Nov. 30, 1926.

1,608,732

C. C. FARMER

ELECTRIC TRAIN LINE COUPLER

Filed Nov. 29, 1921

2 Sheets-Sheet 1

Fig. 1.

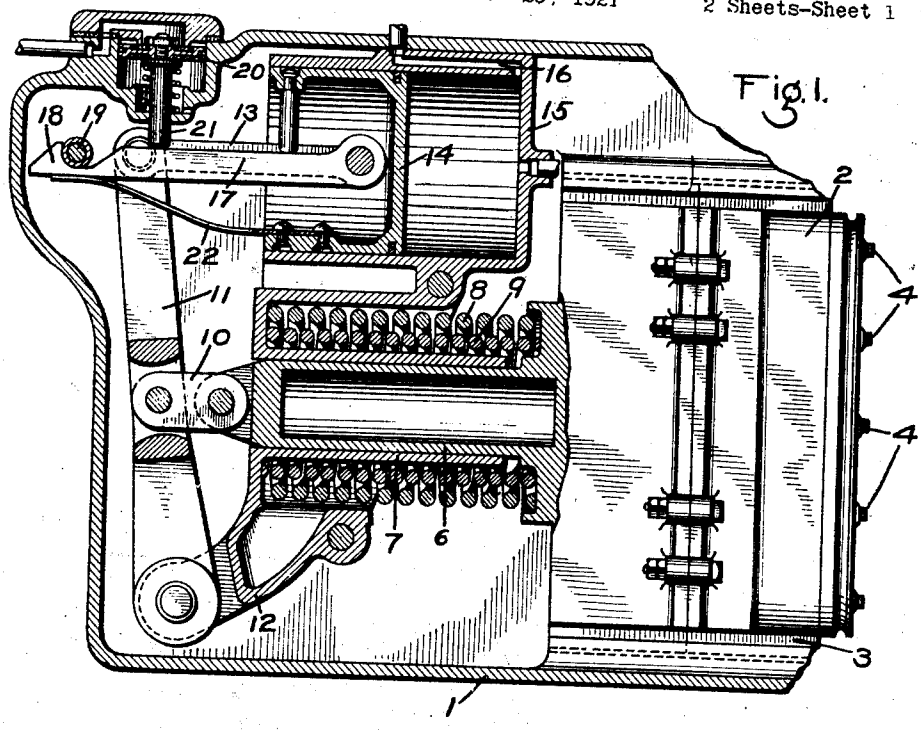
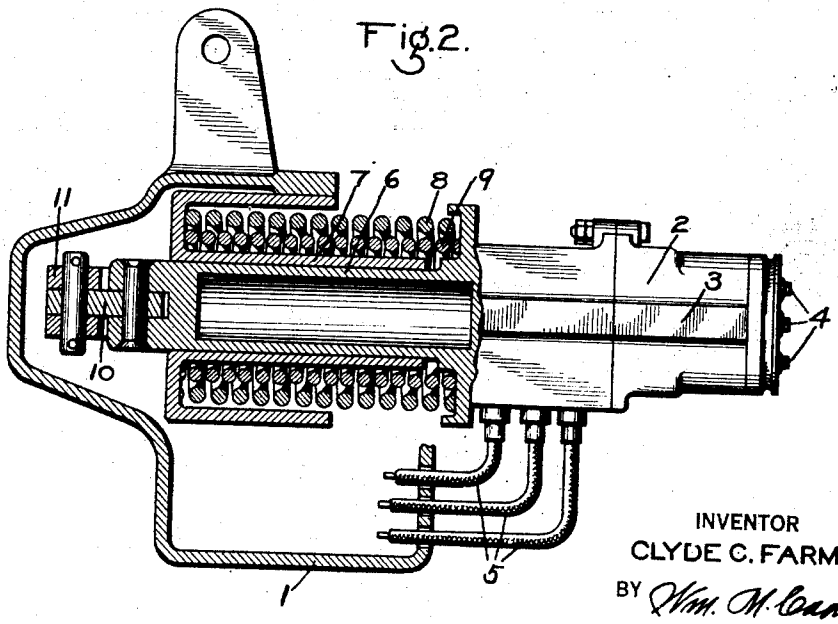


Fig. 2.



