April 15, 1969 HENRI ANDRÉ TISSERAND ETAL 3,438,535

INVIOLABLE CONTAINER

Filed March 22, 1966 Sheet 1 of 2

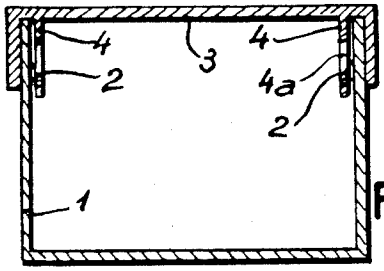


FIG. 1

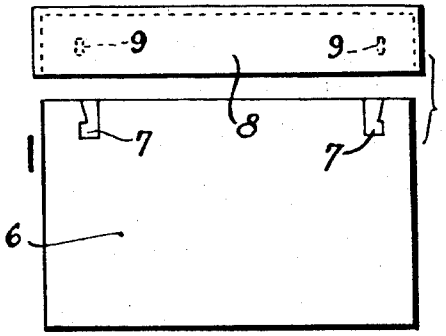


FIG. 3

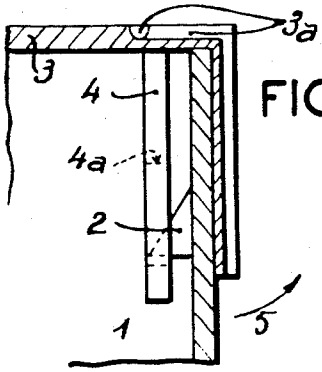


FIG. 2

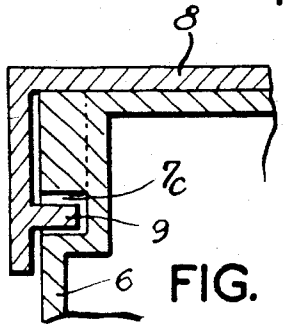


FIG. 5

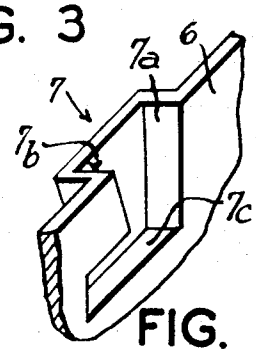


FIG. 4

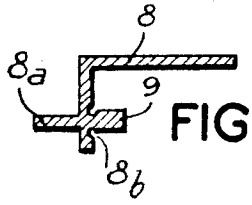


FIG. 6

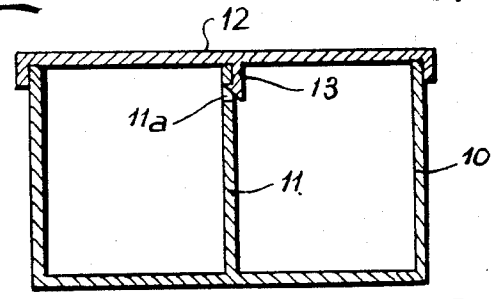


FIG. 8

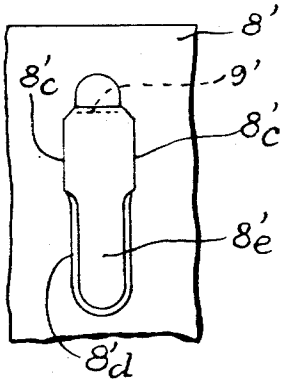


FIG. 7

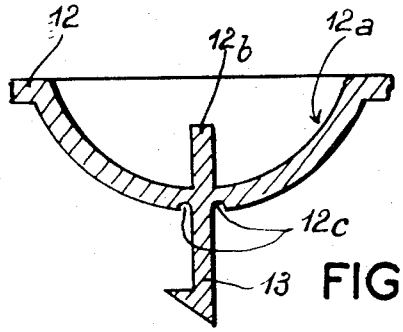


FIG. 9

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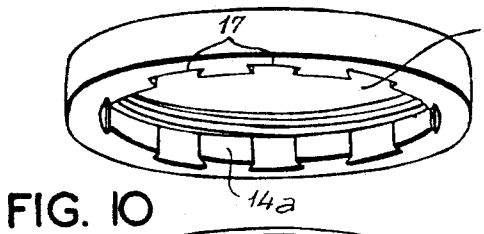
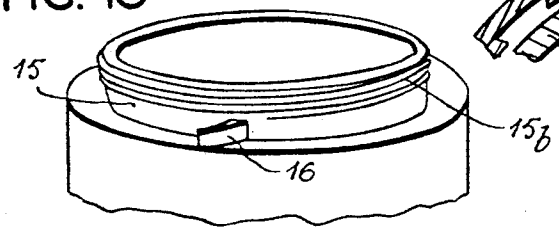


