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Guth

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[54] **WASTE FOOD DISPOSER MOUNTING ASSEMBLY**

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[73] Assignee: **General Electric Company,** Louisville, Ky.

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[52] **U.S. Cl.** **241/100.5**

[51] **Int. Cl.** **B02c 18/42**

[58] **Field of Search** ..... 241/32.5, 46 A, 46 B, 241/100.5, 257 G; 4/287, 288; 285/119, 158, 314, 358–362, 394–396, 421

[56] **References Cited**

UNITED STATES PATENTS

3,025,007	3/1962	Wieczorek	241/100.5
3,477,747	11/1969	Clements	241/100.5 X
2,819,915	1/1958	Woodson	241/100.5
3,425,637	2/1969	Enright et al.	241/100.5 X

Primary Examiner—Robert L. Spruill

Attorney—George C. Atwell, Francis H. Boos, Jr., Frank L. Neuhauser, Oscar B. Waddell and Joseph B. Forman

[57] **ABSTRACT**

A sink mount support assembly for a waste food disposer includes a pair of annular members having means thereon to enable engagement of the members, one with the other, when the members are brought together in axial alignment and one of the members is rotated with respect to the other. The means of engaging one of the members to the other provides a first holding position whereby the disposer is suspended beneath the sink but may be axially rotated to complete the plumbing connection thereto. A second locked position is provided whereby the disposer is fastened firmly to the sink drain sleeve and prevented from thereafter rotating relative thereto. The means of engaging the two annular members of the sink mount support assembly is a quick connect arrangement requiring only that the rotatable annular member be manually driven in rotation a relatively short distance to complete the procedure of mounting a disposer to a sink drain sleeve, and it is a quick disconnect assembly inasmuch as the rotatable member may be thereafter manually driven to rotate in a direction opposite to the connecting rotation to free the disposer unit from the drain sleeve.

