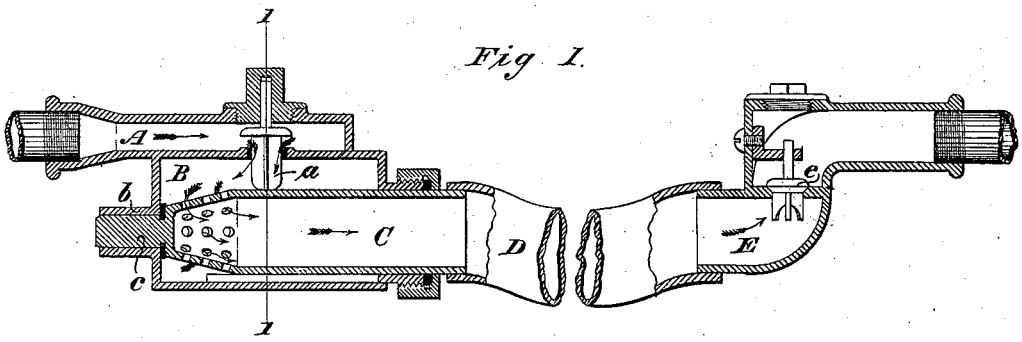
W. W. H. ROBINSON.

APPARATUS FOR HEATING RAILWAY-CARS, &c.

No. 195,049. Patented Sept. 11, 1877.

Fig 1.



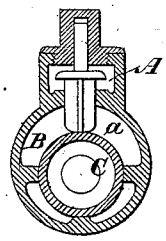
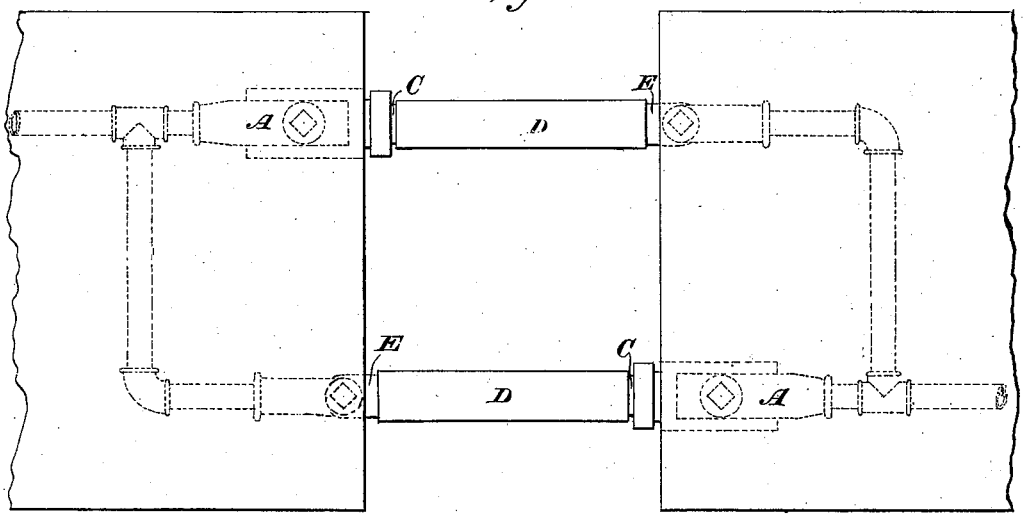


Fig 2

Fig 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WALTER W. H. ROBINSON, OF GEORGETOWN, ASSIGNOR OF ONE-THIRD HIS RIGHT TO EDWARD C. DEAN, OF WASHINGTON, D. C.

IMPROVEMENT IN APPARATUS FOR HEATING RAILWAY-CARS, &c.

Specification forming part of Letters Patent No. **195,049**, dated September 11, 1877; application filed February 15, 1877.

To all whom it may concern:

Be it known that I, WALTER W. H. ROBINSON, of Georgetown, in the District of Columbia, have invented certain new and useful Improvements in Apparatus for Heating Railway-Cars and other Structures, of which the following is a specification:

The object of my invention is to prevent cars from accidentally taking fire from a heating apparatus by employing steam generated by the locomotive or other suitable boiler remote from the car to be heated.

My improvements consist in novel devices for connecting the heating apparatus of one car with that of an adjacent one, whereby in case of rupture of the connection the escape of steam is automatically prevented, and the cars can readily be coupled or uncoupled with a full pressure of steam on without danger to the train-hands.

The subject-matter claimed will hereinafter specifically be designated.

In the accompanying drawings, Figure 1 represents a vertical central longitudinal section, showing so much of the apparatus as is necessary to illustrate the invention herein claimed. Fig. 2 represents a vertical transverse section therethrough on the line 1 1 of Fig. 1; and Fig. 3, a plan view thereof, showing the apparatus so arranged that either end of the cars may be readily coupled together.

Heating-coils of well-known construction may be employed, my invention relating mainly to the method of coupling together two adjacent cars.

The steam-pipe A, leading from the boiler, is provided with a valve, *a*, which is normally kept closed by pressure of the steam in the pipe, and is always closed when the connection-pipe between the two cars is out of place. Steam passes through the valve *a* to a suitable packing-box, B, provided with an open hollow trunnion-bearing, *b*, at one end, and with a suitable gland surrounding the opening at the other end.

The connecting-pipe C is made with a projecting solid plug or trunnion, *c*, at its forward end, which fits snugly in the hollow trunnion or bearing *b*. The pipe is tapered at one end, and perforated for the passage of the steam. When the pipe is removed from the packing-box the valve *a* is closed by the pressure of the steam. When the pipe C is inserted its tapering end lifts the valve and allows steam to escape through the pipe; the pressure of the steam on the plug *c* forces the pipe instantly into place, and packs its joints tightly.

The pipe C is connected with a pipe, E, of the adjacent car by a flexible pipe, D, of well-known construction. The valve *e* of the pipe E is lifted by the pressure of the steam, but closes automatically whenever the back pressure exceeds that from the boiler, as would be the case were the connecting-pipe sundered. The valve is thus automatically quickly closed in case of accident.

I have described my apparatus as more especially adapted to railway-cars; but it is obviously applicable to other structures in which a temporary or detachable steam-tight connection is desirable. Obviously, however, my improved coupling can be used beneficially in connection with compressed air, as well as for coupling together cars operated by an air-brake for applying the compressed air to the different brakes of the train.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of the valve, the packing-box, and the tapering connecting-pipe, whereby the valve is automatically lifted by the insertion of the pipe.

2. The combination of the valve, the packing-box, the tapering connecting-pipe, and its solid trunnion, whereby the partial insertion of the pipe opens the valve and causes the steam to force the pipe quickly into its place.

3. The combination, substantially as hereinbefore set forth, of the valve and packing-box attached to one car and the adjustable connecting-pipe flexibly connected with another car, whereby they may be readily separated in case of accident, and the escape of steam prevented.

In testimony whereof I have hereunto subscribed my name.

WALTER W. H. ROBINSON.

Witnesses:

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WM. J. PEYTON.