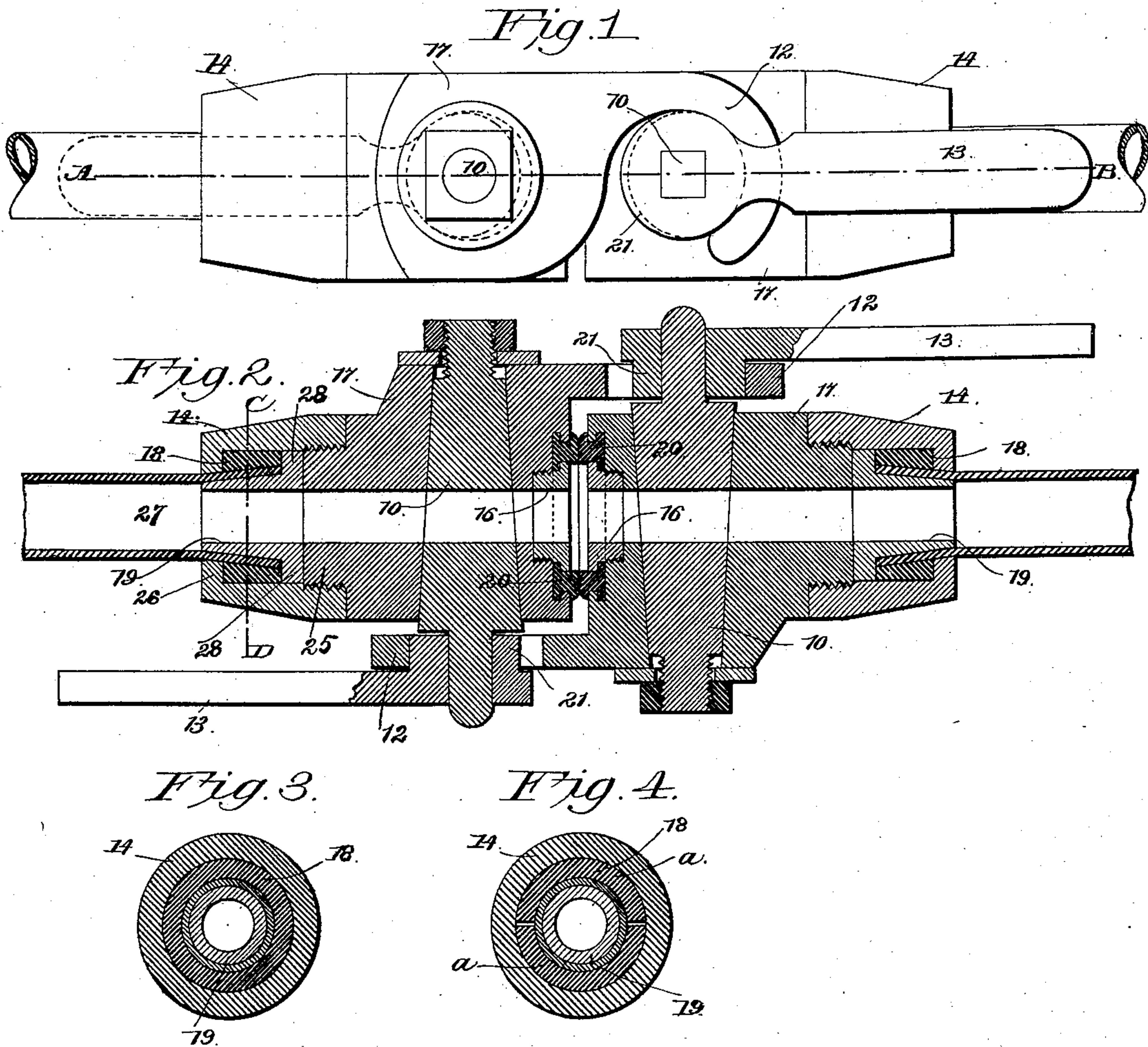


(No Model.)

G. B. WILLIAMS.
HOSE COUPLING.

No. 407,456.

Patented July 23, 1889.



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UNITED STATES PATENT OFFICE.

GEORGE BAYLEY WILLIAMS, OF LA CROSSE, WISCONSIN.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 407,456, dated July 23, 1889.

Application filed November 15, 1887. Serial No. 255,249. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BAYLEY WILLIAMS, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in Hose-Couplings, of which the following is a specification.

My invention relates to an improvement in hose-couplings especially adapted for coupling the hose between the cars in railway-car air-brakes; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a hose-coupling embodying my improvement. Fig. 2 is a vertical sectional view of the same, taken on the line A B of Fig. 1. Fig. 3 is a transverse sectional view taken on the line C D of Fig. 2. Fig. 4 is a sectional view representing an improvement in the construction of the ring 18, in which improvement the ring is made in sections.

In the air-brake connections between cars now in common use there are couplings in the center between the cars and stop-cocks on diagonally-opposite corners of the cars, so that to either couple or uncouple the hose requires three operations in three different places, and a failure to open either of the stop-cocks when coupling will cut off the operation of the air-brakes on all the cars in rear of the said stop-cock and render the same inoperative.

