T. CARENCE & E. W. SUMPTER.

STEAM COUPLING FOR RAILWAY CARS.

APPLICATION FILED FEB. 4, 1910.

984,470. Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

Fig. 1

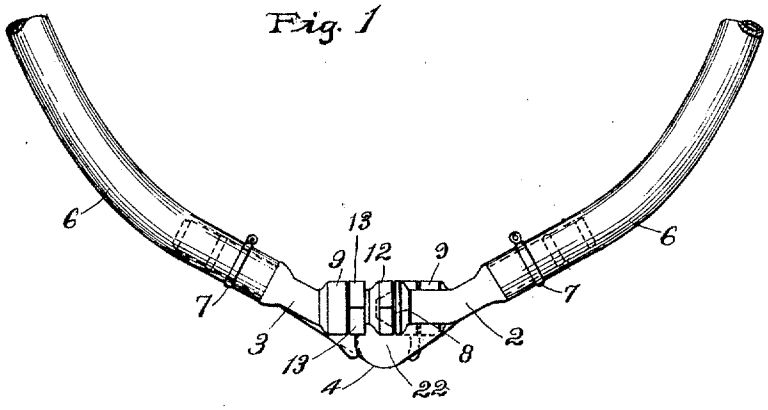


Fig. 2.

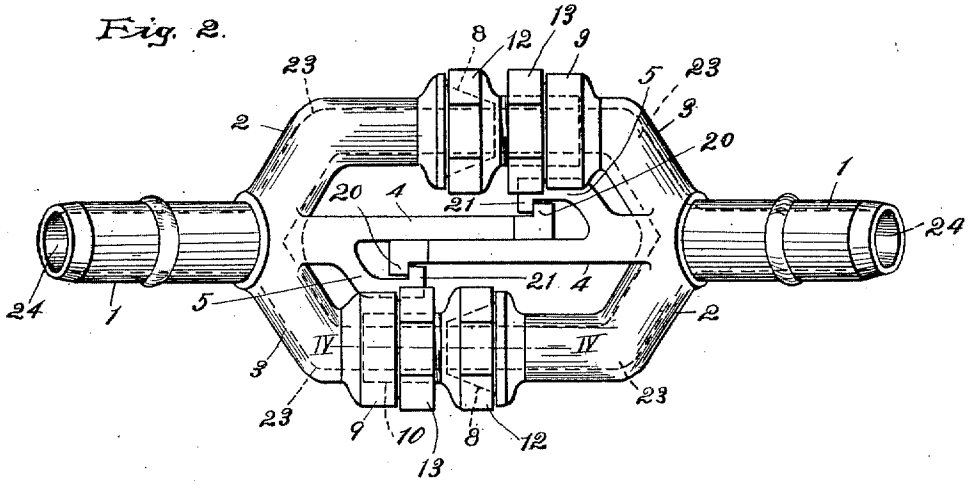


Fig. 3.

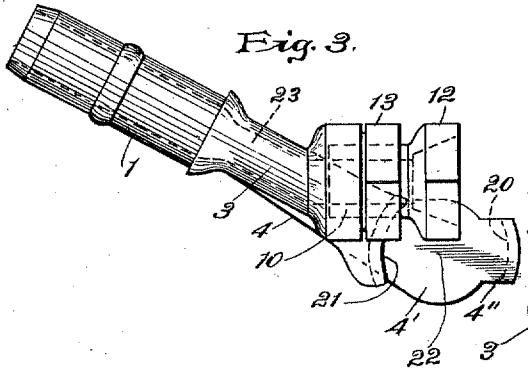
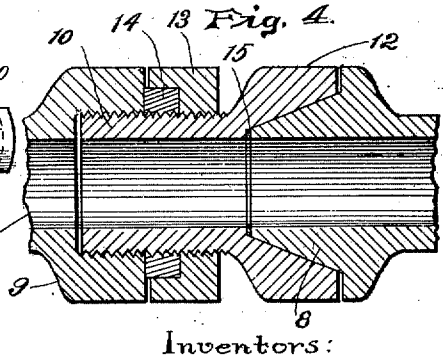


Fig. 4.



