No. 771,094. PATENTED SEPT. 27, 1904.

S. M. RHOADS.

HOSE COUPLING.

APPLICATION FILED OCT. 28, 1902.

NO MODEL.

Fig. 1.

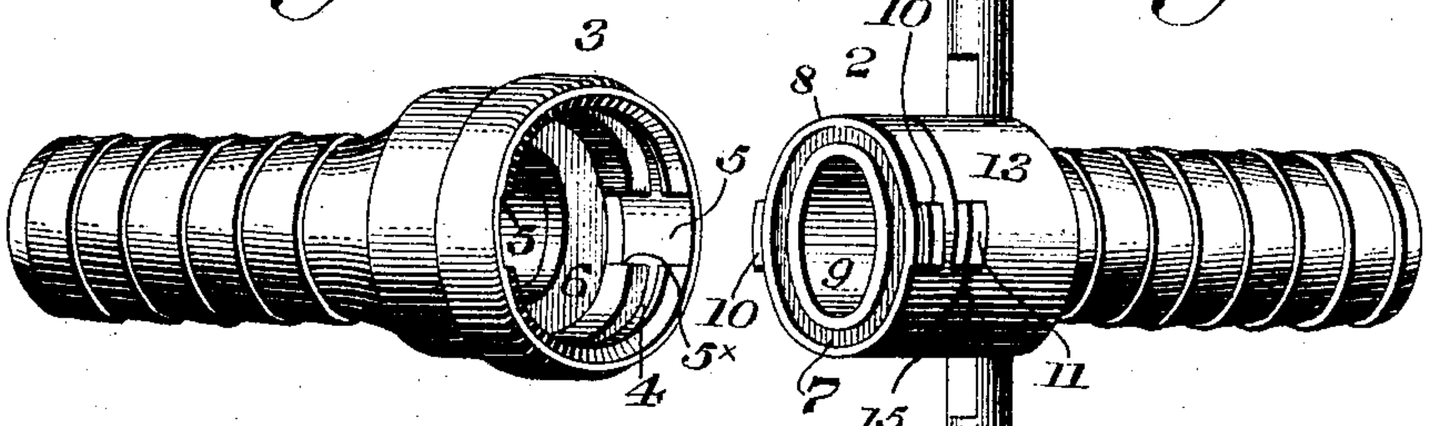


Fig. 2.

Fig. 3.

