

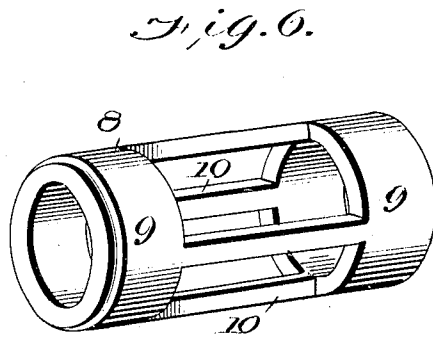
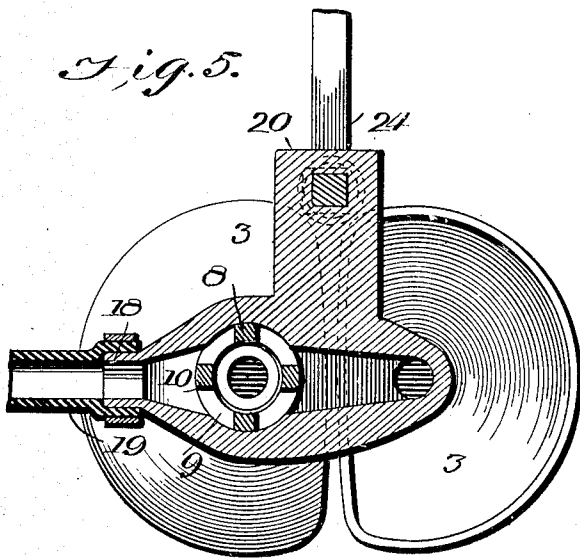
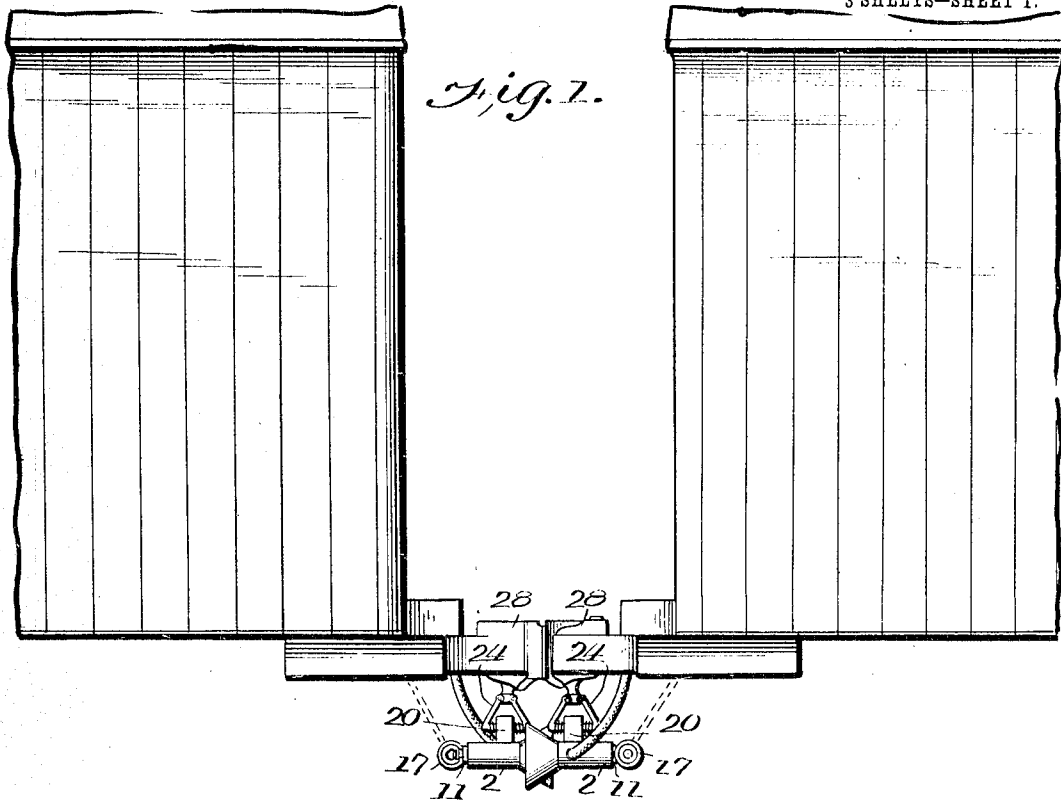
No. 872,174.

PATENTED NOV. 26, 1907.

R. M. FYOCK & S. STONE.
AUTOMATIC TRAIN PIPE COUPLING.

APPLICATION FILED MAR. 25, 1907.

