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⑤④ **Universal sprayer canister.**

⑤⑦ A canister (10) for substantially universal use with sprayers which have a canister closure and canister engaging elements to secure the canister to the closure. The canister has a closed bottom and an open top (14). On the outer surface of the canister adjacent to the top are radially opposed angled projections (24) extending outwardly from the canister. These angled projections have a configuration and dimensions to be received by a respective one of the canister engaging elements of a sprayer, for securing the canister to the closure. The angled projection is angled for accommodating its reception by various forms of canister engaging elements and for strengthening and reinforcing the projection to withstand the force applied when the canister is secured to the closure.

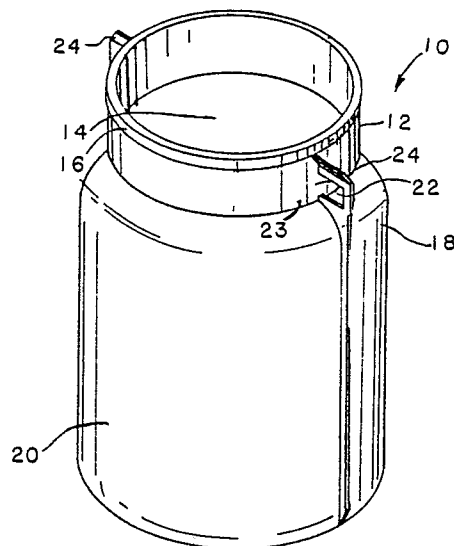


FIG. 1

UNIVERSAL SPRAYER CANISTER

Background of the Invention

The present invention relates to a universal plastic disposable canister to be used with spraying apparatus having a variety of different configurations. This invention is particularly suited for use with paint sprayers, although it is by no means so limited, and can be used with other sprayable liquids.

Paint sprayers which use metal canisters to hold the paint or lacquer to be sprayed are well known. The metal canisters are reusable and must be cleaned after every use, thereby increasing the time and labor of painting operations. In addition, it takes approximately a pint of solvent, e.g., paint thinner or turpentine, to clean a canister after every use. Solvents are considered hazardous waste and therefore must be disposed of carefully. These factors also add to the cost involved in the use of metal canisters with paint sprayers.

Disposable plastic containers for paint sprayers are known. However, known disposable plastic containers are merely plastic copies of metal containers, using lugs projecting from opposite sides of the mouth of the container to engage a sprayer cover. They do not show the important features of the instant invention, explained in detail below.

Summary of the Invention

The present invention is a canister molded of a plastic to include either high density polyethylene, high molecular weight polyethylene, polyvinylchloride or other suitable impact resistant plastic material. The preferred embodiment is a canister which is substantially cylindrical, having a closed base and one opening at the top typically having a diameter of approximately 8.8189 centimeters (3.472 inches). Ribs having dimensions approximately .254 centimeters (.100 of an inch) wide and .3175 centimeters (.125 of an inch) deep protrude from diametrically opposing sides of the cylinder, and extend the vertical length of the canister from the base to the neck. At the neck, the ribs widen to form a rectangular opening which is reinforced on the upper portion by an angled extension of the rib. The rectangular opening is designed to receive hooked protrusions of a cover locking mechanism for a variety of paint sprayer apparatus.

The canister is preferably constructed by either extrusion blow molding or by injection molding of a

plastic material and is designed to be used once and then disposed of. In addition, after the plastic canister is molded, the compression molded flashing which occurs at the seams, and which is normally trimmed away, is instead left on the canister to form strengthening ribs which reinforce the canister, enabling it to withstand the pressure applied to it when in use without collapsing.

Further, the wider top portion of the strengthening ribs, which protrudes from the neck of the canister, is shaped to form a rectangular opening with a reinforcing upper angled piece, also partly fashioned from the compression molded flashing. This angled piece enables the cover engaging means of the canister to withstand the full range of pressure that can be applied to it when sprayer covers are attached to the canister using these rectangular openings.

The distance between top of the rectangular opening and the lip at the top of the opening of the canister is approximately 1.3437 centimeters (.529 of an inch). This distance was chosen so that there would be a sufficient depth to allow the plastic canister to be universally adapted to fit the three major types of sprayers presently on the market.

