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(54) **ROLL DISPENSER**

SPENDER FÜR ROLLE

DISTRIBUTEUR POUR UN ROULEAU

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Description

[0001] This invention relates to a dispenser for a roll of material, such as plastics material, foil or paper, said dispenser having opposing journal mounting means allowing rotation of the roll about it axis as material is dispensed therefrom.

[0002] Numerous prior dispensers of this type are known for dispensing, inter alia, toilet paper, kitchen paper, foil, plastics wrapping sheet.

[0003] US-A-2,905,405 discloses, a dispenser for a roll of material in combination with said roll, said dispenser have opposing journal mounting means allowing rotation of the roll about its axis and also comprising a diaphragm which fits into or onto one of the journal mounting means so as to be rotatable relative thereto and which lacks an axial well or stub but is provided with a configuration of recesses and/or projections for engagement with corresponding projections and/or recesses at one end of the roll, and said roll having material wrapped around a core and, at one end at least, a retained element which lacks an axial stub or well but carries the corresponding projections and/or recesses for engagement with the diaphragm.

[0004] Compared to the foregoing, the dispenser and roll combination of the present invention is characterised in that the retained element comprises a bung which abuts or engages with the core and around which material of the roll is also wrapped.

[0005] This provides an improved, more stable arrangement than hitherto.

[0006] The projections and/or recesses which interengage are primarily off-centre with respect to the diaphragm and/or the roll axis. In other words, although a portion thereof may pass through the axis in some embodiments, there is no axial well or stub as such on either the diaphragm or the bung.

[0007] The other journal mounting means may conveniently be of cradle type in that it simply provides means for reception and support of the opposing end of the roll, or a shaft or similar projecting therefrom, enabling free rotation of said end, or shaft or similar. However, spring means may also be provided at this end to assist retention of the roll at this end.

[0008] Advantageously the diaphragm is of resilient material and is a snap fit into or onto the journal means. In this respect, the diaphragm snap fit arrangement is preferably of such a design that once fitted to the journal mounting means the diaphragm cannot be removed without breaking.

[0009] Additionally or alternatively, the diaphragm may be spring-loaded.

[0010] In preferred embodiments of the present invention, the dispenser includes a container for the roll, which container has an interior surface provided with teeth or spikes or the like so that the material of the roll will tend to tear in the event that an attempt is made to pull material from the roll when the roll is not mounted upon the journal mounting means. In this way it is readily apparent to a user whenever a roll is simply dropped into the container and is not properly mounted upon the journal mounting means of the dispenser. Rolls of material which do not have projections and/or recesses at one end compatible with the configuration of the diaphragm cannot be fitted to the journal mounting means and cannot, therefore, be used with the dispenser.

[0011] In embodiments incorporating a container for the roll, the journal mounting means are advantageously provided as parts of respective end mounts which engage with the container. These end mounts may engage with the container by a snap fit interconnection, and the design may be such that any attempt to disconnect the end mount once so connected would result in its breakage. The end mounts, whether connected by snap fit or otherwise, may advantageously include catch means adapted to secure a top or lid of the container.

[0012] As mentioned, the bung projects, at least partially, from the end of the core and the material of the roll is wrapped around the bung as well as the core.

[0013] The bung may be provided, around its exterior, with barbs to prevent its removal from the roll. The bung may also be formed in two parts, each part annular, which fall apart upon removal of the bung from the core so that the bung cannot be re-used.

[0014] By way of example, two specific embodiments in accordance with the invention will now be described with reference to the accompanying drawings, in which:

Figure 1 is a fragmentary side view of one exemplary dispenser, a top portion having been omitted;

Figure 2 is a transverse cross section through the dispenser of Figure 1, along the line A-A, with the roll also shown;

Figure 3 is a section of the same dispenser viewed along the line B-B in Fig 1;

Figure 4 is a section of the same dispenser, viewed along the line D-D in Fig 1;

Figure 5 is a fragmentary transverse cross-section showing roll mounting in another exemplary embodiment of the dispenser of the invention;

Figure 6 and 7 are fragmentary perspective views showing how the bung of the Figure 5 embodiment is mounted in a roll; and

Figure 8 is a perspective view showing how the bung of the Figure 5 embodiment engages with the spring loaded diaphragm.

[0015] As illustrated, the exemplary dispenser comprises a trough shaped container (10) having a base (12) and front and rear walls (14, 16) and opposing end

walls (18, 20) as well as a lid (22), which is shown only partially. Each end wall (18,20) is provided with a respective end mount or fitment (28, 29) which lies primarily inside the container (10) and has a portion (24) engaging in a corresponding aperture in the respective end wall (18, 20) and a portion (26) of cylindrical form providing journal mounting means for a roll of material (30), which is to be accommodated within the container (10) and dispensed therefrom.

