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54 **Container for emergency medicaments.**

57 This invention relates to a particular kind of container intended to retain upon oneself emergency medicaments such as the pills of the coronary-dilator medicament that is generally administered by sublingual way as an emergency aid in the case of a sudden cardiac crisis, said container being conceived so as to make such administration as quick, unfailing and practical as possible in any time and event of the everyday life.

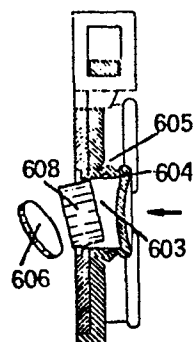


FIG. 6

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" CONTAINER FOR EMERGENCY MEDICAMENTS "

This invention relates to a particular kind of container intended to be used for retaining upon oneself an emergency medicament, particularly in the form of tablets or pills, such as the coronary-dilator medicament that is usually employed in the case of a sudden cardiac crisis, so as to make its administration practical, unfailing and immediate.

It is known that, as soon as the typical symptoms of a cardiac crisis appear (angina pectoris, infarct of the myocardium), the only possible means that the affected

individual can use by himself in a practical and quick way to alleviate the pains and as an emergency therapy while waiting for medical aid and hospitalization, is that of taking per os a vaso-dilator medicament suitable to rebalance the occurred deficiency of the rate of coronary blood-flow and at the same time to increase the stress-resistance of the cardiac muscle. In many cases this administration, in addition to producing said therapeutic effect, also causes the disappearance, or at least the decrease, of the well-known pains that are typical of a cardiac crisis.

It is also known, however, that in order to obtain the highest efficiency from the said emergency therapy, it is essential that the medicament acts as quickly as possible after the beginning of the crisis. It is proved, in fact, that, in many cases where the affected individual could have been saved by a timely administration of a coronary-dilator, the death occurred because such administration had taken place too late.

Consequently, as the absorption of said medicament proves practically instantaneous, especially if taken by sublingual way, the death risk due to a too late intervention depends only on the circumstance whether the affected individual has or not the medicament within his reach and in such a condition as to be taken as quickly, unfailingly and practically as possible, immediately after the beginning of the crisis.

As known, the medical statistics show that cardiac crises generally occur at the more unsuspected and unforeseen time of the everyday life. Therefore, anyone who expects to be suddenly affected by a heart attack has only one means to safeguard himself from a possible

death danger with the maximum of chance, namely that of carrying the coronary-dilator medicament along with him.

People intending to protect themselves in the above-mentioned manner, generally use to carry the medicament pills or tablets along with them within a conventional container or vessel whatsoever (small bottle, box, or the like), this being generally kept together with other items of everyday use. However, this system is objectable for many reasons, which are all absolutely incompatible with the emergency situation requiring the urgent aid of a medicament.

The main objections to the use of a conventional container for the above-mentioned purposes are as follows:

- The conventional container is usually kept, together with other items of everyday use, in the pockets, in a bag, or the like, from where it is periodically taken out together with such items. One can therefore easily forget to take it along with oneself again after these operations.
- The conventional container being usually an article which is not permanently connected to the user's body, it can be inadvertently lost during the movements of the everyday life.
- Because of the fact that the pills or the tablets are usually kept loose in the conventional container, a wear thereof may occur with the passing of the time due to mutual friction.
- The conventional container, even if permanently carried by the user upon himself, may be held not always in the same place. The uncertainty of its location increases the time

necessary for finding it. In any case, such a search in the pockets or the like proves laborious and requires several movements, which must unfailing take place in a condition of severe pain and extreme psychic confusion. The above can involve dangerous and even fatal consequences.

- The opening of a conventional container and the taking off of one or more pills or tablets usually requires visibility conditions. Should the crisis take place in a situation of non-visibility, these operations may become even more difficult and uncertain; furthermore, during these operations, that are usually carried out hurriedly, the conventional container may either fall to the ground and be lost, or may open itself or be opened in a wrong way scattering its contents about, as the pills or the tablets are generally not fastened to each other or to the container.
- The conventional container, if connected to the user's clothes or kept by him in a bag, as is generally the case, may not be within immediate reach of the user if the cardiac crisis occurs under particular conditions, such as those when the clothes are changed, reduced or taken off.
- During the sleeping hours the conventional container is usually placed on a piece of furniture together with other objects taken out of the pockets before going to bed. If the cardiac crisis catches the individual during his sleep and wakes him up, even in this case the search for the medicament may involve some of the drawbacks listed above.

Therefore, the object of this invention is to provide a container for pharmaceutical products in the form of tablets, pills or the like, which are intended to be administered in emergency situations, such container permitting the above-mentioned drawbacks to be obviated, while assuring the possibility of a quick, practical and unfailing intervention, especially in the case of a cardiac crisis originated by a coronary insufficiency, where the psychophysical conditions of the patient are generally characterized by the well-known physical pain as well as by other typical symptoms, such as anguish and sensation of impending death, psychic confusion, fear, sensation of extremely urgent need of a medicinal remedy.

