(No Model.)

3 Sheets—Sheet 1.

F. M. WILDER.

PIPE COUPLING.

No. 385,740. Patented July 10, 1888.

Fig. 1.

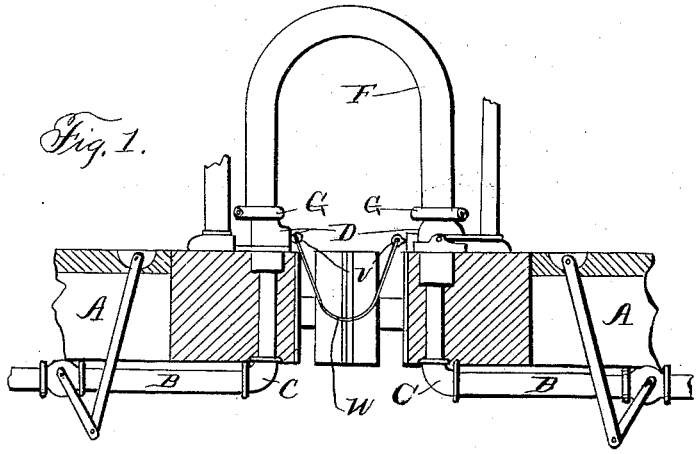
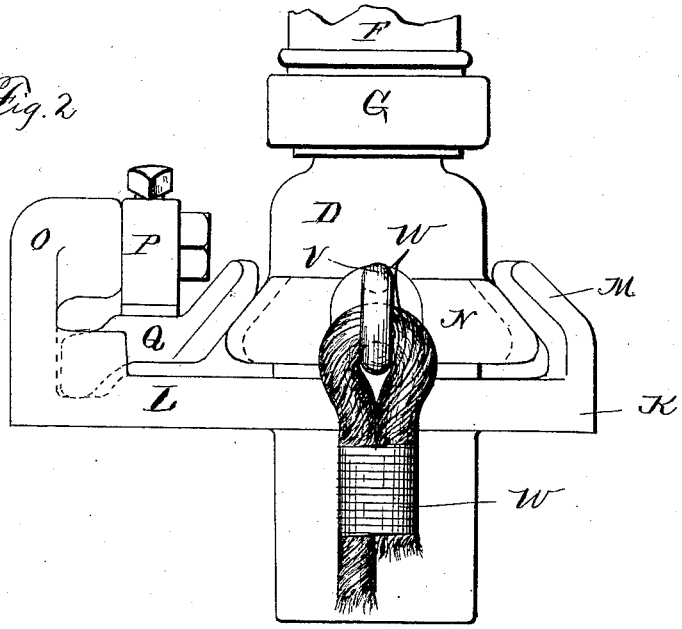


Fig. 2



WITNESSES:

Fra R. Steward.

F. Ko. Budd

INVENTOR,

Francis Milton Wilder.

BY

Geo. H. Benjamin.

ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

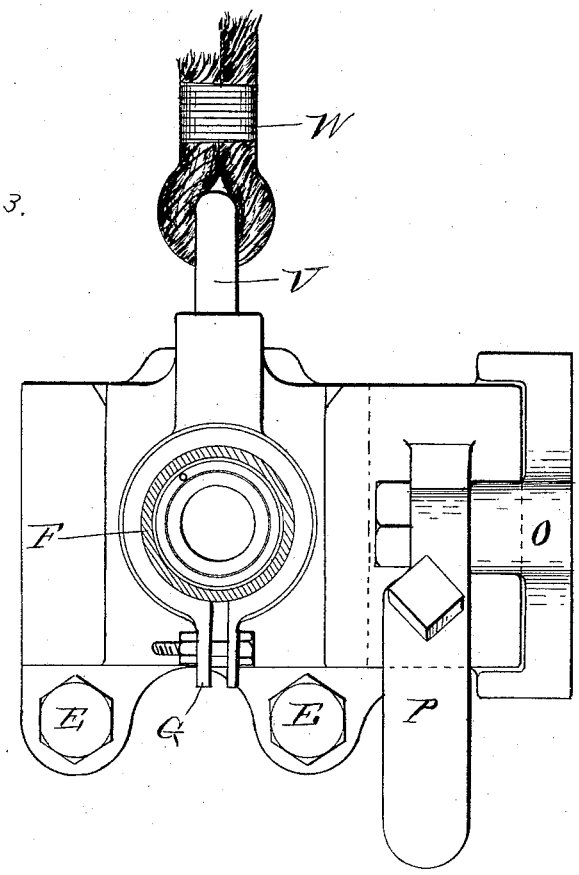
(No Model.) 3 Sheets—Sheet 2.