[0016] A diaphragm (40) of resilient plastics material is a snap fit into the cylindrical journal mounting means (26) at one end (18) of the container (10), as shown in Fig 2. This diaphragm (40) is configured on its end face so as to have a recess (46) which is in the form of a letter "F" and a surrounding projection (44) defining said recess. Naturally the specific form of the projection(s) and recess(es) in the end face of the diaphragm are not critical to the invention. They may take any form, of letters, numerals, shapes, whether geometric or otherwise, stripes or dots, etc. The only requirement is that an axial well or stub should not be provided in or on the diaphragm. In this way the dispenser can be customised for the rolls of any particular manufacturer.

[0017] The diaphragm (40) is rotatable relative to the journal means (26).

[0018] The other end fitment (29) has a closed end face to its cylindrical portion (26) and projecting therefrom is a U-shaped flange (27), best seen in Fig 4, which provides a cradle support for the other end of the roll (30).

[0019] The respective portions (24) of the end fitments (28, 29) are designed to make a snap fit connection with the respective end walls (18, 20). Any attempt to disconnect the fitments (28, 29) is likely to result in their breakage.

[0020] The end fitments (28, 29) also include upper portions (38, 39) which serve as catch means for securement of the lid (22) of the container (10). Thus breakage of either fitment would also result in a defective catch means.

[0021] Each end fitment (28, 29) is preferably formed integrally as a plastics moulding to incorporate the journal mounting means portion (26), the fitment mounting portion (24) and the lid catch portion (28, 29). However, other constructions are possible.

[0022] The roll (30) is wound onto a core (32), eg of cardboard or fibreboard. At one end, a cylindrical bung (34) engages as a push fit into the core (32) and projects therefrom, as shown in Fig 2. The material of the roll (30) is also wound around the projecting portion of the bung (34) and thereby holds it firmly in place at that end of the roll. An outer end face of the bung (34) is formed with a projection (36) which is configured as a letter "F" and sized to fit into the corresponding recess (46) in the diaphragm. In this way a non-rotatable connection is formed between the bung (34) and the diaphragm (40).

[0023] At the other end of the roll (30), the core (32) projects and is able to rest in the cradle support (27).

[0024] In use the roll is inserted by firstly engaging the bung (34) with the diaphragm, then dropping the other end of the core (32) into the cradle support (27). The free end of the material on the roll is pulled out and dispensed via an opening between the housing (10) and its lid (22) or via any other opening provided for that purpose in any conventional manner.

[0025] If a roll of material does not have the correctly configured bung (34) for fitting to the rotatable diaphragm (40) it cannot be mounted between the cylindrical journal means (26). Across the interior surface of the base (12) of the housing a small number of pointed projections (13), namely teeth or spikes or the like, are formed at intervals. If a roll of material is dropped into the housing (10) without being properly mounted between the journals (26) and attempts are made to draw the material out through the dispensing opening, these spikes (13) will tend to tear the material. This alerts a user either to the fact that an incorrect roll has been located in the dispenser or to the fact that the roll is simply not mounted properly.

[0026] Within the housing (10) one or more reinforcing flanges (48) may be provided as shown in Figs 3 and 4.

[0027] The invention is not limited to specific details of the illustrated embodiment.

[0028] Numerous variations are possible. In other embodiments the bung may be formed in two part-annular parts and carry barbs to facilitate its retention by the material of the roll. Also the diaphragm and the end fitment may be differently configured, and the diaphragm could be spring-loaded by separate spring means to ensure that inter-engagement with the bung is maintained. Also, spring loading at the cradle mount end may be provided to assist retention of the roll in its mounted position ready for dispensing of material therefrom.

[0029] With reference to Figures 5 to 8, this second illustrated embodiment of roll dispenser may or may not have a similar container and similar end fitments to the first illustrated embodiment. A diaphragm (50) is shown which in use will be mounted in or on journal mounting means (not shown) at one end of the container and will be rotatable relative thereto. As shown in Fig 8, this diaphragm (50) can be springloaded by a compression spring (52) arranged between it and part of the mounting means. However, other manners of springloading are possible.

[0030] As in the first embodiment, the roll (60) is wound onto a core (62) consisting of a tube of cardboard or fibreboard and at one end a bung (64) engages the core as a push fit and projects therefrom. The material of the roll (60) is wound around the core (62) and the projecting portion of the bung (64) at the same time. As best shown in Figure 6, the bung is formed of two substantially part-cylindrical parts which are brought together upon the fitting of the bung (64) to the core (62). When the wall of material is used up, these two parts come apart. Also, a shown, the bung (64) carries barbs (66) which serve to grip the material of the roll and prevent

removal of the bung until the material is used up.

