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WRENCH FOR ATTACHING BOLT-CLAMPED LUGS TO TRIM STRIPS

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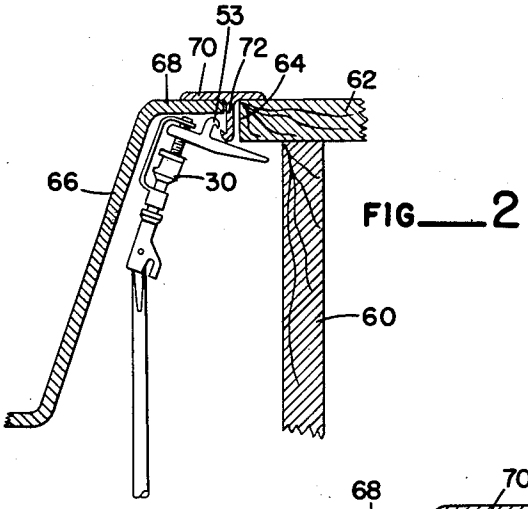



FIG. 2

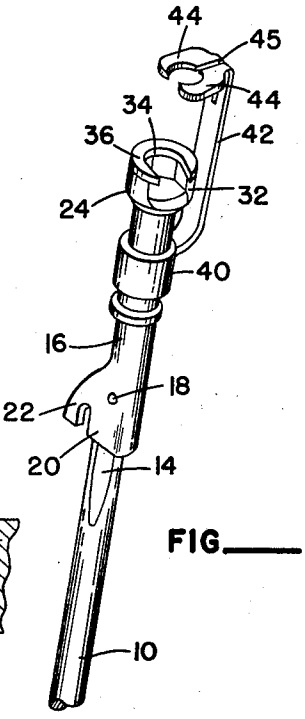



FIG. 1

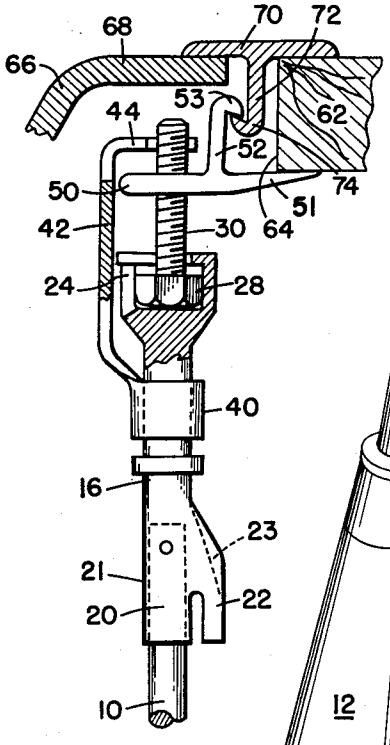



FIG. 3

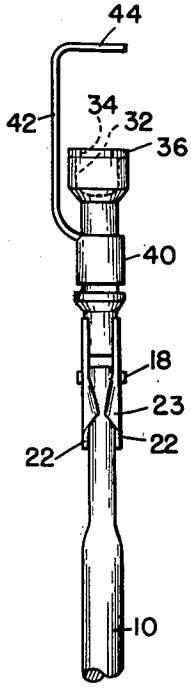



FIG. 4




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# WRENCH FOR ATTACHING BOLT-CLAMPED LUGS TO TRIM STRIPS

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4 Claims. (Cl. 81—125)

This invention relates to a wrench for attaching bolt-clamped lugs to trim strips and, more particularly to a wrench for positioning and securing bolt-attached sink lugs in cramped quarters usually encountered beneath a sink rim of a kitchen or bathroom fixture.

It is a widespread or common practice today to mount lavatory fixtures in cabinets or counters so that the rim of the fixture is flush with the surface of the cabinet top or counter. It is desirable to trim and seal the line of joinder between the fixture rim and the periphery of the opening in which the fixture is disposed by a trimming ring. Normally such rings comprise a T-shaped member having the depending leg passing downward between the fixture periphery and wall of the opening and this serves for attaching and clamping purposes. The depending leg element of the trim rim is engaged by a lug device including a screw element which applies a levering action upon the trim rim to pull it tightly down against the counter and the fixture surface. This invention is primarily concerned with the application of these lugs. An accompanying circumstance quite often encountered in making such an installation is that the workman must place and secure his lugs in the very cramped quarters generally found under the sink rim and which do not permit the ready use of simple tools and of the hands. To put it another way, the workman must attach the lugs often at a position quite remote from any that he can easily reach by hand and do so with speed and facility.