According to the invention, there is provided a container for one or more medicinal tablets, pills or the like, intended to be administered in emergency cases, said container being formed by an enclosure defining or comprising one or more hermetically sealed receptacles containing one or more tablets, pills or the like, each of the receptacles being able to be individually opened by either breaking, or tearing off, or detaching, or removing, one or more portions thereof, said container including supporting or connecting means intended to directly or indirectly hold it in a stable and continuous manner preferably in a predetermined position upon or adjacent to the user's body.

The container is therefore devised so as to protect the tablets, pills or the like, against any external agent such as water, perspiration, acid exhalations of

skin, and so on, thereby retaining the medicament's conditions of efficiency within the validity terms guaranteed by the manufacturers.

Furthermore, said container is specifically conceived so as to be always within reach of the user in the course of his everyday life, either generically, for example being part of the user's clothing or of items related thereto or of other dressing accessories, or preferably in a direct way, for example being fastened to the user's body, provisions being made in order that this connection is stable, uninterrupted and continuous for 24 hours a day, so as to constitute an object which is given, once for ever, a well-determined and fixed location upon the user's body, in order that the user be able to easily maintain this location, so as to even virtually "forget" its existence. This purpose can be obtained, for example, by means of a supporting element such as a small chain, a necklace, a bracelet, or the like, and such that the opening of the container and the taking off of one or more tablets or pills therefrom, preferably occur without the necessity of removing the container from the supporting element.

A further advantage resulting from the fact that the container is fastened to the user's body or clothing preferably in a well-determined, fixed and definitively specified location, is that such location becomes readily well-known and customary to the user. Consequently, as soon as an emergency occurs, the user can reach the container by means of a gesture which proves immediate and automatic, having become merely instinctive, thereby reducing to a great extent the time required for finding it.

According to a further essential feature of this invention, since the container is preferably connected to the user's body through a supporting element from which it does not need to be removed for taking the tablets or the pills out of it, the same cannot fall to the ground and go astray as a consequence of the movements necessary for locating it or for taking the pills or the tablets out of it.

Still further, according to the invention, the pills or the tablets are not arranged in the container in a loose condition, but in such a manner as to be fastened to each other and at the same time fastened to the container itself. In accordance with the invention this purpose can preferably and advantageously be accomplished either by fastening the pills or the tablets to the container direct, or by fastening the same either separately or in a group to a suitable element which is fastened in its turn to the container itself, and from which it may be removed, by a special procedure, at regular intervals when refilling the container. Due to such advantageous feature, there is no risk that the pills or the tablets inadvertently fall down and are scattered about upon opening of the container. Moreover, since the pills or the tablets are not loosely arranged into the container, the possible wear caused by their mutual friction is also avoided.

A further advantage of this invention as resulting from the preceding features is that the said container is suitable to be quickly located and opened and one or more tablets or pills safely taken out therefrom even in conditions of non visibility, namely with the

mere aid of the touch, thereby permitting it to be used by seeing people in the dark as well as by blind people.

Figs. 1 and 2 are front views of two similar embodiments of the same container, both intended to be carried preferably hanged to one's neck by means of a small chain or the like, the container being made of a plastic material and obtained, in a hermetically sealed condition including the pills or tablets, starting from two or more elements assembled together, and wherein the pills or tablets can be pushed off by squeezing;

Figs. 3 and 4 are rear views of the container's embodiments shown in Figs. 1 and 2;

Figs. 5 and 6 show vertical sections of the said two embodiments of the container; Fig. 6, in particular, shows a tablet while pushed off by squeezing;

Fig. 7 is a front view of another container, also made of a plastic material and hermetically sealed and manufactured in a way similar to the one referred to above, and wherein the tablets are taken off by turning away a tongue closing the receptacle that contains the tablet;

Figs. 8 and 9 are respectively a longitudinal and a vertical section of the container of Fig. 7; Fig. 9, in particular, shows a tablet while taken off by removal of the tongue;

Fig. 10 is a partial front view of a further container made and obtained in the same way as the preced-

ing ones;

Fig. 11 is a cross-section thereof;

Fig. 12 shows a tablet-holder made of plastic material, obtained and to be used in the same way as the containers referred to above, and which is intended to be inserted into a container, preferably made of metal and square-shaped, and suitable to be opened preferably by snap action, as illustrated in the following Figs. 13, 14 and 15;

Fig. 13 is a longitudinal section taken through said container, showing the opening by snap action, and from which, upon opening, the said tablet-holder is getting out, also by snap action;

