M. A. GREENE.

HOSE COUPLING.

APPLICATION FILED FEB. 10, 1917.

1,255,738.

Patented Feb. 5, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

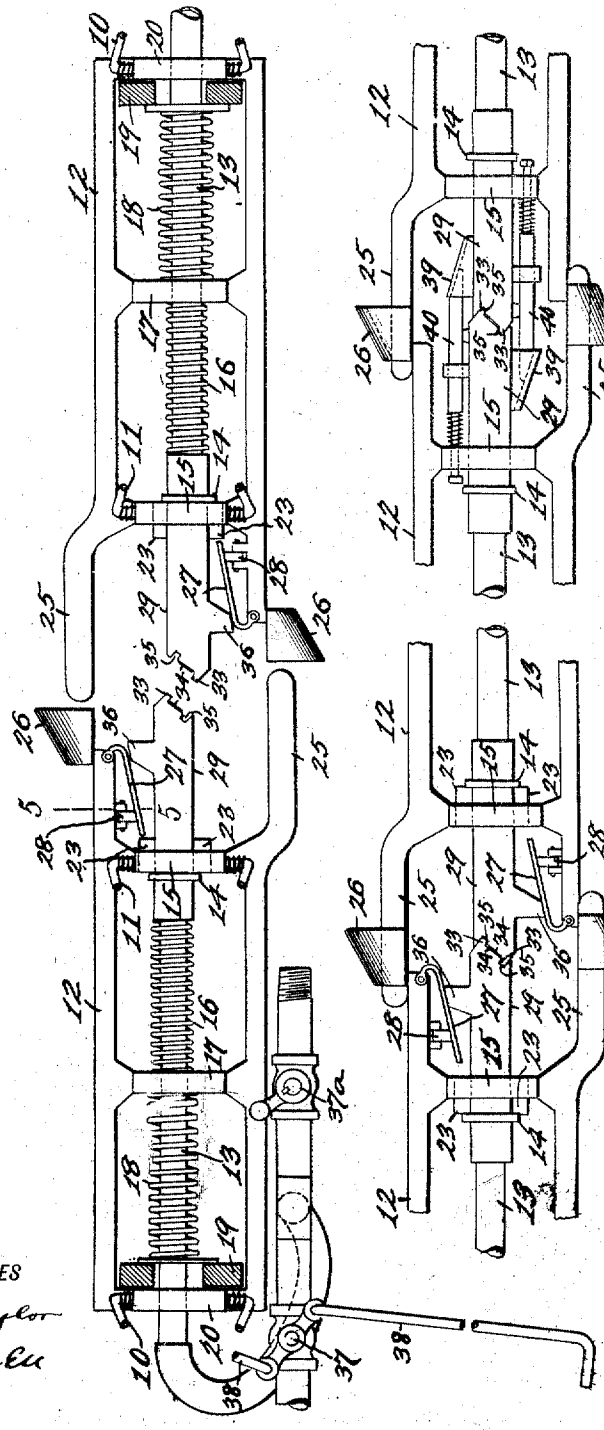


Fig. 2.

Fig. 3.

WITNESSES

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Fig. 3.

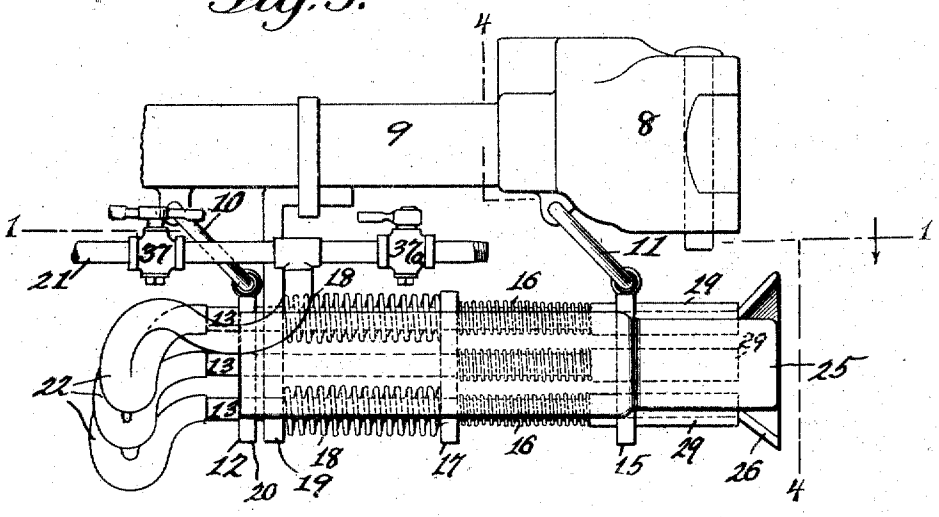


Fig. 4.

