(No Model.)

J. EMERSON.

STEAM HEATING PIPE CONNECTION FOR CARS.

No. 382,597. Patented May 8, 1888.

Fig. 2.

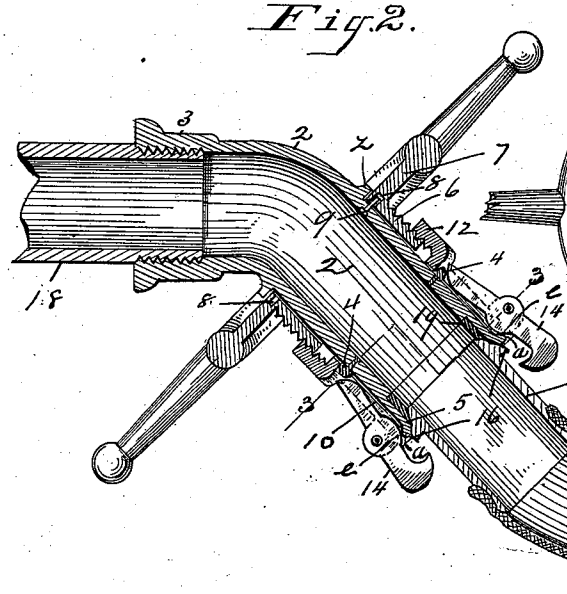


Fig. 3.

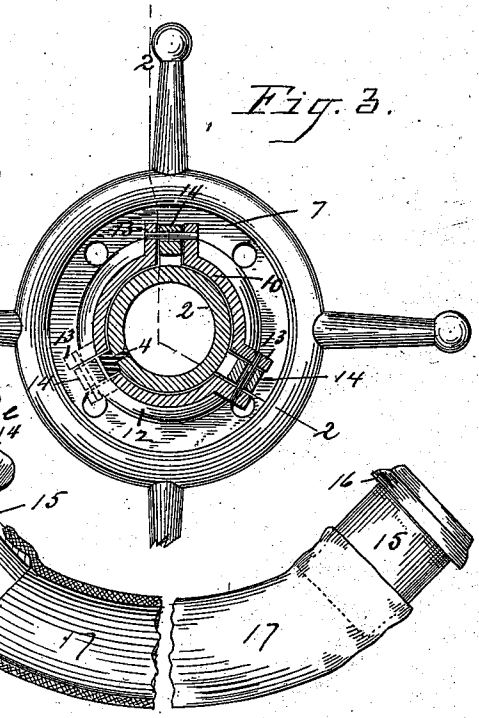
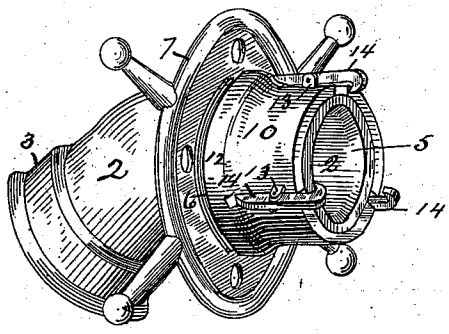


Fig. 1.



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STEAM-HEATING PIPE-CONNECTION FOR CARS.

SPECIFICATION forming part of Letters Patent No. 382,597, dated May 8, 1888.

Application filed December 14, 1887. Serial No. 257,836. (No model.)

To all whom it may concern:

Be it known that I, JAMES EMERSON, a citizen of the United States, residing at Willimansett, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Steam-Heating Pipe-Connections for Cars, of which the following is a specification.

This invention relates to steam-heating devices for railway-cars, and pertains to steam-pipe connections between cars for uniting the ends of the steam-supply pipes thereof, the object being to provide an improved coupling for the above-mentioned purpose; and the invention consists in the peculiar construction and arrangement of said coupling, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a coupling for steam-heating pipe-connections between railway-cars constructed according to my invention, the hose-nozzle which acts in conjunction with said coupling not being shown in this figure. Fig. 2 is a longitudinal section of said coupling on the line 2 2, Fig. 3, and also a longitudinal section of one of the hose-nozzles and of the end of the steam-suppply pipe of a car shown connected to one end of the coupling, said figure showing also the flexible hose-coupling (one end being shown in section) for uniting two couplings, and a second hose-nozzle in side elevation connected to one end of said hose. Fig. 3 is a front elevation showing parts of said coupling in cross-section on the lines 3 3, Fig. 2.