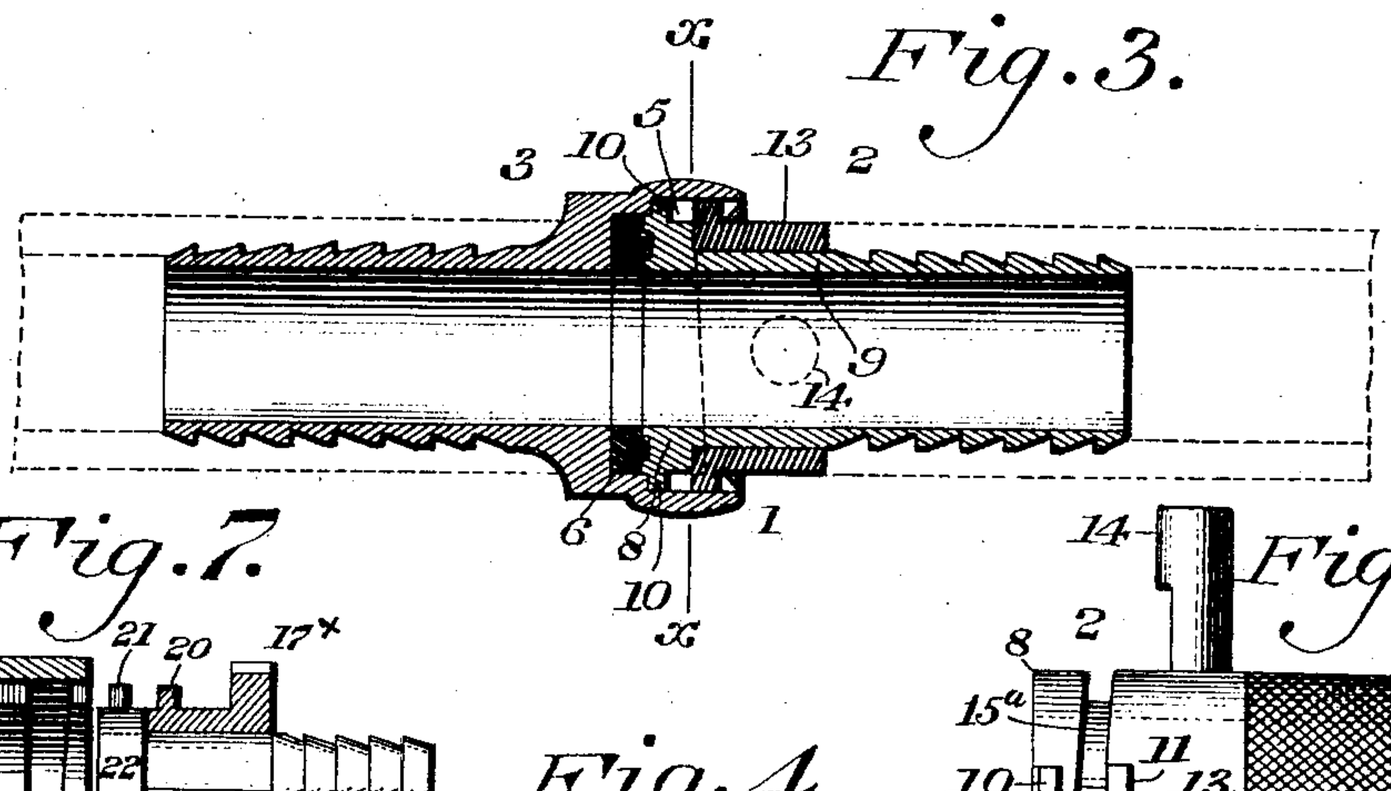


Fig. 7.

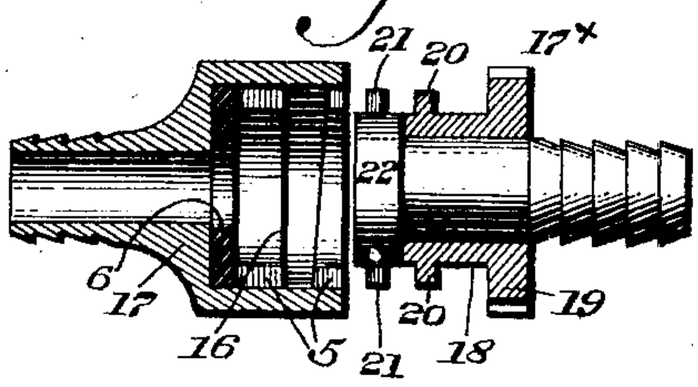


Fig. 4.

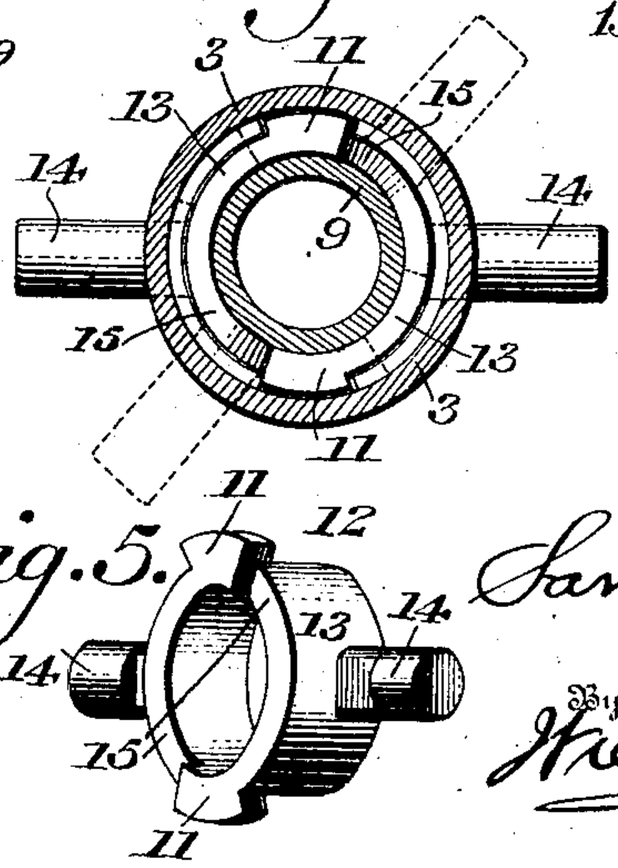
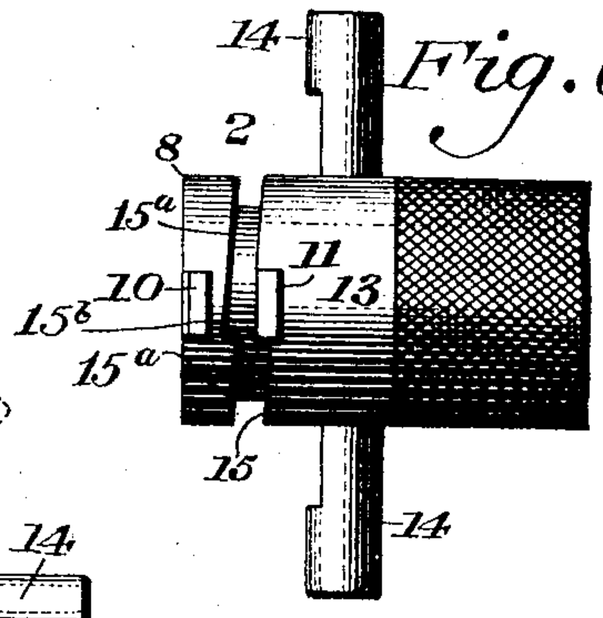