F. M. WILDER.

PIPE COUPLING.

No. 385,740. Patented July 10, 1888.

Fig. 3.



WITNESSES:

Ira R. Steward.

F. K. Budd.

INVENTOR.

Francis Milton Wilder.

BY

Geo. H. Benjamin.

ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

F. M. WILDER.

PIPE COUPLING.

No. 385,740. Patented July 10, 1888.

Fig. 5.

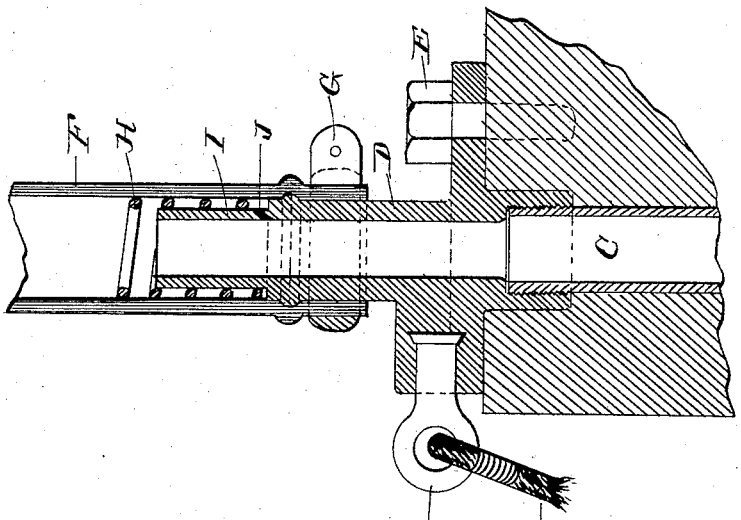
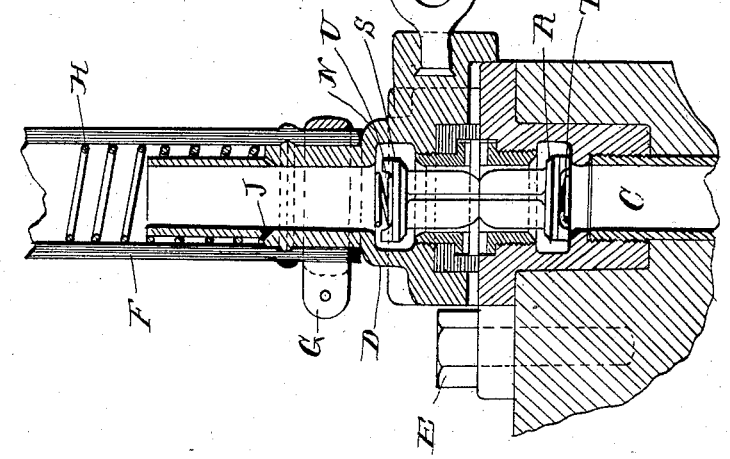


Fig. 4.



WITNESSES:

Ira R. Steward.

F. K. Budd.

INVENTOR.

Francis Milton Wilder.

BY

Geo. H. Benjamin.

ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS M. WILDER, OF BINGHAMTON, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE SAFETY CAR HEATING AND LIGHTING COMPANY, OF NEW JERSEY.

PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 385,740, dated July 10, 1888.

Application filed August 29, 1887. Serial No. 248,120. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS MILTON WILDER, of Binghamton, county of Broome, State of New York, have invented certain new and useful Improvements in Pipe-Couplings, of which the following is a specification.

My invention relates to a pipe-coupling such as is designed to be employed between railroad-cars or similar vehicles, and which has for its purpose to connect the heating apparatus of such cars or vehicles by means of a pipe-coupling which shall form a steam or air tight joint between, conform freely to all the movements of such cars while in motion, and be automatically separable when submitted to any unusual strain.

In a former application filed by me on May 18, 1887, Serial No. 238,696, I have generally described a pipe-coupling located on and above the platform of the cars to be connected. My present invention relates to such a pipe-coupling; and it consists of the combination of the various novel features, which I shall now proceed to describe.

In the accompanying drawings, which illustrate my invention, similar letters of reference indicate like parts.