Fig. 14 is a longitudinal section taken through the container of Fig. 13, in a closed condition;

Fig. 15 is a top plan-view of the container of Fig. 13 just after being opened;

Fig. 16 is a longitudinal section, in a closed condition, of a rechargeable tablet-holder, preferably made of metal, to be used in connection with the container shown in Figs. 13, 14 and 15 instead of the tablet-holder made of plastic material and shown in Fig. 12; the tablet-holder of Fig. 16 can be refilled with separate capsules, each containing a tablet which can be pushed off by squeezing;

Fig. 17 is a longitudinal section of the said rechargeable tablet-holder in an opened condition and while the capsules containing the tablets are introduced therein;

Fig. 18 is a top plan-view of the said tablet holder in an opened condition, ready to receive the capsules;

Fig. 19 is a top plan-view of the metal tablet-holder in a closed condition, filled with the capsules and ready to be inserted into the container by slipping it into the slot of the turning element connected thereto;

Fig. 20 is a front view of a further embodiment of a container made of plastic material;

Fig. 21 is a vertical section thereof, and Fig. 22 is a side view thereof.

Referring first to Figs. 1 to 6 of the drawings, the container is constituted by two elements 501 and 502 obtained by molding or otherwise in a suitable plastic material and then bonded together so as to form a solid and hermetically sealed enclosure. In the element 502 the tablet receptacles are formed, one of which is indicated by 503 and shown in cross-section. Numerals 504 and 604 designate a metal tube having a cutting edge and embedded into the element 502 during the manufacturing of the container.

The plastic material employed for manufacturing the element 502 is chosen so that the tablet receptacles 503 can be squeezed by a finger. In so doing, the metal tube penetrates the element 501 until a portion of it is punched off, so that the tablet is made free and falls out without a pressure force being exerted thereon.

Numerals 305, 405, 505, 605, designate a groove

encircling the bases of the tablet receptacles and intended to facilitate the squeezing of the receptacles by receiving in part the squeezed material.

Numeral 603 designates one of the tablet receptacles while it is squeezed by a finger in order to eject a tablet 506, 608 therefrom. Numeral 609 designates a disc of plastic material being punched off by the metal tube.

Referring now to Figs. 7, 8 and 9, numeral 1001 designates one of the tongues forming the front element 1201 of the container and which can be torn away following a breaking line 1002, 1102, provided upon molding or otherwise in the element 1201 when it is being manufactured. A similar breaking line 1103, 1203, is likewise provided in the front portion of the tablet receptacle, so that the tongue 1204, upon tearing, sets the tablet 1205 free. The rear element 1202 of the container is bonded to the front element 1201 so as to provide a hermetically sealed container. Numeral 1003 designates the outline of the receptacle after removal of both the tongue and the tablet. Along the periphery of elements 1201, 1202 a curved area 1004 is provided in order to facilitate to the fingers the seizing of the projecting edge of the tongue.

Referring now to Figs. 10 and 11, these show a container similar to the preceding one but having an elongated shape, such container being provided with tongues 1301 similar to those of the preceding Figures, which are bounded by grooves 1302, 1402 and 1403, in order to facilitate their removal from the container. Numeral 1303 designates the outline of a receptacle after the

tongue and the tablet have been removed and numeral 1304 designates a curved area similar to that already described.

Referring to Figs. 12-15, there is shown a container which can be opened by snap action and formed of two shells 2101, 2102, made preferably of metal, either common or precious. The supporting ring 2103 is integrally formed with the shell 2101, and the shell 2102 is provided with an abutement portion 2105 mating with the twin portion 2104 of the supporting ring when the shells are in the closed position shown in Fig. 14. The mechanism for closing and opening by snap action the container, not shown in these Figures, forms part of the abutement surface of the supporting ring 2103 and allows the opening of the container to be carried out by a simple movement. A gasket 2106-2306, of a suitable elastic material is inserted in the edge of shell 2101, said gasket, upon closing of the container, being pressed within an L-shaped groove 2107-2307 provided in the mating edge of shell 2102, thereby assuring the hermetical seal of the container as a further precaution in addition to the hermetical seal already provided by the interchangeable plastic holder 2008 or by the single capsules 2505 in the case of the metal holder. Numeral 2206 designates the gasket described above and compressed between shells when the container is in a closed position. Shells 2101, 2102, are connected by a hinge 2109 including a spiral spring, not shown in the Figure, biasing the shells to an open position so as to permit the automatic opening thereof as soon as the closure mechanism is released. A metal tubular element 2110 is rotatably mounted about a

pin 2111, said tubular element being provided with a slot preferably circular in cross-section and being intended to retain a correspondingly-shaped projection of the interchangeable plastic holder or a similar projection 2403, 2503, 2703 of the metal holder of Figs. 16-19. These tablet holders are suitable to rotate by 180°, thereby assuming two opposite positions according to whether the container is open or closed. The hinge of this holder 2110 also embodies a spiral spring, not shown in Figure, biasing the tablet holder in a position rotated outwardly of the container.

