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 [33] France
 [31] PV 160,974 and PV 176,742

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[54] **CONTAINERS FOR PROTECTING CHILDREN
 AGAINST DANGEROUS PRODUCTS**
 18 Claims, 14 Drawing Figs.

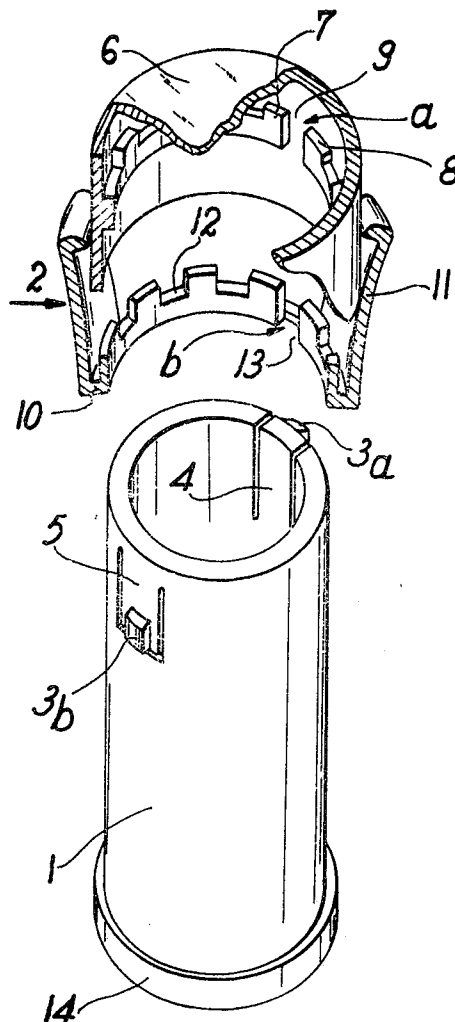
[52] U.S. Cl. 215/9,
 220/20, 220/41, 215/6

[51] Int. Cl. A61j 1/00,
 B65d 55/02

[50] Field of Search 215/9, 6;
 220/41, 20

ABSTRACT: The invention concerns method and containers for protecting children from dangerous products by enclosing said products in opaque container which can be opened only by a combination of at least two movements according to a nonobvious program counteracting the normal reflexes but is closed by simply translating movement, using normal instinctive reflexes.

Container comprises moreover an independent auxiliary compartment provided with an easily removed closure and an element, sweet, fill, point etc.... which is unpleasant to at least one of the child's senses is disposed in it.



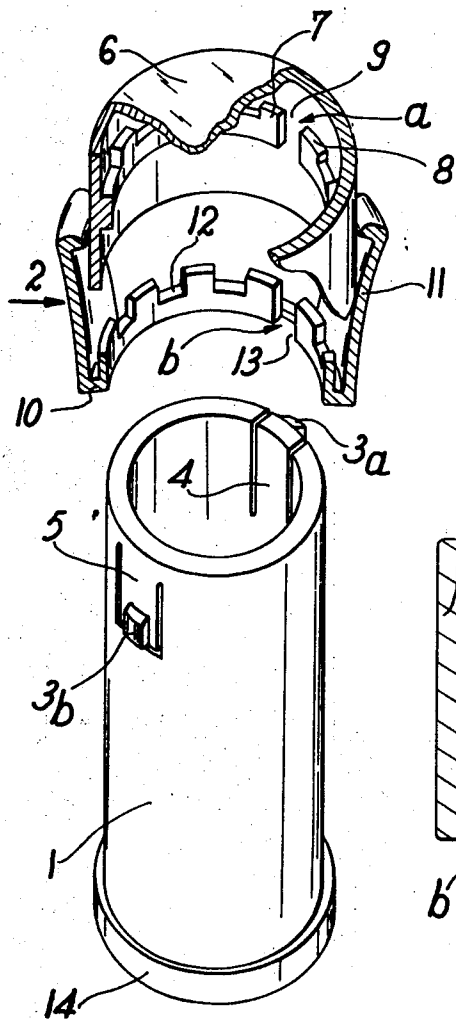


FIG. 1

FIG. 2

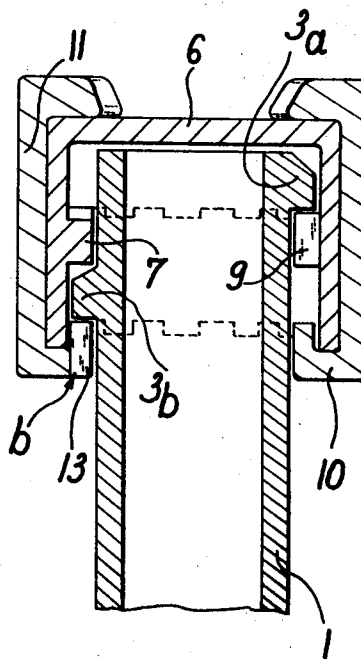


FIG. 3

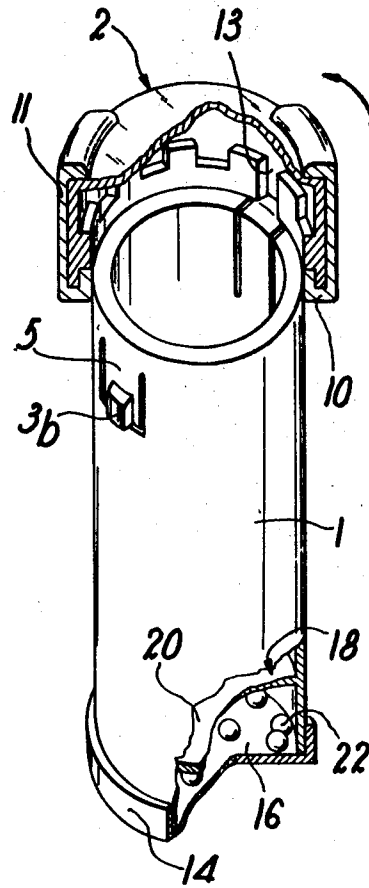
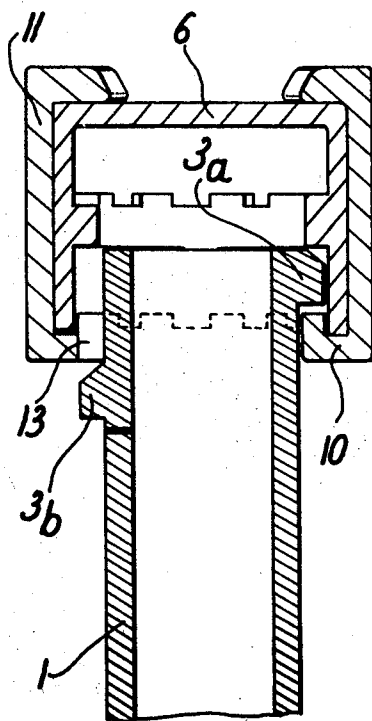