3 SHEETS—SHEET 1.



WITNESSES

J. E. Barry
J. Middleton

INVENTORS
RALPH M. FYOCK
STEWART STONE
BY *Wm. & Co.*
ATTORNEYS

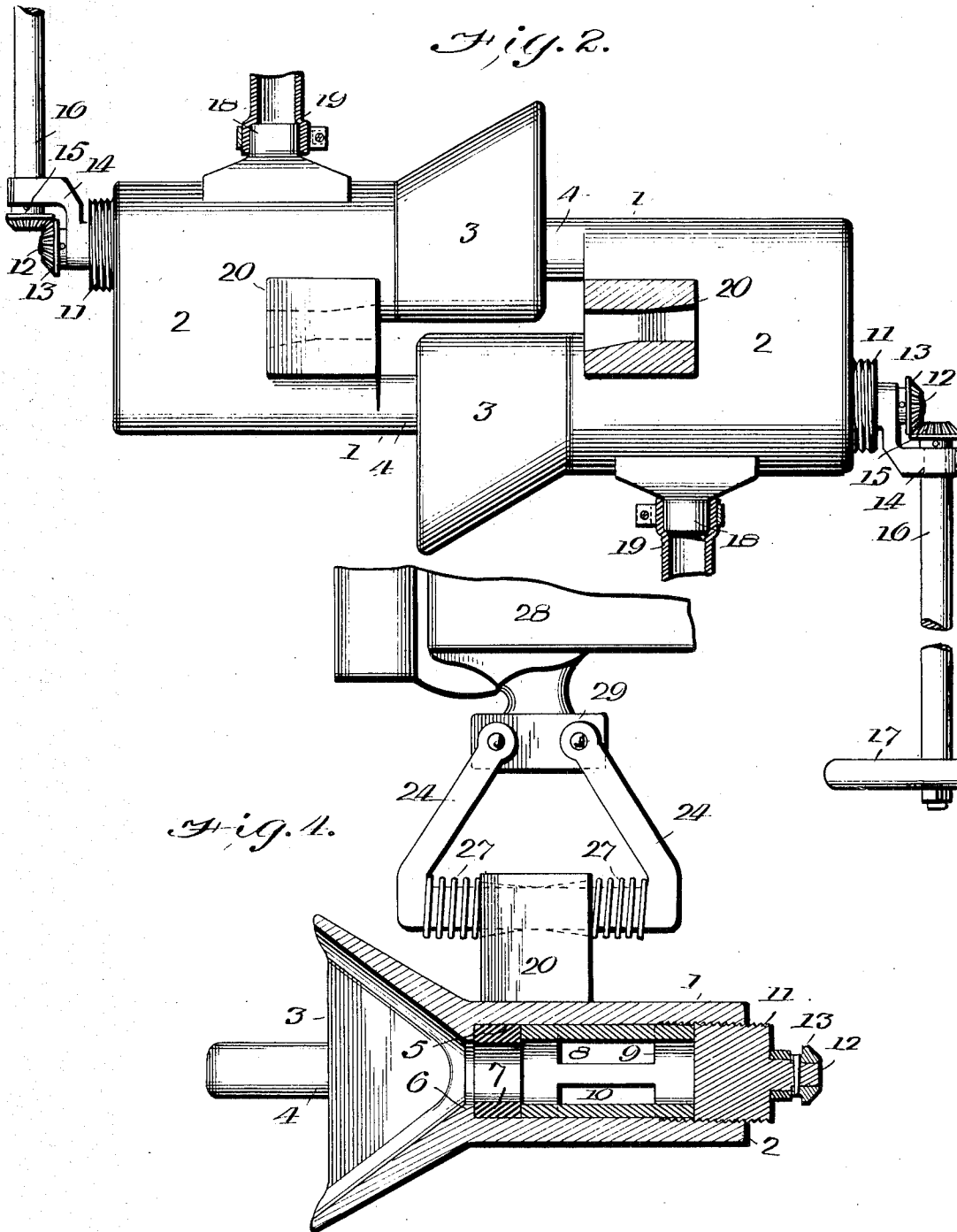
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J. C. Barry
Middleton