Because of the above-described arrangement, as soon as the closure mechanism is released, the container's shells open by snap action until they lie in a parallel plane, as shown in Fig. 13; at the same time the slotted tubular element 2110 is rotated outwardly so that also the tablet holder 2008-2108 is brought in a parallel position and is ready for letting the tablets to be pushed off, while the container remains always connected to the small chain or like element securing it preferably to the user's neck.

Referring now to Figs. 16-19, there is shown a refillable tablet holder, preferably made of metal and comprised of two plates 2401 and 2402, each carrying a projection 2403, 2603, 2703 intended to be inserted in the slotted tubular element 2110 once the holder has been closed and the plates have been superimposed to each other. In the case of the refillable metal tablet-holder this projection is therefore formed of two portions 2503-2603 symmetrical to each other so that, when they are in a superimposed position and inserted into the slot of

the tubular element 2110, they keep the tablet-holder closed. Numerals 2404 and 2504 designate the holes intended to permit the tablets to be ejected when, after the closure of the tablet-holder and its insertion into the slot, a pressure is exerted by a finger on the opposite side of the capsule 2405-2505. Q179743

An improved embodiment of the container made of plastic material is shown in Figs. 20, 21 and 22. In this embodiment the metal tube 21-22 having a cutting edge is fastened to the bottom of the receptacle containing the tablet, rather than by flaring as in the preceding case, by means of a central bore in which, upon molding of the portion 24, the retaining boss 25 is obtained.

In this embodiment the portion 24 is provided with an extension 26, which, due to the flexibility characteristics of the plastic material employed, can be bent over at the region 27, which is made thinner in order to act as a hinge. This extension is provided with voids such as those indicated by 12 and 28, obtained in the thickness thereof and in which, upon closure of the container, the receptacles containing the tablets are inserted so as to assure a protection against an accidental squeezing.

The closure is obtained by means of the teeth 13 and 29, which are spread apart in order to permit the opening, and the movement of which is also permitted by the flexibility characteristics of the plastic material used.

C L A I M S

1. A container or the like for containing one or more medicament pills, tablets or the like and for use in emergency therapies, preferably made of plastic material, metal either common or precious, comprising means, such as a container body or the like defining or including one or more hermetically sealed receptacles, each receptacle containing one or more of said pills, tablets or the like and being able to be opened, preferably by breaking, tearing, severing it or by removing a portion thereof and further cooperating with suitable supporting or connecting means intended to directly or indirectly keep it in a stable manner in a predetermined location on or adjacent to the user's body.

2. A container according to claim 1, wherein said one or more receptacles containing one or more medicament pills, tablets or the like form a part of a holder integrally connected to said container during the use, but removable as a whole and interchangeable for the refilling.

3. A container according to claim 1, further comprising sealed capsules each of which contains one or more medicament pills, tablets or the like, said capsules being housed in a plate element firmly connected to said container, said element being able to be removed from the container and to be opened so as to permit each capsule to be introduced therein independently of the other capsules for refilling.

4. A container according to claim 1, wherein said container body is cylindrical in shape and is provided with a threaded plug for hermetically sealing it, said pills, tablets or the like being disposed therein in a stacked condition, being pushed upwards by a spring-loaded piston arranged below said stack and being prevented from coming out by a stop device permitting them to be taken off by hand one at a time.

5. A container according to claim 1, wherein said one or more receptacles containing medicament pills, tablets or the like are squeezable and preferably sealed by a closure element which can be torn away by applying a squeezing force on the side of said receptacle opposite to said closure element.

6. A container according to claim 5, wherein said receptacles and said closure element are formed of a plastic material.

7. A container according to claim 1, wherein each of the receptacles co-operates with an element disposed adjacent the tablet or the like, the function of which is to cut at least a portion of the closure region of said receptacle in order to provide for the outlet opening of the tablet, said function preferably deriving from the pressure exerted on said element by the user.

8. A container according to claim 1, wherein said

one or more receptacles containing medicament pills, tablets or the like are hermetically closed by means of a tongue, which can be torn away.

9. A container according to claim 8, wherein said one or more receptacles and/or said closure tongues are formed of a plastic material, said tongues being defined by zones of reduced thickness, in order to obtain a predetermined tearing.

10. A container according to claim 1, wherein said container body is constituted by two shells enclosing a space for containing said pills, tablets or the like and fastened to each other by a sealing peripheric band which can be torn away.