FIG. 4

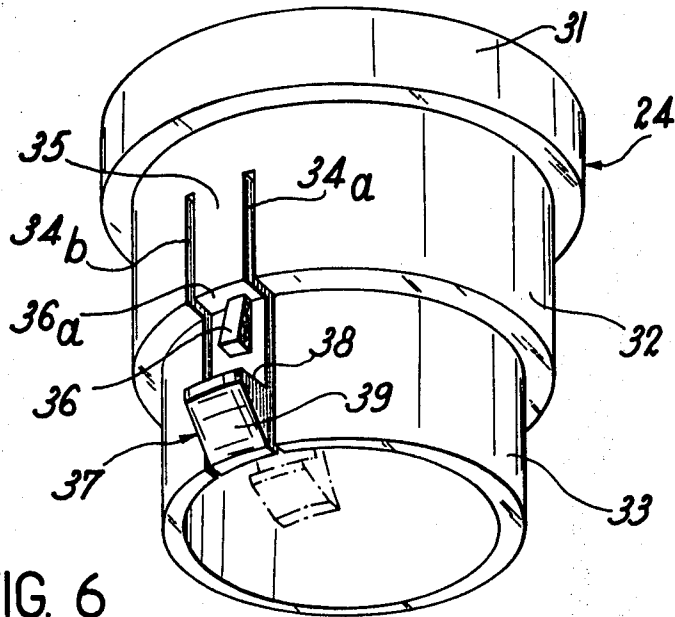
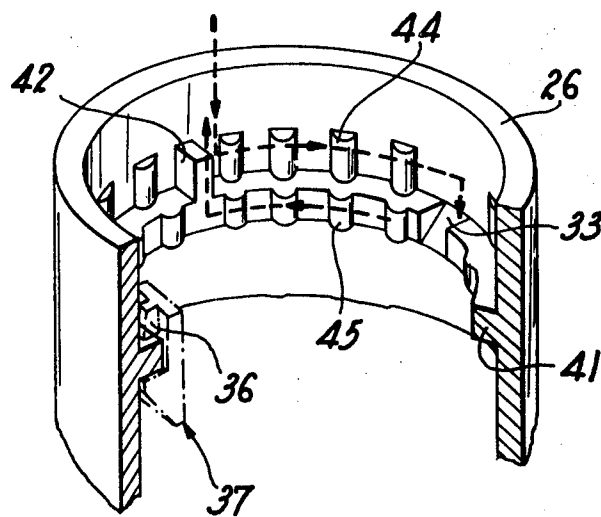


FIG. 6

FIG. 5



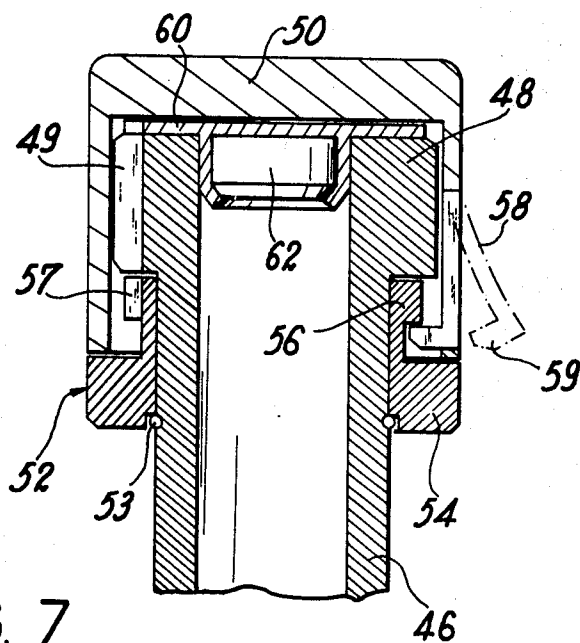


FIG. 7

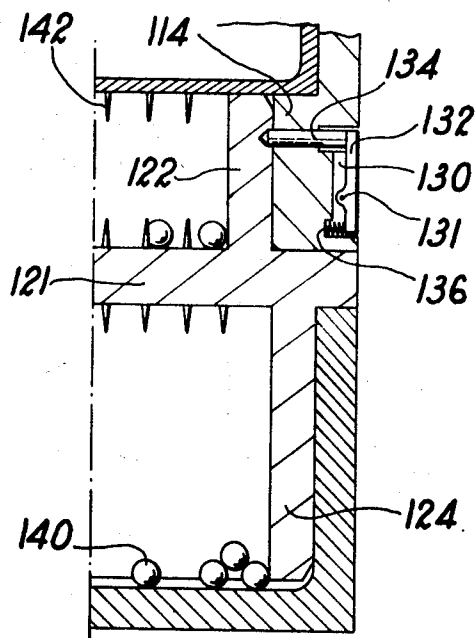
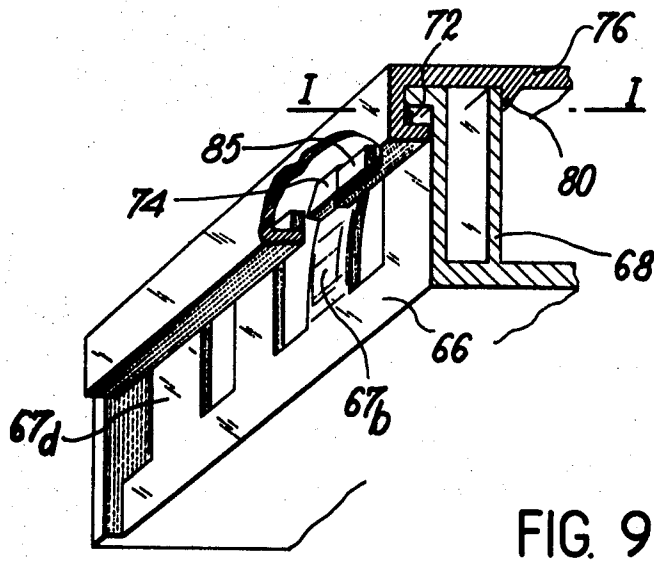
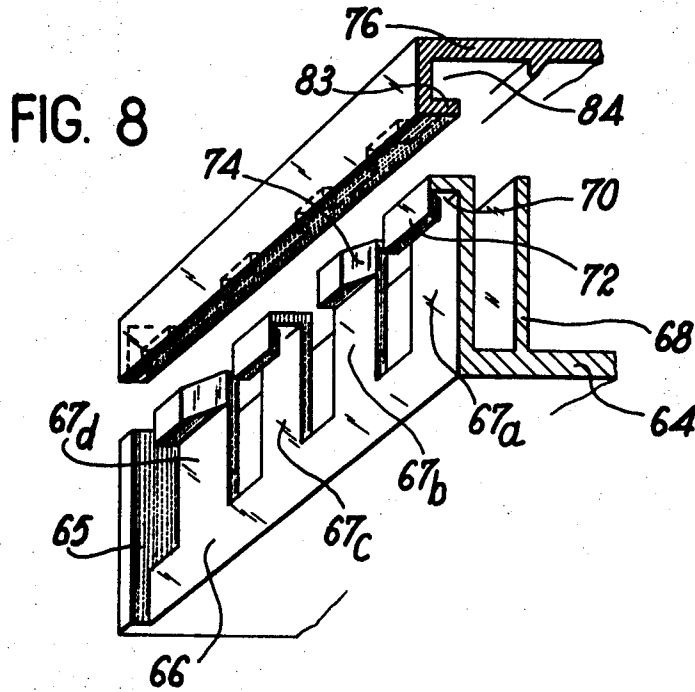


