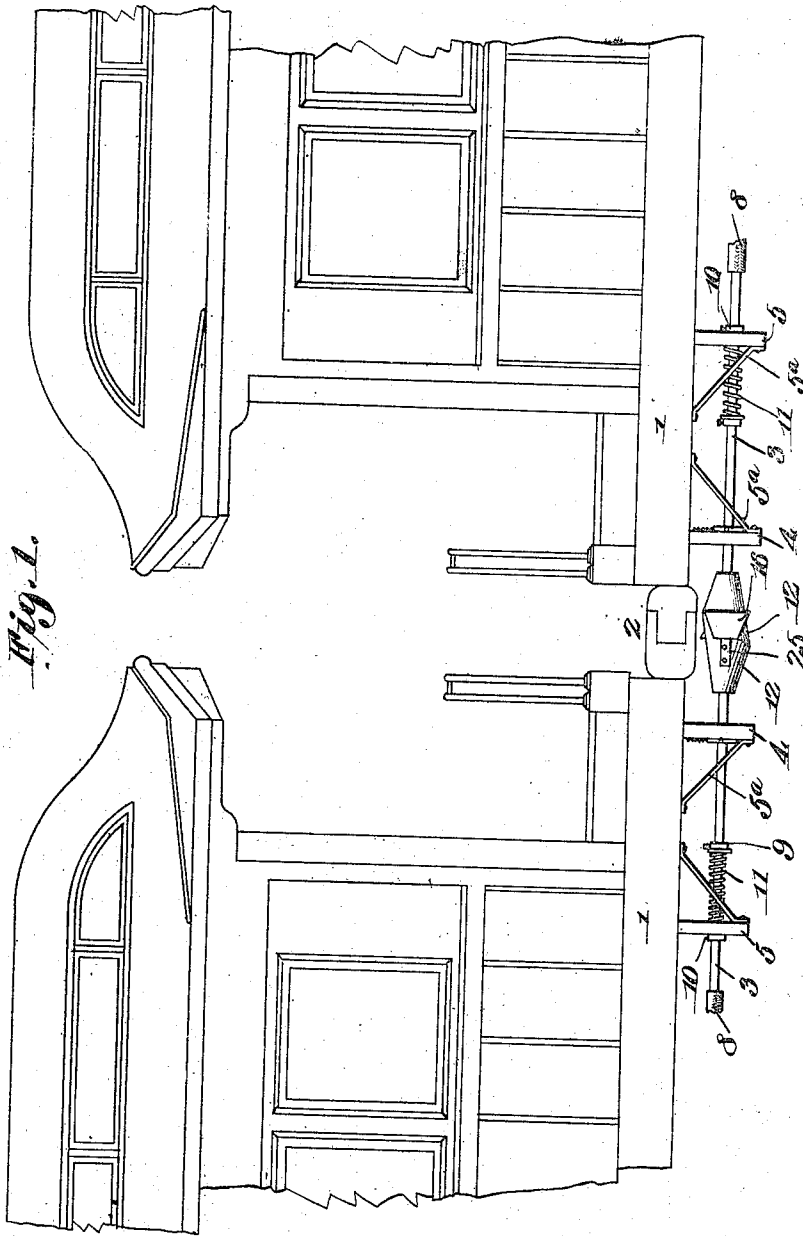


H. N. MOORE.
TRAIN PIPE COUPLING.
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1,011,229.

Patented Dec. 12, 1911.

3 SHEETS—SHEET 1.



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1,011,229.

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3 SHEETS-SHEET 2.

Fig. 2.