It is, therefore, among the more important objects of this invention to provide: a wrench which is operable in extremely cramped quarters at some distance from a position that can be reached by hand; a wrench which will facilitate and expedite the placing and securing of bolt-attached sink lugs to trimming rims and the like; and a tool of the nature described which will allow the tilting or tipping of the axis of a bolt in a bolt-attached sink lug for engagement of the lug in its proper mechanical relationship to the trimming rim but which can be altered to a vertical position for the tightening of the attaching bolt.

These and other objects of the invention will be more apparent during the course of the following description in which is set forth a preferred form of the invention. It will be apparent to those skilled in the art that changes and alterations may be made in the structure disclosed and all such, that are fairly within the function and scope of the invention as defined by the subjoined claims, it is my every intention to cover herein.

In the drawings, in which like reference characters refer to like parts throughout the same:

Figure 1 is a perspective view of my improved wrench;

Figure 2 is a view in reduced proportion disclosing a step in the attachment and positioning of a sink lug through the use of my tool;

Figure 3 is a view similar to Figure 2 but on an enlarged scale, showing the sink lug in position to be tightened and secured; and

Figure 4 is a side view of the tool shown in Figure 3.

Referring specifically to Figure 1, my wrench includes an elongated handle shank **10** having a handle grip **12** on one end and a flattened or tapered portion **14** on the opposite end. A socket shank **16** is pivotally mounted on the extremity of shank **10** by means of pivot pin **18** which passes through the bifurcated portion **20** of the socket shank **16**.

It will be understood that the bifurcated socket shank **16** is pivotally mounted on the flat sides of the shank end **14** to rock from axial alignment with the shank **10**,



as shown in Figure 1, to the obliquely angular position shown in Figure 2. A pair of resilient ears **22** stand outward to one side of the axis of shank **10** and of shank **16**. As shown in Figure 4, these ears form friction jaws which maintain shank **16** in an adjusted angular disposition relative shank **10**. Bending or rocking is limited by stop tabs **23**.

Integrally associated on the other end of shank **16** is the socket member **24** which has side opening **32** to receive a multi-sided bolt head **28** as shown in Figures 2 and 3. The bolt shank **30** extends in axial alignment with the axis of shaft **16** through a U-shaped slot **34** in the collar **36** on the outer end of socket **24**. The overhanging portion of collar **36** engages the underside of bolt head **30**, that is on that side of the bolt head **28** from which protrudes the shank **30**, and thus the head of the bolt is retained against longitudinal displacement from socket **24**. It is intended that the bolt head may pass outward only through the slot or opening **32**.

By means of a collar **40** a relatively broad flat offset extension arm **42** is revolvably carried by shank **16**. At its outer end the extension **42** is provided with a pair of spring-pressed open-mouth jaws **44** that engage the shank **30** of the bolt at a position remote from socket **24** substantially as shown in Figures 2 and 3.

A sink lug with which this invention is particularly useful can be seen in Figures 2 and 3 to comprise an inverted T-shaped element, including arms **50**, **51**, and leg **52** having hook end **53** on its extremity. Bolt shank **30** is threadedly engaged in the arm **50**. When such a sink lug is properly positioned with respect to the wrench the arrangement is as has been set forth in Figures 2 and 3.

A typical use of the tool is to be seen in the schematic view of Figure 2 wherein a cabinet wall **60** supports a counter or cabinet top **62** the latter having an opening **64** in which the sink **66** is located. The flange edge **68** of the sink is normally positioned flush with the upper face of the counter **62** and in slight spaced apart relationship to the walls of the opening **64**.

A typical trimming element, forming no part of this invention, comprises a T-shaped band or ring having a cross head **70** and depending flange **72**, formed with hook edge **74** on the extremity of flange **72**.