Witnesses:
E. E. Seidelman.
M. Cox.

Inventors:
T. Carence and E. W. Sumpter
By F. G. Fischer Atty.

T. CARENCE & E. W. SUMPTER.

STEAM COUPLING FOR RAILWAY CARS.

APPLICATION FILED FEB. 4, 1910.

984,470.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 2.

Fig. 5.

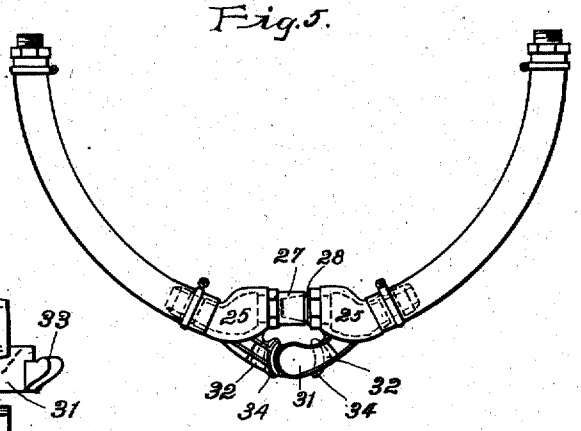


Fig. 6.

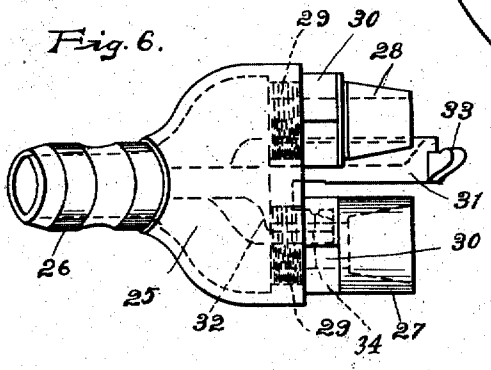


Fig. 7.

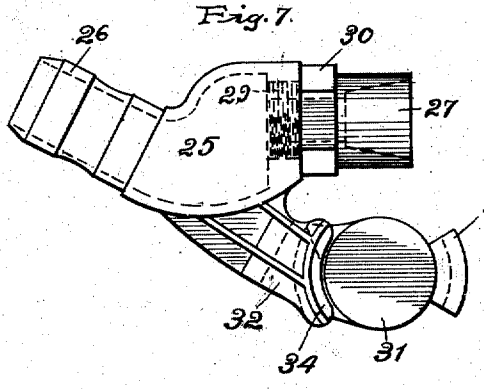


Fig. 8.

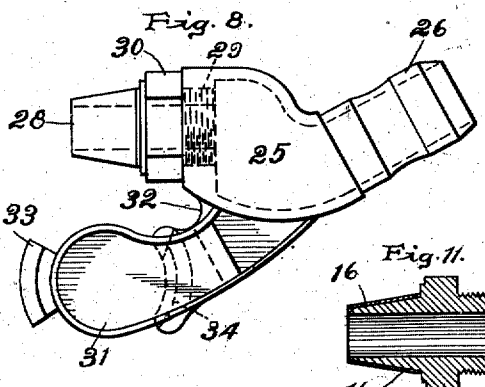


Fig. 11.

Fig. 9.

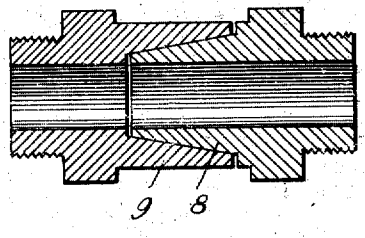
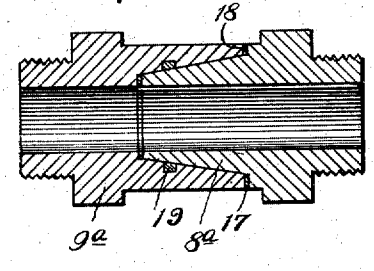


Fig. 10.



