Oct. 24, 1967 C. ROSSO 3,348,724

HINGED LID BOX

Filed Feb. 26, 1965 2 Sheets-Sheet 1

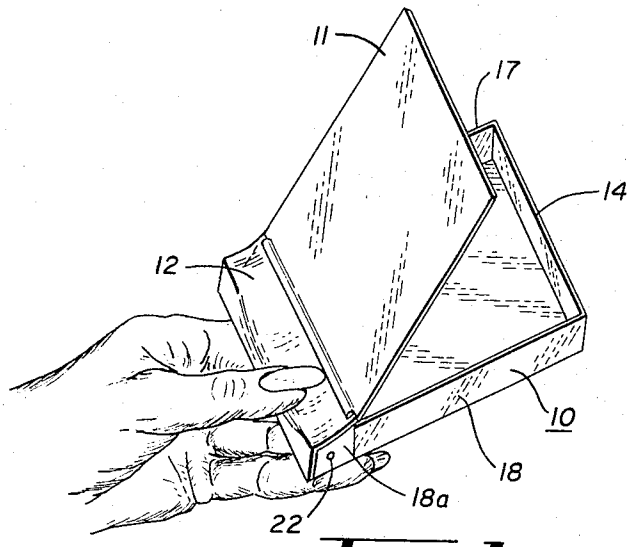


Fig_1

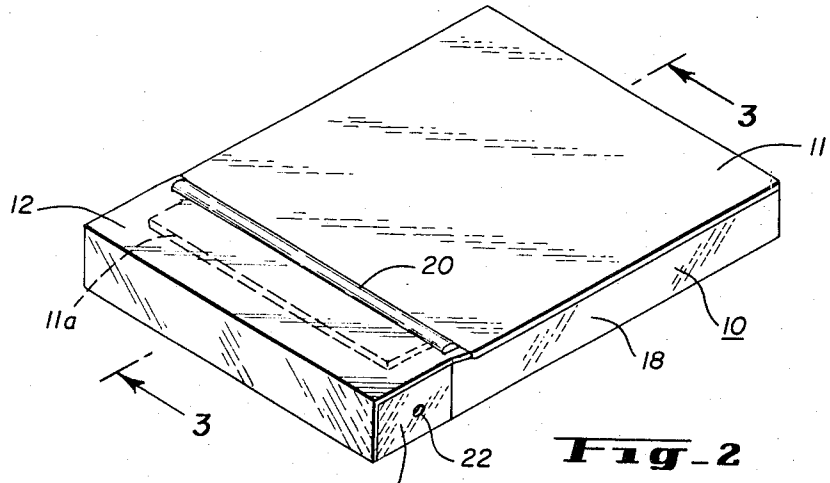


Fig_2

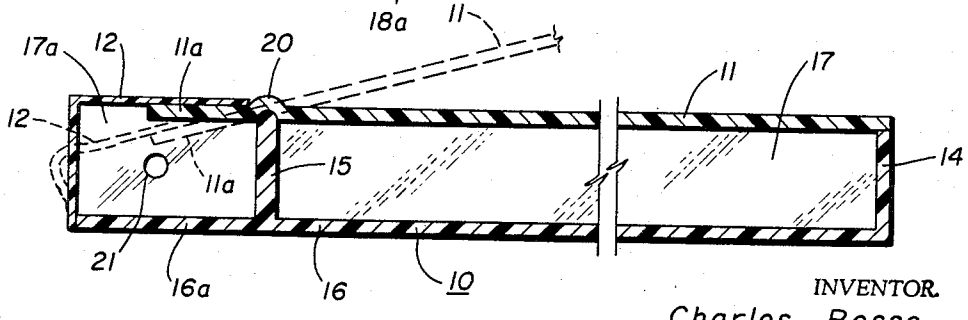


Fig_3

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HINGED LID BOX