[0031] Each half of the bung (64) is formed with a terminal flange (68) extending laterally and carrying a projection (69) which is sized to fit into a corresponding recess (59) in the diaphragm (50), as shown in Figures 5 and 8. These projections (69) and recesses (59) are offset from the axis of the roll and the centre of the disc-shaped diaphragm. As shown, the projections (69) have sloping faces so as to be able to slide across ramps (54) provided adjacent the recesses to gain entry to the recesses (59) in the springloaded diaphragm (50).

[0032] In use, the roll (60) is mounted by firstly fitting the protruding end of the core (62) (at the end remote from the bung (64)) over a correspondingly sized projection (56) at that end of the container (see Figure 5). The bung (54) is then engaged with the diaphragm (50) by the projections (69) thereon being pushed across the ramps (54) so as to counter the spring action of the diaphragm until they snap into the recesses (59).

[0033] Dispensing of the roll (60) is as previously described for the first embodiment and the container may also be provided with teeth or spikes, as in the first embodiment.

[0034] In modified versions, the bung can be formed in one piece and the flanges and projections/recesses be differently configured.

Claims

1. A dispenser for a roll of material in combination with said roll, said dispenser having opposing journal mounting means (26) allowing rotation of the roll about its axis and also comprising a diaphragm (40; 50) which fits into or onto one of the journal mounting means (26) so as to be rotatable relative thereto, said diaphragm comprising a first face which lacks an axial well or stub but is provided with a configuration of recesses and/or projections (44,46;59) for engagement with corresponding projections and/or recesses (36;69) at one end of the roll, and said roll having material (30;60) wrapped around a core (32; 62) and, at one end at least, a retained element (34; 64) comprising a first face which lacks an axial stub or well but carries the corresponding projections and/or recesses (36;69) for engagement with first face of the diaphragm, **characterised in that** the retained element comprises a bung (34;64) which abuts or engages with the core and wherein the material (30;60) of the roll is also wrapped directly around a portion of said bung.

2. A dispenser as claimed in Claim 1 wherein the diaphragm (40;50) is of resilient material and is a snap fit into or onto the journal mounting means (26).

3. A dispenser as claimed in Claim 1 or 2 wherein the diaphragm (40;50) is spring-loaded.

4. A dispenser as claimed in Claim 1 or 2 including a container 10 for the roll, which container (10) has an interior surface provided with teeth or spikes (13) or the like so that the material (30) of the roll will tend to tear in the event that an attempt is made to pull the material (30) from the roll when the roll is not mounted upon the journal means (26).

5. A dispenser as claimed in Claim 1 or 2 including a container (10) for the roll and wherein the journal mounting means (26) are provided as parts of respective end mounts (28, 29) which engage with the container (10) by a snap fit arrangement.

6. A dispenser as claimed in Claim 1 or 2 including a container (10) for the roll and wherein the journal mounting (26) means are provided as parts of end mounts (28, 29) which engage with the container and which include catch means (38,. 39) adapted to secure a top or lid (22) of the container (10).

7. A dispenser as claimed in any preceding Claim wherein the bung (64) is provided with barbs (66) on its exterior to prevent its removal from the roll.

8. A dispenser as claimed in any preceding Claim wherein the bung (64) is formed from two part-annular parts (Fig. 5 to 8).

9. A refill roll of material (30) engageable with a dispenser as claimed in any one of Claims 1 to 8 so that the material of said roll is dispensable from said dispenser, wherein said roll comprises said material wrapped around a core (32;62) and, at one end at least, has a retained element (34;64) comprising a first face which lacks an axial well or stub but carries projections and/or recesses engageable with the first face of the diaphragm (40;50) of said dispenser, **characterised in that** the retained element comprises a bung (34;64) which abuts or engages with the core (32;62) and that the material of the roll is at least partially wrapped directly around said bung.

Patentansprüche

1. Ein Spender für eine Rolle von Material in Kombination mit dieser Rolle, wobei der Spender einander gegenüberliegende Lagerzapfenbefestigungsmittel (26) aufweist, die das Drehen der Rolle um deren Achse ermöglichen, und der außerdem ein Trennelement (40; 50) umfaßt, das in oder auf eines der Lagerzapfenbefestigungsmittel (26) paßt, so daß es relativ zu diesem drehbar ist, wobei das Trennmittel eine erste Fläche umfaßt, die keinen axialen Schaft oder Rollenrest aufweist, jedoch mit einer Zusammenstellung von Aussparungen und/oder Vorsprüngen (44, 46; 59) zum Eingreifen in entspre-

chende Vorsprünge und/oder Aussparungen (36; 69) an einem Ende der Rolle versehen ist, und wobei die Rolle um einen Kern (32; 62) herumgewikkeltes Material (30; 60) aufweist und mindestens an einem Ende ein zurückgehaltenes Element (34; 64), das eine erste Fläche umfaßt, die keinen axialen Rollenrest oder Schaft aufweist, jedoch die entsprechenden Vorsprünge und/oder Aussparungen (36; 69) zum Eingreifen in die erste Fläche des Trennelements (40; 50) trägt, **dadurch gekennzeichnet, daß** das zurückgehaltene Element einen Zapfen (34; 64) umfaßt, der an den Kern angrenzt oder in diesen eingreift und wobei das Material (30; 60) der Rolle auch direkt um einen Abschnitt des Zapfens gewickelt ist.