FIG. 14



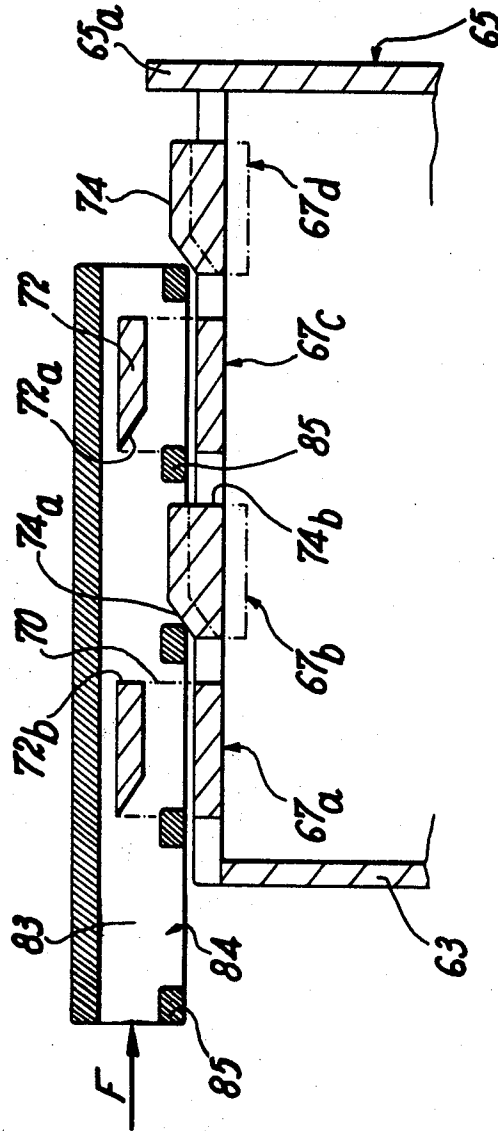


FIG. 10

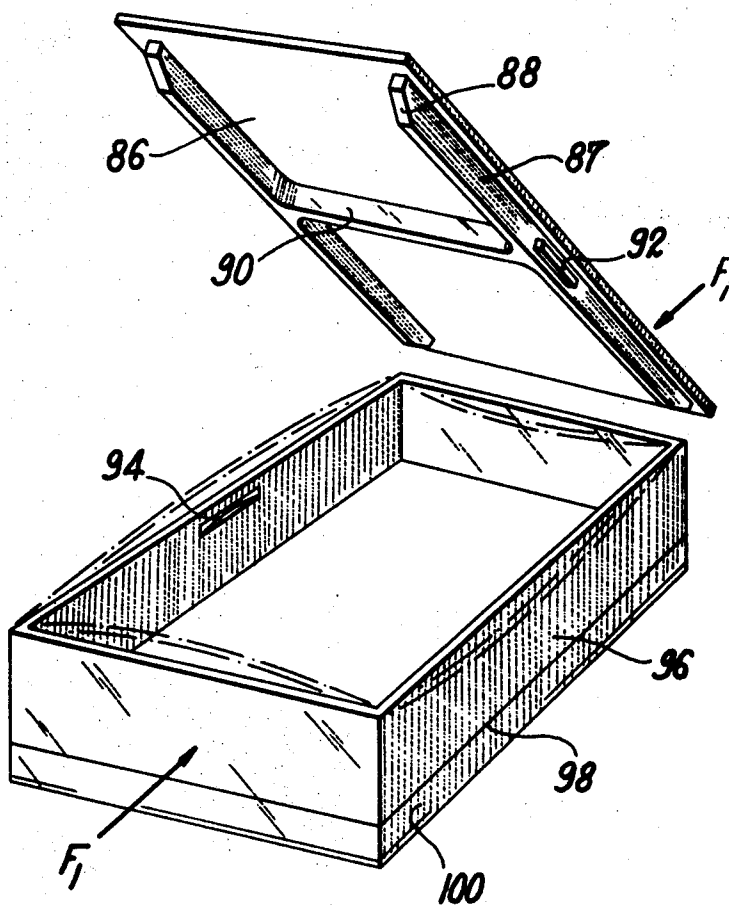


FIG. 11

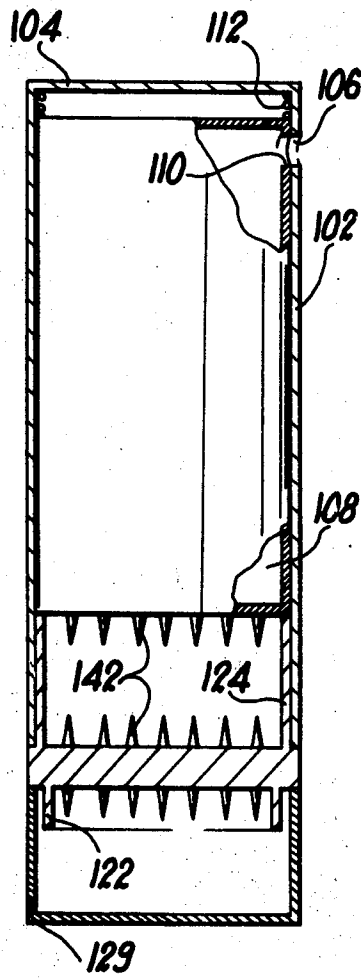


FIG. 12

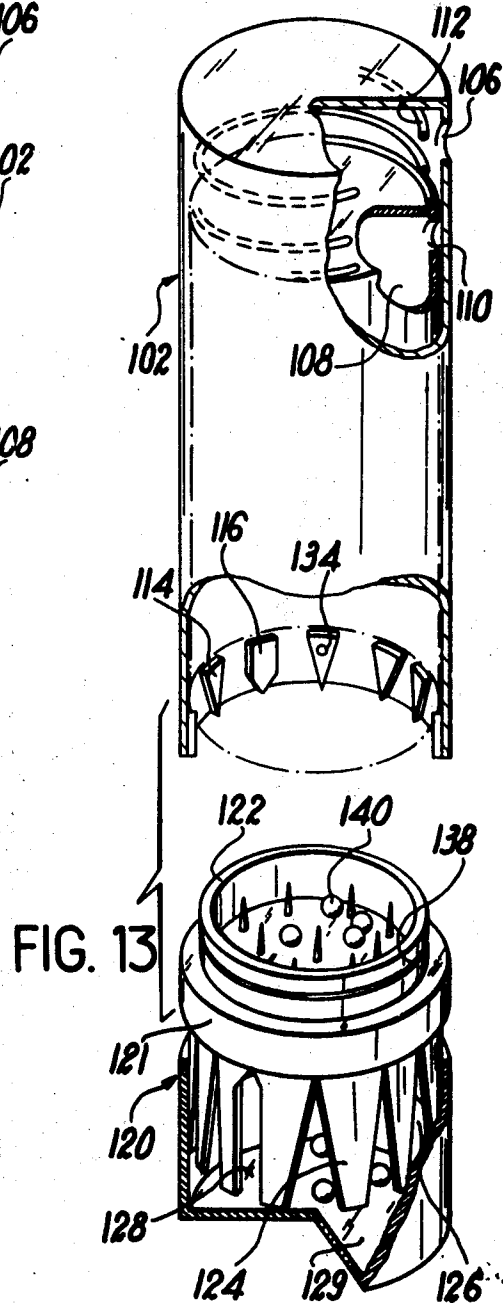


FIG. 13

CONTAINERS FOR PROTECTING CHILDREN AGAINST DANGEROUS PRODUCTS

The number of cases of accidental poisoning of children increases each year particularly as the number of dangerous products increases, e.g., drugs, insecticides, detergents, veterinary and other products.

It has been found that the greater majority of children who have such accidents are aged between two and five and it is at this age that children touch everything they encounter and are extremely sensitive to external appearances, gradually acquire some knowledge of objects and simple movements for opening a box or some other container, but are still seldom capable of carrying out any complex operations.

The complex closures or fastenings which are sometimes used today do not appear to be effective and this is probably due to the fact that they take a long time to open and are complicated to close so that the user regards it as complicated to reclose them between two periods of use which he considers will shortly follow one another. Thus most accidents occur during a relatively short absence on the part of the adult.

The object of this invention is to obviate this by providing a protection which can be put into position even by someone in a great hurry.

The invention relates to a method of protecting children from dangerous products, comprising enclosing said products in an opaque container and counteracting the normal reflexes for opening a container by requiring a deliberate operation for such opening, while using these same normal reflexes to allow instinctive and automatic closure.

According to another feature of the invention, the method also comprises disposing an educative element producing an unpleasant sensation at a point of easy access by an operation corresponding to the conventional reflexes of a child.

The child is thus faced with a container, tube, box or the like whose contents he cannot see and which he cannot open because he cannot define the specific operation allowing such opening, such operation being contrary to the immediate and habitual reflexes of an adult when faced with such a container. However, the adult who knows the method of use or the code allowing the opening can carry out this operation without difficulty and quickly.

Closure, on the other hand, is immediate and instinctive. Even if pressed or preoccupied, an adult will instinctively close the container after removing the product, will automatically lock the container and thus make it necessary to restart the special operation required for the dangerous product to be reached once again.

The child is not attracted by the appearance of the product inside the container but is discouraged by the ineffectiveness of the movements which would normally enable him to open a box, tube or the like. The failure of his attempts may even result in a disappointment such as to discourage him in future from attempting to open such an object and he may finally assume that it is unopenable.

Also, the container may comprise an additional educative element having an attractive appearance but leaving an unpleasant memory. This element diverts the attention of the child from the difficulty operated element, satisfies his desire to reach a result and know what the container contains, but the unpleasant sensation will stay in his memory and dissuade him in future from touching or trying to open packages of the same kind.

The unpleasant element may be in the form of sweets, pills or the like, colored, inoffensive but with an unpleasant taste, e.g. bitter, peppered or the like. It may also comprise a surface which is unpleasant to touch, e.g. a surface having harmless but pricking points, or an element having a nauseating smell.