7 Claims, 6 Drawing Figures

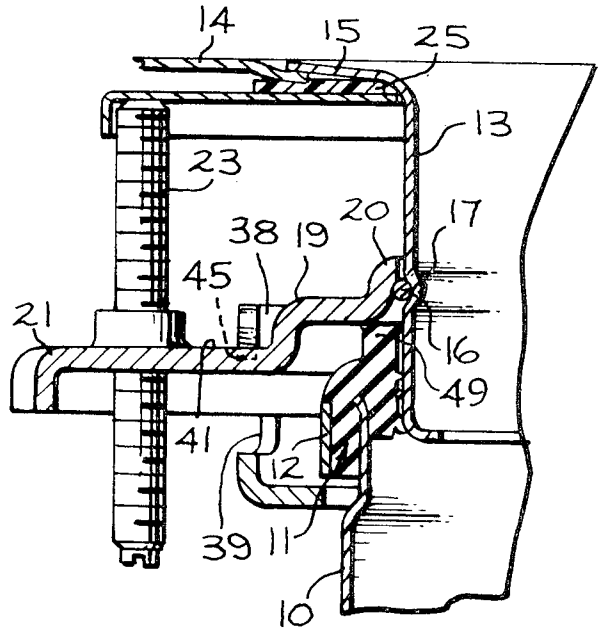


FIG. 1

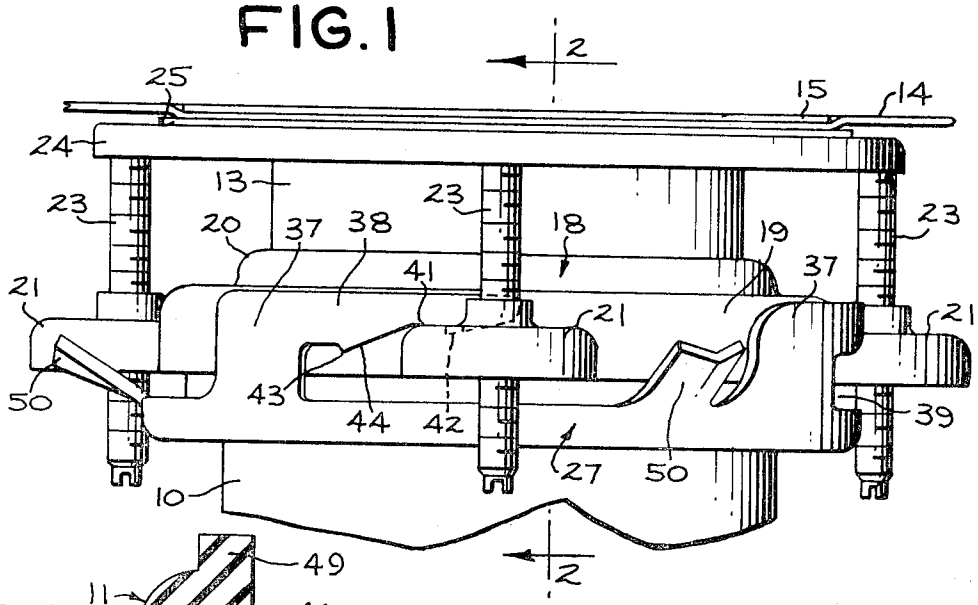


FIG. 6

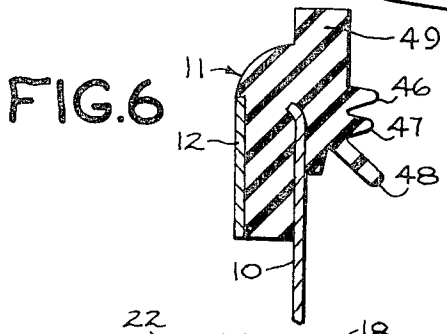


FIG. 5

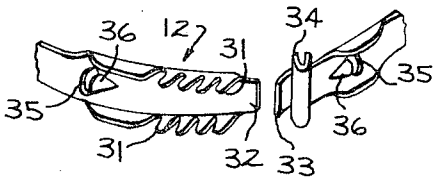


FIG. 3

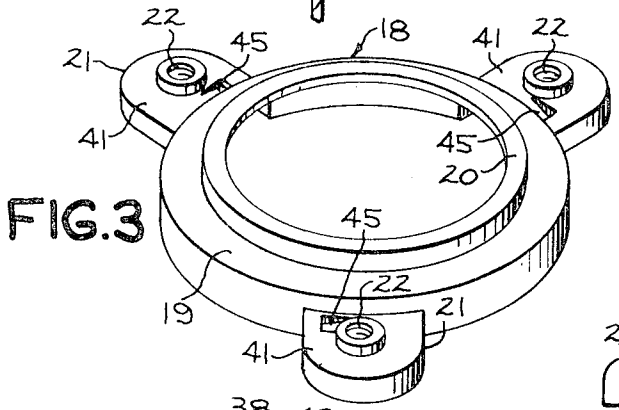


FIG. 2

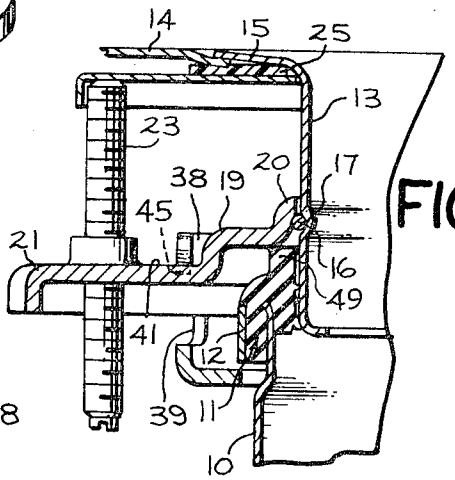
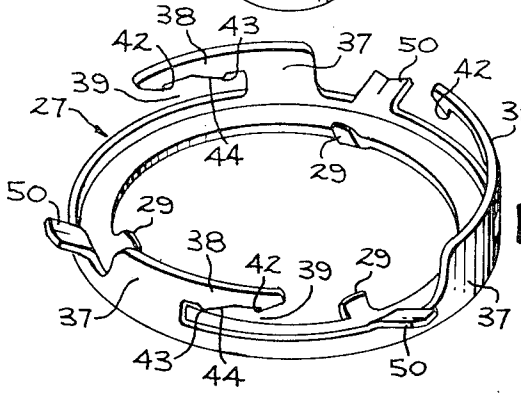


FIG. 4



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WASTE FOOD DISPOSER MOUNTING ASSEMBLY

BACKGROUND OF THE INVENTION

This invention relates generally to means for mounting a food waste disposer and more particularly pertains to a quick connect and disconnect mounting assembly for coupling a disposer to a tubular drain sleeve beneath a sink.