2. Spender gemäß Anspruch 1, wobei das Trennelement (40; 50) aus einem elastischen Material besteht und einschnappend in oder auf die Lagerzapfenbefestigungsmittel (26) gepaßt werden kann.

3. Spender gemäß Anspruch 1 oder 2, wobei das Trennmittel (40; 50) federbelastet ist.

4. Spender gemäß Anspruch 1 oder 2, der einen Behälter (10) für die Rolle umfaßt, wobei der Behälter (10) eine Innenfläche aufweist, die mit Zähnen oder Dornen (13) oder dergleichen versehen ist, so daß das Material (30) der Rolle zum Reißen neigen wird, falls versucht wird, das Material (30) von der Rolle zu ziehen, wenn die Rolle nicht auf den Lagerzapfenmitteln (26) befestigt ist.

5. Spender gemäß Anspruch 1 oder 2, der einen Behälter (10) für die Rolle umfaßt und wobei die Lagerzapfenbefestigungsmittel (26) als Teile entsprechender Endbefestigungen (28, 29), die in den Behälter (10) mittels einer Einschnappanordnung eingreifen, bereitgestellt sind.

6. Spender gemäß Anspruch 1 oder 2, der einen Behälter (10) für die Rolle umfaßt und wobei die Lagerzapfenbefestigungsmittel (26) als Teile von Endbefestigungen (28, 29) bereitgestellt sind, die in den Behälter eingreifen, und die Sperrmittel (38, 39) umfassen, die angepaßt sind, um ein Oberteil oder einen Deckel (22) des Behälters (10) zu sichern.

7. Spender gemäß einem der vorhergehenden Ansprüche, wobei das Äußere des Zapfens (64) mit Widerhaken (66) versehen ist, um dessen Entfernen von der Rolle zu verhindern.

8. Spender gemäß einem der vorhergehenden Ansprüche, wobei der Zapfen (64) aus den zweiteiligen Ringteilen (Fig. 5 bis 8) geformt ist.

9. Eine Ersatzrolle von Material (30), die in einen Spender gemäß einem der Ansprüche 1 bis 8 eingreifen kann, so daß das Material von der Rolle aus diesem Spender ausgegeben werden kann, wobei die Rolle das um einen Kern (32; 62) herumgewikkelte Material umfaßt und mindestens an einem Ende ein zurückgehaltenes Element (34; 64) aufweist, das eine erste Fläche umfaßt, die keinen axialen Schaft oder Rollenrest umfaßt, jedoch Vorsprünge und/oder Aussparungen trägt, die in die erste Fläche des Trennelements (40; 50) des Spenders eingreifen können, **dadurch gekennzeichnet, daß** das gehaltene Element einen Zapfen (34; 64) umfaßt, der an den Kern (32; 62) angrenzt oder in diesen eingreift, und daß das Material der Rolle mindestens teilweise direkt um den Zapfen gewickelt ist.

Revendications

1. Un distributeur destiné à un rouleau de matériau en association avec ledit rouleau, ledit distributeur ayant des moyens de montage de tourillon opposés (26) permettant la rotation du rouleau autour de son axe et comprenant aussi un diaphragme (40 ; 50) qui se met en place dans ou sur l'un des moyens de montage de tourillon (26) de façon à ce qu'il puisse tourner par rapport à celui-ci, ledit diaphragme comprenant une première face dépourvue de cavité ou de protubérance axiale mais munie d'une configuration de renfoncements et/ou de projections (44, 46 ; 59) pour se mettre en prise avec des projections et/ou des renfoncements correspondants (36 ; 69) à une extrémité du rouleau, et ledit rouleau ayant du matériau (30 ; 60) enroulé autour d'un organe central (32 ; 62) et, à une extrémité au moins, un élément retenu (34 ; 64) comprenant une première face dépourvue de protubérance ou de cavité axiale mais qui porte les projections et/ou les renfoncements correspondants (36 ; 69) pour se mettre en prise avec la première face du diaphragme, **caractérisé en ce que** l'élément retenu comprend une bonde (34 ; 64) qui est contiguë à l'organe central ou se met en prise avec celui-ci et dans lequel le matériau (30 ; 60) du rouleau est aussi enroulé directement autour d'une portion de ladite bonde.

2. Un distributeur tel que revendiqué dans la revendication 1 dans lequel le diaphragme (40 ; 50) est en matériau élastique et se met en place par encliquetage dans ou sur les moyens de montage de tourillon (26).

3. Un distributeur tel que revendiqué dans la revendication 1 ou la revendication 2 dans lequel le diaphragme (40 ; 50) est à ressort.