Description of the Drawings

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

Figure 1 is a perspective view showing a seam with the flashing forming a strengthening rib.

Figure 2 is an elevational view with the lower portions of the canister partially broken away.

Figure 3 is a top plan view.

Figure 4 is a sectional view taken along lines 4-4 in Figure 2.

Figures 5, 8 and 10 are enlarged fragmented views of the upper portion of the canister showing the attachment of the three different major types of paint sprayer covers.

Figure 6 is a sectional view taken along line 7-7 in Figure 5 showing the cover in Figure 5 in an unlocked position.

Figure 7 is a sectional view taken along the lines 7-7 in Figure 5 showing the cover in Figure 5 in a locked position.

Figure 9 is a sectional view taken along lines 9-9 in Figure 8 showing the cover in Figure 8 in a locked position.

Figure 11 is sectional view taken along lines 11-11 in Figure 10, showing the cover in Figure 10 in a locked position.

Description of the Preferred Embodiment

Referring now to the drawings, wherein like numerals indicate like elements, there is shown in Figures 1 and 2 a plastic canister 10 having a top opening 14 and a closed base 15. The outer wall 20 of the canister tapers into a reduced diameter neck 12 with a lip 16. A strengthening rib 18, made from the flashing left after the compression molding process, projects from outer wall 20 and extends vertically upward conforming to outer wall 20. At the neck 12, the rib widens and is molded to form a rectangular hole 22. Strengthening rib 18 terminates close to the top of neck 12 with an upper angled projection 24, to reinforce and give added strength to the top portion 23 of rectangular hole 22. This angled projection 24 will enable the cover engaging means of canister to withstand the clamping pressure exerted on the upper portion 23 of rectangular hole 22 when a sprayer cover is secured in place.

Figures 3 and 4 show the top opening 14 and the closed base 15 respectively.

Figures 5 through 7 show the top portion of the canister 10 to which a conventional paint sprayer closure 26 has been attached. The closure 26 is manufactured by Binks, one of the three major companies in the paint sprayer business. The closure 26 comprises a cover 27 attached to a yoke assembly 28. The yoke assembly 28 has downward sloping arms 30. Each arm 30 of the yoke assembly 28 has a horizontal slot 32 near its end. The slot 32 allows the lower portion of the arm 30 to hook into rectangular hole 22.

Rotation of thumb bolt 34 lifts the yoke assembly 28 causing that portion of the arm 30 which is hooked into rectangular hole 22 to lift, thus applying pressure to the reinforcing upper angled projection 24, and at the same time forcing the cover 27 against the top of the canister 10 sealing it.

Figures 8 and 9 show the top portion of the canister 10 to which a conventional paint sprayer closure 26' has been attached. The closure 26' is manufactured by DeVilbiss, one of the three major companies in the paint sprayer business. The closure 26' comprises a cover 27' attached to a yoke assembly 28'. The yoke assembly 28' has downward sloping arms 30'. Each arm 30' of the yoke assembly 28' has a horizontal slot 32' near its end. The slot 32' allows the lower portion of the arm 30' to hook into rectangular hole 22. Rotation of the thumb bolt 34' lifts the yoke assembly 28' causing

a portion of the arm 30' which is hooked into the rectangular hole 22 to lift, thus applying pressure to the reinforcing upper angled projection 24 and at the same time forcing the cover 27' against the top of the canister 10 sealing it.

Figures 10 and 11 show the top portion of the canister 10 which a conventional paint sprayer closure 26" has been attached. The closure 26" is manufactured by Sharpe, one of the three major companies in the paint sprayer business. The closure 26" comprises a cover 27" attached to a yoke assembly 28". The yoke assembly 28" has downward sloping arm 30". Each arm 30" of the yoke assembly 28" has a horizontal slot 32" near its end. The slot 32" allows the lower portion of arm 30" to hook into rectangular hole 22. Rotation of the thumb bolt 34" lifts the yoke assembly 28" causing the portion of the arm 30" which is hooked into the rectangular hole 22 to lift, thus applying pressure to the reinforcing upper angled projection 24 and at the same time forcing the cover 27" against the top of the canister 10 sealing it.