Witnesses:

E. E. Seidelman.

M. Cox.

Inventors

T. Carence and E. W. Sumpter,

By F. G. Fischer Atty.

UNITED STATES PATENT OFFICE.

THOMAS CARENCE AND ERNEST WILLIAM SUMPTER, OF KANSAS CITY, MISSOURI.

STEAM-COUPLING FOR RAILWAY-CARS.

984,470. Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed February 4, 1910. Serial No. 542,040.

To all whom it may concern:

Be it known that we, THOMAS CARENCE and ERNEST WILLIAM SUMPTER, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Steam-Couplings for Railway-Cars, of which the following is a specification.

Our invention relates to steam couplings, adapted especially for use on railroad passenger cars that are heated by steam supplied from the locomotive boiler.

The chief objects of the invention are: to provide a steam coupling that will automatically uncouple itself when the cars are moved apart farther than the usual distance allowed by the car couplers; to provide a steam coupling that will not leak, even when rounding curves; to provide a steam coupling that will not choke the passage of the steam and thereby cause condensation; and to provide a steam coupling that will be simple and strong in construction, durable and easily connected up. These objects and certain incidental objects are attained by the constructions illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of a pair of steam hose provided with the preferred form of my steam coupling, the parts being in connected position. Fig. 2 is a top plan view of the coupling, without the hose. Fig. 3 is an inner side elevation of the coupling member shown at the left in Fig. 2. Fig. 4 is a sectional detail of one branch of the coupling; on line IV—IV of Fig. 2. Fig. 5 is a view similar to Fig. 1, of a modified steam coupling. Fig. 6 is a top plan view, enlarged, of one half of said modified coupling. Figs. 7 and 8 are side elevations of the two parts of said coupling disconnected. Fig. 9 is a sectional view of a coupling pair without packing. Fig. 10 is a sectional view of a coupling pair with modified packing, and Fig. 11 is a sectional view of a coupling with another modified packing.

In the form shown in Figs. 1, 2, and 3, each half of the coupling comprises a hose nipple, 1, cast with two branches 2 and 3, and with a locking member 4. The hose nipple 1 fits within the usual depending hose 6, carried at the end of a car, the hose being fastened thereon with the usual clamp 7. One of the branches 2 terminates in a nipple 8, having a tapered outer surface. The other branch 3 is formed with a swell 9, which is bored and tapped to receive the threaded neck 10 of a socket member 12, which has a flaring tapered or conical bore, adapted to receive and accurately fit the nipple 8 on the other coupling member. Through the parts 3, 12 and 8 is a straight, uniform bore, as shown. Threaded upon the neck 10 of member 12 is a gland or hollow nut 13, within which is an annular packing 14 which prevents leakage of steam to atmosphere. At the inner end of the tapering bore of said socket member 12 is a shoulder, against which is seated a thin annular packing 15, which is contacted by the end of the nipple as shown. The taper fitting surfaces of the parts 8 and 12 may be without packing, or, as shown in Fig. 11, the nipple may carry thereon a thin tubular packing as 16.

Another mode in which the parts may be packed is shown in Fig. 10, which shows a packing 17 inserted in the joint 18, between the conical nipple 8^a and the socket member 9^a which latter is internally grooved to receive a packing 19 which normally would project slightly from said groove.

The locking members 4 are cast with the parts 2 and 3, and are extended in alinement with the axes of the hose nipples 1, when viewed sidewise. Each member 4 terminates in a circular cheek 4′ having an extension 4″ provided with an outwardly projecting, arcuate lug 20. Branching from the inner face of member 4 is a short arm 5, provided with an inwardly projecting arcuate lug 21. This lug 21 of each member is adapted to interlock with the lug 20 of the other member, as seen in Fig. 2; and to be disengaged therefrom by relative rotary movement of the couplings, about a central axis designated 22.

