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MULTIFLAVOR ICE-CREAM FILLING NOZZLE

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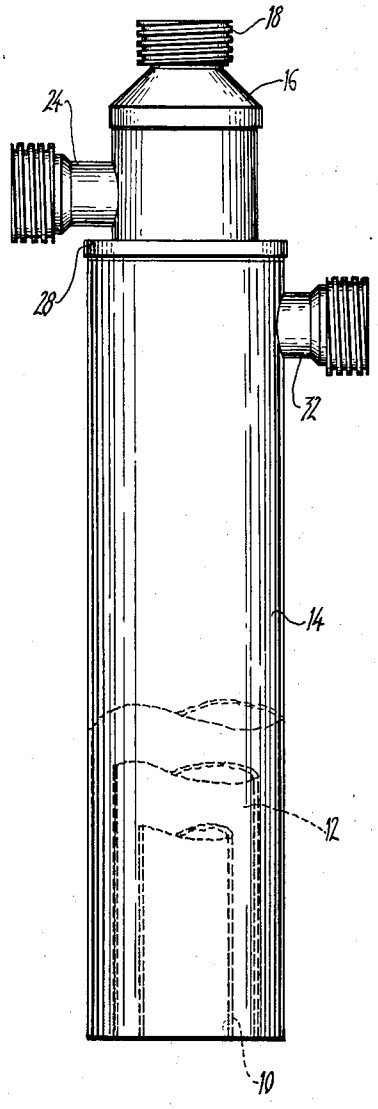


Fig. 1

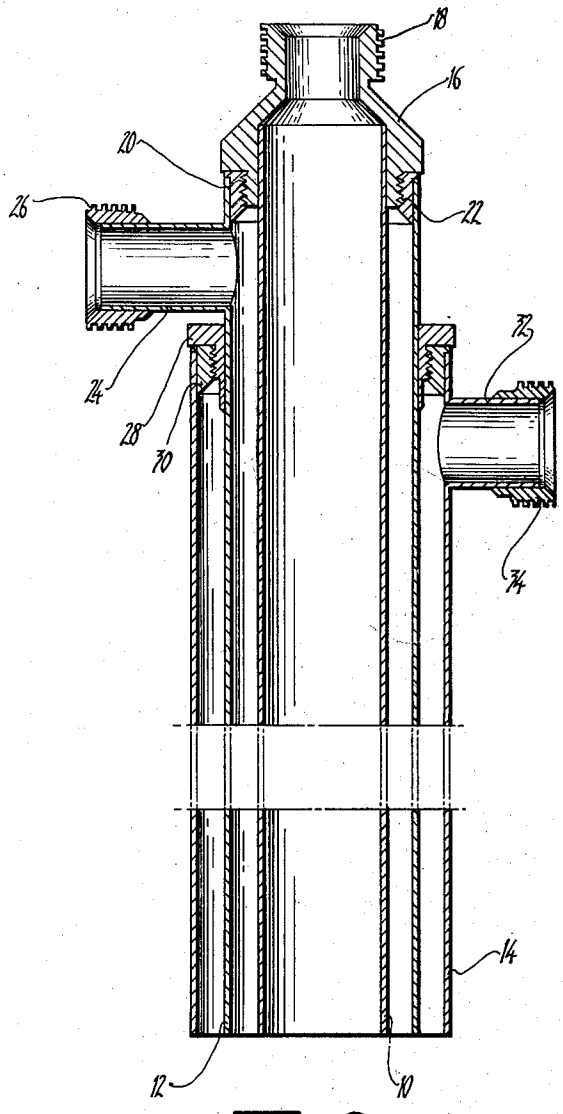


Fig. 2

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MULTIFLAVOR ICE-CREAM FILLING NOZZLE

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2 Claims. (Cl. 222—129)

This invention relates to filling nozzles for semifrozen fluids and particularly to a nozzle adapted for filling containers with concentric rings of ice-cream surrounding a circular central portion.

An object of the invention is to provide a multiple nozzle through which several streams of semi-fluid ice-cream mixes or other food materials may be forced from separate supplies to the lower discharge end of the nozzle in concentric streams.

A feature of importance of the invention is that the rings of ice-cream or other food materials discharged from the nozzle are maintained in true concentric form, the admitting connections for the ice-cream being symmetrically disposed and the passages for the ice-cream through the nozzle being in the form of a central cylindrical passage and annular passages concentric thereto.

