBERT D. MEEKER, OF NISKAYUNA, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC COUPLING.

1,267,247.

Specification of Letters Patent.

Patented May 21, 1918.

Application filed June 26, 1914. Serial No. 847,525.

To all whom it may concern:

Be it known that I, HERBERT D. MEEKER, a citizen of the United States, residing at Niskayuna, county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric Couplings, of which the following is a specification.

My invention relates to an electric coupler and more especially to a protective cover for an automatic electric coupler designed for use upon moving vehicles arranged in trains.

Where it is desired to carry several wires throughout the length of a train of cars, it is essential that some means be provided for readily connecting the wires in one car with those in the next. For this purpose various forms of electric couplers have been devised, some of which are automatically connected upon the coupling together of the cars. In order to secure good electrical contact between the coacting members, it is important that the contacts be protected from snow, ice, dirt and moisture.

It is, then, the object of my invention to provide such a protecting means for an electric coupler. Further, I have sought to produce such a protecting cover that it will not interfere with the automatic action of the coupler and in which the cover will be removed and replaced automatically.

My invention will be more readily understood from an inspection of the accompanying drawing, in which Figure 1 is a side view partly in section showing the couplers separated and the cover in closed position.

Fig. 2 is a similar view with the couplers in contact and the covers displaced.

Fig. 3 is a fragmental longitudinal vertical section of the arrangement shown in Fig. 2.

Fig. 4 is an end view of one of the couplers showing the cover in an open position.

Each coupler comprises a body portion 1 provided with a suitable bracket 2 for rigid attachment to the draw bar of a vehicle. The body portion is hollow and at its outer end carries an insulation member 3, in which are suitable electrical contacts 4, here shown as spring-pressed plungers. The wires are brought through the body portion in any

suitable manner, as in the form of a cable 5, and are then attached to the contacts 4. All this, however, is of the usual construction and forms no part of my invention.

Surrounding the body portion is a sleeve 10 arranged to slide thereon, and this sleeve is guided by means of a rod 11 passing through a fixed guide 12. A spring 13 surrounds the rod 11 and forces the sleeve outwardly toward the end of the body portion carrying the contacts. Pivotaly attached to the sleeve 10 by means of lugs 20 is a cover 21 which is held against the body portion preferably by means of a suitable spring 22. This cover 21 will usually be formed with a central rib 23 which serves as a cam member resting against a cooperating cam 24 attached to the lower side of the body portion in order to accurately control movements of the cover and prevent injury to the contacts or body portion. A slot 14 is formed in the sleeve 10 at the lower side, in order to allow it to pass along the piece forming the cam 24. At its rear end, however, a cross-piece 15 on the sleeve 10 serves to limit the movement of the latter by abutting the stop formed by the rear end of the piece forming the cam 24.

As will be seen by an inspection of the drawing, the forward end of the sleeve 10 is enlarged at the lower side at 10' and cut away in order to allow the admission of the cover 21, and the elements are so shaped that they coact to form a substantially tight closure over the contacts 4. The edges of the cover 21 rest against a ledge 18 formed on the inner side of the sleeve, a central recess 19 being provided for the admission of the end of the cam rib 23.

In its normal position, the sleeve 10, carrying the cover 21, will be extended as shown in Fig. 1 by the action of the spring 13, while the cover will be held upwardly against the sleeve and over the contact members by the action of the spring 22. If two vehicles supplied with similar couplers are now brought together, the outer end 16 of the sleeve, serving as a buffer, will force the same backwardly against the action of the spring. The cam 23 upon the hinged cover

will then ride along the cam 24 upon the body portion and cause the cover to be moved downwardly and away from the contacts, exposing the same so that similar contacts upon the two couplers will be pressed together and close the appropriate circuits. As long as the vehicles are held in this relation by means of their couplings, the buffers 16 will be held in contact by the springs 13 and will cover the upper side of the coupler. From an inspection of Fig. 3, it will be seen that the body portions are provided with overlapping edges 17 which further serve to protect the contacts from the admission of dirt or moisture.