It has for years been common practice to suspend a food waste disposer from a tubular drain sleeve fastened in sealed relation in the drain opening of a sink. Although the tubular sleeve has undergone changes through the years from a particularly heavy cast body to a comparatively thinwalled construction generally of stainless steel, until relatively recently the most common arrangement for coupling the disposer housing to the drain sleeve remained substantially unchanged primarily due to its proven dependability.

For example, in U.S. Pat. No. 2,166,786, issued to Adalbert Alexay, on July 18, 1939, an assembly for coupling a food waste disposer to a sink sleeve is illustrated that comprises a rigid drain sleeve having an annular radially-outwardly projecting ridge on which a coupling member or clamping ring is carried. The upper end of the disposer housing is provided with a radially-outwardly projecting flange that serves as a second clamping ring whereby bolts may be screwed upwardly through threaded circumferentially spaced-apart openings extending through both clamping rings to affix the upper end of the disposer housing to the drain sleeve. The vertically aligned bolts extend upwardly through the clamping rings whereby they contact an annular sink fitting and press it upwardly against the under surface of the sink around the sink's drain opening. The force exerted upwardly against the annular fitting pressing against the under surface of the sink is translated through to the sink sleeve which is drawn downwardly whereby its upper outwardly extending flange is pulled tightly against the sink's inner surface circumjacent the sink's drain opening. The vertically oriented bolts also tend to pull the clamping rings together against an annular sealing member disposed inwardly therebetween to establish a watertight seal between the upper end of the disposer housing and the sink sleeve.

Although disposer hanging assemblies patterned generally in the arrangement illustrated in the Alexay patent continue to be used as a reliable means of mounting a disposer to a sink, more recent prior art devices have been introduced that are less difficult and time-consuming to assemble and are more functional in reducing vibrations that are transmitted to the sink. For examples of these devices reference may be made to U.S. Pat. No. 3,025,007, issued Mar. 13, 1962, to E. E. Wieczorek or to U.S. Pat. No. 3,108,755, issued to J. W. Yartz et al.

While both Wieczorek and Yartz et al. teach the advantages of a quick connect and disconnect assembly and the concept of being able to rotate the disposer on its vertical axis after it is suspended in order to facilitate the plumbing operation, it is nevertheless believed that there are certain problems in assemblies of this general type. Each has certain other exclusive advantages worth retaining and certain disadvantages believed to be obviated by the present invention.

The present invention was developed in the interest of obviating certain recognized problems by devising a

new and improved coupling assembly for mounting a disposer beneath a sink that retains the time-proven advantages of previous assemblies in a new and improved combination. It is believed that these problems and the means by which the present invention overcomes them will be understood from the detailed description hereinafter of the preferred embodiment of the present invention.

SUMMARY OF THE INVENTION

The present invention provides a simplified, comparatively low-cost mounting arrangement and vibration-absorbing means for mounting a food waste disposer in communication with the drain opening of a sink.

Broadly described, is a means, in combination with a food waste disposer, for removably connecting the disposer to a sink drain sleeve including a pair of annular connecting members adapted to be removably engaged with each other and having means therewith acting to draw one toward the other by a camming action therebetween. The sealing means is fastened to the upper end of the disposer and is adapted to be rotated between the connecting members for sealing against the outer side wall of the drain sleeve. The sealing means is preferably adapted to move upwardly on the outer side wall surface of the sink sleeve when the connecting members are engaged and drawn toward each other by the camming action whereby the entire sealing means is circumjacent the outer side wall of the drain sleeve and above the lower end thereof.