4. Un distributeur tel que revendiqué dans la revendi-

cation 1 ou la revendication 2 comportant un conteneur (10) destiné au rouleau, lequel conteneur (10) a une surface intérieure munie de dents ou de pointes (13) ou analogue de telle façon que le matériau (30) du rouleau aura tendance à se déchirer en cas de tentative de traction du matériau (30) du rouleau lorsque le rouleau n'est pas monté sur les moyens de montage de tourillon (26).

5. Un distributeur tel que revendiqué dans la revendication 1 ou la revendication 2 comportant un conteneur (10) destiné au rouleau et dans lequel les moyens de montage de tourillon (26) sont fournis en tant que parties de montures d'extrémité respectives (28, 29) qui se mettent en prise avec le conteneur (10) par un agencement à encliquetage.

6. Un distributeur tel que revendiqué dans la revendication 1 ou la revendication 2 comportant un conteneur (10) destiné au rouleau et dans lequel les moyens de montage de tourillon (26) sont fournis en tant que parties de montures d'extrémité (28, 29) qui se mettent en prise avec le conteneur et qui comportent des moyens de verrouillage (38, 39) adaptés pour assujettir un dessus ou couvercle (22) du conteneur (10).

7. Un distributeur tel que revendiqué dans n'importe quelle revendication précédente dans lequel la bonde (64) est munie de barbes (66) sur sa partie extérieure pour empêcher qu'elle ne s'enlève du rouleau.

8. Un distributeur tel que revendiqué dans n'importe quelle revendication précédente dans lequel la bonde (64) est formée de deux pièces en partie annulaires (figures 5 à 8).

9. Un rouleau de recharge de matériau (30) pouvant se mettre en prise avec un distributeur tel que revendiqué dans une quelconque des revendications 1 à 8 de telle façon que le matériau dudit rouleau puisse être dévidé dudit distributeur, dans lequel ledit rouleau comprend ledit matériau enroulé autour d'un organe central (32 ; 62) et, à une extrémité au moins, a un élément retenu (34 ; 64) comprenant une première face dépourvue de cavité ou de protubérance axiale mais qui porte des projections et/ou des renfoncements pouvant se mettre en prise avec la première face du diaphragme (40 ; 50) dudit distributeur, **caractérisé en ce que** l'élément retenu comprend une bonde (34 ; 64) qui est contiguë à l'organe central (32 ; 62) ou se met en prise avec celui-ci et que le matériau du rouleau est au moins partiellement enroulé directement autour de ladite bonde.