INVENTORS

RALPH M. FYOCK
STEWART STONE

BY *Munn & Co.*

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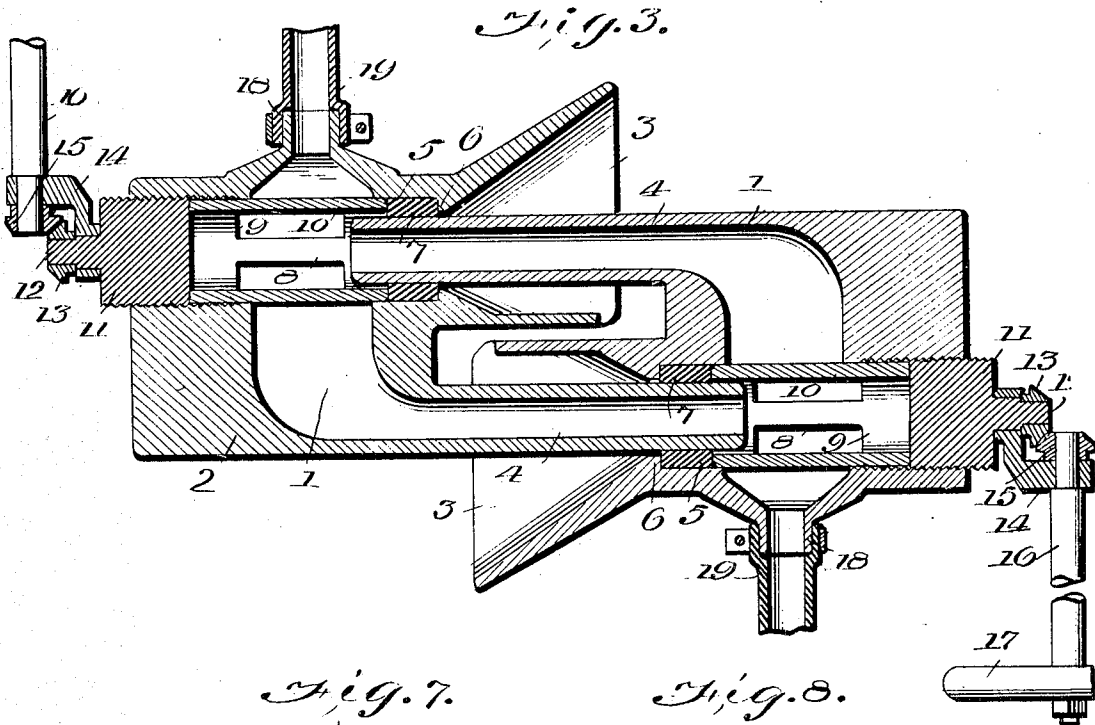
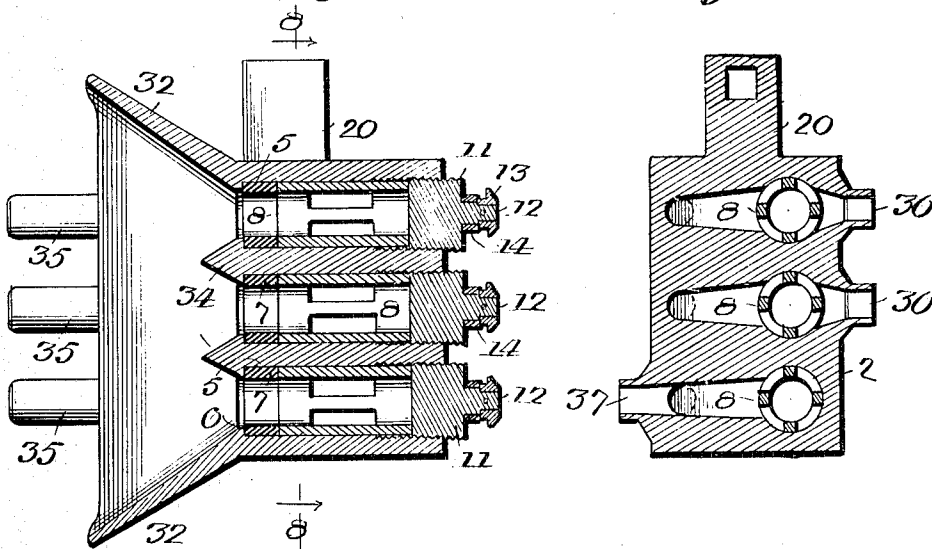


Fig. 7.

Fig. 8.



WITNESSES

J. C. Barry
J. Middleton

INVENTORS
RALPH M. FYOCK
STEWART STONE

BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

RALPH M. FYOCK AND STEWART STONE, OF BUTLER, PENNSYLVANIA.

AUTOMATIC TRAIN-PIPE COUPLING.

No. 872,174.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed March 25, 1907. Serial No. 364,245.

To all whom it may concern:

Be it known that we, RALPH M. FYOCK and STEWART STONE, citizens of the United States, and residents of Butler, in the county of Butler and State of Pennsylvania, have made certain new and useful Improvements in Automatic Train-Pipe Couplings, of which the following is a specification.