The assembly of the invention is adapted to suspend the disposer in a relatively loose arrangement or first position on the drain sleeve so that the installer can rotate the disposer on its vertical axis relative to the drain sleeve in order to align the disposer for the plumbing connection. The simple manual adjustment is all that is required thereafter to fasten the disposer in a second locked position on the sink sleeve whereby the actual rotation of the disposer is curtailed.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is an elevational view of the upper end of a food waste disposer and the presently preferred embodiment of an improved assembly for connecting the disposer to a sink in accordance with the present invention;

FIG. **2** is a sectional view taken along lines **2—2** of FIG. **1**;

FIG. **3** is a perspective view of a rigid stationary member that is a part of the illustrated embodiment of the improved mounting assembly of the present invention;

FIG. **4** is a perspective view of a rotatable rigid connecting member that is a part of the illustrated embodiment of the improved mounting assembly of the present invention;

FIG. **5** is a view in perspective showing the ends of a band or clamping strap, a preferred means for compressing a resilient annular boot to the upper end of a disposer housing in accordance with the present invention; and

FIG. **6** is a view in vertical section of the resilient annular boot component of the present invention, shown as it appears in position on the upper end of the disposer housing before being placed into its operative position relative to the other components in the assembly of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. **1** and **2**, there is illustrated a disposer housing upper end or hopper **10** having a sealing means in the form of an annular resilient gasket or boot **11** fastened thereto by means of a fastening means preferably in the form of a metal clamping strap **12** (shown in detail in FIG. **5**). The disposer hopper **10** is disposed in drain flow communication with a tubular drain sleeve **13** extending downwardly from the drain opening is a sink **14.** The tubular drain sleeve **13** has an upper annular radially-outwardly extending flange portion **15** that contacts the inner sink surface circumjacent the drain opening of the sink **14.**

A radially-outwardly extending annular ridge is provided intermediate the length of the tubular drain sleeve in the form of a snap ring **16** carried in a circumferential groove **17** formed in the body of the drain sleeve **13.** A stationary connecting member **18** (shown separately in FIG. **3**) is carried around the drain sleeve **13.** The stationary connecting member **18** has an annular major body portion **19** with a radially-inwardly extending flange portion **20** that rests on the snap ring **16** carried in the groove **17** of the drain sleeve **13.** Extending radially-outwardly, preferably in equidistantly spaced relation to each other, from the major body portion **19** of the stationary connecting member **18** are knob-like portions or bosses **21.** Each boss has a threaded opening **22** therein to accommodate a vertically disposed stud **23.**

The studs **23** (see FIGS. **1** and **2**) are screwed upwardly through the bosses **21** whereby their upper ends exert pressure against an annular clamping ring or sink fitting **24** disposed around the drain sleeve **13.** An annular resilient gasket **25** is compressed upwardly by the clamping ring **24** to prevent chipping of the sink surface. With particular reference to FIG. **2**, it will be noted that the gasket **25** underlies the sink surface circumjacent the sink's drain opening and also seals against a portion of the drain sleeve flange **15.** Common plumber's putty compound (not shown) may also be spread around the sink opening under the sleeve flange **15** whereby a watertight seal is formed between the drain sleeve **13** and the sink **14.**

When the plumber or installer prepares to install the disposer beneath the sink **14,** his first operation is to apply putty as required and then drop the end of the sink sleeve **13** through the sink opening. He then brings the annular gasket **25** up from beneath the sink **14** and over the body of the drain sleeve **13** into the position shown in FIG. **2.** Then the stationary connecting member **18** is slipped up over the drain sleeve **13** after which the snap ring **16** is placed into the groove **17** on the drain sleeve **13.** The studs **23** are then threaded up through the bosses **21.** By screwing the studs **23** through the openings **22** provided therefor in the bosses **21** and then screwing the studs upwardly, a force is exerted between the clamping ring **24** and the stationary connecting member **18** whereby the flange **20** of the stationary connecting member **18** is forced downwardly against the snap ring **16** and the clamping ring **24** is pressed upwardly toward the sink **14.** Tightening the studs **23** serves to rigidly mount the sleeve **13** to the sink **14** and also firmly fastens the stationary connecting member **18** in position on the drain sleeve **13.** The heretofore described procedure is normally completed by the installer even before the disposer is taken from its shipping carton. Once these preparatory steps are completed, the drain sleeve **13** is firmly positioned and ready to have the disposer mounted thereon.

A rotatable rigid connecting member **27** is carried about the neck of the disposer hopper **10** and has an annular body portion **28** with inwardly projecting flange means, preferably in the form of separate spaced-apart fingers **29,** projecting radially-inwardly therefrom for engagement against the under surface of the resilient boot **11.** The rotatable connecting member **27** is preferably placed in position about the neck of the hopper **10** before the disposer leaves the factory. The resilient boot **11** is preferably clamped into position as part of the factory assembly line operation, also.