When the couplings are placed in axial alinement with the nipples 8 started into the sockets 12, the lugs 20 will pass the lugs 21, and vice versa. When the parts are permitted to fall (by gravity and hose resilience) into the coupled position, the relative rotary motion causes the lugs 20 and 21 to become engaged with the opposed lugs; and during this movement the nipples 8 are moved into the sockets in parts 12. When the parts are coupled the four lugs 20 and 21 are tightly engaged, and the coupling parts 8 and 12 form steam-tight friction joints.

The combined cross sectional area of the

two branch bores 23 is greater than that of the main bore 24. This will prevent the condensation of steam at the coupling, which is a serious fault of some present steam couplings.

As the socket members 12 are adjustable ing and out by rotation in the holding members 9, it is clear that if the tapered surfaces of one branch of the coupling become more worn than those of the other branch, the threaded necks 10 of the members 12 will permit the latter to be extended accurately to compensate for said difference in wear.

As the coupling is in the form of a closed yoke, when coupled, it is evident that it will have great rigidity horizontally. This rigidity has the advantage of holding the parts 8 and 12 in tight co-engagement at all times, even when the train passes around sharp curves. Present forms of steam couplings are strained apart, at such times, sufficiently to cause leakage of steam. In this coupling, the hose alone bend; the metal parts of the coupling are rigid as concerns lateral movement.

The two hose 6, being stiff, tend to assume a straight form; this stress holds the parts of the coupling in the position shown in Fig. 1, that is to say, locked.

In the couplings shown in Figs. 5 to 8, inclusive, all the features of advantage hereinbefore described are retained. Each member 26 of the coupling is cast with a square-ended chambered part 25. The socket member 27 and the nipple member 28 have threaded extensions 29 (dotted) to receive which, the bores in the part 25 are internally threaded. Lock-nuts 30 are provided which shoulder against the plane face of the part 25.

The locking members 31 are integral with the members 25 and drop below the parts 27 and 28, as shown. Members 31 are formed with the branches 32, corresponding to the branches 5 in Fig. 2. The longer branches have outwardly-projecting lugs 33, and the shorter branches have inwardly projecting lugs 34. The lugs 33 are adapted for engagement with the lugs 34 of the other coupler, whereby the parts are held against separation when at or about the angle shown in Fig. 5.

In the event of unequal wear in or of the parts 27 and 28, of the two branches of the coupling, one of the parts 27 or 28 may be shifted, as aforesaid. In this form of the coupling, all packing may be dispensed with, or any or all of the forms of packing shown in the drawings may be employed.

When the cars to which the couplings are attached are uncoupled and drawn apart, the pull on the two hose 6 will straighten out the same, thereby rocking or turning the part 4 of each coupling member and disengaging the lugs 20 from the lugs 21, whereupon the coupling members will separate from each other.

The usual valves for shutting off the steam are provided in the steam pipes (not shown) but are no part of this invention.

Having thus described our invention, what we claim is:

1. A twin steam coupling member, comprising a twin steam-conducting part having a hose nipple, and an integral locking arm extending in alinement with the hose nipple, the steam-conducting part being provided with a tapered nipple and an internally-tapered socket, the axes of said nipple and socket being above and out of alinement with said locking arm.

2. A twin steam coupling member, comprising a hose nipple integral with two steam branches, one steam branch terminating in a tapered nipple, the other branch being threaded, and a socket member having threaded connection with the last named branch, whereby said socket-member may be adjusted longitudinally.

3. A coupling of the character described, consisting of two members, each comprising a hose-nipple integral with two branches, one branch terminating in a tapered nipple, the other branch having a socket-member, the tapered nipple on one member being adapted to snugly fit within the socket of the opposing member, means for taking up wear of the interfitting parts, and locking elements on each opposing coupling member, arranged midway between the tapered nipple and socket-member thereof, substantially as described.

In testimony whereof we affix our signatures, in the presence of two witnesses.

THOMAS CARENCE.
ERNEST WILLIAM SUMPTER.

Witnesses:
R. E. HAMILTON,
M. COX.