Our invention is an improvement in automatic train-pipe couplings and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

Referring to the drawings, forming a part hereof, Figure 1 is a side view of a portion of two cars provided with our improvement. Fig. 2 is a plan view of the two heads comprising the coupling. Fig. 3 is a horizontal section of the same. Fig. 4 is a vertical longitudinal section. Fig. 5 is a transverse section. Fig. 6 is a perspective view of the follower. Fig. 7 is a vertical section through one member of a coupling head, showing the arrangement for three train pipes, and Fig. 8 is a section on the line 8—8 of Fig. 7.

In the present embodiment of the invention, the coupling comprises a plurality of heads 1, each comprising a body portion 2 having a longitudinal cylindrical opening 5 therethrough, the end of the opening having a bell mouth 3, projecting beyond the body portion proper of the head. The cylindrical opening is provided with an internal annular shoulder 6 at its junction with the bell mouth, and against the shoulder rests a gasket 7 of suitable resilient material. A follower 8 comprising spaced rings 9 connected by longitudinal bars 10, is arranged within the opening and engaging the shoulder, and a cylindrical plug 11 is threaded into the opening, the inner end of the plug engaging the outer end of the follower. The outer end of the plug is provided with a pin 12, having a reduced end upon which is keyed a bevel gear 13, and one arm of an angular bracket 14 is mounted on the pin, the other arm having journaled therein a shaft 16, provided with a bevel gear 15 meshing with the bevel gear 13. The outer end of the shaft is provided with a hand wheel 17, whereby to rotate the plug. The body portion of the head has projecting therefrom in the same direction with the bell, a tubular portion 4, communicating with the cylindrical opening, and on the op-

posite side of the head from the tubular portion is a nipple 18, adapted to have the train-pipe hose 19 connected thereto.

It will be noticed from an inspection of Fig. 3, that the internal diameter of the tubular portion 2 at its communication with the cylindrical opening is considerably greater than at its outer end, and that the opening of the nipple into the cylindrical opening is also of greater diameter, whereby to provide for the free passage of air from the hose to the tubular portion, without obstruction by the bars of the follower. Each of the coupling heads has upon its upper face a lug 20, provided with a longitudinal opening therethrough, for receiving the body portion of a hanger 24, the arms of the hanger being connected in any suitable manner to a lug 29 upon the draw-head 28. Springs 27 are arranged on each side of the lug 20, whereby to normally retain the lug at approximately the center of the body portion of the hanger.

It will be noticed from an inspection of Figs. 2 and 4, that the opening through the lug 20 is cut away upon the sides in such manner as to permit swinging of the head in a horizontal plane in the direction of the tubular portion, and that the top and bottom of the opening are cut away in such manner as to permit a slight rocking motion of the head on the hanger. This arrangement permits the heads to yield in practically every direction except one, the direction which would allow the bell mouths to engage with each other.

In Figs. 7 and 8 is shown the form of head designed for passenger cars, which are equipped with three train pipes, the body portion of the head being provided with a vertical series of three cylindrical openings, having a common bell mouth 32, and three tubular portions 35 also arranged in a vertical series. The axes of the tubular portions are parallel with the axes of the respective cylindrical openings, and the head is provided with nipples 36, 37, communicating with the cylindrical openings, the openings 36 for the upper and intermediate cylindrical openings being arranged on one side of the head, and the opening 37 for the lower cylindrical opening being arranged upon the other side. Pyramidal guides 34 are arranged between the cylindrical openings, to direct the tubular portions of the coacting head into the proper opening. The construction

of this form of head is otherwise precisely similar to the head shown in Figs. 1, 2 and 3.

In operation when cars provided with the improved coupling heads are pushed together, the tubular portions of the cooperating heads engage the bell mouths of the cylindrical opening, and are deflected thereby into the said cylindrical openings. Should the gasket permit leakage between the tubular portion of one head and the wall of the cylindrical opening of the other head, the hand wheel may be rotated to turn the plug further into the cylindrical opening, thus pressing the gasket between the annular shoulder and the follower, and decreasing the internal diameter of the said gasket whereby to make a better contact between the gasket and the tubular portion. By this construction it is possible either when the cars are first coupled or at any other time, to contract the gasket firmly on the tubular portion to prevent leakage, thus always insuring a proper coupling. The shaft 16 of the hand wheel may extend out to the side of the car in a convenient position for manipulating the plug without necessitating entrance between the cars.