The clamping band **12** is of a type requiring a specific type of tool for its installation and removal so that, unlike many prior art mounting assemblies, the hopper sealing means cannot be easily or inadvertently removed and lost once it has been placed in position on the hopper lip. The clamping band **12,** as shown in FIG. **5,** is preferably a semi-flexible, one-piece tempered steel spring strap having a series of outwardly protruding teeth **31** along opposite edges near an end **32** thereof. The other end **33** of the band **12** has a transverse channel portion extending outwardly from opposite edges thereof to provide inwardly directed ridge portions **34** for engaging across opposite sets of the teeth **31.**

At a point set back from each end of the band **12,** an opening **35** is provided. Adjacent each opening **35** the band side wall is expanded outwardly to provide a projection or lip portion **36.** The purpose of the two lip portions **36** is to enable the ends **32** and **33** of the band **12** to be gripped by a plier-like tool (not shown). By proper manipulation of the tool a force may be applied to the two outwardly projecting lips **36** whereby, with end **33** overlapping end **32,** the band ends may be drawn toward each other to thereby compress the band **12** around the boot **11.** This action moves the ridges **34** along the parallel rows of outwardly projecting teeth **31** whereby the ridges will engage a set of opposed teeth. Moving the ridges **34** further along the rows of teeth **31** in ratchet fashion and compressing the band **12** tighter serves to press the resilient boot **11** tightly against the outer surface adjacent the lip of the disposer hopper **10.** This type of strapping band connection makes a particularly neat, unobtrusive arrangement that fastens the band **12** quite firmly to the hopper, and, unlike typical circular clamps or bands that utilize circumferentially oriented bolts for tensioning the band, there are no bulky outward projections to interfere with the installation of the other parts of the mounting assembly.

Separate compressing means is provided for fastening the annular boot to the hopper lip of the disposer so that there is no dependence upon any force being exerted directly from the hopper lip and vertically upwardly against the lower end of the drain sleeve to effect a watertight sealing arrangement therebetween. The annular boot, after being firmly fastened to the hopper lip, is caused to move upwardly in a squeegee action against the outer side wall of the drain sleeve by the act of changing the orientation of the connecting members from the first relatively loose holding position to the second tight position. By this arrangement, transmission of vibrations from the operating disposer to the sink is substantially inhibited.

With particular reference now to the rotatable connecting member 27 shown separately in FIG. 4, it will be seen that it has engaging means comprising integral shoulder portions 37 extending upwardly from the body portion 28 and that each shoulder portion 37 has an arm portion 38 projecting laterally in the direction of rotation of the member 27. Each arm portion 38 extends preferably coextensive with the outer periphery of the body portion 28 of the rotatable connecting member 27 and in spaced relation thereto whereby each arm portion 38, with its base shoulder portion 37, forms a deep throated hook portion 39. Thus, when the disposer is brought into aligned position beneath the drain sleeve 13 and moved upwardly so that the lower end of the drain sleeve 13 is insertably received within the throat of the disposer hopper 10 and in contact with the radially-inwardly projecting flange portions of the resilient boot 11, the installer need only be sure that the bosses 21 extending from the stationary connecting member 18 are interposed between the arm portions 38 of the body portion 28 of the rotatable connecting member 27. Then, by rotating the rotatable connecting member 27 to the right, that is in a clockwise direction as viewed looking upwardly, each arm portion 38 will pass over and onto the upper surface 41 of one of the bosses 21 at a point radially-inwardly from the adjacent stud 23.

The under surface of each arm portion 38 is preferably provided with at least two teeth, 42 and 43, that project downwardly from the arm portion. Alternatively, only one tooth need be employed, however, the efficiency of the assembly is enhanced by the provision of two. The downwardly projecting tip of the tooth 43 is at a substantially lower level than the tip of the tooth 42. A portion of the under surface of each arm portion 38, intermediate the teeth 42 and 43, is inclined whereby a camming surface 44 is provided. Thus, when the installer places the disposer into position beneath the drain sleeve 13 and moves upwardly thereon whereby the bosses 21 of the connecting member 18 are disposed at the mouth of each throat 39, initial rotation of the rotatable connecting member 27 will cause each arm portion 38 to move over an adjacent boss 21. The teeth 42 will then slip into a cooperating recess 45 provided in the upper surface of each boss 21. A single recess could be utilized instead of one in each boss in the event only one arm portion of the rotatable connecting member is provided with one or more teeth, however this would require specific orientation of connecting members relative to each other for proper meshing of these parts.

