(No Model.) 2 Sheets—Sheet 1.

E. F. WALLACE.

HOSE COUPLING.

No. 563,898. Patented July 14, 1896.

Fig. 1.

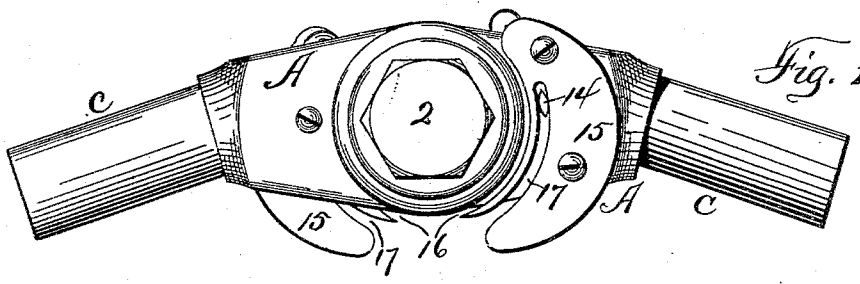


Fig. 2.

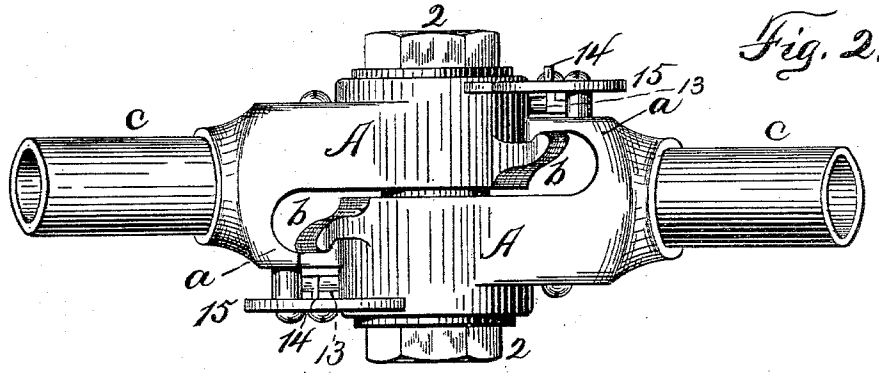
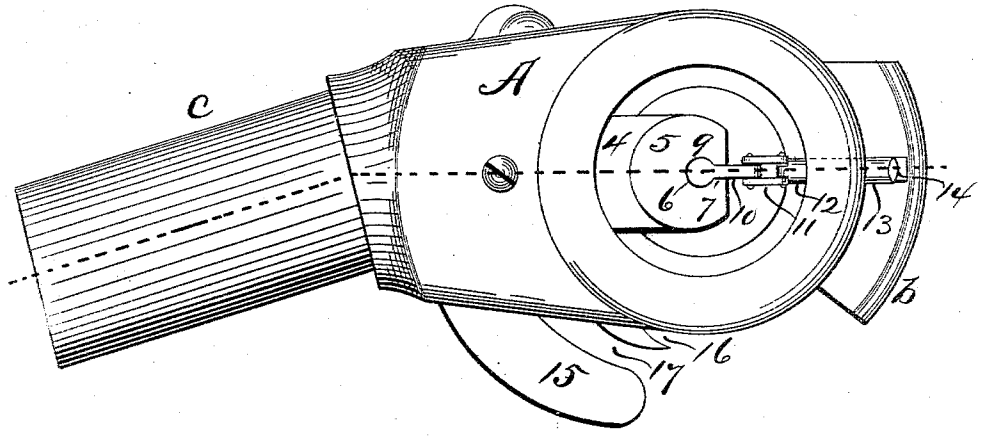


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

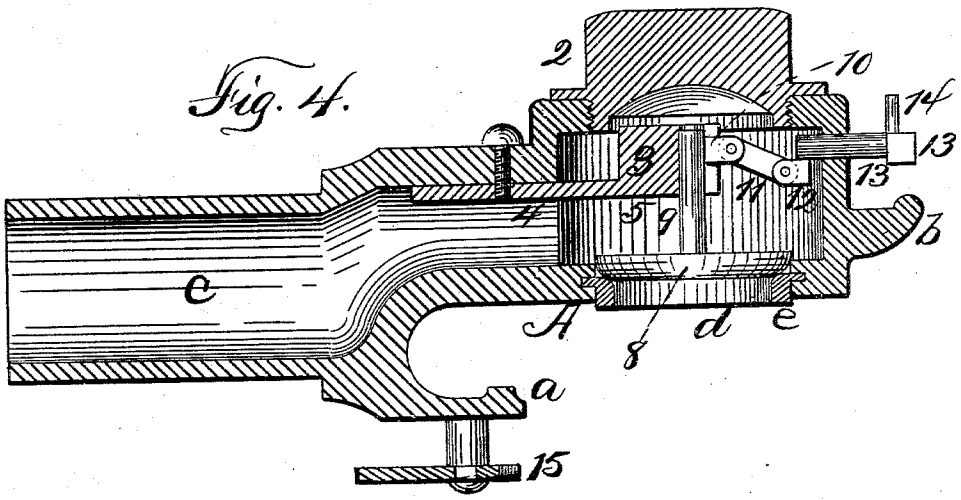


Fig. 5.

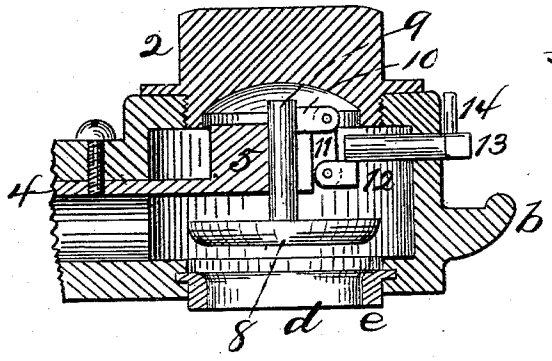


Fig. 6.

