

Jan. 3, 1950

L. K. FRANKLIN

2,493,577

ADAPTER

Filed April 19, 1947

Fig. 1.

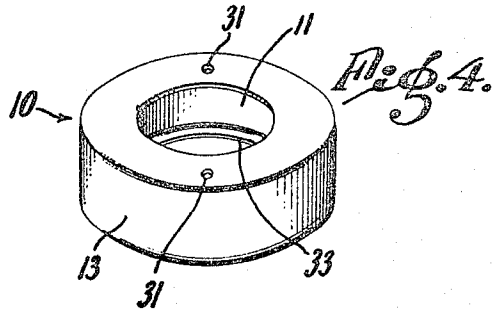
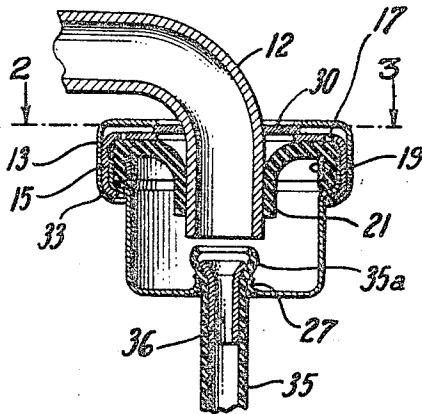


Fig. 4.

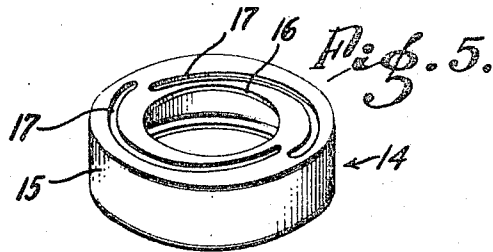


Fig. 5.

Fig. 2.

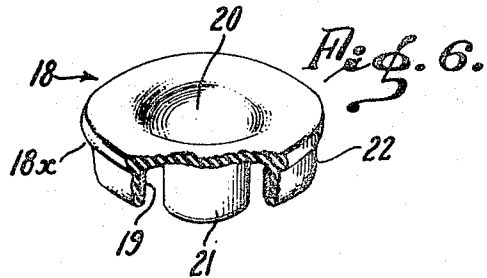
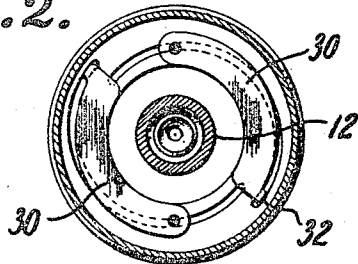


Fig. 6.

Fig. 3.

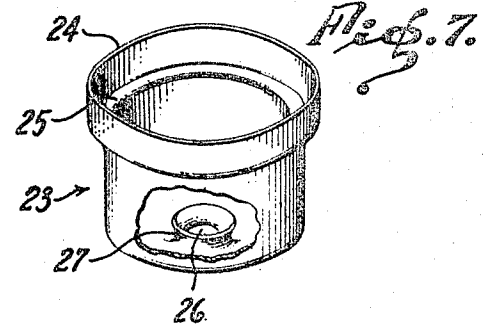
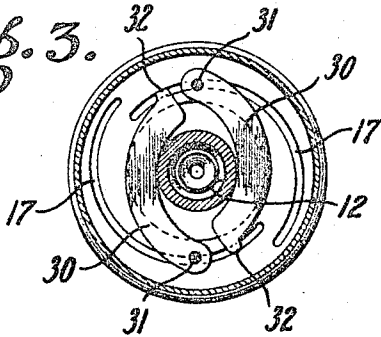


Fig. 7.

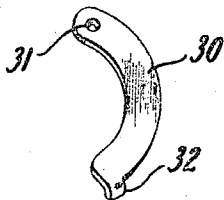


Fig. 8.

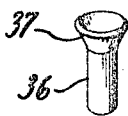


Fig. 9.

LESTER K. FRANKLIN,
INVENTOR.

BY 
ATTORNEY

UNITED STATES PATENT OFFICE

2,493,577

ADAPTER

Lester K. Franklin, Los Angeles, Calif.

