No. 846,840. PATENTED MAR. 12, 1907.

J. E. FORSYTH.

TRAIN PIPE COUPLING.

APPLICATION FILED JULY 9, 1906.

2 SHEETS—SHEET 1.

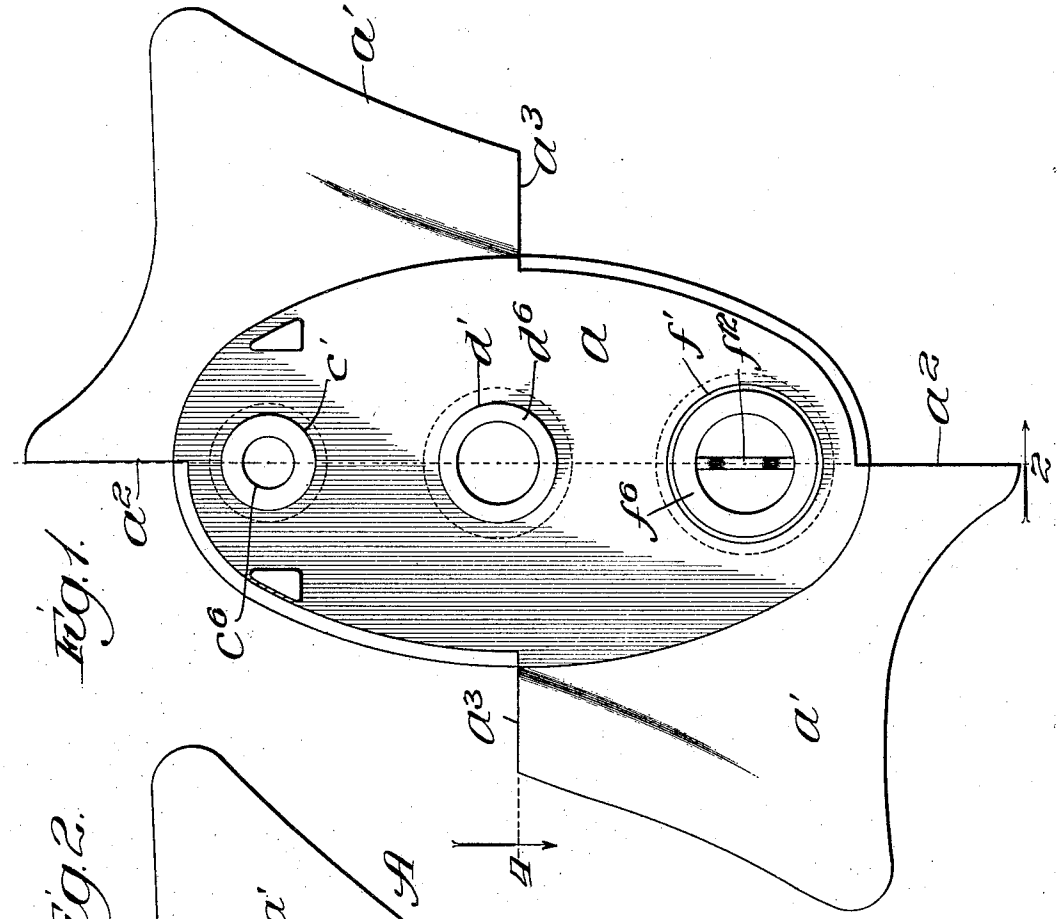

Fig. 1.