The installer may then remove his hands from the disposer, and the disposer will remain suspended from the drain sleeve in a first holding position wherein the disposer body may be manually rotated relative to the sink sleeve so that plumbing connections may be completed. In this position, the lips 46, 47 and 48 (see FIG. 6) of boot 11 are in contact with the drain sleeve side wall and movable thereagainst. The boot 11 also has an upwardly projecting portion or ridge 49 which is movable against the under surface of the connecting member 18.

To complete the installation, the installer need only strike the rotatable connecting member 27 against an outwardly projecting rigid tab 50 thereof and further rotate the connecting member 27 a few degrees. Each arm portion 38 is thereby driven fully onto the upwardly facing surface 41 of its corresponding boss 21 whereby the tooth 43 of each arm portion 38 seats into its recess 45 and locks the connecting members 18 and 27 together. As this action occurs, the upper side edge of the boss 21 serves as a cam guide surface contacted by cam surface 44 whereby the connecting member 27 is drawn upwardly as the cam surface 44 slides over the boss 21 until the tooth 43 seats in the recess 45. This action also serves to force the ridge 49 of the boot 11 tightly up against the connecting member 18.

Should the need ever arise, the disposer may be removed from its installed position on the drain sleeve 13 by tapping a hammer against one of the tabs 50 and thereby counter-rotate the rotatable connecting member 27 to disconnect it from the bosses 21 of the stationary connecting member 18. For this purpose, each tooth 43 may be rounded at its point to facilitate its disengagement from its recess 45, or the entrance to each recess may be a ramp or incline to facilitate removal of the assembly.

The resilient boot 11 is shown in FIG. 6 as it appears prior to its installation against the outer side wall surface of the hopper lip. When the boot 11 is moved upwardly over the outer surface of the drain sleeve 13, the bottom peripheral edge of the drain sleeve 13 progressively contacts all of the lips 46, 47 and 48 of the boot 11 and pushes the longest inwardly extending lip 48 downwardly. This flexure is translated back to the body of the boot 11 and tends to cause the two shorter lips 46 and 47 to spread away from each other and twist inwardly against the outer side wall surface of the drain sleeve 13. Thus a watertight seal is established between the drain sleeve's outer wall and the resilient boot 11 that is, when the installation of the assembly is completed, nevertheless yieldable to unusual stress between the disposer and the drain sleeve such as the resultant torque at the start of the disposer's motor.

The particular boot configuration and means of retaining the boot on the hopper, as shown in FIG. 6, have been found to have excellent sealing and vibration dampening characteristics when used in combination with the more rigid component of the assembly heretofore described. What pressure is exerted from the disposer's hopper lip and through the boot 11 against the side wall of the drain sleeve 13 is strictly a function of the resiliency and configuration of the material from which the resilient boot 11 is constructed. To obtain the desired sealing and dampening effect of the seal in accordance with the present invention, any modification of that which is shown in the preferred embodiment that would tend to exert excessive compressive force to jam the resilient boot 11 against the drain sleeve 13 outer side wall is to be avoided. The fit between the resilient boot 11 and the drain sleeve 13 side wall should be only that which is required to prevent leakage therepast. In fact, prior to the final rotation of the rotatable connecting member 27, it should be possible to rotate the disposer on its vertical axis and thereby slide the resilient boot 11 around the outer surface of the drain sleeve 13 whereby the lips 46, 47 and 48 slip thereagainst.

