Sept. 11, 1945. C. S. BEVERLY 2,384,525

POP-UP SPUD WRENCH

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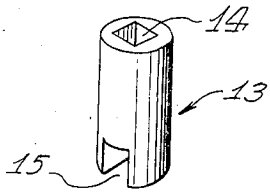


Fig. 1

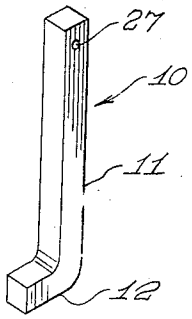


Fig. 2

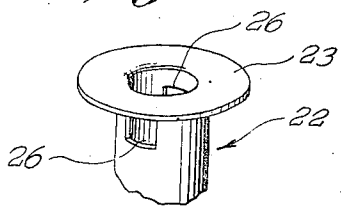


Fig. 3

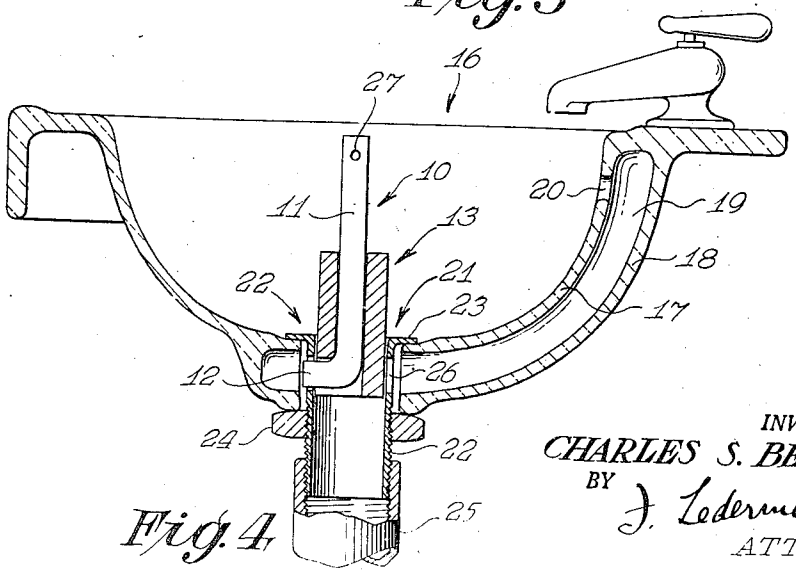


Fig. 4

INVENTOR.
CHARLES S. BEVERLY
BY
J. Lederman
ATTORNEY

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POP-UP SPUD WRENCH

Charles S. Beverly, Brooklyn, N. Y.

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3 Claims. (Cl. 81—13)

This invention relates to tools, and aims to provide a novel and useful tool to assist in the dismantling of the housing of a pop-up valve such as is commonly in use in the drains of bath room basins as well as other water receptacles. The tool may also be termed a spud wrench.

In the absence of a suitable tool such as that herein presented, it is the common practice of plumbers to insert a screw driver or the like through one of the drain openings into the side of the valve housing to restrain the housing from rotation while a tool such as a wrench is applied to the lock nut under the basin, in order to remove the valve housing. This practice usually results in deforming or scratching of the seat of the pop-up valve so that when the unit is reassembled the valve will not sit snugly on its seat, whence the valve fails to provide a watertight plug in the basin so that it thereafter becomes impossible to keep the basin filled with water. The tool of this invention permits of holding the valve housing against rotation without in any way injuring the valve seat.

The above and other objects will become apparent in the following description, wherein characters of reference refer to like numbered parts in the accompanying drawing. It is to be noted that the drawing is intended for the purpose of illustration only, and that it is neither intended nor desired to limit the invention in any manner to the specific details of construction shown excepting insofar as they may be deemed essential to the invention.

Referring briefly to the drawing,

Fig. 1 is a perspective view of the barrel constituting one of the two cooperating members of the tool.

Fig. 2 is a perspective view of the hook-shaped member constituting the other of the said cooperating members.

Fig. 3 is a fragmentary perspective view of the pop-up drain valve housing per se.

Fig. 4 is an axial vertical sectional view through a bathroom basin, showing the tool in position for tightening or loosening the lock nut of the housing.