As indicated, a particular advantage of the instant invention is its adaptability to each of the sprayer closures 26, 26' and 26". In addition, it is sufficiently inexpensive to make so that it can be discarded when changing paint color or when a paint job is completed. This eliminates the time and labor involved in cleaning the conventional reusable canisters and eliminates the cost relating to the disposal of hazardous waste solvents.

Claims

1. A canister for substantially universal use with sprayers of the type having a canister closure and canister engaging elements for securing a canister to the closure, said canister having a closed bottom end and an open top end, characterised by radially opposed engaging means on the outer surface of the canister adjacent the open top thereof, said engaging means each comprising an angled projection extending outwardly from the canister having a configuration and dimensions to be received by a respective one of the canister engaging elements of the sprayer and having a lower surface positioned to be engaged by the respective canister engaging element for securing the canister to the closure, said projection being angled for accommodating its reception by various forms of canister engaging elements and for strengthening and reinforcing the projection to withstand the force applied when the canister is secured to the closure.

2. A canister according to claim 1, characterised in that said lower surface of each said angled projection is spaced in the order of about 1.3437 centimeters (0.529 of an inch) below the open top end of the canister.

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3. A canister according to claim 1 or 2, characterised in that each canister engaging element comprises an arm having an opening therein facing in a given direction of relative rotation between the arm and the canister and each said angled projection is angled upwardly towards the open top end of the canister in said given direction.

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4. A canister according to claim 3, characterised in that each said projection comprises a lower portion extending generally parallel to the axis of the canister, the lower edge of which comprises said lower surface of the projection, and an upper portion angled upwardly from said lower portion in said given direction.

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5. A canister according to any preceding claim, characterised in that said canister is a moulded plastics canister and each said angled projection is moulded integrally with the canister and fashioned from the flashing of the moulding process for the canister.

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6. A canister according to claim 5, characterised in that radially opposed outwardly projecting ribs are moulded integrally with the canister and fashioned from the flashing of the moulding process for the canister, each said rib having a hole therethrough, the upper margin of which is defined by said lower surface of the respective angled projection, the angled projection comprising the topmost portion of the respective rib.

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7. A canister according to claim 6, characterised in that each said rib extends from the top of the respective angled projection downwardly to substantially the bottom of the canister.

