Dec. 20, 1960 R. W. HYDE 2,965,319

MOUNT MEANS FOR GARBAGE DISPOSER

Original Filed Dec. 20, 1951 2 Sheets-Sheet 1

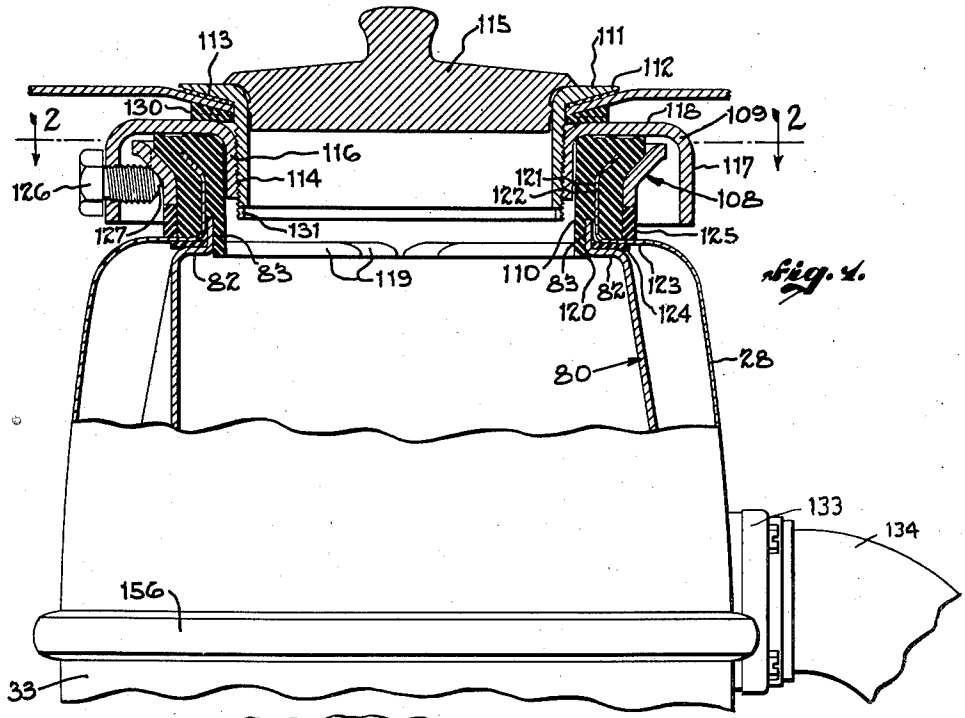

Fig. 1.

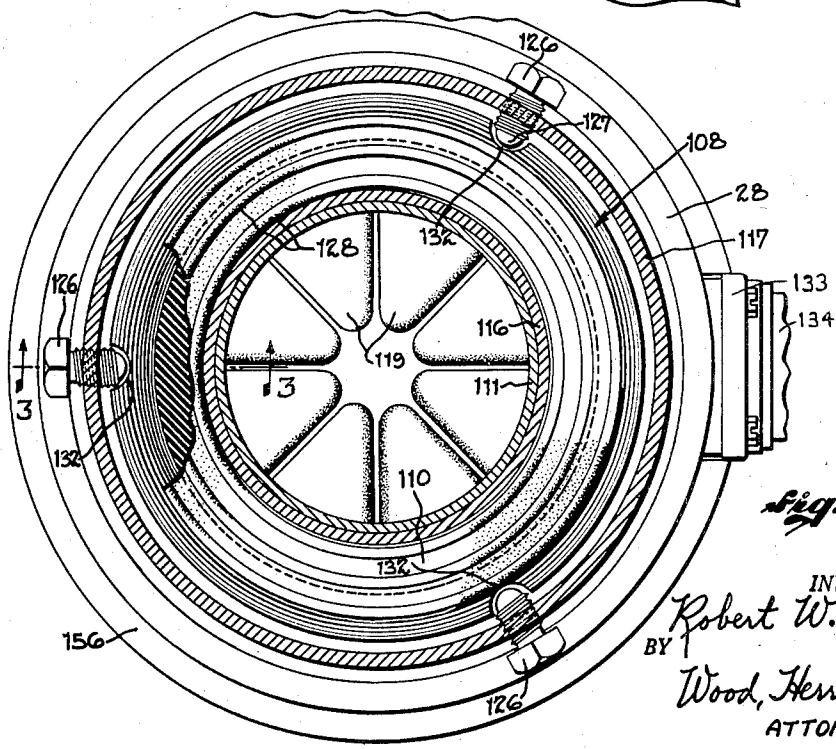

Fig. 2.