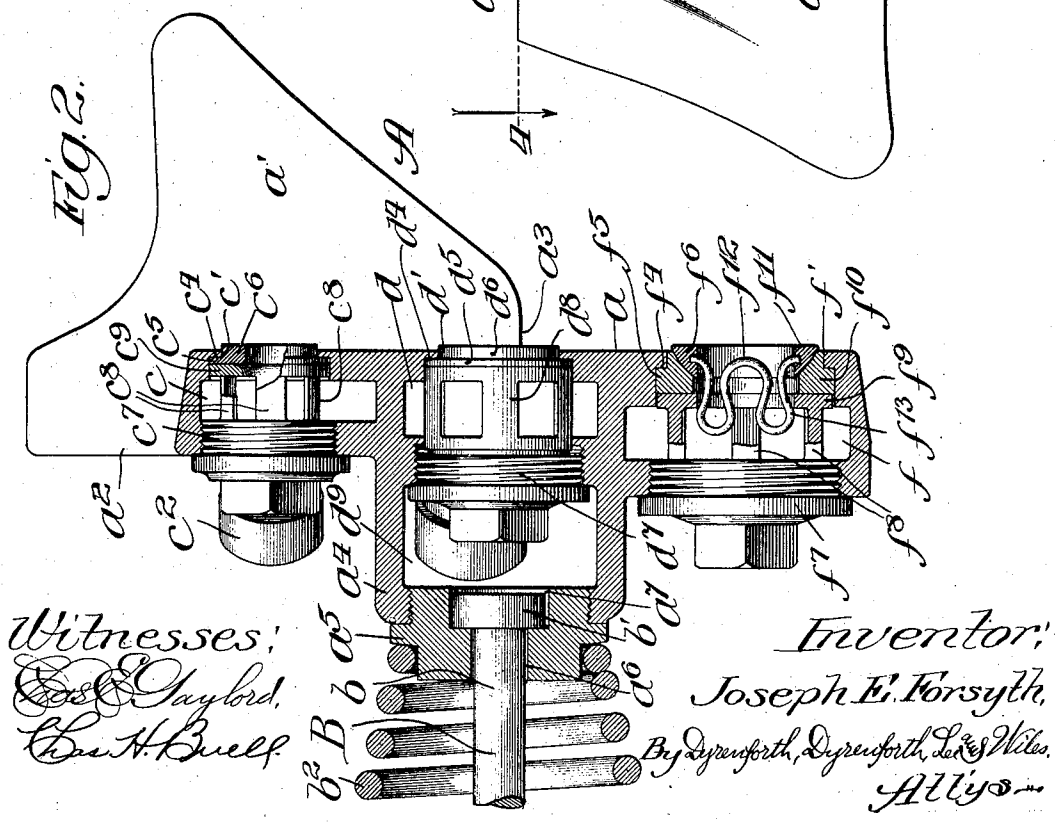

Fig. 2.

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2 SHEETS—SHEET 2.

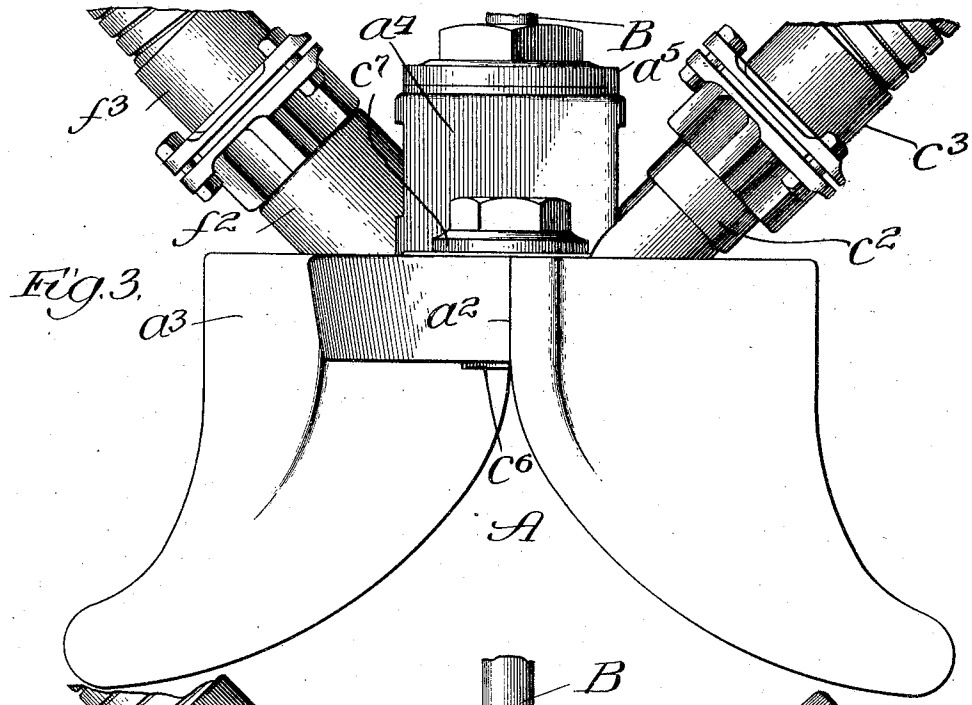

Fig. 3.