FIG. 10



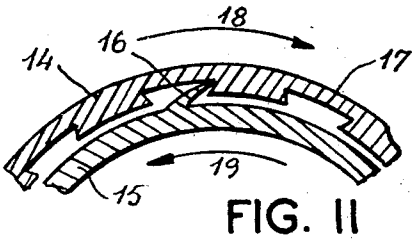


FIG. 11

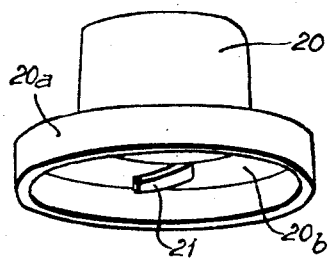


FIG. 12

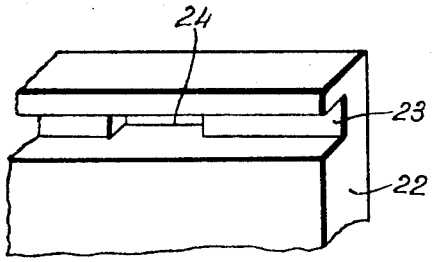


FIG. 13

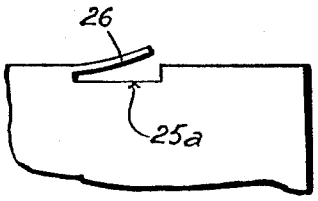


FIG. 14

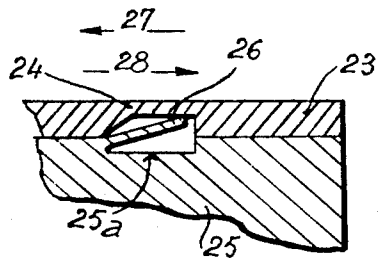


FIG. 15

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3,438,535

INVIOLABLE CONTAINER

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Int. Cl. B65d 17/00
U.S. Cl. 220—27 6 Claims

ABSTRACT OF THE DISCLOSURE

The invention provides a container for ensuring genuineness and volume of its contents and locked against opening except by visible rupture of a portion thereof, comprising a case, a cover for the case, and a pair of complementary locking parts formed on the case and cover which mate and prevent removal of the cover once it is closed, said parts including an internal locking projection integral with the cover and having an aligned external extension secured thereto by a weakened portion of the cover, whereby the extension may be grasped and bent to rupture the cover and remove the projection.

The present invention relates to packaging and more particularly to an improved package which cannot be opened without yielding visible evidence thereof. The opening of the box or package can only be accomplished by rupturing a part of the container so that the unopened container guarantees the authenticity, that is the genuineness, nature and volume of the contents and assures that the contents have not been tampered with in any way.

In the conventional practice, the inviolability of boxes and packages of the above type is insured by a supplementary piece (leaded wire, glued sealing tape, etc.) applied to the assembly after filling and closing. The attachment of these types of supplementary seals complicates the handling operations involved in filling and closing the containers.

The improvements according to the present invention have the primary object of providing a container whose contents are maintained inviolable once the cover is closed, without the need for application of any additional piece or seal.

The invention briefly comprises the provision on either the case or the cover of the container of at least one projecting part to retract elastically when the cover is closed, but adapted to cooperate with a recess or aperture in the other part (cover or case) to lock the container closed and not permit opening without breaking some part of the container, this part therefore constituting the seal of guarantee.

The novel features that are considered characteristic of the invention are set forth with particularity in the appended claims. The invention, itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in connection with the accompanying drawings, wherein like reference characters indicate like parts throughout the several figures and in which:

FIG. 1 is a vertical section of a container according to one embodiment of the invention.

FIG. 2 is a detail section on a larger scale illustrating a variation of embodiment of the box according to FIG. 1.

FIG. 3 is an elevation of another container according to a second embodiment of the invention.

FIG. 4 is a perspective view on a larger scale of one of the depressions provided on the side walls of the casing of the container of FIG. 3.

FIG. 5 is a partial section illustrating the cover in locked condition on the casing of the container of FIGS. 3 and 4.

FIGS. 6 and 7 show, in section and elevation respectively, two different embodiments of the cover which may be applied to the container of FIGS. 3 to 5.

FIG. 8 is a vertical section showing a container with an interior partition and provided with locking means according to the invention.

FIG. 9 is a detail section showing a different embodiment of a cover useable with the container of FIG. 8.

FIG. 10 is an exploded perspective view of a container having a screw type lid shown before attachment to its case and means according to the invention for locking the cover and case.

FIG. 11 illustrates, in horizontal section, the locking of the lid according to FIG. 10.

FIG. 12 is a perspective view of a different lid lockable by rotation.

FIG. 13 is a partial view in perspective of a case for use with a sliding lid.

FIG. 14 is a partial view in plan of the corresponding lid.