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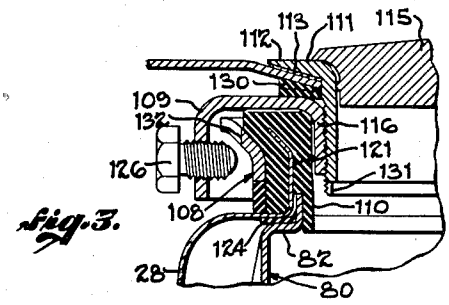

fig. 3.

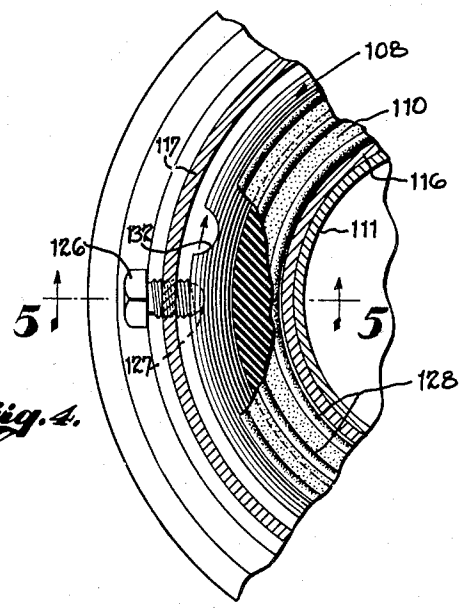

fig. 4.

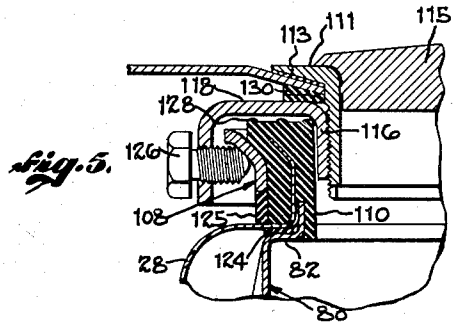

fig. 5.

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MOUNT MEANS FOR GARBAGE DISPOSER

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Application Nov. 18, 1953, Ser. No. 392,873, which is a continuation of application Ser. No. 262,626, Dec. 20, 1951. Divided and this application May 26, 1959, Ser. No. 815,992

6 Claims. (Cl. 241—100.5)

This application is a division of patent application Serial No. 392,873, filed November 18, 1953. The parent application is a continuation of an application filed December 20, 1951, Serial No. 262,626, now abandoned.

The parent application is directed to a garbage disposer unit of the type designed primarily for installation in a home. This application is directed to a means of attaching such a garbage disposer unit to the drain sleeve of a sink and it incorporates a vibration dampening annulus which insulates from the sink vibrations arising from the unit when it is in use. One of the objectives of this invention is to provide a mounting ring assembly of the type described which is exceedingly easy to install. In most instances it has been necessary in the mounting of disposers in the past for the installer to hold the unit in place while bolts and other attaching devices are put in place and secured. This is difficult and awkward to do, working in the cramped quarters of the cabinet structure under the average sink. The present invention provides a means whereby the unit may be quickly and easily initially suspended from the drain sleeve of the sink, which places all of the weight of the unit on the drain sleeve. Thereafter during the installation it is not necessary for the installer to lift or to hold the unit and he has both hands free to complete the installation.

Other objectives and advantages of the invention will be readily apparent to those skilled in the art from the following detailed description of the drawings in which:

Figure 1 is a view showing the upper portion only of a garbage disposer unit with parts being broken away to illustrate the details of a preferred form of the mounting ring of this invention.

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1 further illustrating the construction of the mounting ring.

Figure 3 is a fragmentary cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a fragmentary view taken on the same plane of Figure 2 showing that portion of the mounting ring illustrated in Figure 3.

Figure 5 is a cross sectional view similar to Figure 3 in which the mounting ring is in unit suspending position prior to being tightened to lock the unit in place beneath a sink.