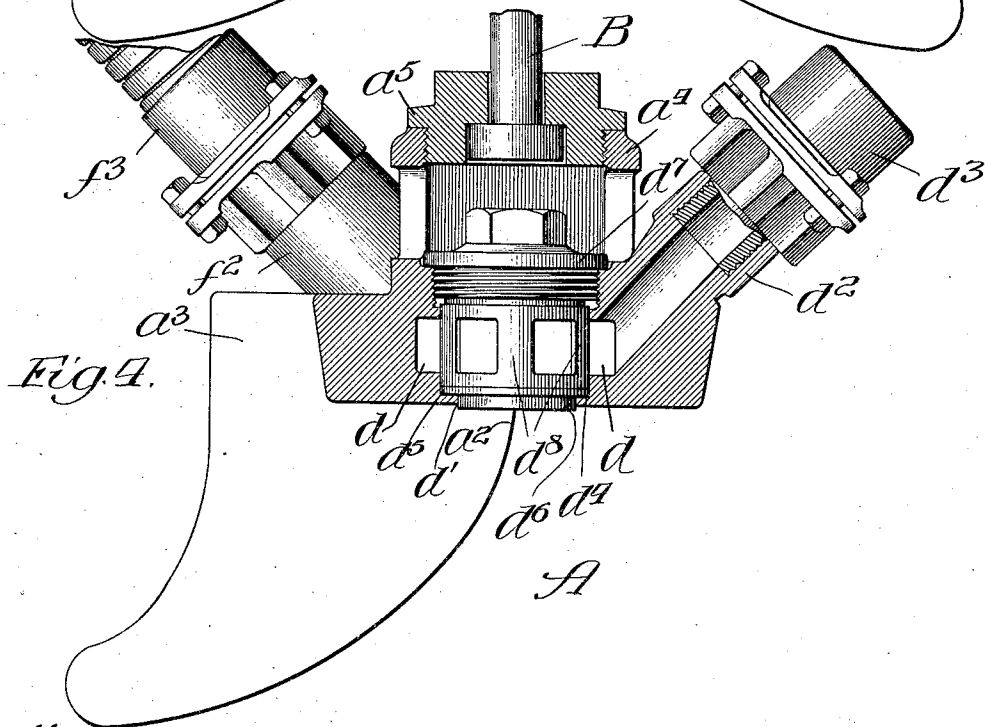

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH E. FORSYTH, OF CHICAGO, ILLINOIS.

TRAIN-PIPE COUPLING.

No. 846,840. Specification of Letters Patent. Patented March 12, 1907.

Application filed July 9, 1906. Serial No. 325,248.

To all whom it may concern:

Be it known that I, JOSEPH E. FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Train-Pipe Coupling, of which the following is a specification.

This invention relates particularly to automatic train-pipe couplings—such, for instance, as disclosed in my Patent No. 692,511, dated February 4, 1902.

The primary object of the invention is to facilitate the replacement of gaskets in the coupling-heads in the event of injury thereto.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a face view of a coupling-head constructed in accordance with my invention; Fig. 2, a vertical section taken as indicated at line 2 of Fig. 1; Fig. 3, a plan view of the same, and Fig. 4 a section taken as indicated at line 4 of Fig. 1.

In the construction illustrated, A represents a coupling-head, and B means for supporting the coupling-head on the substructure of a car. The coupling-head has a flat face a of oval outline and has a pair of diagonally opposite guide-prongs a', affording shoulders a^2, lying in a vertical central plane, and shoulders a^3, lying in a horizontal central plane, as is now well understood in the art. The head is equipped on its rear surface with a central hollow boss a^4, which is internally threaded at its rear portion to receive a nut a^5, having a central perforation a^6, with an enlargement a^7 at its inner end. The means for supporting and centering the coupling-head comprises a bolt b, having a head b', received within the enlarged opening a^7, and a conical coiled spring b^2, within whose small outer end is received the shank of the nut a^5, said nut having a bearing for the spring, as shown. In practice the spring b^2 is supported on a bracket (not shown) which depends from the draw-bar of the car.

The coupling-head has near its top a chamber c, with an orifice c' opening at the front face of the head. It has at its center a chamber d, with an orifice d' opening at the front face of the head, and it has at its lower portion a chamber f, with an orifice f' opening at the front face of the head. The orifices c' d' f' are in vertical alinement at the central plane of the coupling-head.