The color used to coat this element is preferably so selected that it leaves traces on the child's fingers and possibly his mouth. The child's parents or other adults are thus warned of his curiosity and, in particular, of the fact that the container has been within his reach.

The invention also covers the containers and other packages for performing this method.

A container of this type is characterized in that it comprises an opaque wall formed with an aperture for the removal of the products, a closure device to prevent the removal of the products through said aperture, means for locking the closure device and borne respectively by the latter and by the container wall and locked simply by the translatory movement of the closure member into the position for opening the container but allowing opening only by a combination of at least two movements of members to a nonobvious given program whose probability of performance by a person not familiar with such program is extremely unlikely.

Numerous combinations of locking members may be provided but in every case locking is effected simply by a movement of the closure member with respect to the container wall, and this movement can be carried out automatically by a packing machine or instinctively by a user even if he is pressed or preoccupied.

Opening, on the other hand, requires a specific operation which must be known and which cannot be guessed at by a person who does not know it. Opening by a child is therefore extremely unlikely, while the products are isolated in every case.

According to another feature of the invention, the container has an obvious mark attracting attention to a point of the wall distinct from the closure device.

According to yet another feature of the invention, the container comprises an independent auxiliary compartment provided with an easily removed closure device and a harmless element which is, however, unpleasant to at least one of the child's senses, said element being disposed in said compartment.

In this way, the child faced with the container is diverted from the real closure member and is attracted by the external mark to a point other than the closure member. He will find no opening at this point or alternatively he may find a second and easily removed closure member and thus have the impression of having succeeded in opening the tube but find that the contents are unpleasant and this will discourage him from starting the same operation with a similar container on a different occasion.

The invention will be more readily understood from the following description of embodiments given by way of example without limiting force and illustrated in the accompanying drawings wherein:

FIG. 1 is an exploded and fragmentary view of a tube for dangerous products according to the invention.

FIGS. 2 and 3 are partial longitudinal sections of the same tube during two stages of opening.

FIG. 4 is an external and fragmentary view of the same tube at the conclusion of unlocking the closure member.

FIGS. 5 and 6 respectively represent the end of a tube and its closure member provided with a locking system according to another embodiment.

FIG. 7 is a partial longitudinal section of a further embodiment of a tube closure system.

FIG. 8 is a perspective and partial section of a box according to the invention in the open position.

FIG. 9 is a perspective and partial section of the box according to FIG. 10 in the closed position.

FIG. 10 is a section on the line I—I in FIG. 9 showing the box during opening.

FIG. 11 is an alternative embodiment of a box according to the invention.

FIG. 12 is a longitudinal section of an alternative embodiment of a tube for dangerous products.