The details of construction of the garbage disposer unit not illustrated here are shown in the parent application Serial No. 392,873, filed November 18, 1953. In general the unit is enclosed within two upper and lower shells designated 28 and 33 respectively. The upper shell encloses a casing 80 which defines the comminuting chamber of the unit. The casing is generally in the shape of a frustum of a cone and the upper end of the casing is turned in and then up to provide a right angular rim, the rim including an annular shoulder 82 which is generally in a horizontal plane and an upstanding flange 83 which is generally vertical. As disclosed in copending patent application Serial No. 815,991, filed May 26, 1959, also a division of the parent application, the upper shell 28 is locked to the lower shell 33 by means of a snap ring 156. Prior to assembly the annular shoulder adjacent to the upper end of shell 28 is concave. In assembly, the concavity is straightened out by forcing the shoulder down into the configuration illustrated here. This lowers the bottom edge of shell 28 into a position where it can be engaged by snap ring 156. The distortion of the shoulder during assembly does not exceed the elastic limit of the material of which the upper shell 28 is formed, thus the upper shell is under tension, the effect of which is to place a downward force upon the annular shoulder 82 at the upper end of the casing and thus lock the casing in place within the unit.

In general, the mounting ring assembly of this invention consists of a clamp ring 108, a mounting ring 109, and a vibration dampening annulus 110. The purpose of the mounting ring assembly is to fasten the unit to a sink sleeve which is indicated at 111. The sink sleeve seats in and depends through the drain opening in the sink. An outwardly turned flange 112 at the upper end of the sink sleeve rests upon a gasket 113 which seats on the sink surrounding the drain opening. Below the sink the sleeve is threaded externally as at 114. The inside of the sleeve may be plain as shown. The sleeve may receive a stopper of the type shown at 115, this stopper being fully described in my copending application Serial No. 308,263, filed September 6, 1952, now Patent No. 2,709,046. Mounting ring 109 has a depending inner flange 116 which is threadedly internally to engage the threads on the sink sleeve. The mounting ring has an outer flange 117 turned down from the upper portion 118 thereof to define with inner flange 116 an annular groove which opens downwardly to receive the vibration dampening annulus 110. It is preferred that annulus 110 be molded from one piece of rubber or other resilient material and that it include baffle fingers such as those shown at 119. The underside of annulus 110 has a circular slot 120 formed in it to accommodate the upstanding flange 83 formed at the top of the casing or inner cone 80. In addition to this, the annulus includes a substantially deep, narrow annular pocket 121 which receives the upper endwise portion of the upper housing shell 28. The upper end of the shell is configurated to provide an upstanding circular flange, the upper end 122 of which is flared outwardly at substantially 45° as shown in Figures 1, 3 and 5. The pocket 121 conforms to the shape of the flange. It will be noted that the upstanding flange 122 extends upwardly from an annular shoulder 123 which in the assembled unit lies in a substantially horizontal plane. A circular, resilient gasket 124 seats on the annular shoulder 82 at the upper end of casing 80 surrounding the flange 83. The annular shoulder 123, of housing 28, rests upon this gasket, being held there under a considerable amount of force as has been explained. The clamp ring 108 has a lower rim portion which is cylindrical; however, the major portion of the clamp ring is angulated, flaring outwardly and upwardly from the lower rim thereof at substantially 45°. The outer surface of the vibration dampening annulus 110 is shaped to fit snugly within the flared clamp ring. Although the clamp ring may be molded directly to the rubber annulus, it is preferred for production reasons to assemble them and to provide, for holding the clamp ring 108 in place, a large band 125 made of rubber or similar material, which surrounds the annulus below the clamp ring to hold it in place, as shown in Figure 1. Cement may be used to secure band 125 to the annulus if desired.

In the preferred embodiment, three radially disposed mounting screws 126 are threadedly engaged through the outer flange 117 of the mounting ring at equally spaced points circumferentially thereof. The inner end of each mounting screw is rounded as shown at 127 and is de-

signed to engage against the outer slanting face of the clamp ring **108** so as to wedge it upwardly and thus force the vibration dampening annulus upwardly into the annular groove defined by the two inner and outer flanges **116** and **117** of the mounting ring. The upper face of the mounting ring is ridged as shown at **128** so that when the three mounting screws **126** are tightened, the ridges, being pressed tightly against the underside of the mounting ring, serve to seal the joint between the annulus and the mounting ring.