And finally it is an object of the invention to provide a nozzle for semi-fluid ice-cream and other mixes having long cylindrical passages for the separate mixes formed by cylindrical members attached concentrically to each other at their upper ends and open at a common level at their lower ends.

With the above and other objects in view, the invention may include the features of construction and operation set forth in the following specification and illustrated in the accompanying drawing.

In the accompanying drawing annexed hereto and forming a part of this specification, I have shown the invention embodied in a spumoni ice-cream forming nozzle but it will be understood that the invention may be otherwise embodied and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims appended to this specification being relied upon for that purpose.

In the drawing:

Fig. 1 is a longitudinal outside view partly broken away of a nozzle made in accordance with the invention; and

Fig. 2 is a central longitudinal sectional view of the nozzle shown in Fig. 1.

In the above mentioned drawing, there has been shown but one embodiment of the invention which is now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Referring more in detail to the figures of the drawing, it will be seen that the nozzle comprises three concentric metal tubes **10**, **12** and **14** of cylindrical form and different diameters. The innermost tube or sleeve **10** has a cap member **16** secured thereto as by soldering or otherwise at its upper end. The upper portion of the cap member **16** is provided with means, such as the screw threads **18**, by means of which a supply conduit may be attached. By suitable pump means (not shown) a semi-fluid mixture of ice-cream or other material may be forced axially through the tube.

Also on the lower end of the cap member **16** are screw threads **20** forming a connecting means for the second tube or sleeve **12** surrounding tube **10**.

The second or intermediate tube or sleeve **12** at its upper end is provided with a flanged ring **22** soldered or otherwise secured within the sleeve **12** by means of which

tube **12** may be detachably attached to tube **10** as by means of the threaded connection shown.

Extending laterally from the upper portion of the intermediate sleeve **12** is a tubular connection **24** having screw threads **26** at its outer end for supplying a second semi-fluid mixture to the annular space between the sleeves **10** and **12**.

The second sleeve **12** below the connection **24** is provided with a flanged and threaded collar **28** secured in position as shown. Mounted on this collar **28** is the third or outer sleeve **14**. For this purpose the outer sleeve **14** is provided at its upper end with a ring member **30** secured as by soldering to the inner surface of the sleeve **14**.

At the upper end of the sleeve **14** is a laterally extending tubular connection **32** having screw threads **34** at its outer end. By means of this connection the space between the sleeves **12** and **14** may be connected to a third source of semi-fluid ice-cream or other mixture.

The connections **24** and **32** are as shown in the drawing disposed diametrically opposite each other so that the pressure of the semi-fluid forced into the annular spaces between the tubes will be in opposed relation to and will equalize each other. The supply to the innermost sleeve **10** is axial so that no lateral force will be exerted on the sleeves from this connection.

The sleeves **10**, **12** and **14** are open at their lower ends and extend to a common plane from which the three separate flows of ice-cream or other mixtures or flavors are simultaneously extruded. This combined flow from the three passages may be admitted directly to a container such as a cylindrical carton placed below the tubes and the flow interrupted by a blade moved laterally across the lower end of the nozzle.

The connections between the tubes are detachable so that they may be disassembled for cleaning purposes.

I claim as my invention:

1. A multiple nozzle assembly for discharging semi-fluid mixtures comprising in combination, a tube having an annular cap member secured thereto at one end, said cap member having a threaded portion surrounding said tube, a second tube surrounding said first tube and connected concentrically thereto by said threaded portion on said cap member, a threaded sleeve secured to said second tube at an intermediate point thereof, a third tube surrounding said second tube and attached thereto by the threaded sleeve thereon, each of said tubes being open at its lower end, and fluid admitting connections to said second and third tubes, said connections being disposed on opposite sides of said assembly.

2. A multiple nozzle assembly for simultaneously discharging separate streams of semi-fluid mixtures comprising in combination, a tube having an annular cap member secured thereto at one end, said cap member having a threaded portion surrounding said tube, a second tube surrounding said first tube and detachably and concentrically attached thereto by said threaded portion, a threaded sleeve secured to said second tube at an intermediate point thereof, a third tube surrounding said second tube and attached thereto by the threaded sleeve thereon, each of said tubes being open at its lower end in a common plane, and fluid admitting connections to said second and third tubes.

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