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FOOD WASTE DISPOSER

Filed Dec. 16, 1966

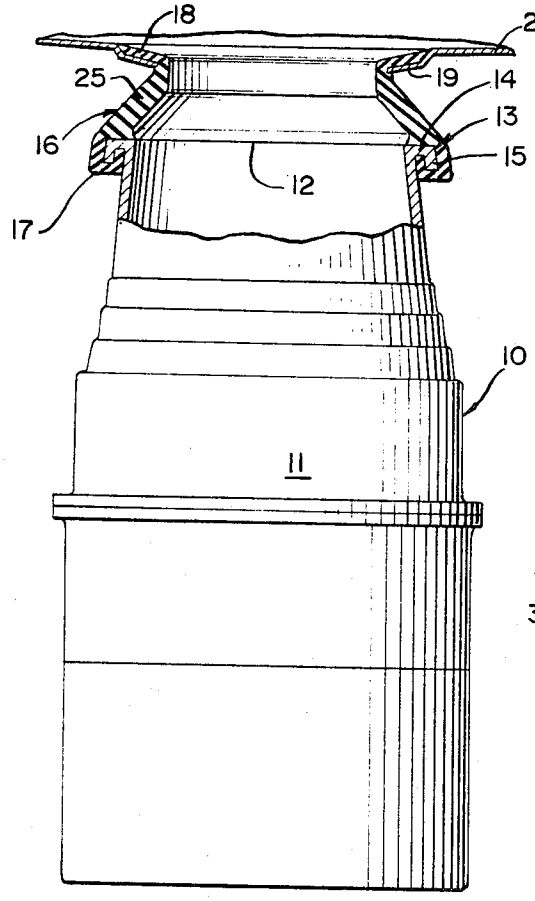


FIG. 1

FIG. 2

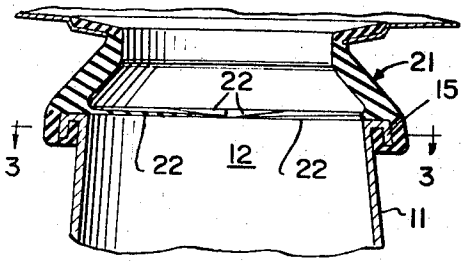
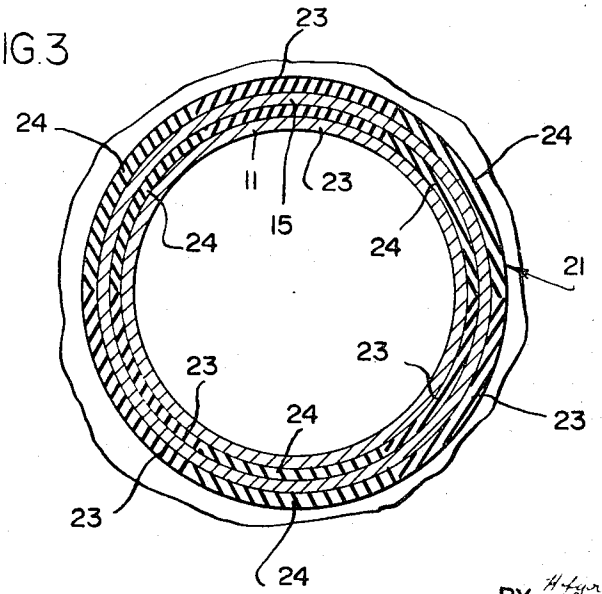


FIG. 3



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FOOD WASTE DISPOSER

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This invention relates to a food waste disposer and particularly to a resilient combined tubular conduit and disposer hopper mount connecting the hopper with a sink opening.

One of the features of this invention is to provide an improved food waste disposer of the type receiving food waste from a sink and grinding waste into particles small enough to be flushed into a sewer in which the disposer comprises a hopper having an entrance opening, a resilient combined tubular conduit and mount for the disposer connecting the rim means of a sink opening to the rim means of a disposer hopper in which certain conduit portions are made of different resiliencies and the conduit functions as a combined sink seal, disposer hopper seal, disposer hopper support and fluid conduit from the sink to the interior of the disposer hopper.

Other features and advantages of the invention will be apparent from the following description of certain embodiments thereof taken in conjunction with the accompanying drawings. Of the drawings:

FIGURE 1 is a side elevational view partially in section of a food waste disposer, a resilient tubular conduit and disposer mount and the adjacent portions of a sink bottom with portions of the apparatus being shown in section.

FIGURE 2 is a view similar to the top portion of FIGURE 1 but illustrating a second embodiment of the invention.

FIGURE 3 is a horizontal section taken substantially along line 3—3 of FIGURE 2.