In making an installation, the three mounting ring screws are first backed off to a point where the mounting ring **108** can be removed from the unit. The mounting ring is then threaded onto the sink sleeve, gaskets such as those indicated at **130** being used to seal the space between the bottom of the sink and the upper face of the mounting ring. Slots, such as those indicated at **131**, may be provided in the bottom rim of the sleeve and a tool inserted in them to prevent the sink sleeve from turning relative to the mounting ring when the ring is being tightened into place. Referring now to Figure 2, the outer marginal rim area of the clamp ring is notched at three places which are spaced to conform to the positions of the respective mounting screws. Each of the notches is indicated by **132**. These notches are designed to clear the inner, rounded ends of the mounting screws when they are run in to a point where they would not otherwise clear the edge of the clamp ring. This relationship is illustrated in Figure 2, and it permits the unit to be lifted and engaged in the annular groove in the clamp ring when the screws are run in to the points shown. Once the unit is thus engaged in the groove, it may be turned to misalign the notches **132** with respect to the inner ends **127** of the mounting ring screws. This is illustrated in Figure 4. After the unit has been turned, it will hang in place on the mounting ring assembly. This relieves the person making the installation of the burden of holding the unit while the mounting ring screws are completely tightened. With the unit thus suspended, the screws can be tightened to a point in which the inner ends thereof are in beyond the notches **132** but not so far in as to clamp the unit in place. Under these conditions, the unit may be rotated without fear of having it fall from the mounting ring assembly, so that it may be adjusted to properly align the drain outlet **133** with the drain pipe **134**. After the drain has been connected, the mounting ring screws may be tightened to securely clamp the unit in place as shown in Figure 1. At no time it is necessary for the workman to hold the unit for any great length of time, and he may use both hands to initially raise the unit to move the notches **132** past the screws. After the unit has been rotated slightly so that the notches are misaligned with respect to the screws, the installer has both hands free to complete the tightening of the screws and to adjust the position of the unit properly with respect to the drain pipe.

Inasmuch as the unit moves slightly during the final tightening of the screws, it is preferred that a resilient gasket be employed between the drain outlet of the unit and the fitting by which it is attached to the drain pipe.

Having described my invention, I claim:

1. Means for mounting a garbage disposer unit on the drain sleeve of a sink or the like comprising a mounting ring having an inner depending flange thereon adapted to be threaded onto said drain sleeve, an outer depending flange on said mounting ring, the respective inner and outer depending flanges being concentric and spaced to define an annular groove at the underside of said mounting ring, a rubber annulus, said rubber annulus adapted to be secured to the garbage disposer unit at the upper end thereof and adapted to be received within said annular groove, a clamp ring secured to said rubber annulus circumferentially thereof, said clamp ring flaring outwardly and upwardly to provide a continuous wedge surface circumferentially thereof, a plurality of clamp bolts threaded through the outer flange of the mounting ring, said clamp bolts being equally spaced about the circumference of said mounting ring and disposed with their respective axes extending radially of said mounting ring, a plurality of notches in the upper marginal edge of said clamp ring, said notches being spaced in accordance with the spacing of the clamp bolts so that the clamp ring may pass said bolts when the notches and bolts are aligned, whereby the rubber annulus may be placed within the annular groove with the respective bolts threaded radially inwardly to a place where their inner ends would strike the upper marginal rim of the clamp ring but for said notches, and whereby the rubber annulus may be revolved with the clamp ring above said bolts to misalign the respective bolts and notches to permit the rubber annulus to rest on said bolts, and said bolts adapted to be threaded inwardly beyond said place to wedge the rubber annulus upwardly to bring the upper surface thereof into tight sealing contact with the mounting ring.

2. An assembly for coupling a garbage disposer unit to the drain sleeve of a sink, said drain sleeve being of the type having a flange at the upper end thereof adapted to rest upon the sink surrounding the drain opening therein and having an externally threaded portion projecting downwardly through the drain opening, said assembly comprising, a mounting ring adapted to be threadingly engaged upon the threaded portion of said drain sleeve, said mounting ring including a pair of depending annular flanges which are in spaced relationship and concentrically disposed with respect to one another to provide an annular groove at the underside of said mounting ring, a rubber annulus adapted to be secured to the top of the garbage disposer unit and to seat within the groove in said mounting ring, a clamp ring secured circumferentially to the rubber annulus, said clamp ring flaring outwardly and upwardly to provide a wedge surface circumferentially thereof, a plurality of clamp bolts threading radially through the outer flange of said mounting ring and, the inner ends of said bolts being rounded and adapted to engage the wedge surface of said clamp ring when said rubber annulus is seated in said groove to force said rubber annulus into tight sealing relationship with the bottom of said mounting ring.