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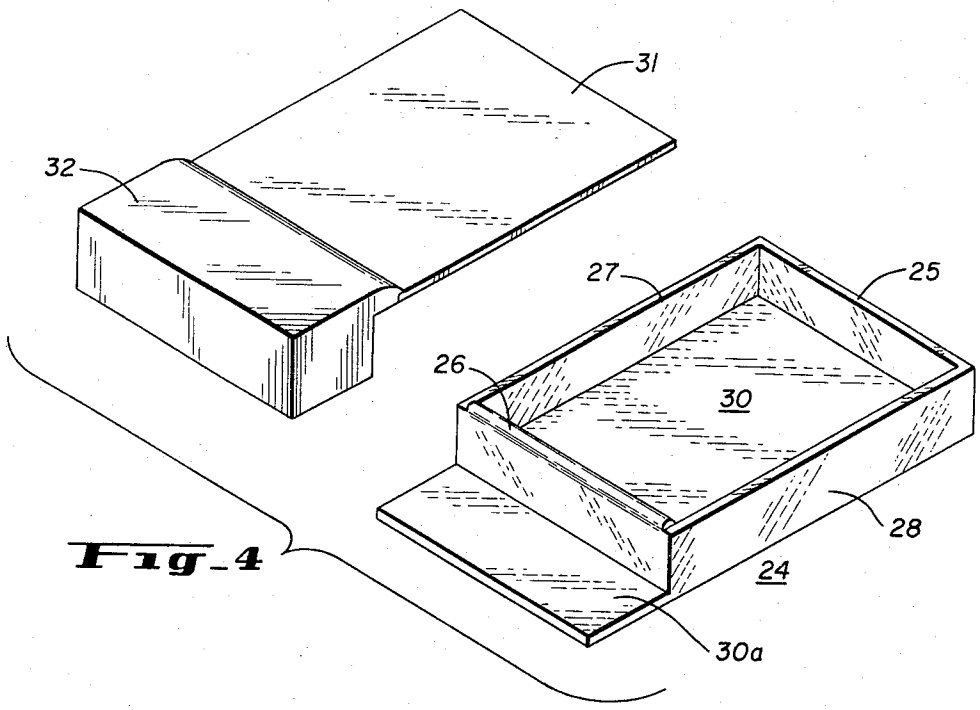


Fig_4

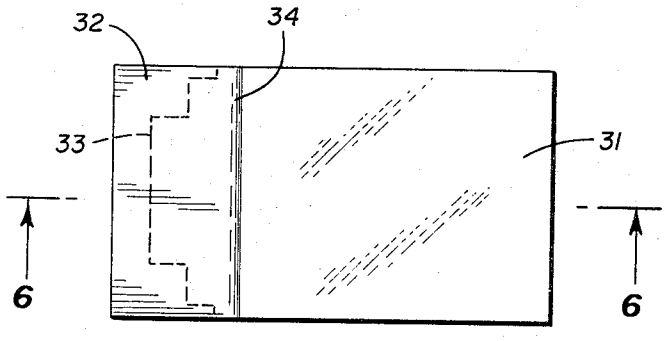


Fig_5

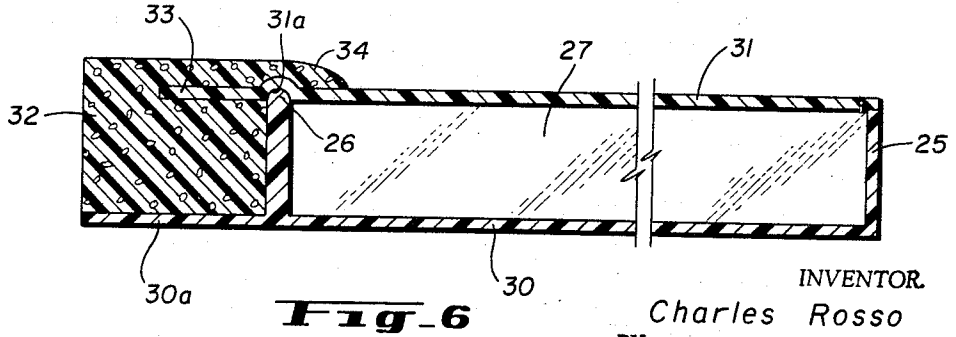


Fig_6

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HINGED LID BOX

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10 Claims. (Cl. 220—31)