Connected with the upper portion of the coupling-head and communicating with the chamber c is an obliquely-set hollow lug c^2, which connects with the signal-pipe c^3 of the train. Connected with the central portion of the head at one side of the boss a^4 is an obliquely-set hollow lug d^2, which communicates with the chamber d and connects with the brake-pipe d^3 of the train. Connected with the lower portion of the coupling-head on the opposite side thereof is an obliquely-set hollow lug f^2, which communicates with the chamber f of the head and is connected with the steam-pipe f^3 of the train. The pipes c^3 d^3 f^3 are flexible metallic pipes of known construction, permitting free movement of the coupling-head with relation to the fixed portions of the train-pipes. The chamber c has at its front side a socket c^4, which receives the flange c^5 of a rubber gasket c^6, whose face projects beyond the front surface a of the coupling-head. The gasket is confined in place by means of a plug c^7, threaded into an opening at the rear side of the coupling-head and which intersects the chamber c. The plug c^7 is equipped with forwardly-projecting arms c^8, which bear a ring c^9, serving to hold the gasket c^6 in place. Similarly, the coupling-head has a socket d^4 at the chamber d, which receives the flange d^5 of a rubber gasket d^6, whose face projects beyond the face of the coupling-head. The gasket is confined in place by means of a plug d^7 and a ring d^8 confined between the plug and the gasket. The plug d^7 screws into the rear side of the coupling-head within the hollow boss a^4. The boss a^4 is provided with lateral openings d^9, which permit removal of the plug d^7, the ring d^8, and the gasket d^6. The coupling-head has at its lower portion a socket f^4, which receives the flange f^5 of a sectionally-constructed gasket f^6. The gasket is confined in place by means of a threaded plug f^7, having forwardly-projecting arms f^8, equipped with a ring f^9, which bears against the gasket. The gasket comprises a composition section f^{10}, having a concave surface at its front side, and a metallic section f^{11}, having a convex surface fitting within said concave surface, the section f^{11} being held in place by a spring f^{12}, having shoulders f^{13} engaging the ring f^9. The section f^{11} projects in front of the face a of the coupling-head, but is of less diameter than the orifice f', so that the gasket as a whole is withdrawable from the rear of the coupling-head.

From the foregoing description it will be understood that the improved construction provides for removal of any gasket and the substitution of a new one without the necessity of uncoupling the cars.

It is understood, of course, that in practice cars are equipped at both ends with the improved coupling and that when the cars are coupled together the train-pipes are automatically coupled in a manner now well understood in the art.

The foregoing detailed description has been given for clearness of understanding only, and no undue limitation is to be understood therefrom.

What I regard as new, and desire to secure by Letters Patent, is—

1. In an automatic train-pipe coupling, the combination with a coupling-head having a face adapted to be presented to a companion coupling-head, of a pipe connected with said coupling-head, and a gasket connected with said head and removable from the rear of the head without disturbing the pipe, for the purpose set forth.

2. In an automatic train-pipe coupling, a coupling-head having a chamber with an orifice opening at the front face of the coupling-head and a gasket-socket formed at said orifice, a gasket seated in said socket, a plug having threaded connection with the rear portion of the coupling-head, means between the plug and gasket for confining the gasket in its socket, and a pipe independent of said plug communicating with said chamber.

3. In an automatic train-pipe coupling, the combination of a coupling-head having a chamber with an orifice opening at the front face of the coupling-head, a gasket equipped with a flange bearing against an internal shoulder adjacent to the orifice, a plug having threaded connection with the coupling-head in the rear of said chamber, a ring bearing upon said gasket and maintained in position by said plug, and an obliquely-set perforate lug communicating with said chamber and serving as a pipe connection, for the purpose set forth.

4. In an automatic train-pipe coupling, the combination of a coupling-head having a central chamber with an orifice opening at the front face of the coupling-head, a hollow boss in the rear of said chamber having a lateral opening, means connected with said boss for supporting the coupling-head, an obliquely-set pipe communicating with said chamber, a plug having threaded connection with the coupling-head in the rear of said chamber and removable through said lateral opening, a gasket at said orifice, and gasket-confining means between said plug and gasket.

5. In an automatic train-pipe coupling, the combination of a coupling-head having a chamber with an orifice opening at the front face of the coupling-head and an internal shoulder adjacent to said orifice, a plug connected with the coupling-head in the rear of said chamber, a pipe communicating with said chamber, and a gasket comprising a section having a shoulder fitting against said first-named shoulder and a section having a bearing on said first-named section and having a face projecting beyond the front face of the coupling-head, said second-named section being of less diameter than said orifice.

6. In an automatic train-pipe coupling, the combination of a coupling-head equipped with forwardly-projecting guide-prongs and a flat front face between said prongs, a series of chambers in said coupling-head with vertically-alined orifices opening at the front face of the coupling-head in a central vertical plane, obliquely-set pipes connected with said coupling-head and communicating with said chambers, a support connected with the central portion of the coupling-head at the rear side thereof, gaskets at said orifices having retaining-shoulders, and plugs connected with the rear portion of the coupling-head and confining said gaskets.

7. The combination of a coupling-head having forwardly-projecting guide-prongs and provided with a central chamber having an orifice opening at the front face of the coupling-head, a hollow boss projecting from the rear face of the coupling-head at the central portion thereof and having a lateral opening, a nut having threaded connection with the rear end of said boss, a bolt supporting said nut, an obliquely-set pipe communicating with said chamber, a gasket at said orifice, a ring bearing upon said gasket, and a plug insertible through said hollow boss and having threaded connection with the coupling-head in the rear of said ring, for the purpose set forth.

JOSEPH E. FORSYTH.

In presence of—
A. U. THORIEN,
J. H. LANDES.