Referring in detail to the drawing, the numeral 10 indicates a tool member comprising a shank 11 having a right-angled lower extremity or tongue 12. As shown, the shank 11 and tongue 12 are rectangular in cross-section.

The barrel 13, which is cylindrical in outline, has an axial opening 14 extending therethrough, and at its lower end has a radial cut-out 15 extending into and communicating with the axial opening 14. The opening 14 and cut-out 15 are also shown rectangular in cross-section.

The basin 16 illustrated in Fig. 3 is intended simply to aid in an understanding of the function of the tool and is not intended truly to represent a standard basin structure. Such basins have an inner wall 17 and an outer wall 18 enclosing an overflow compartment or passage 19 into which overflow water enters through the overflow vent or opening 20 in the basin wall 17.

The drain opening 21 passes down through both walls 17 and 18, and the drain valve housing or spud 22 rests in the drain opening. This housing is provided with a flange 23 which provides the seat for the pop-up valve, not shown. The lower end of the housing 22 is threaded, and a lock nut 24 secures the housing in the drain opening 21 in an obvious manner. The drain pipe 25 is secured to the housing 22 either directly or through a further connection, not shown.

Ordinarily, it is necessary upon occasion to remove the pipe 25 or the housing 22 for the purpose of cleaning out accumulated sediment or other material clogging the drain. It is apparent that difficulty would be encountered were it desired to loosen the nut 24, since the housing 22 is free to rotate within the drain opening 21. This tendency is present especially after the device has been long in use, owing to corrosion, etc.

The housing 22 is provided with a plurality of side openings 26 therethrough, through which overflow water in the compartment 19 flows down the drain. These openings are usually rectangular, as shown. The tool of this invention serves to restrain the housing 22 from rotating while a wrench is applied to the nut 24 to loosen the latter or vice versa, in the following manner: The member 10 is inserted into the drain opening 21 with the tongue at the bottom, and is moved to register the tongue 12 in one of the openings 26. This is possible since the overall length of the tongue 12 is less than the diameter of the drain opening 21. The barrel 13 is then slipped over the shank 11 and allowed to drop, and it is then inserted into the drain opening, in which it fits rather snugly, the member 10 meanwhile adjusting its position laterally and automatically, as is obvious. Thus the tongue is positioned through an opening 26 in the housing 22 and the barrel 13 sits snugly in the opening 21, resting on the tongue 12 which also registers in the barrel cut-out 15.

If now a small wrench, pliers, or the like is applied to the shank 11 while the nut 24 is being

turned by a wrench, it is apparent that the housing 22 will be secured and held against rotation, thus permitting ready loosening or tightening of the nut 24.

In the drawing a small hole 27 is shown through the upper end of the shank 11. Instead of the wrench or pliers to hold the shank as above mentioned, a rod may be passed through the hole 27 to hold the shank against rotation.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention. Both the barrel opening or bore 14 and the shank 11 may be of any cross-section other than the rectangular or square form shown, including cylindrical, and there may also be play between the shank 11 and the walls of the bore 14. The essential feature of the barrel 13 is that it maintains the tongue 12 in position in the opening 26 and stabilizes the entire member 10, so that the shank may be held as above described while the nut 24 is being turned. Without the barrel 13 the member 10 would wobble and be difficult to hold firm, and pressure of the shank against the upper inner edge of the drain flange or valve seat 23 would result with consequent injury to the valve seat.

I claim:

1. A tool of the class described and for the purpose set forth, comprising a shank having the lower extremity thereof bent at right angles thereto to form a tongue, a barrel having an axial opening of substantially the same lateral dimensions as said shank, said shank being slidably registrable in said barrel opening, said barrel having a radial cut-out through the lower end thereof communicating with said axial opening, said radial cut-out being of substantially the same cross-sectional dimensions as said tongue, said tongue projecting through and registering in said cut-out when said barrel rests upon said tongue with said shank passing through said barrel opening.

2. The tool set forth in claim 1, said axial opening and said shank being rectangular in cross-section.

3. The tool set forth in claim 1, said cut-out and said tongue being rectangular in cross-section.

CHARLES S. BEVERLY.