FIG. 13 is an exploded perspective view of the tube shown in FIG. 12.

FIG. 14 is a detail to an enlarged scale of the system for locking the plug in FIG. 13.

The container for dangerous products shown in FIGS. 1 to 4 comprises a cylindrical tube 1, one of the ends of which is

open and bears two lugs 3a and 3b situated at different levels but both having a top inclined surface. The wall of the tube 1 is cut around each of these lugs which are thus borne by tabs 4, 5 which are free near the lug but rigidly secured to the body of the tube 1 at the opposite end.

The closure member 2 for closing this container comprises a lid 6, the inside of which has a ring 7, the top part of which is provided with projections 8 of a width at least equal to that of the lugs 3a and 3b. Just one of the projections or notches 9 lead into the bottom part of the ring.

The closure member also comprises a ring 10 which is axially secured to the lid 6 by two diametrically opposite claws 11 fitted over the top part of the lid 6, and this ring forms a notched collar 12, only one of the notches or projections of which forms an open passage 13 for one or other of the lugs 3a, 3b.

The tabs 4 and 5 supporting the lugs 3a and 3b have a flexibility such that when the closure member 2 is simply driven home the collars 12 and 7 can push them towards the interior of the tube and lock beneath them and they then approach one another so that the closure member 2 is locked on the tube 1 and its removal is prevented. The lugs 3a and 3b allow an external movement only when they are each situated in one of the passages 9 and 11.

FIG. 2 shows this position of the closure member in which the ring 10 has been turned so as to bring the notch 13 level with the lug 3b while rotation of the lid 6 has enabled the notch 9 to come level with the lug 3a. It is apparent that in this position the closure member can be lifted by a height corresponding to that of each of the lugs 3a, 3b. It then reaches the position shown in FIG. 3 but is locked by the contact of the notches of the ring 12 with the lug 3a. A fresh rotation of the ring 10 brings the notch 13 into register with the lug 3a (FIG. 4) and allows complete removal of the closure member 2.

References, letters, numbers or characters on the outside of the closure member 2 indicate the positions of the notches and the lugs but none of them specifically shows the position of either of the passages 9, 11. In order to open the container, therefore, one must know the code or method of use of the closure member but it is impossible to find it out by rotating the members, because of the rectangular shape of the notches which makes it necessary for each position to be driven home in order to discover the open passage. On the other hand, as soon as one knows this, the operations required are extremely simple and can be carried out quickly. An adult who is unaware of the operation cannot therefore open the container without prior information; it is therefore all the truer to say that a child will be able to open it only after extremely lengthy attempts. He will also tend to pull the closure member rather than turn it patiently.

If desired, the lid may be formed by two or three similar inter-fitted lids which themselves bear reference marks which must be brought into alignment in accordance with the code supplied by the manufacturer.

At the end remote from the closure member, the tube 1 is also preferably provided with an auxiliary lid 14 which is closed simply by fitting over the tube and is therefore easily removed and which leads to an auxiliary compartment 16 (FIG. 4), which is separated from the main compartment 18 containing the dangerous products by a partition 20 forming an absolute seal. This compartment 16 contains pills, dragees or other sweets in bright colors which are thus attractive to a child but which have a bitter or at least unpleasant taste.

The child, whose attention has been distracted from the closure member 2 by the lid 14 which he can open easily, discovers the pills 22 with pleasure but is disappointed and disgusted by their unpleasant taste and this will make it unlikely for him to try a new experiment of the same type with another container of similar appearance.

Preferably, the pills or sweets 22 are coated with a coloring agent which not only has an attractive appearance to the child but leaves traces on his fingers and possibly also his mouth so that the parents are warned of the danger to which the child

has been exposed. Of course, these pills or sweets are absolutely harmless.

FIGS. 5 and 6 illustrate an alternative embodiment of the closure for a tubular container comprising a plug 24 (FIG. 6) comprising elements which in combination with elements provided in the end of the tube 26 (FIG. 5) for which the plug is intended, form a coded locking system. This plug comprises a head 31 in the form of a solid cylinder whose side surface is advantageously grooved to facilitate handling and a body formed by a first hollow cylinder 32 and a second hollow cylinder 33 situated one beneath the other with their axes coinciding. The outside diameter of the cylinder 32 is less than the diameter of the head 31 but greater than the outside diameter of the cylinder 33. The two cylinders 32 and 33 have two slots 34a and 34b disposed along two adjacent generatrices starting from the free edge of the cylinder 33 and extending to near the head 31. These slots bound a tab 35 which bears a lug 36 and a hook 37 respectively. The lug 36 is provided in the tab part corresponding to the cylinder 33 and has a slightly inclined front surface. The hook 37 has a surface 38 perpendicular to the axis common to the cylinders 32 and 33 and an inclined surface 39 with respect to the surface 38. The material from which the plug is made has a certain flexibility so that the tab 35 is flexible and can be flexed towards the interior of the plug body and occupy the position shown in chain-dotted lines.

A ring or collar 41 is provided (FIG. 5) in the end of the tube 26 to which the above-described plug 24 is fixed, and has a rectangular section whose inside diameter is very slightly larger than the diameter of the cylinder 33 and whose thickness is less than the distance between the end of the lug 36 and the surface 38 of the hook 37. The depth at which the top surface of the ring 41 is situated in the tube 26 is equal to the length of the cylinder 32 plus the length of the lug 36 so that when the plug is driven into the tube 26 the ring 41 is held captive between the lug 36 and the hook 37 as shown in chain-dotted lines in the left-hand part of FIG. 5.

The ring 41 continues in the upward direction in the form of a stop 42 whose width is substantially equal to that of the lug 36 and whose thickness is equal to that of the ring 41 which is also cut some distance from the stop 42 so as to have an inclined plane 33 extending from the inner wall of the tube 26 to the bottom inner edge of the ring. The width of this cut 33 is slightly larger than the width of the lug 36. The inner surface of the cylinder 26 above the ring 41 and the inner surface of the ring 41 are provided with a number of rounded thin longitudinal projections 44 and 45 respectively.

To close the container, the plug 26 is so positioned with respect to the tube 26 that their axes coincide and then the plug is driven into the tube. The inclined part 39 of the hook 37 then engages the ring 41 and the movement as the plug is driven in causes the tab 35 to bend towards the interior of the plug (FIG. 6) so that the hook 37 can pass over the ring. When the plug 24 is fully home, the tab 35 resumes its normal position so that the ring 41 is held captive between the hook 37 and the lug 36 (FIG. 5) so that the container is closed. This closure is a safety closure because irrespective of the angular position of the plug with respect to the tube 26 the hook 37 always bears by its surface 38 on the bottom surface of the ring 41 which has no gap therein. A closure of this type is very simple and thus lends itself to complete automation and can be carried out by the packing machines. The plug 24 is also put into position and locked immediately by any user even if he is in a hurry or preoccupied.