The object of my invention is to obviate these defects by providing a combined hose-coupling and stop-cock in which the operation of coupling or uncoupling is all done at one place, the same movement completing the coupling and opening the stop-cocks simultaneously, or the reverse, so that neither part of the operation can be omitted.

A further object of my invention is to provide an improved union for fastening the hose to the coupling, so that the hose cannot become unfastened or leak through the fastenings.

As both members of my improved hose-coupling are alike, it is only necessary to describe one of them.

17 represents a case or body, which is of

the form shown, and is provided at one end, on one side, with a rigid projecting hook 12, preferably formed integral with the case or body.

20 represents an annular packing-ring, which is secured in an annular groove in the front side of the case or body by means of an annular screw-collar 16, which engages the threaded countersunk opening in the front side of the case. The opening in the center of this collar registers with the longitudinal bore or air-channel through the body or case.

10 represents a stop-cock or turning plug, which is fitted snugly in a transverse tapered recess in the case or body, and is secured in place therein by means of a washer and nut in the ordinary manner. At the opposite end of the plug or cock is secured a lever 13, which is provided at its inner end with a cam or eccentric disk 21.

The outer end of the case or body is provided with a projecting exteriorly-threaded boss 25, as shown, to which is screwed the inner end of a cap-nut 14, having an inwardly-extending annular flange 26 at its outer end.

19 represents an annular tapered plug, which has its inner edge seated against the end of the boss or projection of the case 17, and which is inserted at its tapered end in the end of the hose 27, as shown, the said plug being provided at its inner end with a peripheral flange 28, which fits snugly in the bore of the cap-nut.

18 represents an annular clamping-ring, which is slipped over the end of the hose, and is beveled on its inner side to correspond with the taper of the plug 19. The inner edge of the said ring bears against the flange at the inner end of the said plug, and the inwardly-projecting flange at the outer end of the cap-nut 14 bears against the outer edge of the said clamping-ring, whereby as the cap-nut is screwed on the clamping-ring is pressed inward toward the larger part of the plug, and the hose is thereby compressed between the adjacent side of the ring and plug.

The operation of my invention is as follows: In order to couple the hose between the cars, the operator grasps one of the cases 17 with each hand, brings their outer ends together, and causes the hook 12 of each case to engage the cam or eccentric disk 21 of the stop-

cock of the opposing case, as shown, the stop-cocks being arranged in such a position that the levers 13 are at right angles to the bores of the cases. After having engaged the hooks 12 with the cams 21 the operator turns the levers to a position parallel with the bore of the cases, so as to open the stop-cocks and cause the cams 21 to exert longitudinal pressure on the hooks, and thereby draw the opposing ends of the cases or bodies 17 together and effect perfectly-tight joints between the opposing annular packing-rings 20, as will be readily understood.

Inasmuch as the act of opening the stop-cocks is necessary to complete the operation of coupling the hose together, the operator cannot possibly forget or neglect to open both the stop-cocks, and thereby cut off the brake apparatus of the rear cars.

I do not desire to limit myself to the precise construction hereinbefore described, as it is evident that modifications may be made therein without departing from the spirit of my invention.

In Fig. 4 I illustrate another form of my invention, in which the packing-ring 18, instead of being made in one solid piece, as shown in Fig. 3, is made in two separable sections *a*.

It will be noted that my improved connection for the hose at the outer end of the case or body differs from the connections heretofore employed in that the tapered plug 19 is separable from the case or body instead of being rigid therewith, and therefore as the cap-nut is screwed on to compress the hose between the opposing sides of the plug and the clamping-ring the hose, clamping-ring, and plug rotate with the cap-nut. Thus the force exerted on the hose is simply that of compression, there being no liability of turning the hose on the plug or turning the clamp-

ing-ring on the hose, and thereby straining or tearing the hose. When a rigid tapered plug is used, the inner edge of the flange 26 is liable also to cut the hose, especially if the latter is attached and detached frequently.

I am aware that it is old to provide a pipe-coupling consisting of twin members, each member having a pivoted hook and a stop-cock or turning plug, the hook of one member engaging the turning plug of the other member, and vice versa; but in this device no lever was provided on the extended end of the turning plug to serve a double function—*i. e.*, to operate the turning plug and also to tighten the connection between the two members. This is the essential feature of my invention.

Having thus described my invention, I claim—

1. In a hose-coupling, the case or body having a stop-cock provided with a cam or eccentric disk and having a rigid hook which projects beyond the inner end of the case or body and engages the cam or eccentric disk on the opposing case or body, substantially as specified.

2. In a hose-coupling of that class provided with twin members, each member having a rigid hook 12, the turning plug 10, and the lever 13, fitted to the turning plug to operate the same, the members when coupled together having the hook of one member engaged with the turning plug of the other member, and vice versa, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE BAYLEY WILLIAMS.

Witnesses:

A. L. SHERER,
FRANK ROFINOT.