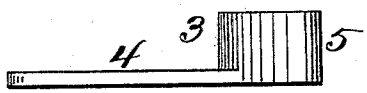
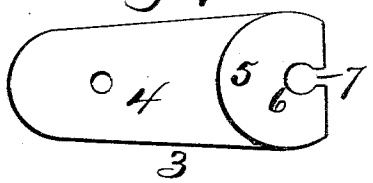


Fig. 7.



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UNITED STATES PATENT OFFICE.

EMILUS FRANKLIN WALLACE, OF SYRACUSE, NEW YORK.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 563,898, dated July 14, 1896.

Application filed April 13, 1895. Serial No. 545,581. (No model.)

To all whom it may concern:

Be it known that I, EMILUS FRANKLIN WALLACE, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Hose-Couplings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to hose-couplings, and particularly to that class which are composed of two interlocking sections detachably connected together, and which are commonly used to connect the air-brake pipes between the cars of a railway-train.

My object is to provide each section of such a coupling with an automatic valve mechanism, which valves are normally held open when the sections are coupled together for the free circulation of the air, and when intentionally or accidentally uncoupled will automatically close to prevent the loss of air-pressure, so as to set the brakes.

My invention consists in the several novel features of construction and operation which are hereinafter described, and which are specifically set forth in the claim hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a coupling, showing the sections connected. Fig. 2 is a top plan of the same. Fig. 3 is a side elevation of one of the sections with the plug removed to show the interior. Fig. 4 is a sectional elevation of the same on the dotted line in Fig. 3, showing the valve closed. Fig. 5 is a like view showing the valve open. Fig. 6 is an elevation of the holder in which the valve-stem is guided. Fig. 7 is a plan of the outer face of the same, showing the valve-stem guide and the slot opening into it.

As these sections are counterparts of each other, it will only be necessary to describe the construction of one section and their joint action when coupled.

The hollow body A, the cam-locking flange *a* thereon, the cam-locking rim *b* thereon, the tubular shank *c*, the discharge-opening *d*, and packing *e* are, generally speaking, old and not a part of my invention and are of ordinary construction. The side of the body opposite to the discharge is cut out and threaded, and 2 is a closer or plug screwed thereinto. A valve-holder 3 is cast or secured within the body, substantially as shown, comprising a stem 4 and a head 5, in which is a valve-stem seat 6 and a slot 7, opening into it. A suitable valve 8 is inserted into said body, with its stem 9 in the seat 6, and 10 is an arm secured to said stem and fitting freely in said slot 7. A link 11 is connected to said arm and to a lug 12 upon the slide 13, which is inserted through the wall of said body, with suitable packing, in order that it may be reciprocated therein, and upon its outer end is provided with a stud 14, having wedging faces. Upon the flange *a* an arm 15 is cast or secured in such manner as to leave an annular recess 16 between its edge and the body A, and is provided with a slot 17 more or less like unto a cam. Then when the sections are coupled, the stud 14 enters the recess 16, the slide 13 will be forced in, and the valve raised, as in Fig. 5, but when said stud enters the slot 17 then said slide is drawn out and the valve closed, as in Fig. 4.

One wall of the slot 17 is beveled or rounded off so that a point is created, the apex of which readily enters behind a pin 14, and then by its wedging or cam-like action this pin 14 is carried into the slot 17. The outer wall of the slot 16 is also beveled or rounded outwardly, so that the point can readily be brought outside of the other pin 14 to wedge it inwardly as it passes into the slot 16. Thus in coupling cars the pin 14 upon the coupling-section, which is connected to the front end of the rear car, is caused to enter the slot 16 of the other section, and the pin 14 of the section upon the rear end of the front car is caused to enter the slot 17. These pins can be caught with the points or manipulated into proper position to enter said slots. Then when the sections are accidentally uncoupled, as when a train breaks in two and the sections are pulled by their angularity toward each other, the valve in the coupling-section which is upon the rear end of the forward car is closed to prevent loss of air-pressure, and the valve in the section which is connected to the front end of the rear car is left open in order to permit free loss of air to quickly set the brakes and stop the rear section, while the brakes are not set upon the front section

until they are operated by the engineer. The valve of the rear section, its pin being in slot 16, is in the position shown in Fig. 5, and remains open because the link 11 is then parallel to the stem 9, and consequently the pressure is exerted in the line of the length of both, and thus the valve cannot be closed. When the pin 14 enters the slot 17, the link 11 is thrown out of such parallelism just enough so that when it is released the pressure will close the valve. The lost motion in the operation of pulling the rod 13 outwardly permits considerable movement of the pin 14 before the link 11 is moved sufficiently to permit the pressure to close the valve. In other words, when the pin 14 is in the slot 17, the valve is at a point intermediate to the positions shown in Figs. 4 and 5, and the pin holds it there and prevents its being closed until released, and it is through this lost motion that the pin 14 enters the slot 17 without closing the valve.

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

In a hose-coupling, the combination with a coupling-section and a valve-seat therein, of a valve reciprocatingly mounted therein, an arm upon the valve-stem, a slide in the coupling-body, a link connecting it to said arm whereby, when said slide is moved outwardly the valve is closed and when moved inwardly it is opened.

In witness whereof I have hereunto set my hand on this 5th day of April, 1895.

EMILUS FRANKLIN WALLACE.

In presence of—
JESSIE E. MURRAY,
HOWARD P. DENISON.