Figure 1 is a longitudinal vertical section of the platforms of two railway-cars, showing the piping of such cars connected by my improved coupler, the coupling as well as the piping of the cars being shown in elevation. Fig. 2 is an elevation showing a front end view of the seat and detachable shoe by reason of which the coupling is automatically separable. Fig. 3 is a plan view of the shoe and seat on the separable end of the coupling. Figs. 4 and 5 are vertical sections of the hose-piping, the ends of the coupler, and the platforms of the cars to which the coupling is attached, and illustrate more especially the interior construction of the hose and ends of the coupling.

In the drawings, A indicates the car-platforms, and B the steam-conveying pipes, which are arranged under the platform and are carried up to the level of the top of the platform by the elbow-pieces C.

Connected to the pipe C on the top of the platform of one car is the connecting-piece D, which is rigidly attached to the platform of the car in any suitable manner, as by the bolt E.

F represents the flexible piping which is carried between and connects the cars, and which may be hose of any desired character, preferably, however, of such character as will not be affected by the body transmitted through it. The hose I prefer to fasten to the part D by means of the clamp G. Within the hose I place a helical spring, H, the end of which is fitted over the tubular portion I of the part D. I may place the spring on the outside of the hose, the office of which will be hereinafter described.

J represents an inclined hole cut through the tubular portion of the part I for the purpose of allowing the egress of any condensed water which may gather near the ends of the spring. On the platform of the car, opposite to which the coupling is rigidly attached and suitably connected to the pipe C, I arrange the clamping-seat K, which consists of the seat proper, L, one end of which is turned up, M, to conform to the configuration of the shoe N on the end of the hose F. The other end of the seat or body is likewise turned up, O, to form a bearing for the cam-lever P. Under the cam-lever is a bearing-plate, Q, the end of which is similar in shape to the part M of the seat L. The shoe N is connected to the hose in a manner similar to that by which the part D is connected—namely, by means of a strap, G.

Located within the seat is a wing-valve, R, and S is a similar valve in the shoe N. Both of these valves are adapted to be normally closed (the parts separated) by means of the resiliency of the springs T and U, thereby closing the port through the coupling. When the parts are connected, as shown in Fig. 4, the springs are depressed and the passage through the couplings is open. The office of the spring H within the hose is to keep the hose in a vertical position, and thus to keep it free from condensed water. The elasticity of the spring should be such that it will follow all the movements of the hose and yet keep the hose in the required position. On the inner side of the part D and shoe N are the eyes V, connected together by means of a rope, W, or other flexi-

ble connection, which is preferably slightly shorter in length than that of the hose connecting the shoe and the part D.

The operation of my device will be readily understood. When it is desired to make a coupling, the shoe N is carried forward onto the seat L of the opposite car to that to which the hose is attached and under the arms M and Q. The cam P is then depressed and the shoe secured in place. At the same time the valves R and S are depressed and the port-openings made free. In case of any accidental separation of the cars connected by such a coupling, tension will be made upon the rope W, and the shoe N is drawn longitudinally forward off and out of the seat K, the valves R and S automatically closing and shutting off the body transmitted. By reason of the difference in length of the rope W over that of the hose F, no strain can ever be brought to bear upon the hose.

I claim as my invention—

1. The combination, in a pipe-coupling, of a flexible hose-pipe, a sustaining-spring within said pipe, a shoe on the end of said pipe, an automatically-closing valve within said shoe, a clamping-seat for said shoe upon a railway-car, and an automatically-closing valve within said seat, substantially as described.

2. The combination, in a pipe-coupling, of a flexible hose-pipe, a sustaining-spring within said pipe, a device for attaching one end of said pipe rigidly to a railroad-car, a shoe on the opposite end of said pipe, and a clamping-seat for said shoe upon a railway-car, and from which said shoe is automatically separable, substantially as described.

3. The combination, in a pipe-coupling, of a flexible hose-pipe, a rigid connection for said pipe upon a railway-car, a shoe on the end of said pipe, a clamping seat for said shoe upon a railway-car, and a rope connecting the fixed end of said coupling with the shoe, whereby the shoe is automatically separated from the clamping-seat when the said rope is subjected to any unusual strain, substantially as described.

4. In combination with two railway-cars, of a flexible pipe-coupling consisting of a single hose connected to one car, a shoe on the end of said hose, a clamping-seat for said shoe on the other car, and an automatically closing-valve in said shoe and in said clamping-seat, substantially as described.

In witness whereof I have hereunto set my hand.

F. M. WILDER.

Witnesses:
IRA R. STEWARD,
F. K. BUDD.