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Fig.3.

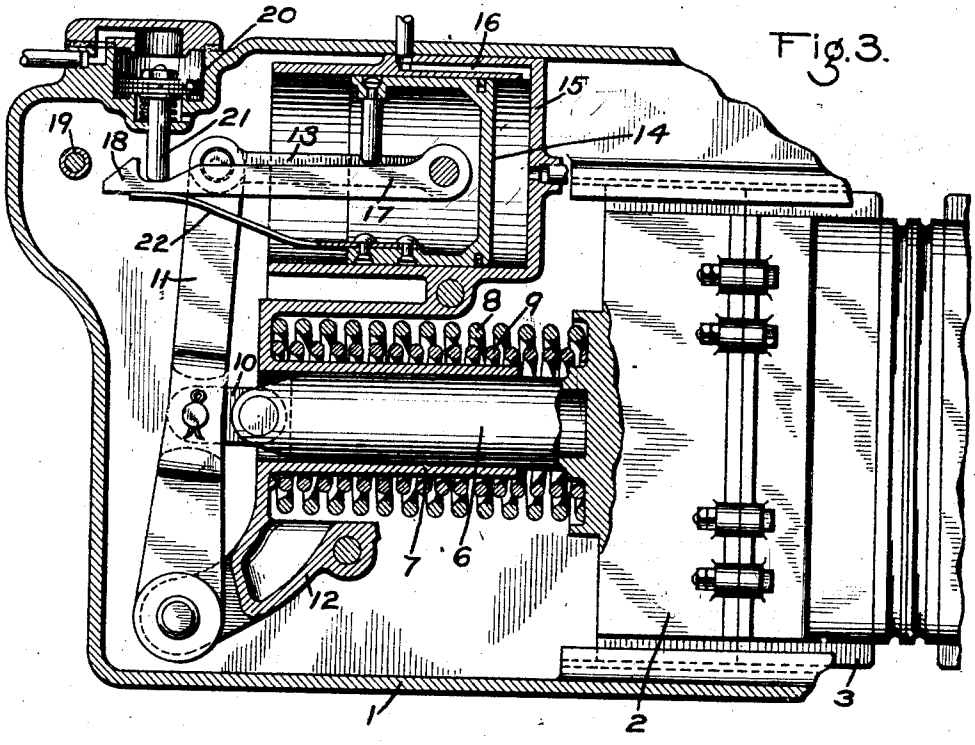
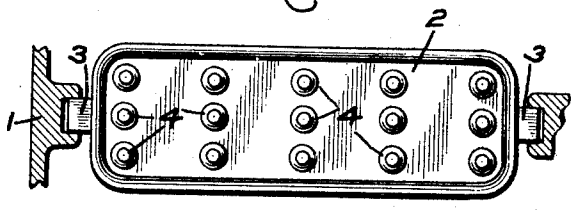


Fig.4.



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UNITED STATES PATENT OFFICE.

CLYDE C. FARMER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE AIR BRAKE COMPANY, OF WILMERDING, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ELECTRIC TRAIN-LINE COUPLER.

Application filed November 29, 1921. Serial No. 518,601.

This invention relates to electric train line couplers adapted more particularly for connecting electric train line circuits between cars of a train.

The principal object of my invention is to improve on and simplify the construction of an electric train line coupler of the type disclosed in the pending application of H. F. Woernley, Serial No. 474,061, filed June 1, 1921.

In the accompanying drawings; Fig. 1 is a plan view, partly sectioned, of an electric train line coupler embodying my invention and showing the parts in release position; Fig. 2 an elevational view thereof, partly sectioned and partly broken away; Fig. 3 a plan view similar to Fig. 1, showing the contact carrier projected and engaging the contact carrier of a counterpart coupler head; and Fig. 4 a face view of the contact carrier or slide.