In the embodiment of FIGURE 1 there is illustrated a food waste disposer **10** comprising a hopper **11** having an entrance opening **12** around which extends an outwardly and downwardly directed rim means **13**. As can be seen from FIG. 1, a section through the flange describes an inverted U-shape having a planar base **14** and a downwardly extending outer rim flange **15** spaced from the outer surface of the hopper **11**.

Connected to the rim means **13** is a resilient combined tubular conduit and mount **16**. This conduit **16** is provided with a bottom part **17** shaped complementary to the rim means **13** in that it surrounds and receives the rim means **13** including the base **14** and flange **15**.

At the end of the conduit **16** opposite the bottom part **17** is a top part **18** adapted to sealingly engage a flange **19** that surrounds the drain opening from the sink bottom **20**.

In the embodiment of FIGURE 2 the conduit **21** is similar in every respect to the conduit **16** of the first embodiment except that here the conduit **21** is provided with displaceable resilient fingers **22** normally cooperating, as shown in FIGURE 2, to extend across the hopper entrance opening **12** but displaceable to permit passage of food waste into the hopper **11**.

In both of the embodiments of FIGURES 1 and 2 the conduits **16** and **21** are constructed of integral portions of resilient material such as rubber having different hardness and elasticities. Thus, in order to provide a secure seal at the sink flange **19** the top part **18** of each conduit is in the form of a first stiff annular section. The resilient material is sufficiently stiff so that it can take a high degree of load and vibration without breaking the seal of the sink flange **19**. In other words, this resilient material is known as high durometer. An example of a durometer hardness range that can be employed is that of 75 to

95 durometer with 90 durometer being a practical example. In each of conduits **16** and **21** the bottom part **17** of the conduit is constructed in the form of a second stiff annular section to sealingly engage and support the disposer **10**. This bottom part is stiff in order to maintain the sealing engagement with the rim means **13** but is not as stiff as the top part **18**.

One way of constructing the bottom part or second stiff annnular section **17** is to make it of alternate stiff and less stiff sections **23** and **24** in which the sections **23** are more resilient than the sections **24**. A typical range of durometers for section **23** is 40 to 80 durometer with 60 being a practical example. A usable range of hardness or stiffness for the section **24** is 75 to 95 durometer with 90 being a practical durometer hardness.

Interconnecting the annular sections **17** and **18** is an intermediate tubular section **25** in the shape of a truncated cone with the small end at the sink flange **19**. This section **25** functions as a flexible shock absorbing section intermediate the ends **17** and **18** in order to absorb the shock and vibration of the operating disposer **10**, to reduce the noise of operation in this manner and yet provide a fluid tight conduit for fluids leaving the sink and passing into the disposer. This section **25** is soft and resilient and is preferably of a hardness intermediate that of the first stiff annular section **18** and the second stiff annular section **17**. In a specific embodiment a usable flexible material and one that simplifies construction is a rubber having the same durometer hardness as that of the section **24** that forms an alternate part of the second stiff annular section **17** on the bottom of the conduit **16**.

Having described my invention as related to the embodiments shown in the accompanying drawings, it is my intention that the invention be not limited by any of the details of description, unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the accompanying claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A food waste disposer communicating with a sink opening having rim means to receive food waste through said opening, comprising: a disposer hopper having an entrance opening defined by rim means; and a resilient tubular conduit and mount connecting said rim means of the sink and said rim means of the hopper to support the hopper and provide enclosed fluid flow means from said sink to said hopper, said conduit having a first stiff annular section at one end sealingly engaging and supported by said sink opening rim means, a second stiff annular section at the opposite end sealingly engaging said entrance opening rim means and supporting said hopper, and a flexible shock absorbing section intermediate said ends.

2. The disposer of claim **1** wherein said second stiff annular section has a resilience greater than that of said first section and less than that of said flexible shock absorbing section.

3. The disposer of claim **2** wherein said second stiff annular section comprises alternate, integral, side-by-side portions of stiff and flexible resilient material.

4. The disposer of claim **1** wherein said conduit is provided with inwardlly extending flexible fingers integral with said shock absorbing section partially blocking said conduit but displaceable to permit passage of food waste into said hopper.

5. The disposer of claim **1** wherein said sink opening rim means has a recessed upper surface part and said first annular section has a surface part complementary to and received on said recessed part.

6. The disposer of claim **1** wherein said disposer rim means has a downwardly extending annular flange spaced

outwardly from said hopper and said second annular section is provided with a groove retaining said flange.

7. The disposer of claim 1 wherein said sink opening rim means has a recessed upper surface part and said first annular section has a surface part complementary to and received on said recessed part, and said disposer rim means has a downwardly extending annular flange spaced outwardly from said hopper and said second annular section is provided with a groove retaining said flange.

8. The disposer of claim 7 wherein said second stiff annular section has a resiliency greater than that of said first section and less than that of said flexible shock absorbing section, and said second stiff annular section comprises alternate, integral, side-by-side portions of stiff and flexible resilient material.

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