We claim—

1. In an automatic train-pipe coupling, the combination of a head comprising a body portion having a vertically arranged series of cylindrical openings therethrough, said openings being provided with a common bell mouth projecting from the body portion, each of said openings being provided with an internal annular shoulder at the junction of the bell mouth therewith, a gasket resting against the shoulder, a follower engaging the gasket, a plug threaded into the opening and engaging the follower, means for rotating the plug, whereby to vary the internal diameter of the gasket, said head having a vertical series of tubular portions projecting therefrom in the same direction as the bell mouth and communicating with the respective cylindrical openings, the axes of the tubular portions being parallel with the axes of the respective cylindrical openings, said head being provided with nipples communicating with the openings for connection with the train pipes, and means for supporting the head whereby to permit a limited horizontal swinging movement in the direction of the tubular portions, and to permit a yielding in the direction of the axes of the cylindrical openings.

2. In an automatic train-pipe coupling, the combination of a head having a plurality of parallel cylindrical openings therethrough, said openings being provided with a common bell mouth, each of said openings being provided with an internal annular shoulder at the end adjacent to the bell mouth, a gasket resting against the shoulder, a follower engaging the gasket, a plug threaded into the

opening and engaging the follower, a manually operated means for rotating the plug whereby to vary the internal diameter of the gasket, said head having a series of parallel tubular portions projecting therefrom and communicating with the respective cylindrical openings, said head being provided with nipples communicating with the openings for connection with the train-pipes, and means for yieldingly supporting the head.

3. In an automatic train-pipe coupling, the combination of a head having a cylindrical opening therethrough, said opening terminating in a bell mouth and being provided with an internal annular shoulder at the junction of the bell mouth therewith, a gasket resting against the shoulder, a follower engaging the gasket, a plug threaded into the opening and engaging the follower, manually operated means for rotating the plug whereby to vary the internal diameter of the gasket, said head having a tubular portion projecting therefrom in the same direction as the bell mouth, and parallel with the axis of the opening and communicating with the opening, said head being provided with means whereby to connect the train-pipe with the opening.

4. In an automatic train-pipe coupling, the combination of a head having a cylindrical opening therethrough, said opening terminating in a bell mouth, and being provided with an internal annular shoulder at the junction of the bell mouth therewith, a gasket resting against the shoulder, a follower engaging the gasket, a plug threaded into the opening and engaging the follower, manually operated means for rotating the plug whereby to vary the internal diameter of the gasket, said head having a tubular portion projecting therefrom, and communicating with the opening, and being provided with means whereby to connect the train-pipe with the opening.

5. In an automatic train-pipe coupling, the combination of a head having a cylindrical opening therethrough provided with a bell mouth, and a tubular portion at the side of the bell mouth and communicating with the opening, said head having a nipple for connection with the train-pipe, a gasket in the opening adjacent to the bell mouth, said opening having an internal annular shoulder against which the gasket rests, a follower engaging the gasket, a plug threaded into the opening and engaging the follower, and manually operated means for rotating the plug whereby to vary the internal diameter of the gasket.

6. In an automatic train-pipe coupling, the combination of a head having a cylindrical opening therethrough provided with a bell mouth, and a tubular portion at the side of the bell mouth and communicating with the opening, said head having a nipple for

connection with a train-pipe, a gasket in the opening adjacent to the bell mouth, said opening having an internal annular shoulder against which the gasket rests, a follower engaging the gasket, and manually operated means engaging the follower to move the same towards and from the shoulder, whereby to vary the internal diameter of the gasket.

7. In an automatic train-pipe coupling, the combination of a head having a cylindrical bell mouth opening therethrough and a tubular portion at the side of the bell mouth and communicating with the opening, said head having a nipple for connection with the train-pipe, a gasket in the opening adjacent to the bell mouth, said opening having an internal annular shoulder against which the gasket rests, and manually operated means for pressing the gasket against the shoulder whereby to vary the internal diameter thereof.

8. In an automatic train-pipe coupling,

the combination of a head having a cylindrical bell mouth opening therethrough, a tubular portion at the side of the bell mouth and communicating with the opening, and a nipple for connection with a train-pipe, a gasket in the opening adjacent to the bell mouth, and manually operated means for compressing the gasket whereby to vary the internal diameter thereof.

9. In an automatic train-pipe coupling, the combination of a head having a cylindrical bell mouth opening therethrough, a gasket within the opening adjacent to the bell mouth, and manually operated means for compressing the gasket whereby to vary the internal diameter thereof.

RALPH M. FYOCK.
STEWART STONE.

Witnesses:

M. D. FRITZ,
ALBERT L. BOWSER.