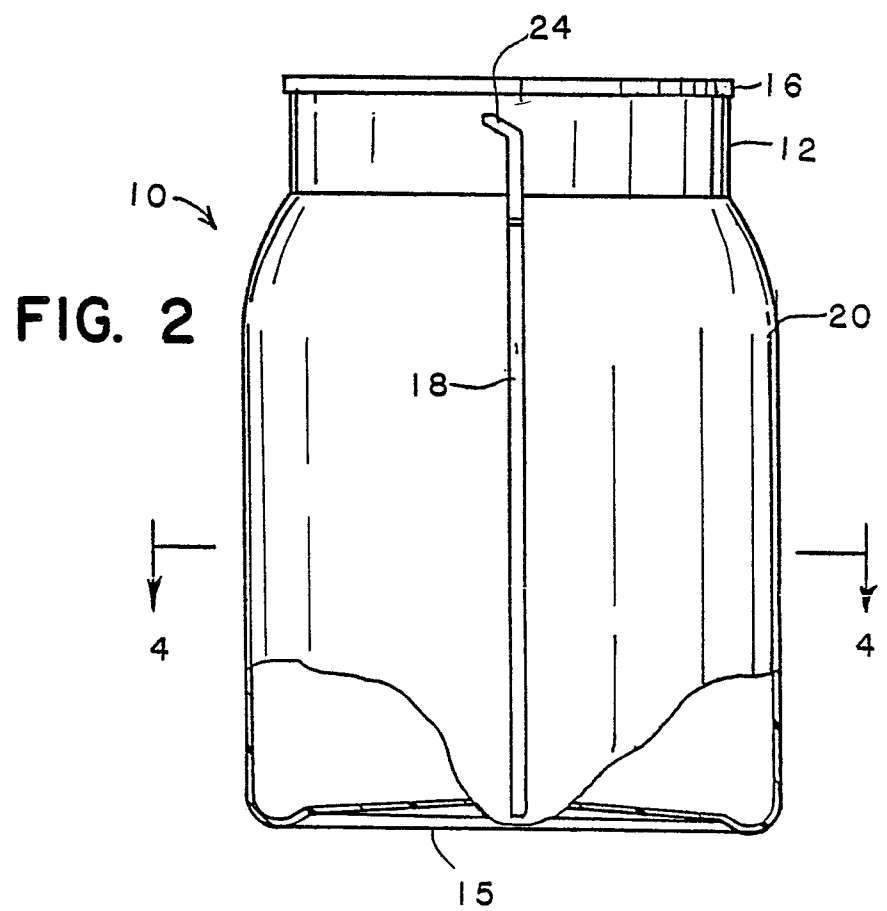
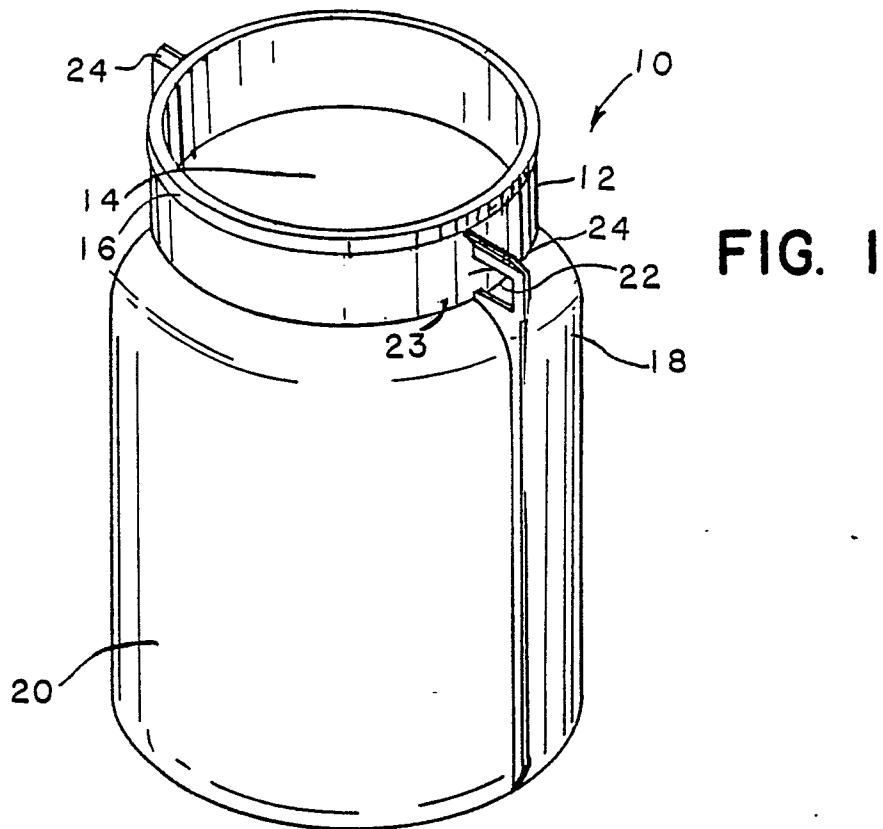
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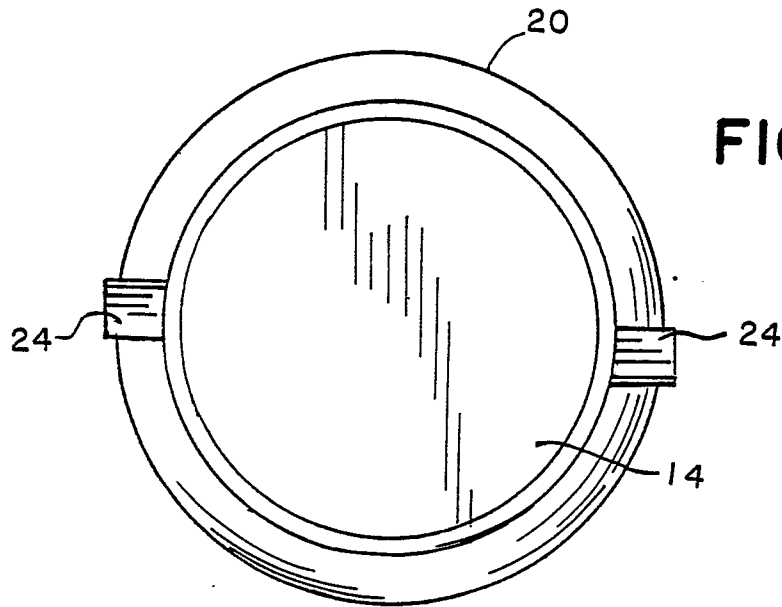