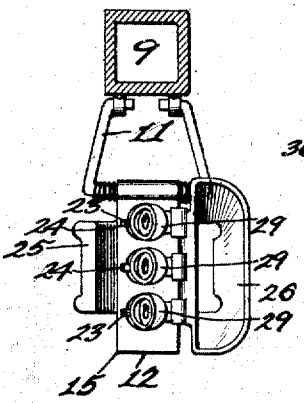


Fig. 6.

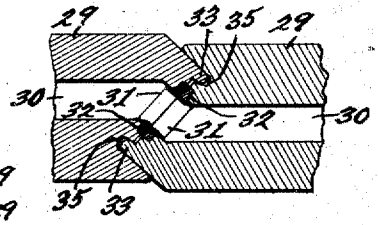
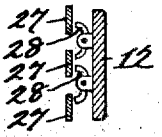


Fig. 5.



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HOSE-COUPLING.

1,255,732. Specification of Letters Patent. Patented Feb. 5, 1918.

Application filed February 10, 1917. Serial No. 147,772.

To all whom it may concern:

Be it known that I, MORGAN A. GREENE, a citizen of the United States, and a resident of Rupert, in the county of Minidoka and State of Idaho, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a specification.

My invention relates to the hose couplings for use in air or steam systems of railway trains, between cars, and the main object thereof is to provide means for automatically coupling the sections together when two cars are coupled and for automatically uncoupling the same when the cars are uncoupled.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which like characters refer to like parts in each of the views, and in which:—

Figure 1 is a plan view of two complemental hose or pipe coupling members, as on adjoining car ends, uncoupled;

Fig. 2 is a similar view thereof, coupled;

Fig. 3 is a side elevation of one member, showing its position with respect to the car coupler;

Fig. 4 is a section taken on the line 4—4 of Fig. 3;

Fig. 5 is a section taken on the line 5—5 of Fig. 1;

Fig. 6 is a sectional view of the hose or pipe heads coupled; and

Fig. 7 is a view similar to Fig. 2 but showing a modification thereover.

Referring to the drawings, 8 represents the head and 9 the draw-bar of a car coupler of any desired form beneath which my invention is suspended, in single or multiple form, by means of links 10 and 11 in such manner as to swing longitudinally of the car, said links carrying a frame 12 in which a pipe 13 is slidably mounted though normally held with a flange 14 thereon against a cross-bar 15 of the frame by means of a spring 16 bearing against a cross-bar 17 of said frame, and said frame is normally held in forward position by means of a spring 18 interposed between said cross-bar 17 and a bifurcated bracket 19 secured in any desired manner to the draw-bar 9, a cross-bar 20 limiting forward frame movement.

The pipe 13 is connected with the stationary piping 21 beneath the car by means of a hose section 22 and is prevented against rotary movement by making the same angular or, as illustrated, by the provision of ears 23 slidably mounted in corresponding grooves 24 in the cross-bar 15, Fig. 4.

Each frame 12 is provided with a forwardly directed finger 25 on one side and with an angularly arranged guide 26 at its other side whereby, when the two frames are forced into operative connection, the finger of one frame will be guided against the side of the other frame by the guide 26 on the latter, thus alining the two frames and preventing relative lateral motion therebetween.

Each frame is further provided with an inclined guideway 27, shown as pivoted, for each of the hose or pipe sections if the latter are in multiple and, in such case, I provide pivoted equalizers 28, Fig. 5, for insuring a proper relationship between said hose or pipe sections, the multiple arrangement being more particularly designed for passenger coaches but I do not desire to limit myself to either single or multiple type.