3. An assembly for coupling a garbage disposer unit to the drain sleeve of a sink, said sleeve being of the type which is threaded externally, said assembly comprising a mounting ring adapted to be threadingly engaged upon said sleeve, an annular groove in the underside of said mounting ring, a rubber annulus adapted to be secured to the top of said garbage disposer unit and to fit within said groove in said mounting ring, a clamp ring secured circumferentially to said rubber annulus, said clamp ring flaring outwardly and upwardly to provide a wedge surface circumferentially thereof, a plurality of radially disposed clamp bolts threadingly engaged in said mounting ring, and the inner ends of said bolts being rounded and adapted to engage the wedge surface of said clamp ring when said rubber annulus is seated in said groove to force said rubber annulus upwardly into tight sealing relationship with the bottom of said mounting ring.

4. Means for mounting a garbage disposer unit on the drain sleeve of a sink or the like comprising a mounting ring, an annular groove at the underside of said mounting ring, a resilient annulus, said resilient annulus being adapted to be secured to said garbage disposer unit at the upper end thereof and being adapted to seat within said annular groove, a clamp ring embracing said rubber annulus, said clamp ring flaring outwardly and upwardly to provide a continuous wedge surface circumferentially thereof, a plurality of clamp bolts threadedly engaged with the mounting ring, said clamp bolts being equally spaced about the circumference of said mounting ring and disposed with their respective axes extending radially thereof and with their inner ends within said annular groove, a

plurality of notches in the upper marginal edge of said clamp ring, said notches being spaced in accordance with the spacing of the clamp bolts so that the clamp ring may pass said bolts in the annular groove when the notches and inner ends of the bolts are aligned, whereby the rubber annulus may be placed in the annular groove with the bolts respectively threaded radially inwardly to a point where their inner ends would strike the upper marginal rim of the clamp ring but for said notches, and whereby the rubber annulus may be revolved with the clamp ring above said bolts to misalign the bolts with respect to said notches, and said bolts adapted to be tightened radially inwardly of the mounting ring against the wedge surface of said clamp ring to force the rubber annulus upwardly to bring the upper surface thereof into tight sealing contact with the mounting ring.

5. Means for mounting a garbage disposer unit beneath a sink comprising a mounting ring, said mounting ring having two concentrically arranged flanges depending therefrom, said flanges defining between them an annular groove in the underside of said mounting ring, at least three clamp bolts threading through the outer flange of said mounting ring, said bolts being equally spaced circumferentially of the mounting ring and arranged with their axes radially disposed with respect to the center of said mounting ring, a rubber annulus, a clamp ring extending around said annulus circumferentially thereof, said clamp ring flaring upwardly and outwardly to provide a wedge surface at the outside thereof adapted to be engaged by the inner ends of said bolts when said bolts are tightened inwardly, and there being at least three notches in the upper marginal edge of said clamp ring,

said notches being spaced in accordance with the spacing of said clamp bolts to permit said clamp ring to be moved past said bolts when said bolts are tightened to a point where their inner ends would otherwise engage the outer marginal edge of said clamp ring.

6. Means for mounting a garbage disposer unit beneath a sink comprising a mounting ring, an annular groove on the underside of said mounting ring, three clamp bolts threading through the outer wall of said mounting ring and into said annular groove, said bolts being equally spaced circumferentially of the mounting ring and arranged with their axes radially disposed with respect to the center of said mounting ring, a rubber annulus, a clamp ring embracing said annulus circumferentially thereof, said clamp ring flaring upwardly and outwardly to provide a wedge surface at the outside thereof adapted to be engaged by the inner ends of said bolts when said bolts are tightened with the rubber annulus seated within said groove, and there being three notches in the upper marginal edge of said clamp ring, said notches being spaced in accordance with the spacing of said clamp bolts to permit said clamp ring to be moved past said bolts when said bolts are tightened to a point where their inner ends would otherwise engage the outer marginal edge of said clamp ring.

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