To open the container the plug 24 must first be turned in the tube 26 until the lug 36 engages the flank of the stop 42 and then another rotation of the plug 24 with respect to the cylinder 26 causes the lug 36 to pass over a given number of projections 44 to bring it into register with the inclined plane 33. An axial pressure on the plug 24 then allows it to be driven in slightly. The tab 35 is pushed towards the interior of the plug and the lug 36 engages the inner surface of the ring 41. The plug 24 is then turned in the opposite direction to the

previous direction until the lug 36 has passed a given number of projections 45 and registers with the stop 42. A pull on the plug then causes the lug 36 to slide on the stop 42 so that the tab 35 is again pushed towards the interior of the plug and the hook 37 can disengage from the ring 41 and also slide over the stop 42. The plug is released.

The container is thus opened in five movements which can be carried quickly once the code is known and this applies particularly to the number of projections that the lug must clear in each direction. References may be marked on the tube but the slight noise resulting from the lug meeting the projection is generally sufficient to enable the movement to be checked. Even if a child turns the plug it will be difficult for him to have the idea of applying pressure from above when the object is to withdraw the plug. Even an adult who does not know the number of projections requiring to be cleared will not be able to open the tube. If the attempt is made to withdraw the plug before the required number of projections has been cleared by the plug during the previous rotation, the tab 35 will return to its normal position and bring the lug 36 above the ring 41. The container will not be opened and the operation will have to be completely restarted.

There may be any number of projections 44 and 45 provided respectively on the tube 26 and the ring 41 so that the complete operation can be given a variety of codings. In practice, the numbers of projections to be cleared in each direction are preferably the same or differ by one unit. It will be seen that a step 36a is formed between the front surface of the lug 36 and the side external surface of the cylinder 32 so that the lug 36 cannot abut the inner top edge of the ring 41. The same result could be obtained by chamfering the end of the said edge near the inclined plane 33.

According to another alternative embodiment, the tubular end 46 of a container (FIG. 7) has at its open end an outer peripheral flange 48 formed with a longitudinal slot 49 over which a cap-type closure member 50 fits. Beneath the flange 48 a ring 52 which is axially locked on the tube 46 by a circlip 53 but which is free to rotate bears an annular collar 54 of an outside diameter equal to that of the closure member and a ring 56 of a smaller outside diameter for locking the closure member. The locking ring 56 also has a longitudinal slot 57. The periphery of the closure member is formed with a tab 58 bounded by two vertical slots and a horizontal slot and said tab bears an inner projection 59. The tab 58 is sufficiently resilient for the closure member to be introduced simply by fitting it over the container 46 irrespective of the position of the ring 52 and the projection 59 is locked beneath the ring 56 in the groove bounded by it and the collar 54.

This closure member can be removed only if the slots 49 and 57 respectively formed in the flanges 48 and the ring 56 are situated in extension of one another and thus allow free passage of the projection 59. A rotation of the ring 52 must bring the slot 57 into the extension of the slot 49 while a rotation of the cap 50 brings the projection 59 into register with said slots. Markings, letters or numbers are therefore provided on the outer walls of the tube 46, the ring 52 and the closure member 50 and the container can be opened only when specific preselected symbols or letters or the like have been brought into register.

Once the code provided by these markings is known it is a very easy and a rapid operation to carry out the two rotations. If the code is not known, however, a long and patient trial and error procedure is required to open the container and it is therefore very unlikely that a child or even an adult will be able to open the container.

In FIG. 7, the closure member seals a plastic capsule 60 containing a hydrating pellet 62 which helps to preserve the products contained in the tube. A similar capsule could of course be provided in any of the closure members shown in FIGS. 1 to 6.

The tube 46 may simply be the end of a tube of the type shown in FIG. 1 or be a tubular end secured to a container of any shape, a bottle or a can intended, for example, for drugs or veterinary products.

The invention, however, is not limited to containers having a tubular end or part but is applicable to various other container shapes.

For example, FIGS. 8 to 10 show an embodiment of a parallelepipedal container, such as a box, closed by a flat lid which covers it. The drawing shows only one of the sides of the box, the other being substantially identical.

Secured to the base 64 of the box are not only the front and rear surfaces 63 and 65 respectively and the sides 66, but also, inside the box, partitions 68 which are parallel to the sides 66. Each of the sides 66 is cut into a plurality of strips 67a, 67b, 67c, 67d which are separated by slots 68 formed over the entire height and the complete thickness of the side. Since the material from which the box is made is flexible, each strip has a certain resilience and can curve towards the interior of the box. On the side 66 visible in the drawing, the strips 67a and 67c are of U-shape at their free end and thus bound a central passage 70 contained between the strip itself and a rim 72 parallel thereto. At their free end the strips 67b and 67d have a boss 74. These bosses 74 and the rims 72 are bevelled (FIG. 10) on the side remote from a stop 65a formed by an extension of the rear surface 65 of the box. The other side has a sharp edge.

The lid adapted to be used with this box comprises a flat surface 76, a shoulder 80 disposed parallel to each of its sides and a rim 83 bent at a right angle in the form of a butt so as to form a longitudinal guide 84. The part of the rim 83 bent at right angles and parallel to the surface 76 is cut out so as to have four apertures 84a, 84b, 84c, 84d of a similar width to the width of the strips 67 separated by lugs 85.

When the lid is closed by sliding it in the direction of the arrow F in FIG. 10, the rims 72 of the strips 67a and 67c will be accommodated in the guide 84 formed in the lid while the lugs 85 of the lid move in the passage 74 formed by the end of the strips 67a and 67c. All that is required to close the lid is simply to push it. The lugs 85 bear against the bevelled parts 74a of the bosses 74 and possibly on the bevelled parts 72a of the rims 72 and move the said bosses and rims out of their path. After their passage, the strips 67a and 67b automatically resume their natural straight position and the lid is locked.

If the attempt is made to slide the lid in the opposite direction to the arrow F the lugs 85 will abut the sharp-edged plane surfaces 74b of the bosses 74.

To be able to slide the lid, the strips 67b and 67d must be pushed towards the inside of the box so as to free the path for the lugs 85 without entraining the strips 67a and 67c. If either of the strips 67a or 67c is pushed when the strips 67b and 67d are pushed, the edge 72b of the rim 72 of the strip will prevent the lug 85 from passing and the lid is locked. An action of this kind reinforces the locking effect instead of allowing the box to be opened.

The drawings show only one of the sides of the box and lid. The second side may be made in exactly the same way and comprise four strips only two of which have to be pushed in to allow unlocking or comprise a different number and/or distribution of the strips. More particularly, it may be advantageous for one of the sides of the box to have two strips with bosses and the other side to have just one strip with a boss. When the box is held in the hand it can be easily opened by bringing the thumb into register with the single strip on the first side while the index finger and the middle finger correspond to the two strips on the second side.