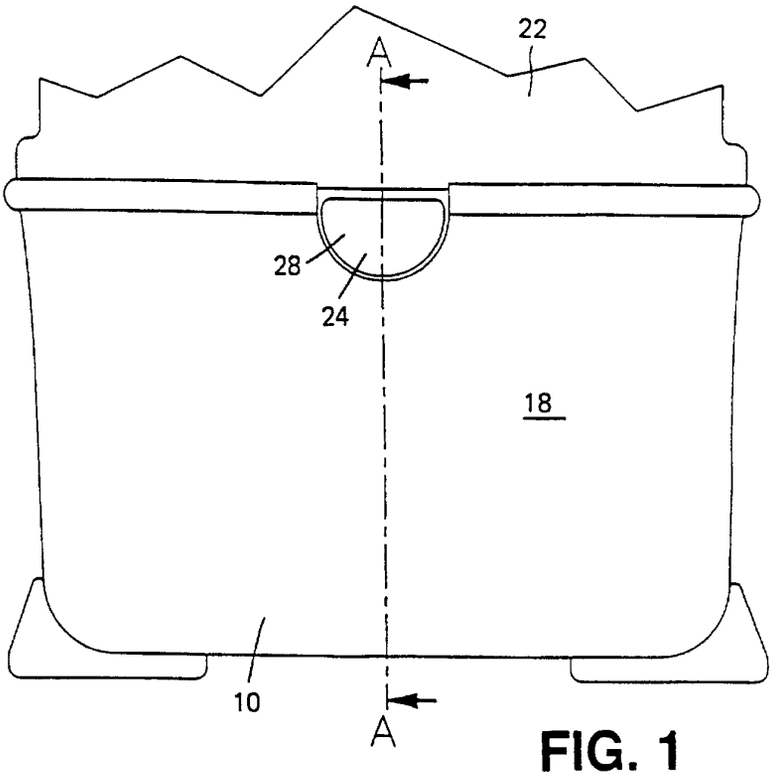
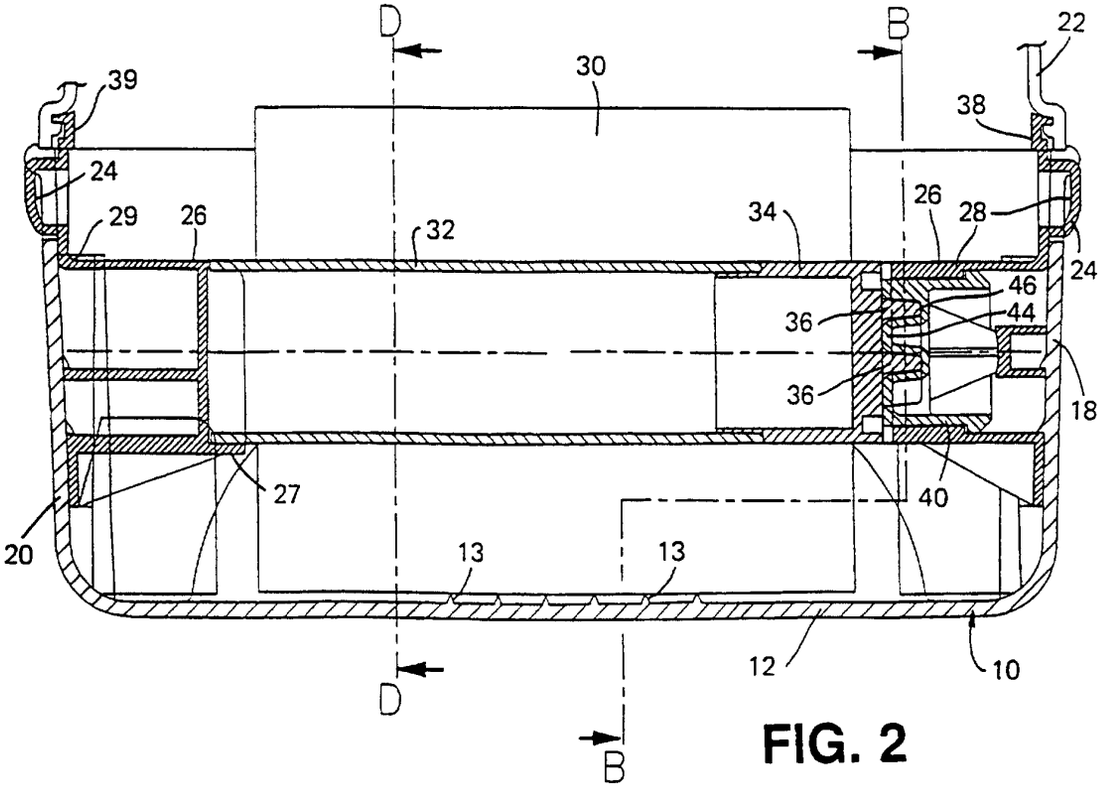

22
A
28
24
18
10
A

FIG. 1


D
B
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29
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20
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12
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D
B