FIG. 3

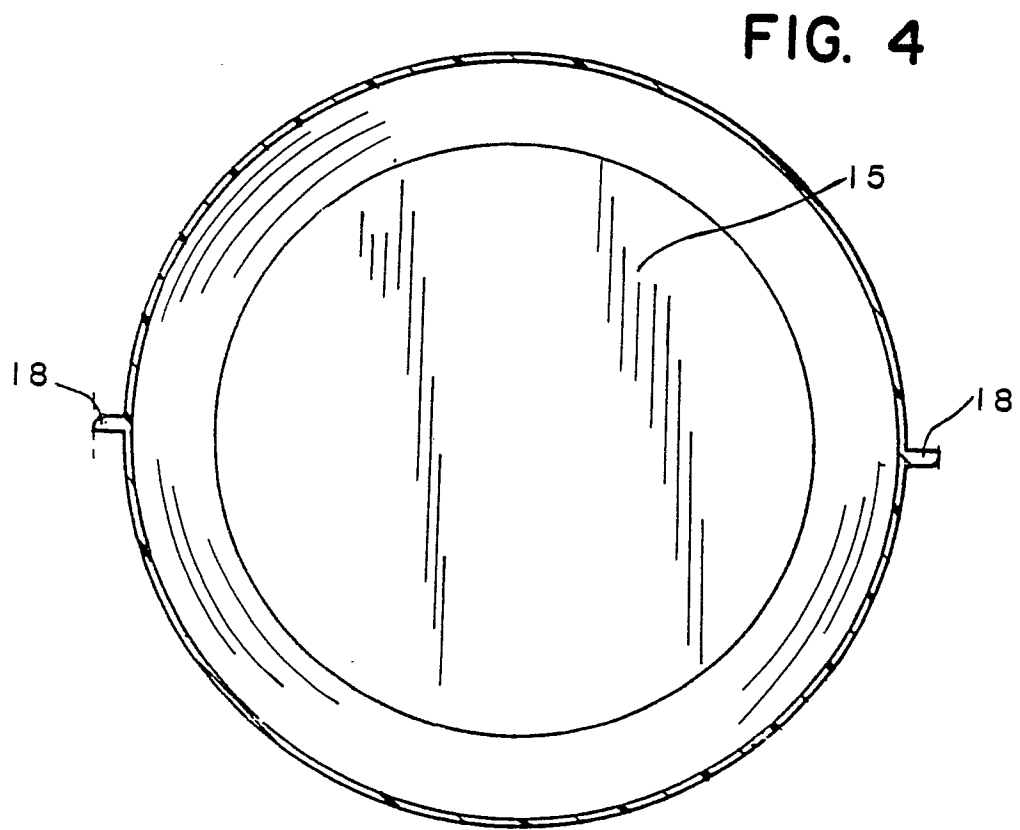


FIG. 4

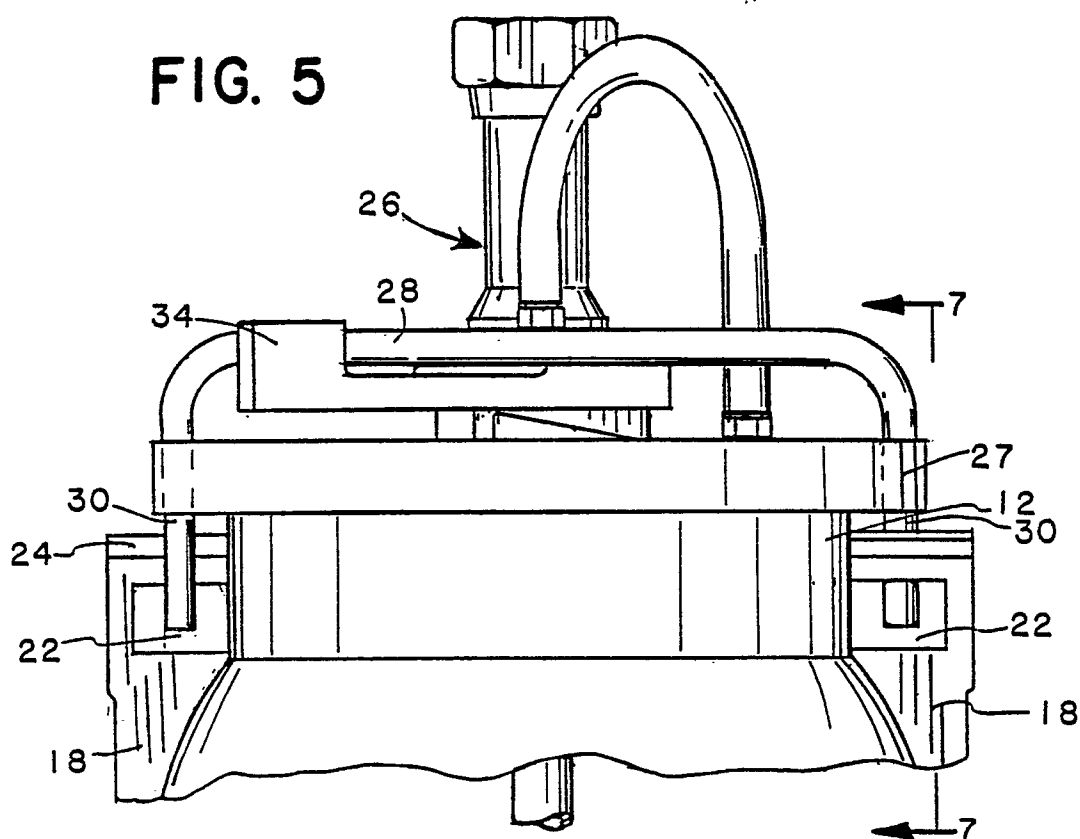