When the lid is in position, all the strips seen from the outside of the box look similar so that the system forms a coded locking system which can be operated only by someone familiar with the code.

Various symbols may be provided on the visible part of the strips and some of the symbols denote those strips which must be pushed to enable the box to be opened but only the person who knows the symbols can interpret them and open the box.

Of course, as in the case of the tubular container, the box can be divided into two compartments. One of these closed by the above described system contains the dangerous products while the other closed by a simple sliding lid contains pills, sweets or the like having an unpleasant taste.

The box may also bear a conspicuous mark, e.g. a thin groove, to simulate a lid and distract the child's attention, and this mark may be used alone or in combination with the auxiliary compartment.

In another embodiment shown in FIG. 11, the lid of a box is in the form of a rectangular panel 86 the two long sides of which have longitudinal ribs 87 slightly shorter than the sides while the outer surface of their ends is chamfered (88). At the center of the lid 86 the two ribs are connected by a cross-member 90. At this crossmember each rib 87 has a projection 92 adapted to engage in a notch 94 formed in the sidewall 96.

The box is closed by force-fitting the lid in the container and this is facilitated by the bevelled shape of the projections 92 and the resilience of the box walls. The box can be opened only by simultaneously pulling on the lid and compressing the box in the direction of the arrows F1. The result of this compression is that the sides 96 of the box bulge as shown in chain-dotted lines in the drawing, so that the projections 94 are released from the notches 92.

The distance between the pressure surfaces is very much greater than the fingers of a child's hand can be spaced apart. A peripheral groove 98 also distracts the child's attention to a false lid or even a real lid 100 which opens an auxiliary compartment containing harmless but unpleasant products.

In an alternative embodiment which also relates to a container in the form of a tube 102 closed at one end 104 but having a lateral opening 106, the dangerous products are enclosed inside the tube in a cylindrical compartment 108 also having a side opening 110 (FIGS. 12 and 13). A spring or other resilient member such as a ball or plug 112 is disposed between the end 104 of the tube 102 and the end of the dangerous product compartment 108 and always tends to push the compartment 108 so as to move the openings 106 and 110 away from one another.

The action of the spring 112 is limited by a series of projections 114 secured to the inner wall of the tube 102. These projections are of triangular shape with the apex extending outwardly from the tube except for one of them which is in the form of a rectilinear key 116 terminating in a point.

The tube 102 is closed by a plug 120 which comprises a disc 121 which on one side bears a cylindrical collar 122 of an outside diameter smaller than the inside diameter of the projections 114 and 116, and of a height equal to the maximum to the height of the same projections, and teeth 124 of a height very much greater than that of the collar 122, said teeth being separated by triangular spaces 126 whose apex adjacent the disc 121 forms an angle equal to that of the apex of the projections 114.

One of the spaces (128) however has a rectilinear shape corresponding to the key 116. A lid 129 is fitted around said teeth.

Level with a plurality of teeth 114, the outer wall of the tube 102 also has a recess 130 (FIG. 14) in which a small plate 132 is articulated at its center at 131. One of the ends of the plate is secured to a lug 134 sliding through the wall of the tube 102 and the triangle 114. A spring 136 mounted in the recess 130 pushes it into the position in which the lug 134 engages in the tube while an external force applied to the free end of the plate withdraws the lug.

When the container is closed, the plug 120 is driven into the open end of the tube 102 so that the collar 122 engages inside the projections 114 and 116. A groove 138 formed all around the collar is locked on the lug 134. The plug is locked and the two openings 106 and 110 are kept in the position in which they are spaced apart.

To remove the products from the tube 108, the spring 112 must be compressed, i.e., pressure has to be applied to the end of the tube. For this purpose, the plug 120 must be withdrawn after having been released by pressure applied to the plate 132. There is preferably a plurality of such plates and only some of them are connected to a locking lug. The lid 129 is then removed and the plug 120 is turned round so that the teeth 124 come into register with the spaces between the projections 114 and the space 128 comes into register with the

key 116. The lid 129 is replaced on the disc 121 and a pressure applied to the lid compresses the spring 112 until the openings 110 and 106 coincide and can discharge the products (FIG. 12).

Closure is obtained automatically simply by withdrawing the plug 120, which releases the spring 112. Locking is then easily restored by refitting the collar 122 into the tube 102 and by the automatic return of the lug or lugs 134 into the groove 138.

Miniature spikes 142 which are harmless but nevertheless unpleasant to touch are also provided on the outer surface of the end of the compartment 108 and on both surfaces of the disc 121.

Pills or sweets 140 similar to the pills 22 in the tube 1 and also having an attractive appearance and an unpleasant taste may also be disposed in the auxiliary compartments formed on either side of the disc 121.

A child who finds this container closed can thus withdraw the lid 129 which exposes the pills or sweets 140 or the spikes 142. If he fortuitously succeeds in applying pressure to the plates 132 and withdrawing the closure member 120—and this is very unlikely—and wishes to apply pressure to the tube 108, he will encounter the spikes 112 which will discourage him from continuing his attempt. It is also practically impossible or at least very difficult for him to find the correct position for fitting the teeth 124 over the projections 114 and then effectively apply pressure to the tube 108.

In some cases it may be advantageous to replace the collar 122 by teeth extending in the opposite direction to the teeth 124 and adapted to fit between the projections 114 and 116.

The projections 114 may also have a different shape from the triangular. E.g., they may bound a regular polygon inside the tube 102, in which case the key 116 is situated in a corner of said polygon. The teeth 124 are then replaced by a prism one corner of which is cut to slide on the key. The collar 122 is also of prismatic shape.

Irrespective of the embodiment used, the containers have a very high safety factor and allow both rapid closure and opening, but the latter can be carried out only by those familiar with the method. The mental effort required to carry out such opening is not based on habitual movements and reflexes and draws the user's attention to the dangerous character of the product. Also, the combination of the difficulty in opening the container and unpleasant elements permanently discourages a child from the attraction offered by the container.

Such containers may be made from plastics, a metal alloy or any other similar material by known molding, blowing, injection or pressing methods. In all cases their cost price is very low. Their dimensions and shape and their opening code can be adapted to the products they are required to contain.

We claim:

1. A container comprising a first compartment having a wall formed with an opening for the removal of products, a closure member preventing removal of the products through said opening, means for locking said closure member, said locking means being mounted on the closure member and on the container wall and being locked by a simple translatory movement of said closure member from the open position, said locking means opening only by a combination of at least two predetermined nonobvious movements including an independent auxiliary compartment, a readily removed closure member for said auxiliary compartment and a harmless element which is unpleasant to at least one of the child's senses in said compartment.