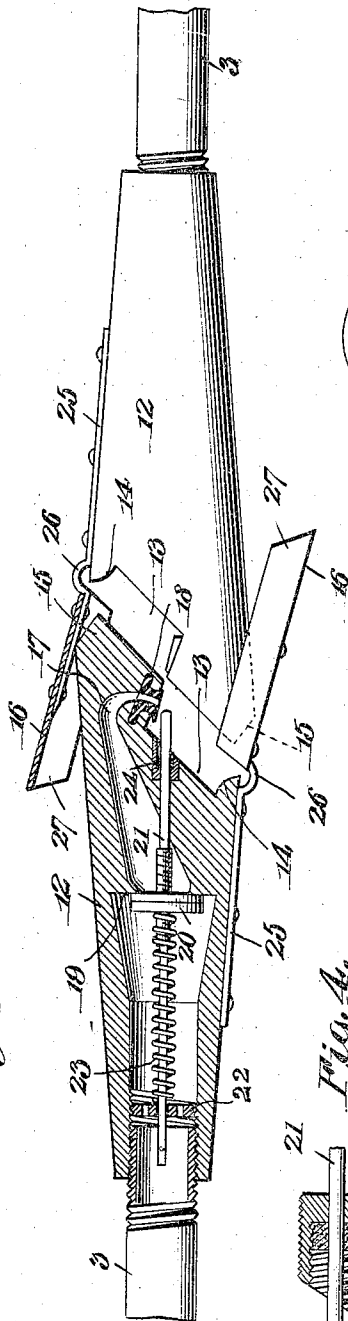


Fig. 4.

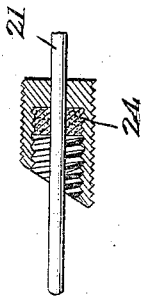


Fig. 5.

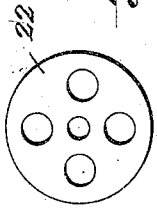


Fig. 3.

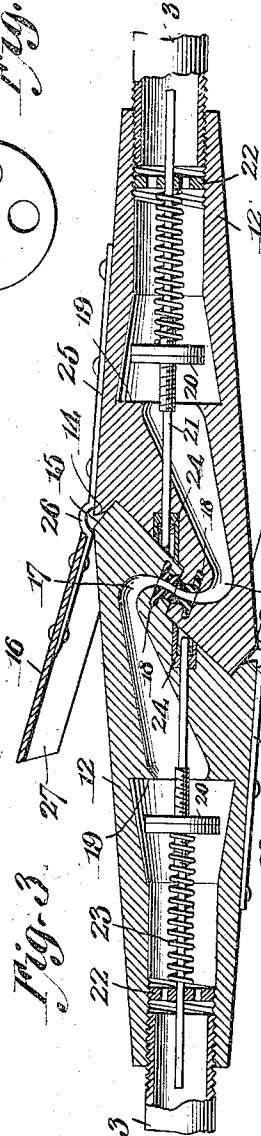


Fig. 7.

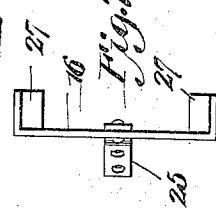
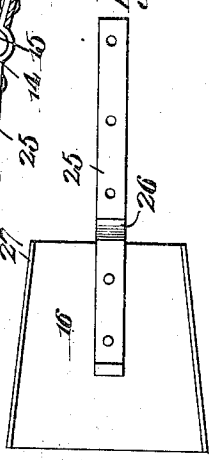


Fig. 6.



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3 SHEETS-SHEET 3.

Fig. 8.

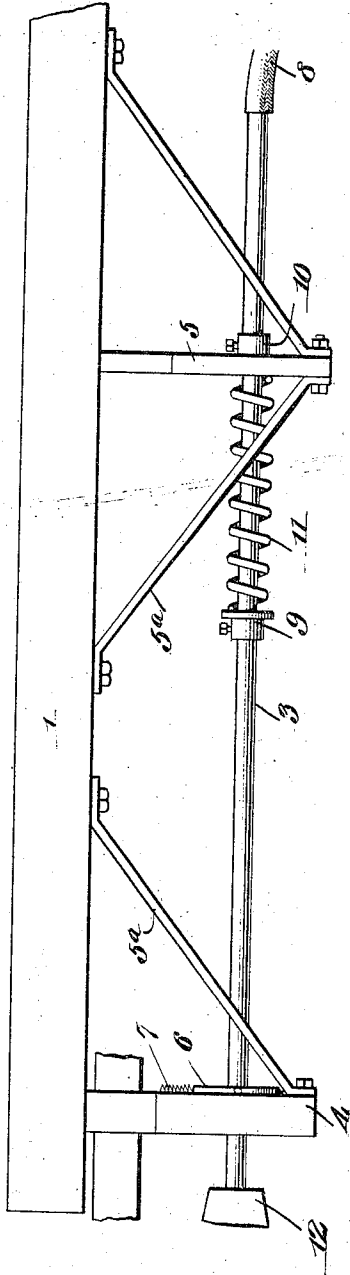


Fig. 10.