When the disposer is first suspended to the drain sleeve 13 in its comparatively loose first position, the resilient boot 11 is disposed relative to the sleeve whereby the lip 48 is projecting beneath the lower edge of the sleeve and only the boot lips 46 and 47 are in relatively firm contact against the sleeve's side wall. The

final connecting operation, when the rotatable connecting member **27** is turned and caused to cam upwardly toward the stationary connecting member, serves to move the entire boot **11** upwardly along the side wall surface of the drain sleeve **13** so that the annular lip **48** is deformed outwardly and stretched tightly against the sleeve's side wall surface. The upward movement of the boot **11** on the sleeve **13** is caused by the fingers **29** pressing upwardly and digging into the under surface of the boot **11** and pressing the boot's upwardly projecting ridge **49** against the connecting member **18.**

The upwardly projecting ridge **49** may be an annular portion of the boot **11** or may be formed as a plurality of circumferentially spaced-apart humps such as, for example, four upwardly projecting humps or ridges disposed in a quadrant relationship around the drain sleeve. Pressure through the boot **11** via the ridge **49,** whether the latter is formed as an annular portion or in separate spaced-apart humps, is the means of providing a biasing force between the connecting members **18** and **27** to thereby retain the entire assembly in the installed tight position and eliminate axial rotation of the disposer relative to the drain sleeve **13.** The lines of force retaining the connecting member **27** to the connecting member **18** are substantially vertical through the boot **11,** from the points on the under surface of the boot **11** where the fingers **29** press upwardly thereagainst and thence upwardly through the boot body to where the ridge **49** contacts the connecting member **18.** This vertical clamping pressure through the boot **11** occurs radially-outwardly from the drain sleeve **13** so that direct transmittal of vibrations from the disposer directly to the lower end of the drain sleeve does not occur as is the case in a comparatively more rigid connection. Rather, in the structure of the present invention, some vertical reciprocation of the boot **11** relative to the drain sleeve **13** can take place in response to vibratory action of the disposer despite the relative rigidity between the connecting members **18** and **27.**

The present invention is believed to have the distinct advantage of allowing for rapid coupling or uncoupling of a disposer to a drain sleeve by rotation of one connecting member relative to a stationary connecting member. It also has an advantage over the older bolt-on system in that it is designed to initially hold the disposer relatively loosely in position beneath the sink and on the drain sleeve without assistance of the installer so that the installer's hands are free to complete plumbing connections thereto, etc. Thereafter, the coupling operation may be completed by a final rotation of the rotatable connecting member whereby the upper end of the disposer housing is sealed relative to the drain sleeve.

It is also believed desirable to utilize the broad concept of having one rigid connecting member rotatable relative to a stationary connecting member without the requirement of substantially redesigning or reshaping the heretofore known construction for the stationary member that has been previously proven to be sturdy and dependable in the prior art. Considerable retooling cost is thereby avoided, and a new and improved assembly is provided which by its appearance imparts confidence and dependability to the experienced plumber.

Experimentation in the development of the present invention has shown it to be advantageous to avoid compressing the annular sealing member or boot of such an assembly between the lower end of the drain sleeve and the upper end of the disposer housing or between either of these parts and the rigid connecting member constituents of the assembly. If the annular boot is utilized in its compressed form as part of the means of translating holding force directly between the disposer housing and the drain sleeve, much of the vibration dampening effect potentially inherent in the annular boot is lost because of the loss of resiliency.

The present invention, therefore, comprehends a new and unique combination by adapting old proven elements in a new disposer mounting assembly wherein structural differences and new concepts appear primarily in a single component of the assembly and its functional interaction with other components thereof.

The foregoing description and the accompanying drawings pertain to the presently preferred embodiment of the invention heretofore disclosed. It is not intended that the invention be limited to either that which has been shown in the accompanying drawing or described in the specification since it will be obvious to those skilled in the art that various changes and modifications may be made after benefit of this disclosure. It is therefore intended that the appended claims cover all changes and modifications as fall within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In an assembly for mounting the open end of the hopper of a waste food disposer on a tubular drain sleeve, the combination of:

a. a resilient annular boot for sealing against the open upper end lip of the hopper in drain flow communication with the drain sleeve,

b. the annular boot being disposed to seal against the outer circumferential surface of the hopper lip,

c. an annular compressing band around the annular boot for sealing it against the hopper lip,

d. the annular boot having an annular radially-inwardly projecting flange portion for insertably receiving and sealing against the outer side wall surface of the drain sleeve,

e. a rotatable rigid connecting member having an annular body portion disposed circumjacent the hopper downwardly from the hopper lip,

f. flange means extending radially-inwardly from the body portion of the rotatable rigid connecting member for abutting against the annular boot and supporting the weight of the disposer thereon,

g. a plurality of rigid shoulder portions extending upwardly from the body portion of the connecting member in spaced-apart relation to each other,