Fig. 6.



Witnesses

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No. 771,094. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

SAMUEL M. RHOADS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PHILADA. BREWERY APPLIANCE COMPANY, A CORPORATION OF NEW JERSEY.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 771,094, dated September 27, 1904.

Application filed October 28, 1902. Serial No. 129,098. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. RHOADS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Hose-Couplings, of which the following is a specification.

My invention consists of a novel construction of a hose-coupling whereby the sections or members of said coupling may be readily assembled and easily and firmly locked in position and disconnected with equal facility, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figures 1 and 2 represent perspective views of the male and female sections of a hose-coupling embodying my invention. Fig. 3 represents a longitudinal sectional view of the coupling, the parts being in assembled position. Fig. 4 represents a section on line $x\,x$, Fig. 3. Fig. 5 represents a perspective view of the locking-collar in detached position. Fig. 6 represents a side elevation showing the locking-collar moved from the position seen in Fig. 2. Fig. 7 represents a sectional view showing another embodiment of my invention.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a hose-coupling, the same consisting of the male and female members 2 and 3, respectively, the female member being provided with a counterbored portion, having the annular groove 4 therein and the longitudinally-extending recesses or channels 5 located oppositely to each other.

6 designates packing seated in the base of the counterbored portion, against which the extremity or outward face 7 of the male member is adapted to contact when the parts are assembled. The male member 2 consists of the flanged head 8, attached integrally to the neck 9, said head being provided with the oppositely-located lugs or tongues 10, which are adapted to aline with the oppositely-located lugs or tongues 11 of the locking-collar 12, the construction of which will be best understood from the detached view seen in Fig. 5. The locking-collar consists of a suitable body portion 13, having the diametrically-extending arms 14, said collar being provided with the cam-faces 15, which are adapted to contact with and ride upon the cam-faces 15^a on the head 8, it being noticed that said cam-faces are on the engaging surfaces of said collar and head at what may be called the "inner" side edge of the flange of said head and "outer" side edge of said collar, as most clearly shown in Fig. 6, whereby when the collar 13 is turned in the proper direction the same will tend to move to the right of the position seen in Figs. 2 and 3, as is evident.

The operation is as follows: The parts in their unassembled position appear as seen in Figs. 1 and 2, it being noted that the lugs 10 and 11 on the head 8 and collar 13, respectively, are in alinement. The head 8 and forward portion of the collar 13 are introduced into the member 3, the lugs or tongues 10 and 11 passing through the channels 5 and the tongues 10 occupying the inner terminal portion of said channels, the extremity or face 7 of said head 8 then contacting with the outer side of the washer or packing 6. By means of the finger-pieces or projections 14 the locking-collar 13 can be readily rotated to the desired extent, whereupon it will be apparent that the lugs 11 engage the annular groove 4 of the female member 3, but that the contact of the cam-faces 15 of the locking-collar with the contiguous cam-faces of the head 8 will cause said locking-collar to move to the right of the position seen in Fig. 2, thereby quickly and readily making a very tight and serviceable connection. It will be seen that the channels 5 communicate with the annular groove 4; but said channels cross and pass inwardly beyond said groove, so that the walls of said channels at their inner portions form shoulders $5^{\times}$, against which the tongues 10 abut; but the tongues 11, owing to the rotation of the collar 13, are turned into the groove 4, whereby owing to the cam-faces of said head and collar said head is pressed against the washer or packing 6. The head, however, is prevented from rotating, owing to the abutment of its tongues 10 against the shoulders $5^{\times}$ of the channels 5, as above