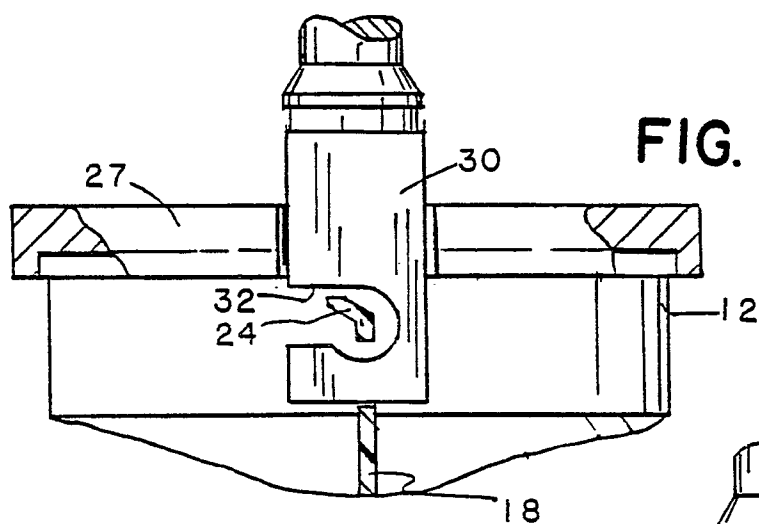
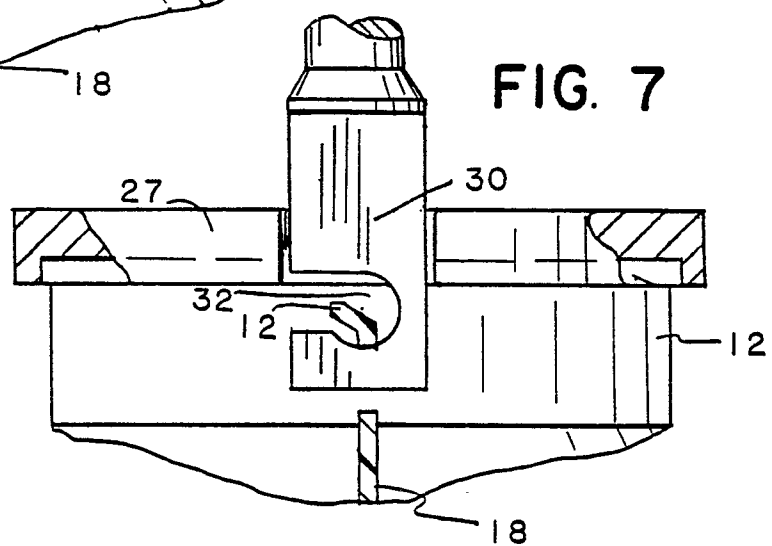
FIG. 5**FIG. 6****FIG. 7**