FIG. 15 is a schematic horizontal section illustrating the locking of the lid to the case in the embodiment of FIGS. 13 and 14.

Referring now more particularly to the drawings, the box, package, or container, shown in FIG. 1, comprises a case **1**, which may be of rectangular shape in plan. On the inner face of two opposing side walls of the case **1** are two projections or teeth **2**, having an inclined or oblique surface facing up toward the upper opening of the case. The case is closed by a cover or lid **3** designed to fit, with very little play over and about the upper edges of the walls of the case, which define the upper opening. The lid is provided with two integral, vertical tabs **4**, perforated at **4***a*, which tabs extend vertically downward for a short distance from the lower surface of the lid and opposite the teeth **2** of the case.

To close the container after filling, the lid **3** is positioned on the case **1** and pushed downwardly. The tabs **4**, being somewhat resilient or elastic will warp inwardly on contact with the oblique faces of the teeth **2**, until the teeth align with the openings **4***a* in the tabs permitting the tab to spring outwardly seating the teeth within the openings. The lid **3** is then locked in place and cannot be lifted or otherwise withdrawn, even if pressure is exerted on the side walls of the case **1** or on the surface or flange of the lid **3**.

To open the container it is necessary to break either the tabs **4**, or the side walls of the case **1** at the level of the teeth **2**, both of which are difficult to do. To make this easier one can use the variation illustrated in FIG. 2, in which the lid **3** is creased or grooved as at **3***a* in the immediate vicinity of each tab **4**, the groove extending vertically downward along flange of the lid. This groove weakens the lid, so that one can easily break the lid to open the container.

Whatever way is used, opening the container requires breaking a visible part thereof, so that the desired inviolability of the package and its contents are insured until a visible break occurs. It will be readily apparent that the number of teeth **2** and corresponding tabs **4** is not limited. It is also obvious that the arrangement can be reversed, the teeth being borne by the tabs **4** in such a way as to engage in openings or depressions formed in the corresponding side walls of the case **1**. It is further noted that the invention can be applied with advantage, whatever the shape or material of the container.

In the modification illustrated in FIG. 3, the case **6**, on

at least two of its side walls, has recesses **7**, open toward the outside and projecting inwardly. As shown in FIG. 4, each of these recesses has a profile generally in the form of a bayonet-type socket and comprises a vertical portion open upwardly and having a lateral vertical face **7***a* and an opposed oblique face **7***b*. The vertical portion communicates at the bottom with a horizontal protruding portion **7***c*.

The box also comprises an encasable lid **8** having a depending flange on two opposite walls of which there are projecting tongues **9**, adapted to enter the recesses **7**. These tongues **9** are disposed so that when the lid **8** is pushed down in place they will warp elastically as they slide along the oblique face **7***b*, which thus forms a guidance ramp, until the tongues snap back and enter the horizontal recess portions **7***c*. In this position (FIG. 5), the lid is firmly locked on the case and can not be removed without breaking a part of the box. To facilitate such breaking one can use the variation illustrated in FIG. 6 in which the lid **8** is in one piece, but is provided on its outer face with extensions **8***a* disposed opposite the tongues **9**, which are connected to the cover flange by thinner portions **8***b*. The extensions **8***a* may be grasped and bent to snap or break the tongues **9** enabling the lid to then be lifted to open the box. The broken portions **8***a*, **9** leave visible evidence of prior opening of the container even though the cover is later reapplied to the case.

In the modification illustrated in FIG. 7, each of the tongues **9'** is obtained by stamping out, and subsequently folding the corresponding flange side wall of the lid **8'**. The stamping tool may be shaped to form two parallel weakening lines **8'***c* below each tongue **9'**, and a cut-out **8'***d* which delimits a tab **8'***e*. Tongues **9'** cooperate with recesses similar to the recesses **7** in FIG. 3 to 5. When it is desired to open the box, tab **8'***e* is grasped and turned upwardly to tear the lid **8'** along lines **8'***c* and tear out the tongues **9'**. The lid **8'** can then be lifted or otherwise removed from the case.

In FIG. 8 the case **10** comprises a vertical partition **11** integral with the bottom and two of its side walls. The corresponding lid is provided in its center with a dependent hook **13**, pointing vertically downward and adapted to elastically engage within a perforation **11***a* in the upper central part of the partition **11** to lock the container closed. The opening of this container can be facilitated by an upward extension **12***b* (FIG. 9) provided inside a depression **12***a* in the lid **12** and opposite hook **13**, which is connected to the lid by two weakening portions **12***c* of reduced thickness.

The dispositions described above for locking lugs and recesses on boxes having partially encasing lids can advantageously be applied to boxes having articulated lids, provided the play of the hinge is small enough to permit the correct locking engagement of the lugs or hooks inside the recesses or apertures.