As soon as the vehicles are uncoupled, however, the springs 13 will force the sleeves 10 outwardly, and the springs 22 will press the covers 21 against the body portion, so that as soon as the cams 23 and 24 permit, the cover will be forced into its closed position, and, cooperating with the overhanging end of the sleeve 10, will form a practically tight closure which will fully protect the contacts from the admission of dust or moisture. At the same time, the cross-piece 15, abutting against the rear end of the piece forming the cam 24, will prevent further outward movement of the sleeve 10 and retain the protecting members upon the coupler.

It will thus be seen that I have attained the object of my invention, in providing a protecting means for an electric coupler, which is, moreover, automatically actuated by the bringing together of the couplers without the necessity of manual intervention.

I conceive that various modifications and changes in the exact construction of the arrangement which I have illustrated could readily be made, and I, accordingly, do not desire to be limited thereto, but seek to cover in the appended claims all such modifications and changes as fall within the true scope and spirit of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In an automatic electric coupler, a body portion, contacts carried thereby adjacent one end thereof, a member relatively movable with respect to said body portion and adapted to be retracted or extended, and a cover operated by said member to expose said contacts when said member is retracted and to coact with said member to inclose said contacts when said member is extended.

2. In an electric coupler, a body portion, contact members carried thereby adjacent one end thereof, a member relatively movable with respect to said body portion and adapted to be retracted or extended, and a cover operated by said member to expose said contacts when said member is retracted and to coact with said member to inclose said

contacts when said member is extended and means operatively connected to said member tending to maintain the same in its extended position.

3. In an electric coupler, a body portion, contacts carried thereby adjacent one end thereof, a member slidably mounted upon said body portion and adapted to be retracted or extended beyond the end thereof, a spring tending to maintain said member in its extended position, a cover pivotally supported on said member and means whereby said cover is moved to coact with said member to inclose said contact members when said member is extended and to expose said contact members when the member is retracted.

4. In an electric coupler, a body portion, contacts carried thereby adjacent one end thereof, a sleeve slidably mounted on said body portion and adapted to be retracted or extended, and a cover operated by said sleeve to expose said contacts when the sleeve is retracted and to cover said contacts when the sleeve is extended.

5. In an electric coupler, a body portion, contacts carried thereby adjacent one end thereof, a sleeve slidably mounted on said body portion and adapted to be retracted or extended, said sleeve having a portion which projects beyond said contacts when the sleeve is extended, and a cover operated by said sleeve to expose said contacts when the sleeve is retracted and to coact with the projecting portion of said sleeve to inclose said contacts when the sleeve is extended.

6. An electric coupler comprising a body portion, contacts carried thereby adjacent one end thereof, a sleeve slidably arranged upon said body portion and adapted to project beyond the end thereof, a rod for guiding said sleeve, a spring surrounding said rod and arranged to project said sleeve, means for limiting the movement of said sleeve, a cover pivotally attached to said sleeve and arranged to cover said contacts when said sleeve is projected, a spring arranged to press said cover toward said body portion, a cam surface on said body portion, and a cooperating cam surface on said cover whereby said sleeve and cover normally protect said contacts and automatically expose the same when the sleeve is retracted.

7. An automatic electric coupler comprising a body portion, contacts yieldingly mounted adjacent one end thereof, a sleeve slidably arranged upon said body portion and adapted to project beyond the end thereof, a rod for guiding said sleeve, a spring surrounding said rod and arranged to project said sleeve, means for limiting the movement of said sleeve, a cover pivotally attached to said sleeve and arranged to cover said contacts when said sleeve is projected,

a spring arranged to press said cover toward said body portion, a cam surface on said body portion, and a cooperating cam surface on said cover whereby said sleeve
5 and cover normally protect said contacts and automatically expose the same when the sleeve is retracted.

In witness whereof, I have hereunto set my hand this 25th day of June, 1914.

HERBERT D. MEEKER.

Witnesses:

MARGARET E. WOOLLEY,
HELEN ORFORD.