h. each of the shoulder portions having a rigid arm portion extending laterally therefrom in spaced relation to the body portion of the first connecting member,

i. a second rigid connecting member having an annular body portion fastened circumjacent the drain sleeve at a position back from the drain sleeve's lower end,

j. the body portion of the second connecting member having a plurality of spaced-apart bosses projecting radially-outwardly therefrom,

k. the bosses and the arm portions being disposed whereby the arm portions are engageable over the bosses when the end of the drain sleeve is insert-

ably received within the flange portion of the annular boot and the first connecting member is rotated a substantially short distance relative to the vertical axis of the drain sleeve,

l. at least one of the arm portions having an under surface including at least one downwardly projecting tooth, and

m. at least one of the bosses having a recess provided in the upwardly facing surface thereof for engagement with the tooth of the arm portion.

2. The invention of claim **1** including a second downwardly projecting tooth spaced apart from the first mentioned tooth whereby the teeth are successively engageable in the recess of the boss.

3. The invention of claim **1** wherein the first connecting member is adapted to engage the second connecting member successively in a first holding position and a comparatively tighter second position.

4. The invention of claim **2** wherein the intermediate area between the teeth is inclined on a line that ascends toward the outer end of the arm portion and thereby provides a cam face for sliding against the recessed boss whereby one of the connecting members will be drawn closer to the other in a camming action.

5. In combination with a food waste disposer, means for removably connecting the disposer to a sink drain sleeve, comprising:

a. a pair of annular connecting members adapted to be removably engaged with each other and having means therewith for drawing one toward the other by a camming action therebetween,

b. a first of the annular connecting members being adapted to be rotatable with respect to the other and having a plurality of rigid shoulder portions extending upwardly therefrom in spaced-apart relation to each other,

c. each of the shoulder portions having a rigid arm portion extending laterally therefrom generally in the direction of rotation of the connecting member,

d. at least a first of the arm portions having an under surface including at least one downwardly projecting tooth for engaging the second annular connecting member, and

e. at least the first arm portion has a second downwardly projecting tooth spaced apart from the first mentioned tooth, and the teeth on the arm portion are disposed at different levels whereby the outer end of the tooth nearest the outer end of the arm portion is disposed at a higher horizontal plane than the next inwardly disposed tooth.

6. In combination with a food waste disposer, means for removably connecting the disposer to a sink drain sleeve, comprising:

a. a pair of annular connecting members adapted to be removably engaged with each other and having means therewith for drawing one toward the other by a camming action therebetween,

b. a first of the annular connecting members being adapted to be rotatable with respect to the other and having a plurality of rigid shoulder portions extending upwardly therefrom in a spaced-apart relation to each other,

c. each of the shoulder portions having a rigid arm portion extending laterally therefrom generally in the direction of rotation of the connecting member,

d. at least a first of the arm portions having an under surface including at least one downwardly projecting tooth for engaging the second annular connecting member, and

e. an area on the under surface of at least one of the arm portions being inclined in a line ascending outwardly toward the outer end of the arm portion such that a cam face is provided,

f. the second of said connecting members having a plurality of circumferential spaced-apart bosses extending radially-outwardly therefrom, and

g. at least one of the bosses being shaped to provide a cam guide surface that coacts with the cam face on the arm portion to provide the camming action therebetween.

7. In combination with a food waste disposer, means for removably connecting the disposer to a sink drain sleeve, comprising:

a. a pair of annular connecting members adapted to be removably engaged with each other and having means therewith for drawing one toward the other by a camming action therebetween,

b. a first of the annular connecting members being adapted to be rotatable with respect to the other and having a plurality of rigid shoulder portions extending upwardly therefrom in spaced-apart relation to each other,

c. each of the shoulder portions having a rigid arm portion extending laterally therefrom generally in the direction of rotation of the connecting member,

d. at least a first of the arm portions having an under surface including at least one downwardly projecting tooth for engaging a second annular connecting member, and

e. a resilient annular sealing means carried between the connecting members the inner wall of said annular sealing means having an inwardly projecting annular lip adapted to be deformed outwardly and stretched tightly against the side wall of said drain sleeve thereby compressibly sealing against the outer side wall surface of the drain sleeve and solely against the outside surface thereof whereby the drain sleeve is in drain flow communication with the housing of the disposer.

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