As shown in the drawings, the coupler head may comprise a casing 1, within which is mounted a movable contact carrier or slide 2 having longitudinal guide members 3 working in corresponding guideways formed in the casing, as shown more particularly in Fig. 4. Mounted in the contact carrier 2 are electric contacts 4, which are connected to the electric train line circuits 5 and are adapted to engage corresponding contacts of a counterpart coupler head.

The slide 2 is provided with a rearwardly extending plunger 6, located on the central longitudinal axis of the slide and mounted in a fixed bearing member 7, carried by the casing 1. Interposed between the member 7 and the slide 2 and concentric with the plunger 6 are coil springs 8 and 9 for projecting the contact carrier.

The rear end of the plunger 6 is pivotally connected, through a link 10 to a lever 11, one end of which is pivotally mounted on a bracket 12 and having the other end pivotally connected through a link 13 to a piston 14. Said piston is mounted in a cylinder 15 having a passage 16 through which fluid under pressure for operating the piston is supplied to the cylinder. A trip arm 17 is pivotally connected to piston 14, the outer end of which is provided with a hook 18 for engaging a pin 19, when the parts are moved to the position in which the springs 8 and 9 are compressed and for tripping the arm 17 from engagement with the pin 19, a piston 20 is provided having a stem 21 adapted to engage the arm 17. A flat spring 22, secured at one end to the piston 14, engages the arm 17 and tends to maintain the arm in position for operation.

In operation, the slide projecting springs 8 and 9 are compressed by supplying fluid under pressure through passage 16 to the cylinder 15. The piston 14 is then actuated so as to cause the lever 11 to pull the plunger 6 rearwardly and thus compress the springs. In the final movement, the hook 18 passes under the pin 19 and then moved by the spring 22 to engage the pin and lock the parts in position with the springs 8 and 9 compressed as shown in Fig. 1 of the drawings.

When cars are brought together and it is desired to connect the electric circuits between cars, fluid under pressure is supplied to piston 20 so that said piston is operated to move the stem 21 and thereby cause the arm 17 to be released from engagement with the pin 19. The springs 8 and 9 are then free to act, so that the compressive force of the springs operates to project the contact carrier 2 and cause the contacts 4 to engage corresponding contacts of a counterpart coupler head, as shown in Fig. 3 of the drawings, it being understood that fluid supplied to piston 14 on one car is also supplied through engaging tappets to the cylinder of the counterpart coupler head on the adjacent car as in the pending application of H. F. Woernley, hereinbefore referred to.

The contact carrier 2 is retracted when fluid under pressure is supplied to cylinder 15 for operating the lever 11 to effect the compression of the springs 8 and 9, and the cars may then be separated.

By locating the compression springs centrally of the contact slide a direct application of the force of the springs to the slide is provided, obviating any tendency of the slide to bind and stick in the guideways. The construction also permits of reducing the number of parts required, thus lowering the cost of manufacture.

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

1. An electric train line coupler comprising a casing, a movable contact carrier

mounted in said casing, a spring engaging said carrier at the central longitudinal axis and tending to project same when compressed, means including a piston operated by fluid under pressure for compressing said spring, means for locking said spring under compression, and means for tripping said locking means to permit the projection of said contact carrier by the compressive force of said spring.

2. An electric train line coupler comprising a casing, a movable contact carrier mounted therein, a plunger connected to said carrier at the central longitudinal axis thereof, and a coil spring surrounding said plunger and acting on said carrier to project same, the compressive force of the spring being employed to project the contact carrier in the act of coupling.

3. An electric train line coupler comprising a casing, a movable contact carrier mounted therein, a plunger carried by said contact carrier, a fixed abutment, a coil spring surrounding said plunger and interposed between the fixed abutment and the contact carrier, a lever connected to said plunger, and means associated with said lever for compressing the spring, the compressive force of the spring being employed to project the contact carrier in the act of coupling.

In testimony whereof I have hereunto set my hand.

CLYDE C. FARMER.