FIG. 8

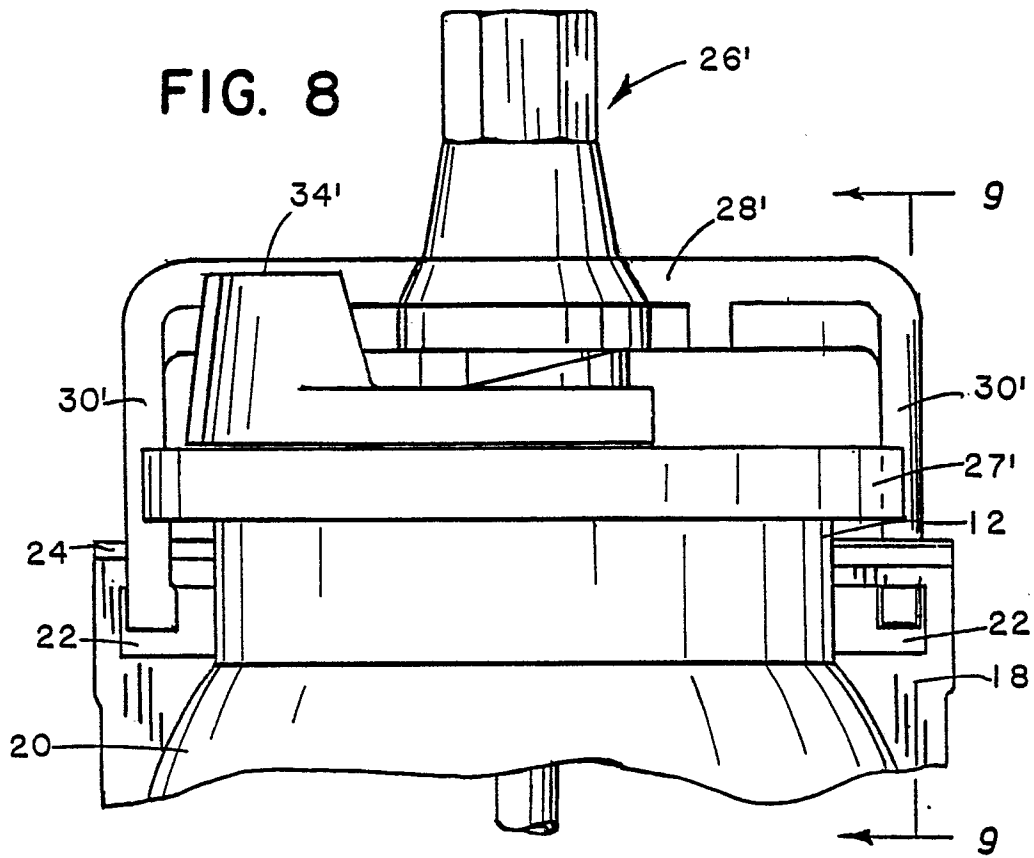


FIG. 9

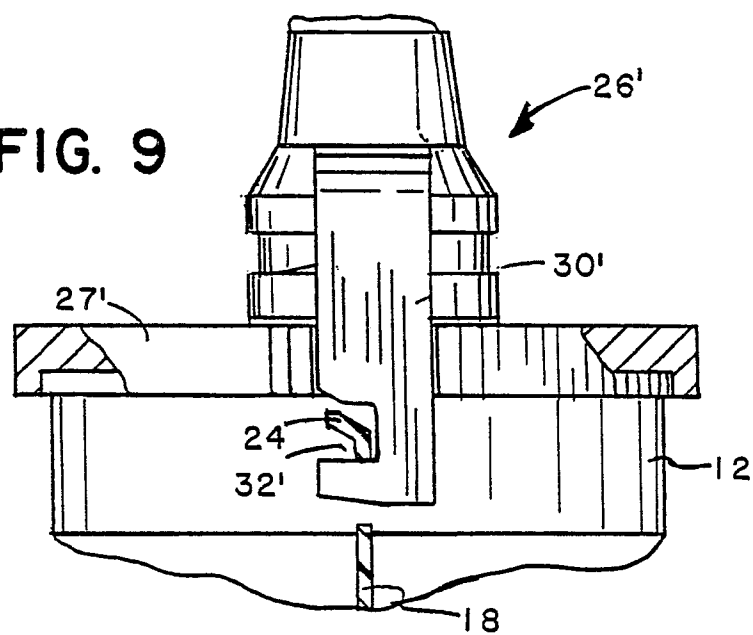