ABSTRACT OF THE DISCLOSURE

A box of the hinged lid type is constructed to be opened by pressing a portion of the lid which extends rearwardly beyond the hinge or fulcrum. The extension of the lid and an extension of the bottom wall of the box are connected by an envelope or body of resilient and flexible plastic material which holds the lid in position on the box and allows pressing of the lid extension to open the lid and also returns the lid to closed position when released.

This invention relates to containers or boxes and more particularly to an improved hinged lid box of the type which is opened by pressure of the thumb and finger.

Many forms of boxes which are pressed to open them have been provided heretofore. The well known metal pill or tablet box is an example of these boxes wherein a pressure application point is provided for opening the lid while the box is gripped between the thumb and forefinger. Synthetic plastic materials have come into wide use in the container field and various forms of hinged cover boxes made of plastic materials have been provided heretofore.

It is an object of this invention to provide an improved hinged lid box of the pressure opening type.

It is another object of this invention to provide an improved pressure opening box of the hinged lid type which may readily be constructed of synthetic plastic materials.

It is another object of this invention to provide a box of the hinged lid pressure opening type including an improved arrangement for maintaining the lid securely attached to the box.

Briefly, in carrying out the objects of this invention in one embodiment thereof, a rectangular box of rigid synthetic plastic material is provided with a lid fulcrumed on a wall of the box and with both the lid and the box bottom wall having extensions beyond the fulcrum outside the box compartment. The lid is held securely in hinged relationship to the box by a resilient plastic walled chamber enclosing the space between the extensions and securely bonded both to the lid and to the box. The resilient walled chamber is constructed to hold the lid normally in its closed position and for many applications no latch or catch is required to maintain the lid closed. The lid is opened by pressure between the box and lid extensions which collapses the resilient walled chamber and allows the lid to pivot to its open position. The lid is returned to its closed position upon the release of pressure.

The features of novelty which characterize this invention are pointed out with particularity in the claims annexed to and forming a part of this specification. The invention itself, however, both as to organization and manner of operation, together with further objects and advantages thereof, will be best understood upon reference to the following description taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of a box embodying the invention shown in its open lid position;

FIG. 2 is an enlarged perspective view showing the box of FIG. 1 with its lid in the closed position;

FIG. 3 is an enlarged sectional view of the box taken along the line 3—3 of FIG. 2;

FIG. 4 is an exploded perspective view of a box embodying a modified form of the invention;

FIG. 5 is a top plan view of the box of FIG. 4 when assembled; and

FIG. 6 is an enlarged sectional elevation view of the box taken along the line 6—6 of FIG. 5.

Referring now to the drawings, the box illustrated in FIG. 1 comprises a main body or container portion **10** and a lid **11** both of which are constructed of rigid plastic material and which are bonded together by a flexible or resilient plastic enclosure **12** at the end of the box outside the hinge of the cover **11**. In the illustration the box is shown with the lid held in its open position by pressure on the portion **12** exerted between the thumb and four fingers of a hand.

As shown in FIGS. 2 and 3, the body portion **10** comprises upstanding front and rear walls **14** and **15** and a bottom wall **16** which extends to the left of the rear wall **15** as indicated at **16***a*. The portion **10** is provided with rigid side walls **17** and **18** which extend to the rear wall **15** and are completed by flexible portions **17***a* and **18***a* thus providing side walls the full length of the box. The cover **11** rests on the top of the rear wall **15** and is provided with a struck-up rib **20** which extends along the rounded top of the wall **15** and provides a groove on its underside which fits the top of the wall so that the wall acts as a fulcrum for the lid **11** and minimizes shifting of the lid on the wall. Thus, when the resilient plastic wall **12** is depressed as indicated by the dotted lines in FIG. 3, a reduced width portion **11***a* of the cover **11** which extends rearwardly from the rib **20** is pressed downwardly and the main body portion of the lid is pivoted upwardly from its position on the body **10**.