Application April 19, 1947, Serial No. 742,595

6 Claims. (Cl. 285-90)

1
This invention relates to an adapter for connecting liquid supply and delivery means.

Among the objects of the invention are: to provide, in an adapter usable, for example in attaching a hose to a faucet spout, improved automatic, fluid pressure operated sealing means which safeguard against leakage both at the intake and outlet side of the adapter; to provide an improved arrangement of cam-slot operable clamping arms that will be better suited to withstand hard usage over a long period of time; and to provide an improved compact and simple assembly of interfitting casing parts, the manual rotation of one of which in relation to the others clamps the device to the faucet spout or other conduit member to which it is applied.

A more specific object is to provide an improved elastic, automatically pressure operated annular fluid seal member more efficiently to prevent leakage between the device and the outlet portion of the spout, pipe or conduit to which the device is applied.

Other objects, features and advantages of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates a preferred embodiment of the invention,

Fig. 1 is a vertical midsection of the adapter showing the same attached to the spout of a faucet to connect the latter with a piece of hose.

Fig. 2 is a transverse section on line 2-3 of Fig. 1, but the clamping elements are shown open instead of in the closed position of Fig. 3.

Fig. 3 is a transverse section on line 2-3 of Fig. 1, showing the clamping elements closed, as they are in the latter view.

Figs. 4 and 5 are, respectively, perspective views of the cover member and cam-carrying, clamping ring.

Figs. 6 and 7 are, respectively, broken perspective views of the elastic sealing member equipped with a stabilizing ring, and of the cup-shaped casing member.

Figs. 8 and 9 are perspective views respectively of one of the clamping arms and of a tubular keeper pin.

Referring in detail to the drawing the principal parts of the illustrated embodiment of the invention are, naming them from above downwardly as viewed in Fig. 1: the circular cover member 10 of an inverted cup shape having through its upwardly directed bottom a circular central aperture 11 large enough to receive, with clearance, the faucet spout 12, and the skirt portion 13; the cam-carrying ring 14 shaped simi-

2
larly to said cover member but having a skirt 15 (less in diameter than the skirt of the latter so as to fit inside thereof as shown), central aperture 16, and a pair of cam slots 17, 17 eccentrically related to said aperture 16; an elastic sealing member 18, containing a reinforcing ring 19 and having a central aperture 20 from which depends a short open-ended annulus 21, this sealing member having also a depending flange 22 spaced radially beyond said annulus 21, within which fits said reinforcing ring 19, and a cup-shaped casing portion 23 having around its top an outwardly offset circular part 24 connected with the body portion of the cup by an annular ledge 25, said cup having a central circular opening 26 around which upstands a circular lip 27 with a somewhat flaring mouth at its upper end, the passage which said ring surrounds being also somewhat flared at its lower end, this shape of the passage through said lip being due to the transverse curvature of the lip as shown. The upper edge of the cup portion 24 underlies a slight peripheral annular downwardly facing shoulder 28 around the upper part of the sealing member 18, said shoulder resulting from the upper part of said sealing member being diametrically enlarged.

In the description thus far reference has been made to all the larger parts of the device, but it is to be noted that a pair of twin, arcuate strap metal clamping arms 30, 30 is interposed between the cover member 10 and the cam ring 14, these clamping arms each having one end pivoted to the cover member at 31, 31 and having at the opposite end a downwardly directed ear 32 having a working fit in one or the other of the cam slots 17. Said arms 30 are arcuated in an edgewise manner and, when urged inwardly by the rotation of the cover member 10 in relation to the underlying parts of the device, are caused to grip in an edgewise manner (with their concave edges) the spout 12 to which the device is shown applied. While they are doing this, nearer to the mouth of the spout the elastic member 18 surrounds the spout with a fluidtight fit.

It also remains to be mentioned that the skirt portion 13 of the cam-carrying ring 14 has an inwardly directed annular lip 33 which underlies the ledge 25 between the diametrically enlarged upper part 24 of the cup 23 and the body portion of said cup.

In Fig. 1 and end portion 35 of a hose is shown having its intake end portion surrounded by the lip 27, a tubular keeper 36 having been crowded downwardly into the hose before the attaching of

the device to the spout, said keeper having a frusto-conically expanded upper end portion 37.

From Fig. 1 it will be seen that the elastic, central, dependent annulus or skirt 21 of the sealing member 18 acts as a sealing lip around the spout so that increase of fluid pressure within the device will impart to said lip an additioned sealing pressure, thus insuring a liquidtight fit between the spout and the device. Also the forcing of the tubular keeper having the flared upper end into the attached end portion of the hose 35 will flare the hose at 35a just above the lip 27 and liquid pressure within the device will tend to increase this flare thereby securely sealing around the attached hose.