FIG. 10

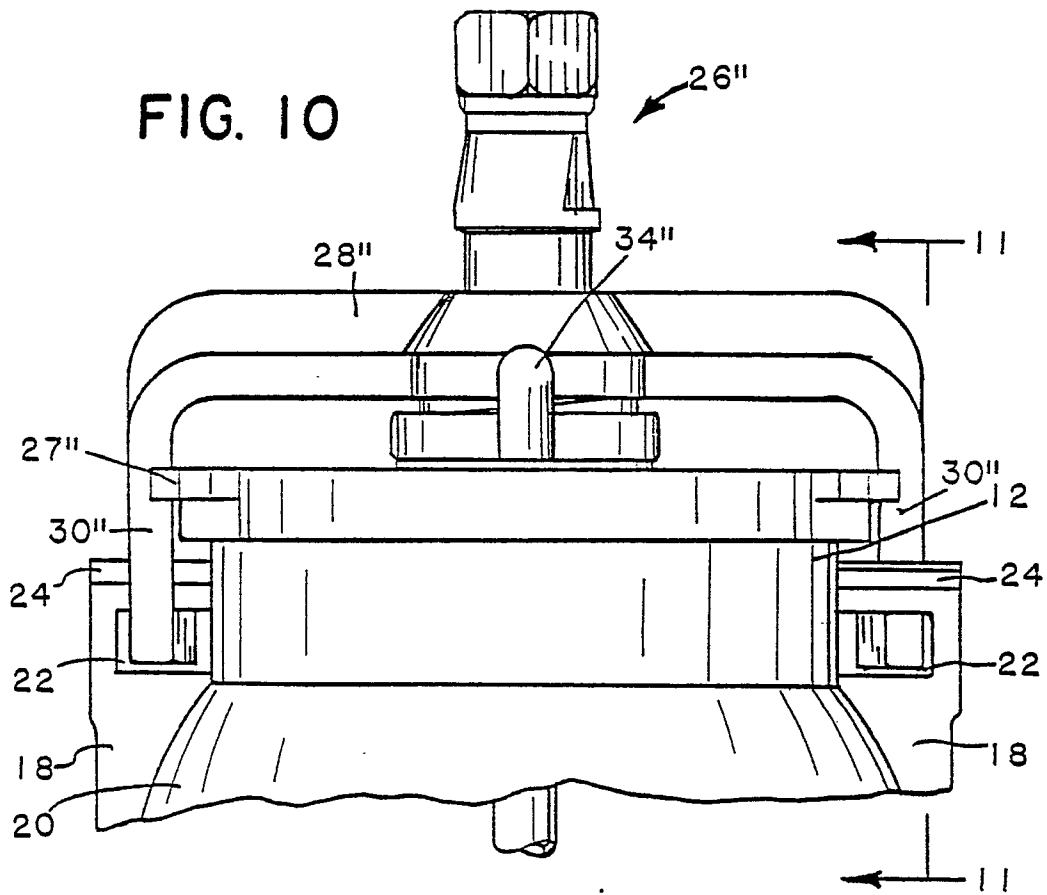


FIG. 11