11. A container according to claim 1, further comprising a metal tube or device having a cutting edge and fastened to the bottom of the receptacle containing the tablet by means of a central bore in which a retaining means for said metal tube or device is formed.

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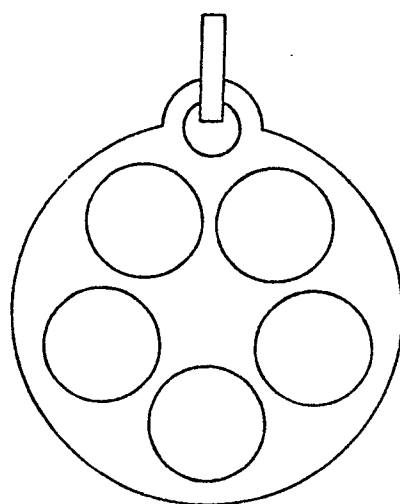
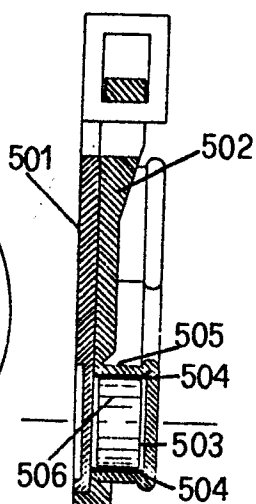
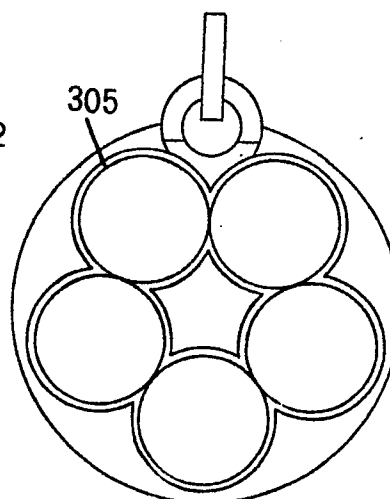
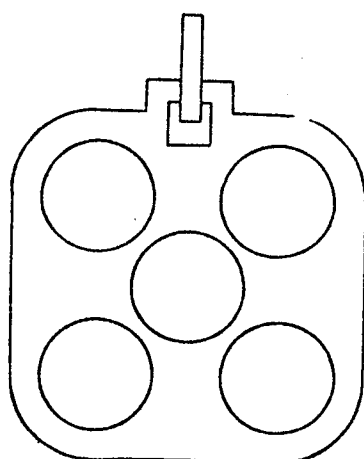
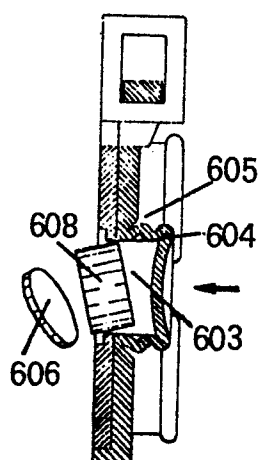
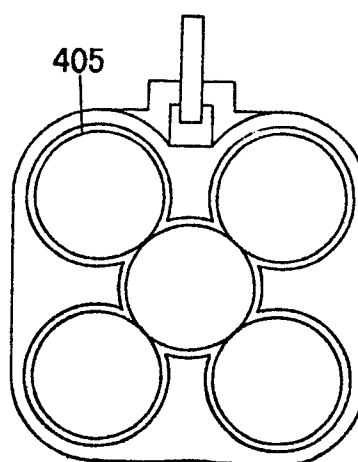
FIG. 1FIG. 5FIG. 3FIG. 2FIG. 6FIG. 4