stated, and thus the packing remains stationary without liability of being ground or cut away, and the lengths of hose connected with the opposite members of the coupling will not be twisted or turned during the coupling operation. When it is desired to disconnect the coupling-sections, it is only necessary to rotate the locking-collar in the opposite direction until the lugs 10 and 11 are in alinement, whereupon the male and female members can be readily disconnected. The beginnings of the faces 15^a leave the shoulders 15^b, with which the tongues 11 are adapted to abut, so that the tongues 10 and 11 are in alinement or register, in which condition they enter the longitudinally-extending channels 5. In rotating the collar 12—say to the right—the tongues 11 leave said shoulders 15^b and enter the annular groove 4. When said collar 12 is rotated to the left preparatory to uncoupling, the tongues 11 abut against the shoulders 15^b, thus limiting the return motion of said collar and again placing the tongues in register, whereby they may be withdrawn as one through and from said channels 5.

It will be apparent to those skilled in this art that my novel construction of coupling can be used in all locations where hose-couplings are necessary or have been employed and that the same is especially adapted for coupling hose to be used for pneumatic purposes, pneumatic tools, or for hose of pipes employed to conduct steam, oil, air, water, brewery products, or for any other similar purposes. The coupling is simple in construction, cheaply and easily manufactured, and will stand any pressure, as it can be used until the washer 6 is entirely worn out and yet have a tight joint, and the coupling-sections cannot be jarred apart under ordinary conditions.

In the construction seen in Fig. 7 I have shown a slightly-modified form of a hose-coupling, wherein in view of the cam-faces 15 on the collar I provide a cam-shaped groove 16 within the female member 17, the latter being provided with the washer 6, as already described, the grooves 5 also being located substantially as already described. The male member $17^\times$ in place of the collar 13 is provided with the collar 18, having the knurled flange 19, which takes the place of the arm 14, said collar being provided with the lugs 20, which are adapted to aline with the lugs 21 on the head 22. It will be apparent from the foregoing that when the head 22 is inserted into the female member so that it contacts with the washer 6 the lugs 20 of the collar will be in engagement with the walls of the groove 16, and a rotary movement having been imparted to said collar said head will be tightly forced against said washer, as will be evident by reason of the coaction of the lug 20 with the walls of the cam-groove 16.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a coupling of the character stated, a stationary member having a flanged head integral therewith, a rotatable collar on the reduced body of said member, registering tongues projecting from the peripheries of said head and collar, cam-faces respectively on the outer side edge of said collar and inner side edge of the flange of said head and means with which the tongue of said collar may abut, adapted to limit the return motion of the latter and place said tongues in register.

2. In a coupling of the character stated, a stationary member having a flanged head integral therewith, a rotatable collar on the reduced body of said member, registering tongues projecting from the peripheries of said head and collar, cam-faces respectively on the outer side edge of said collar and inner side edge of the flange of said head, and means on said head with which the tongue of said collar is adapted to abut limiting the return motion of said collar and placing said tongues in register.

3. A coupling of the character stated consisting of a stationary member having a counterbore, an annular groove on the inner face of said counterbore, a shoulder on said face adjacent to said groove, and a longitudinally-extending channel on said face at an angle to said groove and shoulder, an opposite stationary member having a flanged head integral therewith, a tongue on the periphery of the flange of said head, a rotatable collar fitted on the body of said opposite member, a tongue on the periphery of said collar, cam-faces on the outer side edge of said collar and inner side edge of the flange of said head, a shoulder on said head adjacent to the cam-face thereof, the tongue of the said collar being adapted to abut against said shoulder and limit the return motion of said collar and place the tongues of the head and collar in register.

SAMUEL M. RHOADS.

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