FIGS. 10 and 11 illustrate the application of the invention to containers in which the lid **14** is closed and secured to the case **15** by rotation or screwing. The case **15** has a neck with a smooth cylindrical part **15***a* immediately below the thread **15***b*. At least one tongue **6** is provided on the smooth part **15***a* oriented tangentially with respect thereto. Tongue **16** is designed to cooperate with any one of a series of recesses **17** formed in the corresponding cylindrical flange **14***a* of the lid **14**. As shown in FIG. 10, each recess **17** preferably has a swallowtail profile open toward the inside of the lid.

When the lid **14** is screwed on the neck of the container (the direction of rotation corresponding to the arrow **18** in FIG. 11), the tongue **16** retracts elastically without interfering with closure. But when one tries ot remove the lid by rotating it in the direction of arrow **19**, the tongue engages in the facing wall of one of the recesses **17** and locks the lid against rotation and in closed position. To open the container it is necessary, therefore, to exert sufficient force on the lid to tear tongue **16**, or, by jamming, to break the flange of the lid at the area of the recess **17** inside which it is engaged.

In the variation shown in FIG. 12, the screw top has an upper part **20** internally threaded to mate with the threading of the neck of the case (not shown). Below cylindrical part **20**, the lid is flanged outwardly at **20***b* at whose outer periphery is formed a dependent cylindrical skirt **20***a* of larger diameter than part **20**. On the underside of flange **20***b* is a tongue **21** oriented obliquely downward in such a way as to engage elastically, when the lid is screwed on, in recesses formed in a corresponding annular shoulder of the case. The orientation of tongue **21** is such that it does not interfere with the screwing on of the lid, but prevents any unscrewing thereof, by abutting against the edge of one of the mentioned recesses in the case. Here again, opening the box requires tearing the tongue **21**, or the lid.

In FIG. 13 is shown at **22**, a fragment of the grooved upper part of a case to be used with sliding lid. In the vertical side, or bottom, **23** of the groove there is a further recess or depression **24**. The corresponding lid **25** (FIG. 14) has a tongue **26** which projects obliquely toward the rear of the lid, and an opposing recess **25***a*. The slide, or lid **25**, is moved to cover the case by longitudinal displacement in the direction of arrow **27** in FIG. 15, causing the tongue **26** to retract inside the recess **25***a* without interfering with the closure. But if one then attempts to displace the lid **25** in the opposite direction (arrow **28**) to open the box, tongue **26** presses against the right side of the recess **24**, thereby locking the lid in closed position. To open the box it is necessary, therefore, to break some part of the latter; after being opened, the box cannot under any circumstances be reclosed and locked.

It should be apparent from the above descriptions that many other examples of the invention may easily be constructed varying in the positions of the locking projections and recesses, their shapes and in the shapes of the containers and the means for facilitating the rupture of a part of the container to open it. While the locking projections, hooks or tongues have been described as being integral with a portion of the container they obviously can be constituted by separate elements, suitably attached in place on the lid or the case.

What is claimed is:

1. A container for ensuring genuineness and volume of its contents and locked against opening except by visible rupture of a portion thereof, comprising a case, a cover for the case, and a pair of complementary locking parts formed on the case and cover which mate and prevent removal of the cover once it is closed, said locking parts being on internal surfaces and unreachable from the exterior of the container when the cover is closed, said locking parts including a projection and a recess for receiving the projection, one of said locking parts being elastically deformable to permit movement of the cover to close the case but springing into engagement with the other to lock the cover when in fully closed position, and external means on said container aligned with the projection and secured thereto by a weakened portion of the container, whereby said means may be grasped and bent to rupture the container and remove the projection.

2. A container according to claim **1** wherein said locking projection is integral with said cover and said means comprises an external extension aligned with the projection and secured thereto by a weakened portion of the cover.

3. A container according to claim **1** wherein said locking projection is integral with the cover and said external means comprises weakened portions defining a tab partially separated from the cover by cutouts and connected to said locking projection, whereby the tab may be grasped, bent and removed from the cover carrying the locking projection.

4. A container according to claim **1** wherein said cover

slideably moves in a rectilinear groove on said case to close and open the case.

5. A container according to claim 1 wherein said recess is a bayonet-type slot having an oblique face for deflecting a projecting lug forming said locking projection, said lug springing into locking engagement with a portion of the bayonet slot beyond said oblique face.

6. A container according to claim 1 wherein said case has a partition, said recess being an aperture in said partition and said locking projection being a hook dependent from the cover and enterable into said aperture.

References Cited

UNITED STATES PATENTS

1,200,390	10/1916	Morin	215—42
2,423,582	7/1947	Coleman	215—42

JAMES B. MARBERT, *Primary Examiner.*