FIG. 7

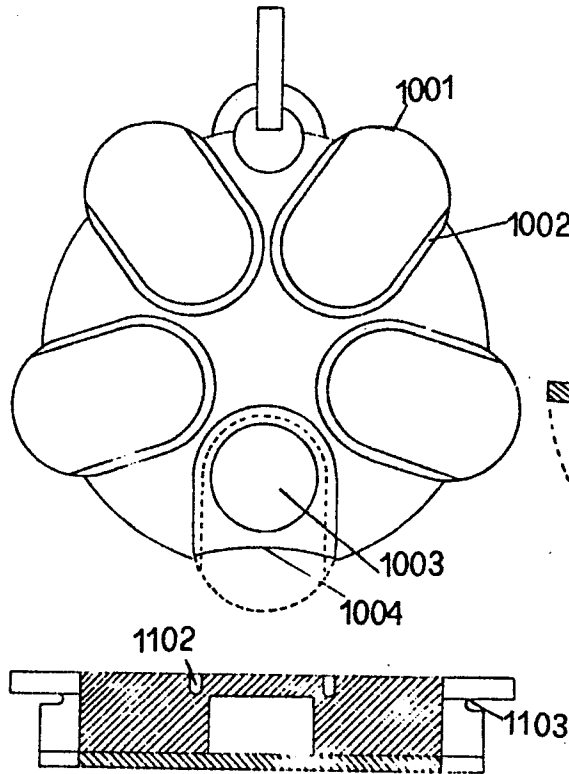


FIG. 8

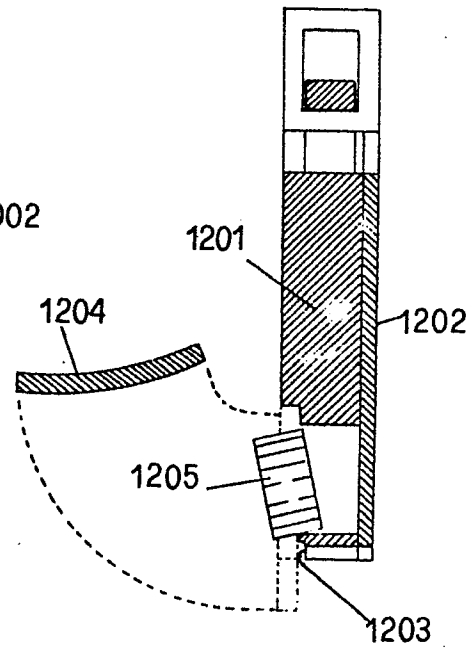


FIG. 9