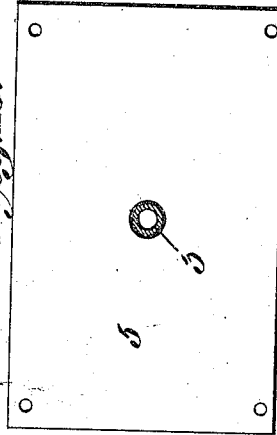
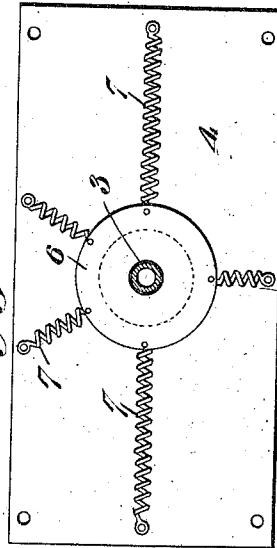


Fig. 9.



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UNITED STATES PATENT OFFICE.

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TRAIN-PIPE COUPLING.

1,011,229.

Specification of Letters Patent.

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Application filed December 21, 1910. Serial No. 598,508.

To all whom it may concern:

Be it known that I, HAROLD N. MOORE, a citizen of the United States, residing at Kearney, in the county of Buffalo and State of Nebraska, have invented new and useful Improvements in Train-Pipe Couplings, of which the following is a specification.

The purpose of this invention is the provision of means whereby the air pipe of the brake system of a train of cars may be automatically coupled and uncoupled without the necessity of the brakeman or other attendant going between cars for effecting this result.

The invention contemplates a coupling for the air pipe of pneumatic brake mechanism comprising similar members of novel and peculiar construction which when the cars are run together automatically couple and establish communication throughout the air pipe of the train and which when the cars are uncoupled and separated admit of the train pipe parting and the valve mechanism of each coupling member shutting off the air to prevent escape thereof, thereby insuring positive and certain action of the brakes of the car or cars coupled to the engine.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claims.

Referring to the drawings, forming a part of the application, Figure 1 is a view in elevation of the adjacent ends of two cars having the train pipe connected by means of a coupling embodying the invention. Fig. 2 is a top plan view of a train pipe coupling having one of the members in central horizontal section and showing the relation of the parts just prior to the coupling of the members. Fig. 3 is a central horizontal section of the coupling showing the members in coupled position. Fig. 4 is an enlarged sectional view of the packing at the outer end of the coupling member for the stem of the valve. Fig. 5 is a detail view of the guide for the inner end of the valve stem. Fig. 6 is a view in elevation of one of the yieldable guides. Fig. 7 is an end view of the guide. Fig. 8 is a view in elevation, showing the movable part of the train pipe and the supporting means therefor. Fig. 9 is a view in elevation of the

front support and yieldable plate for the forward portion of the train pipe. Fig. 10 is a view similar to Fig. 9 of the rear support for the train pipe.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The numeral 1 designates the bottom of the car or the platform of the running gear upon which the body of the car is mounted and to which the draft-rigging, brake mechanism, and other adjunctive parts are attached. The coupling for connecting the cars is indicated at 2. The air pipe 3 is located below the draft coupling and is mounted in hangers 4 and 5, said hangers being strengthened by means of stays or braces 5^a. The hanger 5 has an opening through which the air pipe 3 is adapted to move longitudinally. The hanger 4 has an opening opposite which is placed a plate or disk 6 having an opening through which the pipe 3 slides, the plate or disk 6 being retained in place by means of a series of springs 7, thereby admitting of the forward end of the air pipe moving freely in every direction within a limited extent. The hose pipe 8 is connected to the rear end of the air pipe 3. Set collars 9 and 10 are secured to the air pipe 3, the set collar 10 limiting the forward movement of the air pipe and the set collar 9 confining a coil spring 11 mounted upon the air pipe and confined between the hanger 5 and set collar 9 and normally exerting a pressure to hold the air pipe 3 at the limit of its forward movement. Each member of the coupling comprises a head 12, which is secured to the forward end of the air pipe 3. The coupling members are of similar formation and equipped with like devices.