FIG. 2

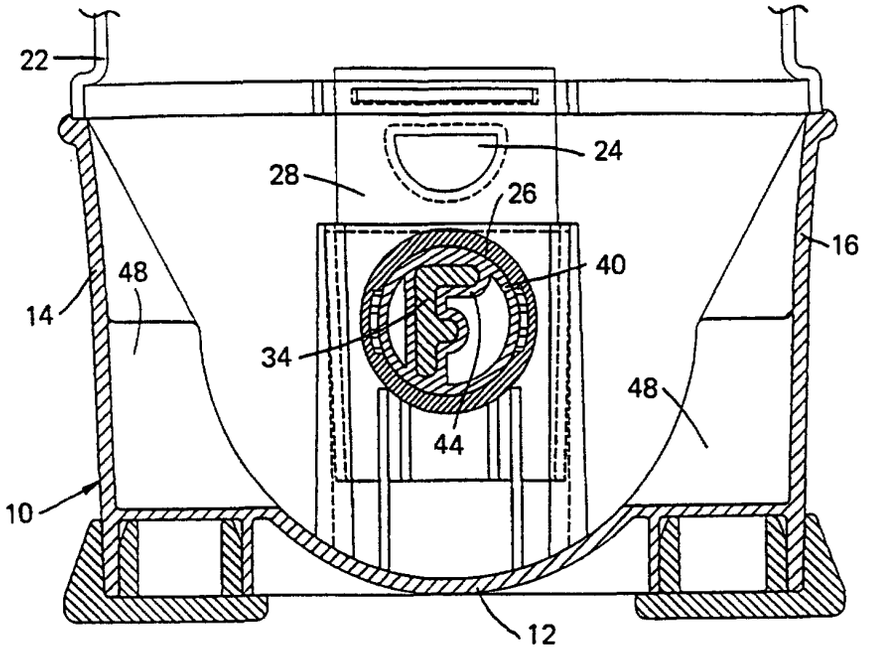

FIG. 3

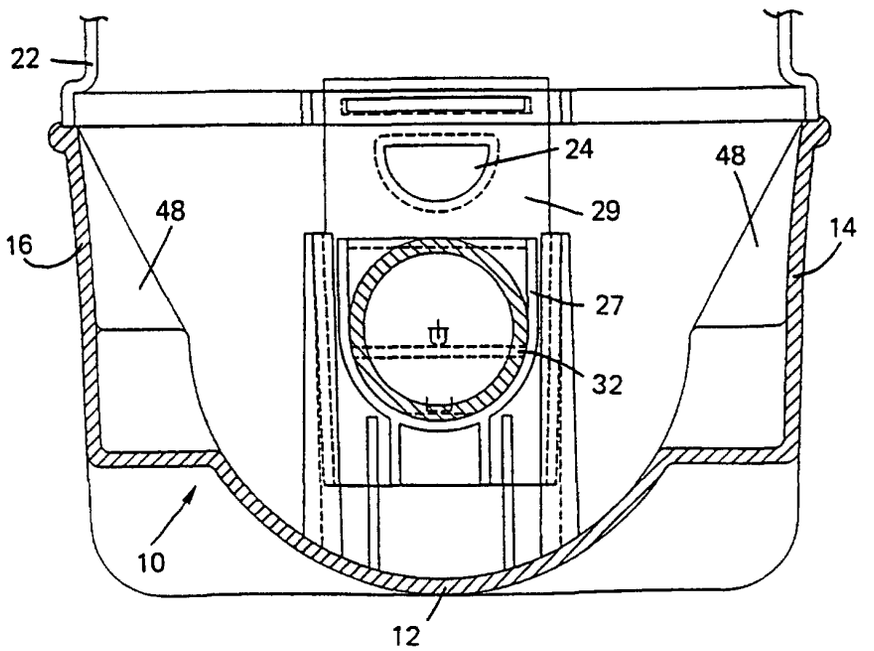

FIG. 4

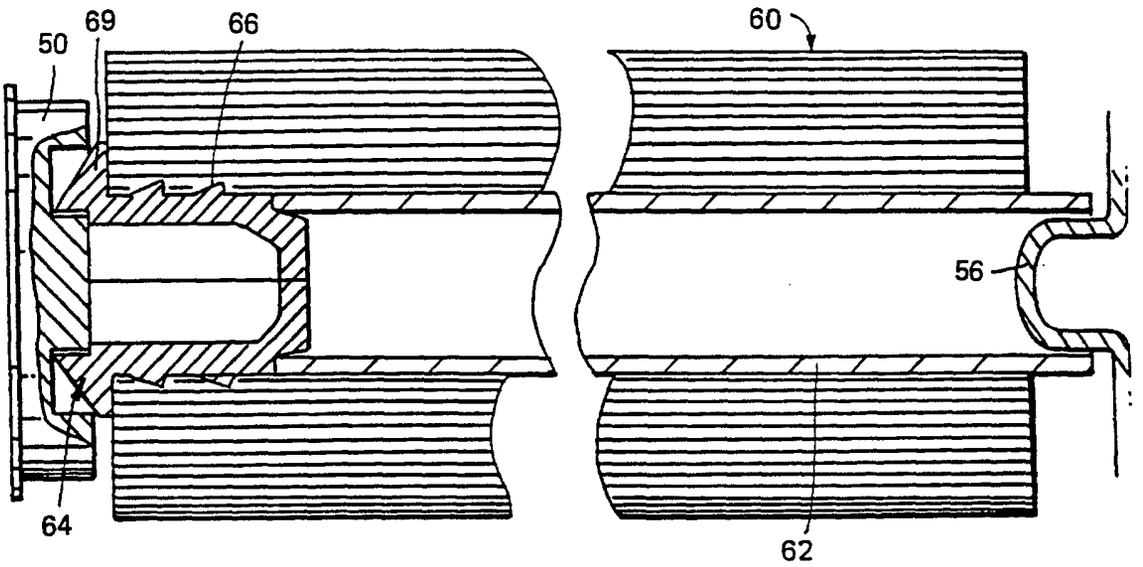