In the drawings, 2 is the coupling-tube, which, with its directly-connected parts, is made preferably of brass or composition metal, excepting that the hook-levers below described are made of iron or steel. The said coupling-tube has formed on one end thereof the screw-threaded socket 3, which receives the end of a steam-supply pipe, 18, which is fixed under the car or cars with which said coupling is connected to convey steam through the same for warming purposes, said coupling-tube having the end thereof to which the flexible hose 17 is connected inclined downward, as shown in Fig. 2. Said coupling-tube has thereon the fixed annular ring *z*, and its lower end has its inner border, 5, beveled to adapt it to receive the end of the hose-nozzle 15, the latter having the end thereof which engages with the end of the coupling-tube made to conform to the beveled end of the latter. A sleeve, 6, is placed on said coupling-tube 2, exteriorly screw-threaded, and having one end abutting against the said annular ring *z*. The said sleeve 6 has fixed thereon, or made integral therewith, the spoke or hand-wheel 7, whereby said screw-threaded sleeve is rotated on the coupling-tube. To retain the sleeve 6 in proper operative position on the tube 2, a pin, 9, is fixed in said tube and has one end entering an annular groove, 8, in said sleeve. After the screwed sleeve 6 has been placed on the coupling-tube in the position shown in Fig. 2, the aforesaid internally-beveled end of said tube is by a suitable instrument turned outwardly to form a bead, *a*, around the end of the same, for a purpose hereinafter described. A hook-carrying sleeve, 10, having a screwed socket, 12, engaging with the said screw-threaded sleeve 6, is also placed on said coupling-tube 2 before the aforesaid outturned border *a* is formed on the end of said tube, and the sleeve 10 is capable of a longitudinal reciprocating movement on the coupling-tube by rotating said sleeve 6 by means of the wheel 7. The said sleeve 10 has the bosses 13 thereon, between the sides of which are pivoted three hook-levers, 14, in the position shown. The rear ends of said hook-levers extend in a line with longitudinal slots, which are formed in the sleeve 10 thereunder, and the rear ends of said levers are curved, as shown in Figs. 1 and 2. A stud, 4, having a cam-shaped end, which is capable of engagement with the said rear curved ends of said hook-levers, is fixed in the coupling-tube 2 under said ends and projects outwardly beyond the surface of said tube within the aforesaid slots in the sleeve 10 under the ends of said hooks, the purpose of said cam-studs 4 being to cause the hook-levers 14 to have a vibratory motion when said sleeve 10 is moved toward the hand-wheel 7, whereby the hooked ends of said levers are caused to approach or move toward the axial line of the coupling-tube, said levers having at the same time a movement with said sleeve 10, whereby their

hooked ends are drawn toward the end of the coupling-tube. When the sleeve 10 is given a reverse motion, whereby the hooked ends of the levers are made to move from the end of the coupling-tube 2, that portion of the under side of said hooks indicated by *e*, Fig. 2, comes into engagement with the aforesaid bead *a* on the end of said tube, and thereby the outer ends of said hooks are caused to swing outwardly from said axial line of the tube 2.

The said hose-nozzle 15 has formed thereon, near the end thereof which enters and engages with the beveled end of the coupling-tube 2, an annular ring or collar, 16, with which the hooks on the outer ends of the levers 14 engage, and whereby when the sleeve 10 is given a movement on the coupling-tube toward the hand-wheel, as aforesaid, the end of said nozzle is forced into the end of the coupling-tube and there rigidly held until the hand-wheel 7 is turned to release it. The end of said nozzle 15 is preferably ground into the end of the coupling-tube 2, to form a steam-tight joint between said two parts when they are forced into connection, as above described; but, if desired, the end of the coupling-tube may be provided with an annular packing-ring, 19, of suitable vulcanized material, with which the end of the hose-nozzle may be made to engage to form a tight joint, instead of grinding the parts, as aforesaid.

The coupling-hose 17, of suitably-vulcanized rubber, has in practice a nozzle, 15, attached to each end thereof, as shown in Fig. 2, to adapt it to the requirements of the couplings of the adjoining ends of two cars.

In practice the screw-threads on the sleeve 6 and in the socket 12 on the sleeve 10 are made quite coarse, so that a comparatively slight rotary movement of the wheel 7 will impart a sufficient degree of longitudinal movement to said sleeve 10 to effect the complete connection of the hose-nozzle 15 with the coupling-tube or its disconnection therefrom, such capabilities being essential for the purposes of rapid manipulation of the couplings in adding a car or cars to or separating them from a train.

The ends of the nozzles 15, which engage with the ends of the coupling-tubes and have the said annular rings 16 thereon, are made to pass freely between the ends of the hooks on the levers 14, to avoid any inconvenience in connecting and disconnecting them, the relative arrangement of said parts being substantially as shown in Fig. 2. Thus, in coupling the hose-nozzle 15 there shown, it is placed in engagement with the end of the coupling-tube, and the wheel 7 being given a slight rotary movement the sleeve 10 is quickly drawn toward said wheel, carrying the levers 14 therewith, and the rear ends of the latter are at the same time brought into engagement with the studs 4, whereby said hooks are made to engage with said ring on the hose-nozzle, thereby rigidly connecting said nozzle and coupling-tube. A slight reverse movement of said wheel 7 brings the parts of the coupling to the positions shown in Fig. 2, whereby the nozzle is disconnected.

The wheel 7 may be easily manipulated from the platform of a car for quickly disconnecting the hose-coupling therefrom by the use of a suitable hook which engages with the arms of said hand-wheel.

What I claim as my invention is—

1. The within-described coupling for steam-pipe connections between railway-cars, consisting of a coupling-tube, as described, having means for connecting the same with a steam-pipe, combined with a screw-threaded sleeve, 6, capable of a rotary motion on said tube, a sleeve, 10, having a screw-thread engagement with said sleeve 6, whereby said sleeve 10 has a longitudinal reciprocating movement on said coupling-tube, a series of hook-levers pivoted on said longitudinally-moving sleeve, and a cam-stud fixed in said tube under the rear end of each of said levers, substantially as set forth.

2. The coupling-tube 2, having the outturned bead *a* on its end, combined with the screw-threaded sleeve 6, having a hand-wheel thereon, the sleeve 10, having a screw engagement with said sleeve 6, and the hook-levers 14, pivoted on said sleeve 10 and having engagement with said bead, whereby their hooked ends are swung outwardly, substantially as set forth.

3. The coupling-tube 2, the screw-threaded sleeve 6, capable of a reciprocating rotary motion on said tube, the sleeve 10, having a screw engagement with said sleeve 6, whereby it is given a longitudinal motion on said tube, the cam-studs 4, fixed in the tube 2, combined with the hook-levers 14, pivoted on said sleeve 10, having their ends engaging with the ends of said studs, and a hose-nozzle capable of engagement with one end of said coupling-tube with which the hooks on said levers engage, substantially as set forth.

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