The outer ends of the coupling members or heads 12 slant laterally from one side to the other and a recess 13 is formed in the slanting end near one side. The vertical side walls of the recess 13 incline in the opposite direction with reference to the length of the coupling so as to prevent the members of the coupling separating by a direct linear movement. The outer side wall flares, as indicated at 14, so as to engage the beveled end 15 of the companion member and press the same laterally when the coupling members are moved together. Each member has a portion at the end remote from the recess 13

beveled, as indicated at 15, for the two-fold purpose of riding upon the flared wall 14 of the companion member and to cooperate with a yieldable guide 16, whereby the members of the coupling are moved laterally when pressed together. The coupling member is hollow so as to form a space or chamber for the passage of the air from one member to the other. The outer end of the opening of the member curves laterally and extends through the inner vertical side wall of the recess 13, as indicated at 17. A packing 18 is set in the inner vertical side wall of the recess 13 to insure a tight joint between the two openings or passages of the members of the coupling when pressed together.

An annular shoulder 19 is formed within the opening or passage of the head 12 and constitutes a seat for a valve 20, which is mounted upon a rod 21 slidably mounted within the member 12 and having its forward end projecting beyond the inner or rear wall of the recess 13 so as to be engaged by the mating coupling member when the parts of the coupling are pressed together. The rod 21 is mounted in an opening formed longitudinally within the front portion of the head 12 and within a guide 22 located within the rear portion of the head, said guide consisting of a plate or disk secured within the member 12 and having a central opening to receive the rear end of the valve rod 21 and having other openings for the passage of the air. A spring 23 is mounted upon the rod 21 and confined between the valve 20 and guide 22 and serves normally to hold the valve 20 closed on its seat 19. The valve 20 is connected to the rod 21 by means of a screwthread, thereby admitting of regulating the tension of the spring 23 and the amount of the rod 21 projecting beyond the end of the head or member 12. Suitable packing 24 is fitted in the opening in the forward end of the head 12 to insure a tight joint between the rod 21 and the member 12.

Each member or head 12 has a guide 16 at one side adjacent the recess 13 and projecting forwardly from the slanting end of the head and this guide is located at the rear end of the slant and inclined slightly so that its forward end will engage the beveled end 15 of the companion coupling member when bringing the same together in the act of coupling the air pipes, as when running two cars together. A flat spring 25 is secured at one end to the guide 16 and at its opposite end to the member 12. The spring 25 has an outer crimp 26 near its juncture with the guide 16 so as to facilitate the lateral movement of the guide without endangering the spring to the extent of a straight spring. The guide 16 consists of a plate which gradually widens from its rear to its outer or forward end, said plate having longitudinal

flanges 27 at its upper and lower edges to engage the upper and lower sides of the companion coupling member to insure proper matching when the members are coupling so that the openings of the members will register.

The members of the train pipe coupling project beyond the draft coupling so as to engage in advance of couplings of the drawbars of the draft mechanism. As the cars are run together the outer ends of the guides 16 engage the beveled ends 15 of the coupling members and press the same laterally and at the same time move the coupling members 12 into vertical alinement, the latter result being effected by the forward flare of the longitudinal flanges 27. As the slanting ends of the members 12 come together the projecting end of one enters the recessed end of the other and the rods 21 are pressed inward, thereby unseating the valves 20, so that communication is established between the members of the coupling, thereby connecting the air pipes of adjacent cars. As the members of the train pipe coupling are pressed together the springs 11 are compressed and as long as the cars remain coupled the members of the train pipe or air brake pipe are pressed together by means of the springs 11, the members being held in alinement by means of the guides 16 which embrace the top, bottom and outer sides of the members of the air pipe coupling. When the cars are uncoupled the stops 10 on the train pipes 3 coming in contact with the hangers 5 pull the members 12 apart, the same separating by a combined longitudinal and lateral movement. As the members 12 separate the valves 20 automatically close. The lateral movement of the members 12 is brought about when separating the same by the inner longitudinally inclined side walls of the recesses 13 riding the one upon the other, as will be readily understood.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention what is claimed as new, is:—

1. A train pipe coupling comprising similar members each having a mating recess and a projection at its forward end and having the inner walls of the recesses under cut

to interlock and the outer walls flared and having longitudinal openings which extend through the inner walls of the recesses.

5 2. In a train pipe coupling, the combination of a supporting framework, longitudinally spaced hangers, the forward hanger having an opening, a plate mounted upon the forward hanger, springs yieldingly connecting said plate to the hanger, an air pipe
10 mounted in the rear hanger and in the spring supported plate of the front hanger, a stop mounted upon the air pipe and adapt-

ed to engage the rear hanger to limit the forward movement of the air pipe, and a spring mounted upon the air pipe and confined between a stop thereon and said rear hanger and normally exerting a force to press the
15 air pipe forward.

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

HAROLD N. MOORE.

Witnesses:

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H. G. REITER.