One of the problems solved with particular facility by my tool is disclosed herein. The problem lies in how, in cramped quarters shown in Figure 2, it is possible to engage hook **53** over the hook edge **74** on flange **72**. To do so, the bolt head **28** is placed in the socket **24** and the gripping jaws **44** are placed around the outer end of bolt shank **30**. The relatively broad flat extension arm **42**, carried by the socket shank, lies closely juxtaposed to the free end of lug arm **50**. Because it is possible to revolve socket **24** relative collar **40**, the operator next backs off the bolt shank **30** until the gripping jaws **44** contact the upper face of the sink lug **52**. The operator then breaks the joint between the handle shank **10** and the socket shank **16** as shown in Figure 2 which results in tilting the sink lug **52**. This makes it easy for him, even from a quite remote position, to engage the hook **53** over the hooking lip **74** on the trim rim **70**. He then pulls straight down on the tool causing the socket shank **16** to align with the axis of handle shank **10**, this condition being illustrated in Figure 3. While maintaining hooks **53** and **74** engaged, he proceeds to tighten the bolt by rotary motion of the tool until it bears on the under surface of the fixture flange **68** and imparts a downward pull on the trimming ring. By this operation the lug arm **52** is pressed against the under side of the counter member **62** in a levering action.

The tool is separated from the bolt head **28** and shank **30**, when the latter is tightly secured in place, merely by disengaging the socket **24** from bolt head **28** and freeing the gripping jaws **44** from shank **30**. This is accomplished by rocking the tool relative the axis of bolt shank **30** which causes the jaws **44** to release their grip on the shank whereupon the socket **24** may be moved sideways and out of engagement with bolt head **28**. More specifically, to remove the tool after the bolt is tightened, the tool should be rotated 180 degrees from the position shown in Figure 3 at which position the straight side **21**

of socket shank **16** abuts handle shank **10**. Counterclockwise tilting movement of handle **10** around bolt head **28**, as a pivot point, causes jaws **44** to be snapped from bolt shank **30** in such movement.

The relatively close positioning of the shank **42** with the edge or end of one of the arms of the sink lug prevents the gripping jaws from revolving during tightening of the bolt and it also serves to maintain the bolt and the associated sink lug in a relatively rigid relation to the tool handle to prevent wobbling and rocking around as well as accidental dislocation of the bolt from the socket. In its preferred form the shank **42** has split **45** between jaws **44** which extends from the jaw crotch to a position downward of arm **42** a sufficient distance to provide a desired springiness.

Having thus described my invention, I claim:

1. A wrench for positioning and securing bolt-attached sink lugs in cramped quarters as beneath a sink rim, comprising: an elongated handle shank; a socket shank pivotally mounted on an extremity of said handle shank to rock from axial alignment therewith to an obtusely angular position relative thereto; a socket member, on the outer end of said socket shank, open on one side to receive a multi-sided bolt head and having means to engage the under side of such a bolt head to prevent axial displacement of a bolt head from said socket; and revoluble grip means carried by said socket shank to engage a bolt shank outward of said socket member.

2. The structure according to claim 1 in which the grip means comprises a pair of spring pressed jaws to be snapped on and off a bolt shank outward of said socket member.



3. The structure according to claim 1 in which the grip means comprises a collar revolubly carried by the socket shank and has a relatively broad flat extension to lie closely alongside of the axis of the bolt shank and which is provided with a pair of spring pressed, open-mouth jaws at the outer end to engage a bolt shank outward of said socket member.

4. A wrench for positioning and securing bolt-attached sink lugs in cramped quarters as beneath a sink rim, comprising: an elongated handle shank and a socket shank mounted on an extremity of said handle shank; a socket member on the outer end of socket shank, open on one side to receive a multi-sided bolt head and having means to engage the under side of such a bolt head to prevent axial displacement of a bolt head from said socket; and revoluble grip means carried by said socket shank to engage a bolt shank outward of said socket member.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 1,021,424 | Oatman | Mar. 26, 1912 |
| 1,426,682 | Snell | Aug. 22, 1922 |
| 1,477,355 | Jacobs | Dec. 11, 1923 |
| 2,090,134 | Lawson | Aug. 17, 1937 |