2. A container according to claim 1, said opening being the end of a tubular member, said locking means including at least one tab cut in the sidewall of one of said members, a locking lug, one of the surfaces of which is inclined while the opposite surface is perpendicular to the container axis and borne by said tab, at least one ring borne by the second member and having a single vertical passage for the lug, the resilience of the tab and the shape of the lug enabling the two members to engage one another irrespective of the relative positions of the passage and the lug.

3. A container according to claim 2, said opening being the end of a tubular element, comprising two tabs supporting two lugs at different levels, said tabs being cut in opposite directions in the tube, and two notched rings each formed with a slot for the passage of the lug and movable in respect of rotation in relation to one another but axially rigidly secured and borne by the lid at two different levels.

4. A container according to claim 2, comprising a tab bearing a lug and cut in the closure member, a first outer ring rigidly secured to the tube, a second outer ring movable in respect of rotation about said tube and a vertical slot for the passage of the lug in each of said rings.

5. A container according to claim 2, comprising a tab cut in the closure member and bearing a lug and terminating in a hook, a ring rigidly secured to the inner wall of the tube and the height of which is less than the distance between the lug and the hook of the tab, an inclined slot for guiding the descent of the lug formed in the said ring and, above said ring, a vertical stop for limiting the rotation of the closure member in the tube and extending the inner surface of the ring in order to move the tab away, release the hook and guide its reascent.

6. A container for protecting children from dangerous absorbable products and for directing the child to harmless substances and to alert responsible persons comprising a first compartment for the dangerous products, a precoded combination closing device for said first compartment automatically self-locking at any position upon closure, a second compartment for a harmless product having a distracting and warning characteristics and an easily opened closing device for said second compartment.

7. A container according to claim 6, said precoded combination closing device including a plug formed by three cylinders of decreasing outside diameter so superimposed that their axes coincide, the first cylinder being solid, the second and third cylinders being hollow, the said second and third cylinders having two slots formed throughout the thickness of their wall along two adjacent generatrices, the said slots bounding a flexible tab adapted to fold towards the interior of the hollow cylinders, the said tab having a hook-shaped protuberance at its free end and a lug on the part corresponding to the third cylinder along the surface of connection between the second and the third cylinder, and a tube which along its inner surface has a circular ring of rectangular section having dimensions such that it can be inserted between the hook and the lug of the plug tab when the plug is introduced into the opening, the ring being situated in the cylindrical opening at a distance from the edge of said opening equal at the maximum to the height of the second cylinder forming the plug, the said ring being cut at a first position and over a width at least equal to the width of the lug of the tab so as to have an inclined plane starting from the inner wall of the tube and leading to the bottom inner edge of said rings, said ring also being surmounted in a second position by a stop whose front surface forms an extension of the inner surface of the ring and whose height is at least equal to the distance separating the hook and the lug on the tab, and reference means for determining the position of the inclined plane and the position of the stop disposed on the plug and the tube so that they can be interpreted only by a person familiar with the closure system.

8. A container according to claim 7 including projections for identifying the code to the senses of touch and hearing, said projections being uniformly spaced along the inner surface of the tube above the ring and on the inner surface of said ring.

9. A container according to claim 6 including a lid in the form of a rectangular panel cooperating with the container in the form of a parallelepipedal box, resilient strips separated by slots forming the two opposite side surfaces of said box, a locking boss at the free end of at least one strip, a U-guide at the end of the other strips, a U-guide on two opposite edges of the lid adapted to slide on the guides of the strips and lugs secured to the lid guides and adapted to slide in the strip guides but locked in the opening direction by the bosses while a simultaneous force applied just to the strips bearing the bosses does not retract them.

10. A container according to claim 6 including a lid in the form of a rectangular panel cooperating with the container in the form of a parallelepipedal box, said lid having along two of its nonadjacent sides a hollow guide of rectangular section limited by four sides, the first side being formed by the plane of the panel itself, the second side being formed by a part perpendicular to the first side and forming the outer edge of the panel, the third side being formed by a part perpendicular to the second side and hence parallel to the plane of the panel and the fourth side being formed by a part perpendicular to the plane of the panel, the said fourth side being out from its edges by rectangular notches separated from one another by lugs, and two of the nonadjacent edges of the container having notches registering with the panel guides, said notches being formed in the said edges over their entire height and throughout their thickness so as to form strips in the proportion of one strip per notch provided in the fourth side of the lid guide, some of the strips terminating at their free end in a boss while the other strips terminate at their free end in a U-shaped guide so that when the lid has been placed on the container it can be withdrawn only by inclining the strips with bosses—and only those strips—toward the interior of the container.

11. A container according to claim 9, the bosses and the U-members at the ends of the strips having beveled part which, when the lid is fitted and under the action of the lugs in the fourth side of the lid guide, bend the strips having bosses inward and correct location of the strips provided with a V-member.

12. A container according to claim 9, the lid having longitudinal shoulders parallel to the sides having guides and parallel to its edges having strips the container has partitions, the said shoulders and partitions cooperating to form a guide means for the lid during its closure or opening movements.

13. A container according to claim 9 including three strips provided with bosses, two of said strips being on one side of the container and one of said strips being on the other side of the container.

14. A container according to claim 1, comprising a lid having the form of a rectangular panel cooperating with a container having the form of a parallelepipedal box, two longitudinal ribs beneath the lid panel, a lug in the middle of each of said ribs and extending slightly beyond the said panel, and recesses formed in the inner wall of the container invisible from outside engaging the lugs by the action of a pressure of the lid on the wall of the container and holding the said lugs captive until simultaneous pressure applied to the other two surfaces of the box deforms the lateral walls in which said recesses are formed.

15. A container according to claim 1, comprising an opaque tube open at one end and provided with a lateral opening, a closed compartment for dangerous products, a side opening for said compartment cooperating with said lateral opening, sliding inside the tube, resilient means for moving the said openings away from one another between the tubes and the compartment, inner projections and a key secured to the tube and forming a stop to limit the movement of the compartment, a closure member comprising a hollow cylindrical plug to prevent access to the movable compartment, a profile opposite to that of the projections and key borne on the outside of said plug and having a height corresponding to the distance between the open edge of the tube and the end of the compartment when, after the compartment has been introduced into the tube, their openings coincide, and a lid for protecting and camouflaging the profile, and retractable means for locking the plug on the tube.

16. A container according to claim 15 including spikes secured to the end of the dangerous product compartment inside the hollow cylinder of the plug and at the center of the profile of said plug.

17. A container according to claim 15, the projections forming a regular polygon, the key being a triangle closing one of the corners of the polygon at some distance from the exterior and the plug and the profile forming polygons one of which corresponds only to the projections while the other corresponds to the projections and the key.

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18. A container according to claim 15, including projections in the form of triangular teeth, a rectilinear key and a

profile borne by the plug having teeth separated by triangular spaces and a rectilinear space corresponding to the key.

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