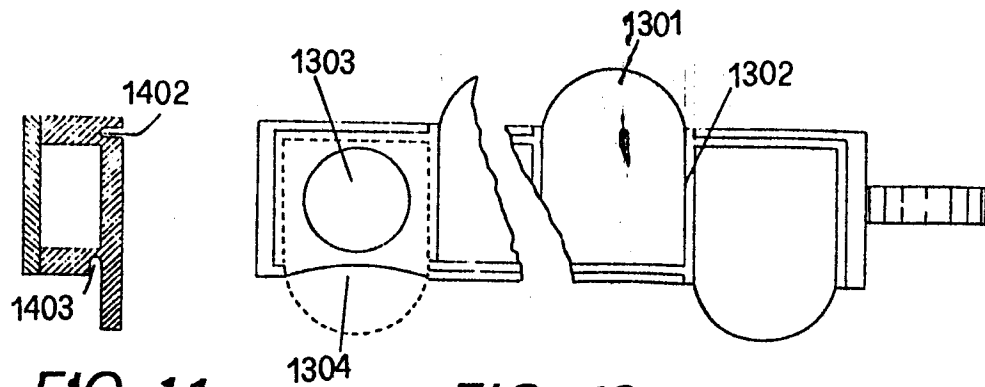


FIG. 11

FIG. 10

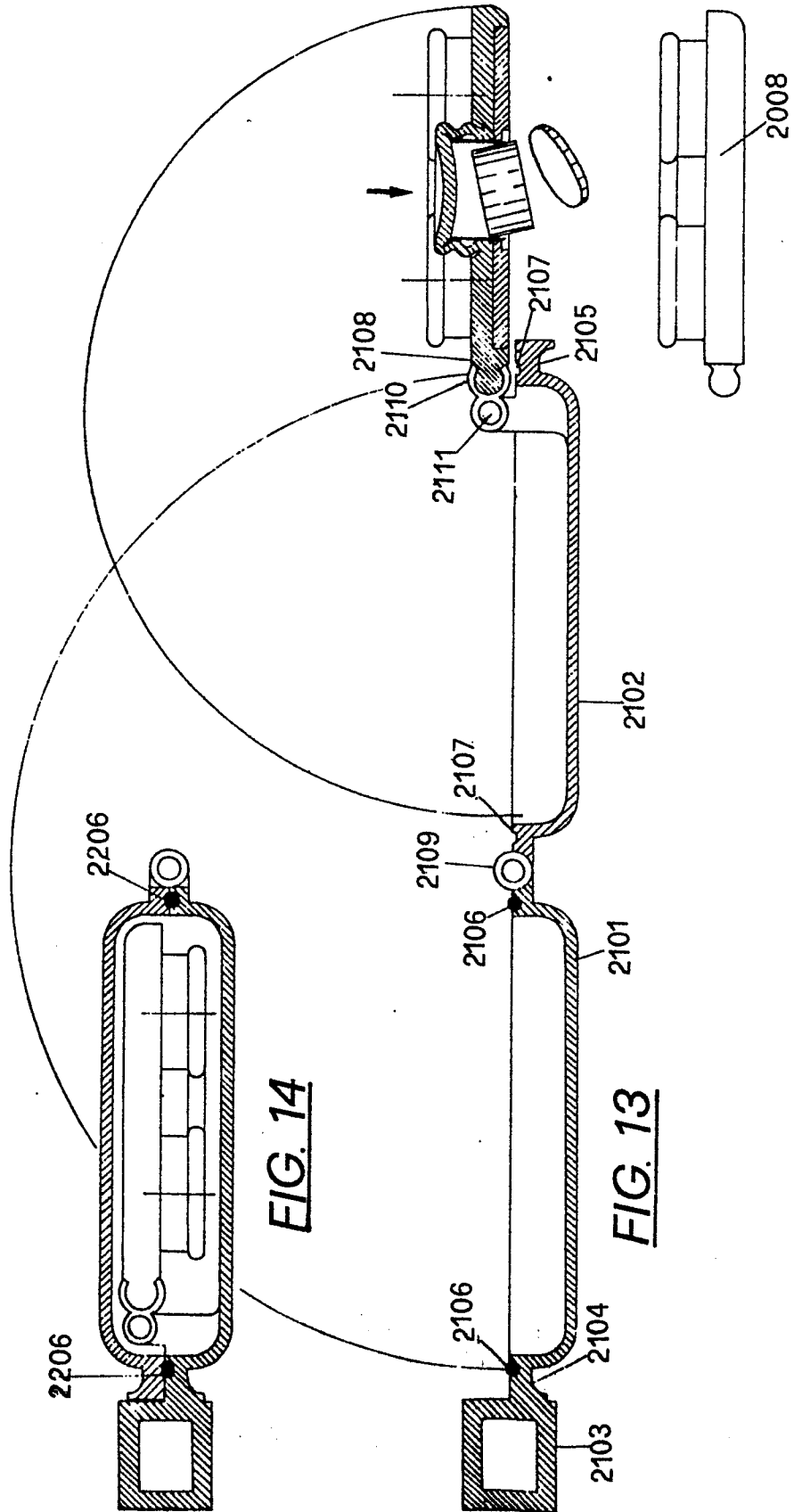
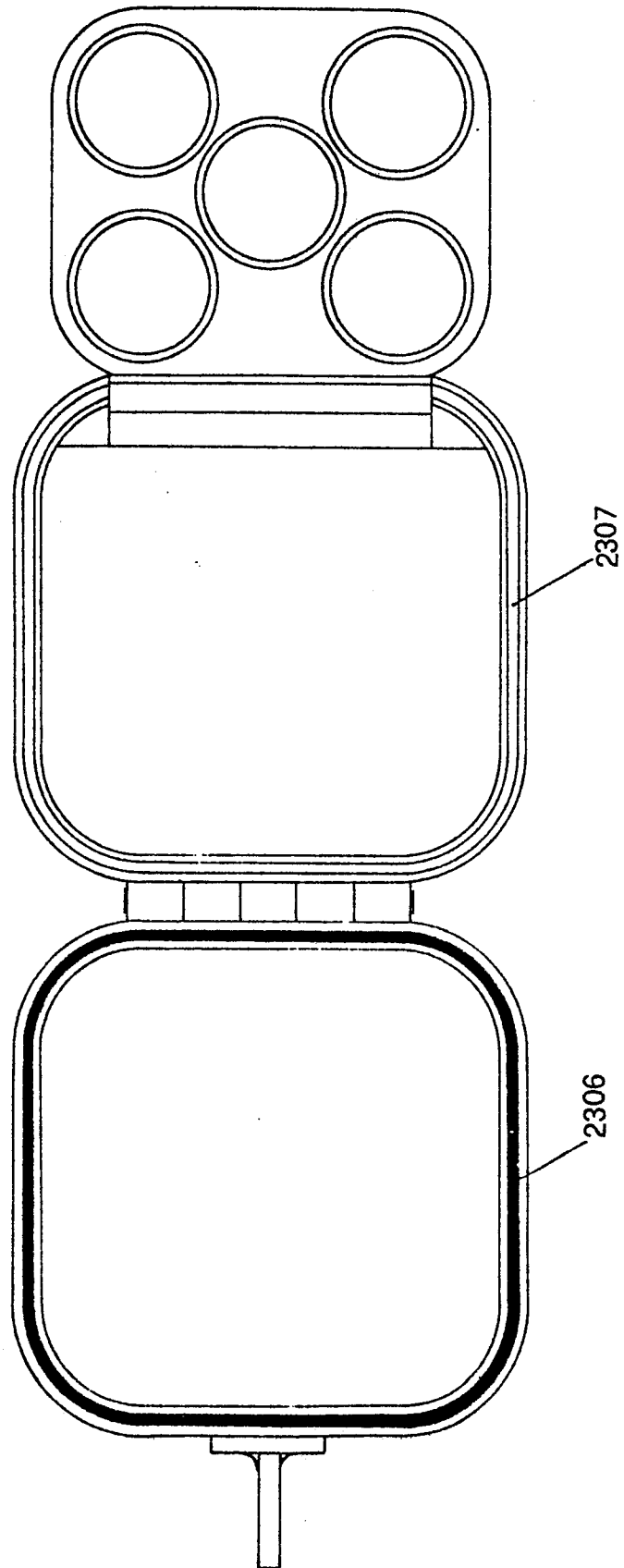