Each pipe 13 is provided with a head 29 having a bore 30 therethrough the end of which is inclined as shown at 31, Fig. 6, and preferably suitably packed as by gaskets 32 or in any other desired manner, the outer end of each head being provided with an inclined tongue 33, a reversely inclined surface 34, and a groove 35 arranged parallel to the tongue 33, Figs. 1, 2, 6 and 7, the tongue of one head being adapted to enter the groove in the other head to form a lock, the surfaces 34 bearing one upon the other.

When separated, the tongues 33 are in the approximate line of the respective sides of the opposite heads though extending inwardly slightly so as to impinge on the inclined outer side of the complemental groove 35 when the heads are brought together whereby, as the heads continue to move toward each other, the respective tongues 33 will slide over the inclined sides of the respective grooves 35 to cause the former to be seated in the latter, Fig. 6, this being insured also by means of a lug 36 on each head sliding over the inclined guideway 27 of the other frame 12, Fig. 2, whereby a leak-proof connection is formed between the heads when the cars are coupled together.

The heads 29 are, as will be obvious, capable of a degree of lateral movement in order to permit this engagement of the same but no relative lateral movement is possible

when the connection is once made and, as will be understood, the pipes 13 yield in a spring resisted manner to compensate for relative axial movement of the car couplers, as do also the frames 12.

When two cars are uncoupled or drawn apart this hose or pipe connection is broken by reversing the above described operation of joining the heads 29 and the parts resume their normal positions ready for another coupling operation.

The air or steam system may be controlled on each car by means of a valve 37 operable from either side of the car by rods 38 and I may provide a separate valve 37ª for use in connecting a car provided with my hose coupler with one not so provided.

It will thus be seen that I provide two air or steam line heads on adjacent cars adapted to automatically engage in a leak-proof manner and to automatically separate when the cars are uncoupled, no attention on the part of the trainmen being required other than operating the valve from the side of the car, thus obviating the necessity for going between the cars and avoiding the accidents, now common, due to this necessity.

The form shown in Fig. 7 is essentially the same as that already described except that I substitute guides 39 for the guideways 27 and spring resisted bars 40 for the lugs 36, the operation being precisely as already described, and I may make other changes in and modifications of the forms shown and described, providing that such changes do not depart from the spirit of the invention and come within the scope of the appended claims.

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

1. In a hose coupling of the character specified, a longitudinally movable frame, a head mounted on the frame and having an independent longitudinal and lateral movement, and coacting means between the head and frame for moving the head laterally in a positive and yieldable manner.

2. In a hose coupling of the character specified, a draw bar, a frame suspended from the draw bar, a bracket carried by the draw bar, a spring between the bracket and frame normally pressing the latter forward, a head mounted on the frame and having a limited longitudinal and lateral movement, a spring between the frame and head normally pressing the head forward, and coacting members between the frame to yieldably press the head laterally.

3. In a hose coupling of the character described, frames, heads carried by the frames and having interlocking engagement, and cooperating means on the frames and heads for moving said heads with respect to the frames.

4. In a hose coupling of the character described, movable frames having means for guiding them into engagement with one another, heads carried by the frame and having interlocking engagement, and coöperating means on the frames and heads for moving said heads with respect to the frames.

5. In a hose coupling of the character described, movable frames having means for guiding them into engagement with one another and provided with guideways and heads mounted in the frames and having interlocking engagement and provided with lugs engaging the guideways of the frames.

6. In a hose coupling of the character described, swinging frames having means for guiding them into engagement with one another and provided with guideways, and spring pressed heads mounted in the frames and having interlocking engagement, said heads being provided with lugs engaging the guideways.

7. In a hose coupling of the character specified, a frame, a head mounted on the frame to receive both a longitudinal and a lateral movement, an inclined guideway yieldably mounted on the frame and a complemental member carried by the head and acting jointly with the said guideway to yieldably press the head laterally.

8. In a hose coupling of the character specified, a frame, hose pipe sections mounted on the frame, each having a longitudinal and a lateral movement, and inclined guideways and coöperating members between the frame and hose pipe sections for moving the latter laterally.

9. In a hose coupling of the character specified, a frame, hose pipe sections mounted on the frame, each having a longitudinal and a lateral movement, and inclined guideways and coöperating members between the frame and hose pipe sections for moving the latter laterally, and equalizing members cooperating with the hose pipe sections and inclined guideways.

MORGAN ADELBERT GREENE.