FIG. 5

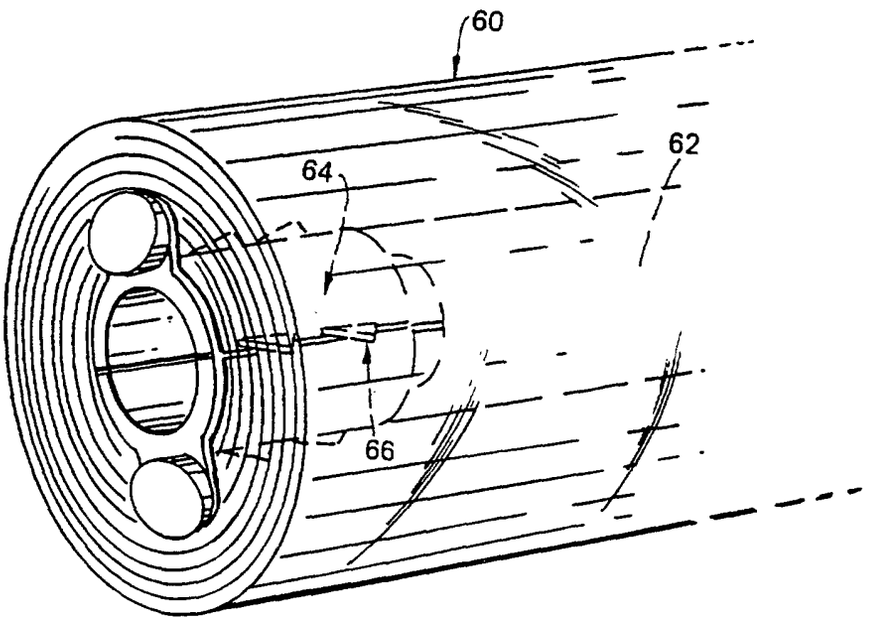

FIG. 6

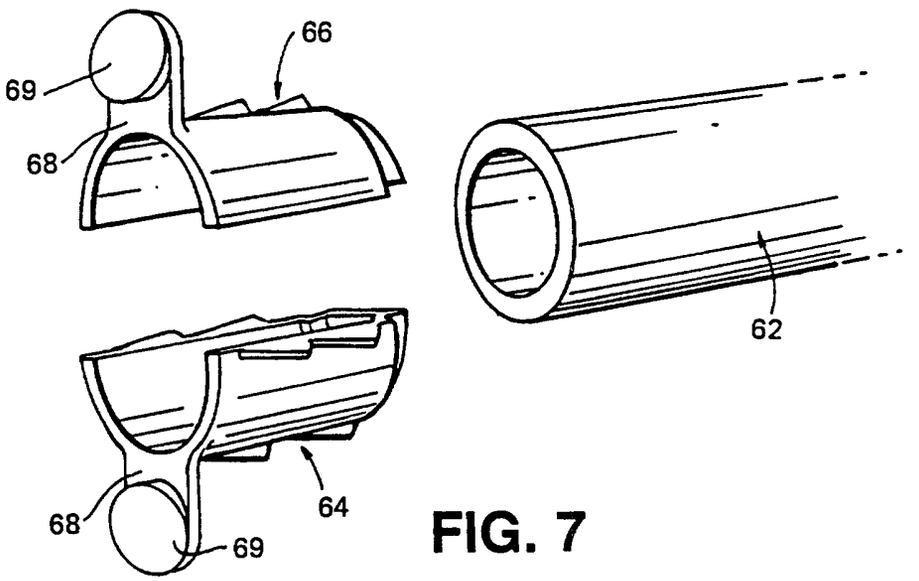

FIG. 7

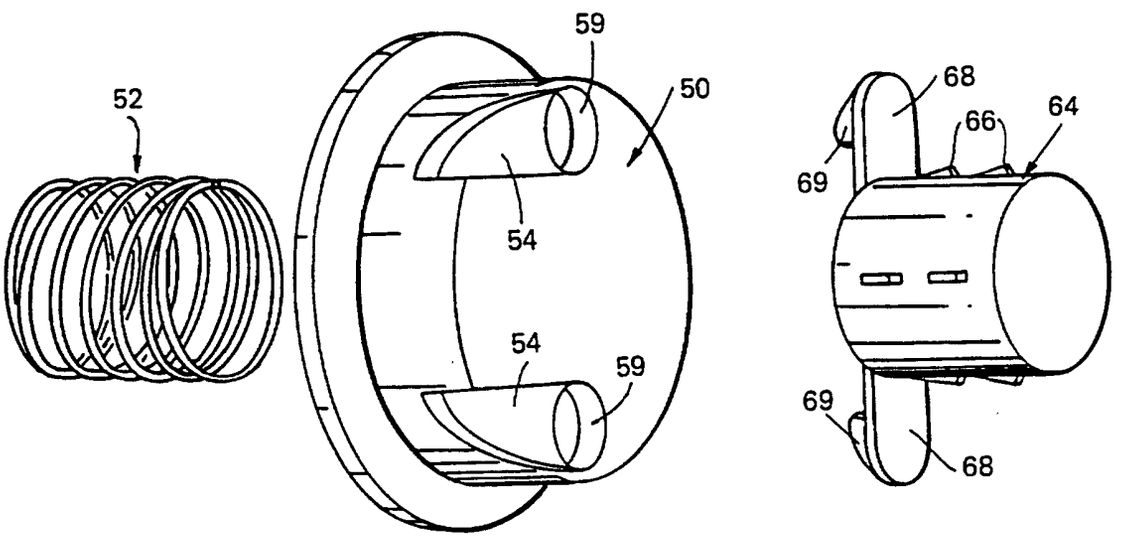

FIG. 8