FIG. 12

FIG. 13

FIG. 14

FIG. 15

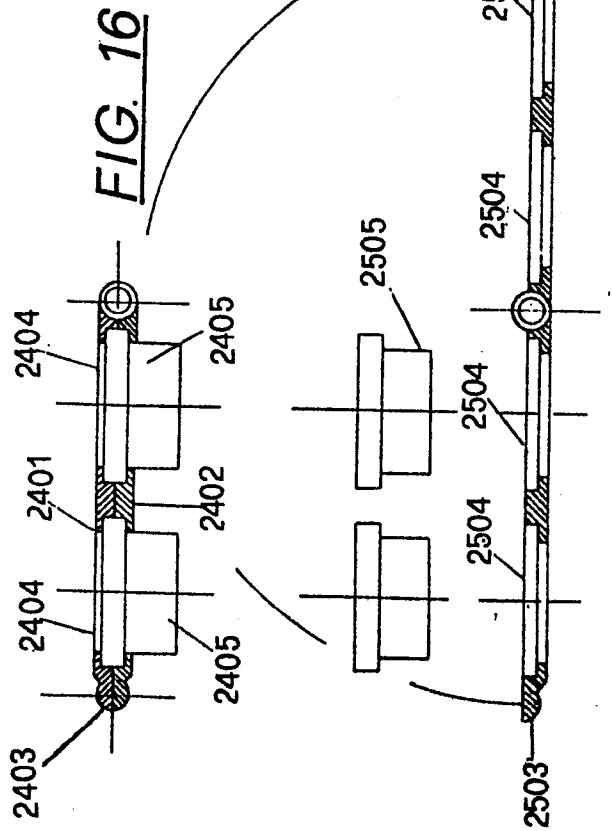


FIG. 19

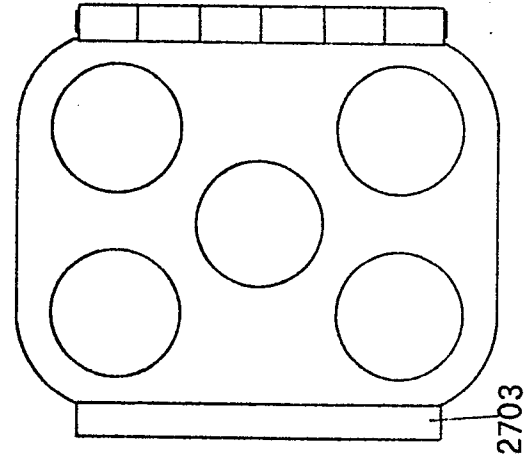


FIG. 17

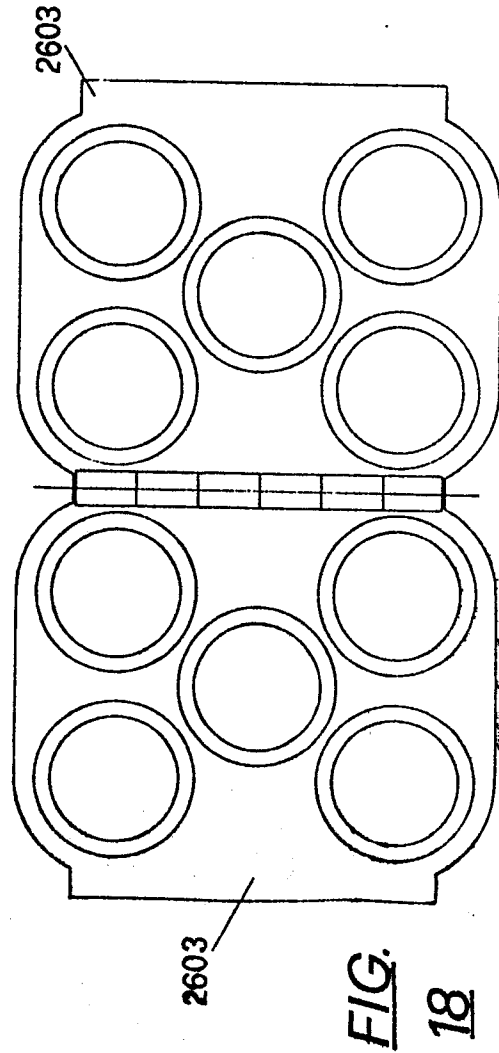


FIG. 18