As having a bearing on the operation of the device it should be noted that the rigid stabilizing ring 19 within the thick, rubber sealing member 18 compresses the depending flange 22 of said member firmly against the inside surface of the skirt 15 of the cam-carrying ring 14. Hence, as the annulus 21 of said sealing member has a good grip upon the spout 12, said sealing member holds said ring 14 against rotation when the cover member 10 is turned to operate the spout-gripping arms 30. However, to insure a more positive operation the user of the device may grasp the lower cup-shaped casing member 23 with one hand to maintain it against rotation while, with the other hand he turns the cover member in the direction indicated by the arrows in Fig. 2.

I claim:

1. In an adapter of the kind described, a cylindrical casing structure having in one end an opening to discharge liquid into a conduit and in its opposite end an intake opening into which the terminal portion of a spout or the like is insertable, elastic sealing means within said casing structure having an opening to receive said spout with a fluidtight fit, a turntable cover member forming a part of said casing structure and located axially beyond said sealing means, said cover member having an opening through which said spout is loosely insertable, and opposed spout-gripping arms pivotally connected with said casing structure and actuated by the turning movements of said cover member to grip and release the spout to secure the adapter thereto and release it therefrom, said casing structure having in it arcuate cam means underlying said cover member, portions of said arms extending into the paths of said cam means so that the arms are moved to and from their gripping positions by said cam means when turning of said cover member moves said arms in relation to said cam means.

2. The subject matter of claim 1, and said cam means consisting of slots through a portion of said casing structure subjacent to said cover member, and said arms having offset portions working within said slots.

3. In an adapter of the kind described, a casing structure of a cylindrical character having an axial opening to receive with a fluidtight fit the discharge portion of a spout when the latter is inserted into one end of said casing structure, and a discharge opening in the opposite end of said casing structure, the latter opening being surrounded by a lip which is inwardly convex in cross-section, an elastic conduit having an end portion projected through said lip into said casing structure, and a keeper sleeve having a frusto-conically flared head, said sleeve being wedgeable

into said elastic conduit to expand the inner end thereof adjacent to said lip.

4. In an adapter of the kind described, a cylindrical casing structure having in one end an opening to discharge liquid into a conduit and in its opposite end an intake opening into which the terminal portion of a spout or the like is insertable, elastic sealing means within said casing structure having an opening to receive said spout with a fluidtight fit, a turnable cover member forming a part of said casing structure and located axially beyond said sealing means, said cover member having an opening through which said spout is loosely insertable, and opposed spout-gripping arms consisting of strap metal which is arcuated in an edgewise manner with the concave edges directed toward the spout, each of said arms having one end pivoted to said cover member and having at its opposite end a laterally directed ear, said casing structure subjacent to said cover member having tangentially extending slots into which said ears extend so that turning movements of said cover member move said arms to and from spout-gripping positions.

5. In an adapter of the kind described, a cup-shaped casing member of sheet material having a diametrically enlarged mouth portion, thus producing an annular ledge between said diametrically enlarged portion and the remainder of said member, there being an aperture through the bottom of said member to receive an outlet conduit, an elastic sealing member fitted within said diametrically expanded part and having a central downwardly directed annulus to fit in a fluidtight manner around the discharge end portion of a spout or the like, a cam-carrying ring of sheet metal having a body portion overlying a dependent skirt portion fitted around the upper part of said sealing member, a circular cover member having a centrally apertured body portion to receive the spout and a dependent peripheral skirt which loosely surrounds said cam-carrying member, the lower edge portion of said cover member having an inwardly directed annular lip which underlies the diametrically enlarged portion of the aforesaid cup-shaped casing member to keep said cover member turnably in place upon the device, the upper portion of said cam-carrying member having excentrically extending cam slots through it, and a plurality of arcuate spout-gripping arms overlying said cam-carrying member and having each an ear at one end with a working fit in a said slot, said arcuate arms each having its concave side contactable with the spout to be gripped and being pivotally connected at the end opposite to its said ear with said turnable cover member.

6. The subject matter of claim 5, and said sealing member having a dependent peripheral flange or skirt around its upper portion and a stabilized ring fitted within and pressing outwardly against said skirt or flange.

LESTER K. FRANKLIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,187,920	Muller	June 20, 1916
1,292,524	Serrell	Jan. 28, 1919