The flexible portion **12** and the portions **17***a* and **18***a* are formed of a suitable resilient plastic which is bonded to the rigid walls of the body portion **10** and to the portion **11***a* of the cover **11**. Thus a closed chamber is formed between the resilient portion **12**, the wall **15**, the bottom extension **16***a*, and the rearward portion of the side walls **17***a* and **18***a*. The resilient portion **12** is bonded in position such that it holds the lid **11** downwardly against the upper edges of the walls of the box **10** and keeps the box normally closed. The portion **11***a* of the lid **11** is shorter than the portion **16***a* of the bottom wall end such that it may pivot downwardly and extend along the rear wall **15**, the portion **11***a* having a length about the same as the height of the wall **15**.

In order to allow confined air within the end chamber to escape, the wall portions **17***a* and **18***a* are provided with openings **21** and **22**, respectively, to allow the air to escape and to return when the resilient portion **12** is released and the lid thereby closed.

In FIG. 1 the box has been illustrated as of substantial size as compared with the hand which is operating it. However, it will readily be understood that this construction is suited for small tablet boxes and the like of the type frequently provided with the press-type lids.

The embodiment of the invention illustrated in FIGS. 3, 4 and 5 is similar in construction to that of FIG. 1 and, as illustrated in FIG. 4, a rigid body **24** is provided having upstanding front and rear walls **25** and **26**, repectively, connected by side walls **27** and **28**, the side walls terminating at the rear wall **26**. The bottom wall of the box indicated at **30** extends rearwardly of the wall **26** as indicated at **30***a*.

The lid assembly has been shown separate from the box, this assembly comprising a rigid lid **31** and a compressible resilient plastic block **32** cemented or otherwise securely bonded to the lid **31**. The block **32** has dimensions such that it will fit on the bottoms wall **30***a* at the rear of the wall **26** and retain the lid **31** in its closed position as indicated in FIGS. 5 and 6 with its groove **31***a* engaging the top of the wall **26**. The lid has a rearwardly extending portion **33** which is substantially shorter than the width of the lid and which is completely embedded within the plastic material **32**, this material preferably being a resilient foamed plastic as indicated in FIG. 6. The foamed plastic **32** extends a substantial distance over the top of the lid, as shown at **34** in FIG. 6, and the block is cemented or suitably bonded to the wall **26** and to the bottom extension **30***a*, the rearward portion **33** of the lid being completely embedded in the plastic foam.

This rearward portion may be collapsed by pressure, for example between the thumb and forefinger, and the portion **33** pressed downwardly so that the lid **31** opens, pivoting about the fulcrum provided at the top of the wall **26**. When the block **32** is released the resilience of the foamed material returns the lid **31** to its position in engagement with the tops of the side walls **27** and **28** and the front wall **25**.

It is thus apparent that this invention provides a plastic box of simple construction which may readily be opened by finger pressure and is particularly suited to act as a container for tablets, pills and the like.

While the invention has been described in connection with specific details of construction, various modifications and other applications will occur to those skilled in the art. Therefore it is not desired that the invention be limited to the details illustrated and described and it is intended by the appended claims to cover all modifications which fall within the spirit and scope of the invention.

I claim:

1. A box of the hinged cover type comprising a body member and a cover member cooperating to form a closed compartment, means on one of said members providing a fulcrum along an axis parallel to said cover and in alinement with one wall of said compartment and spaced inwardly from one edge of the cover a distance sufficient to afford leverage for lifting the cover on the other side of the fulcrum, means adjacent said one edge of said cover and extending between said cover and said body for retaining said cover on said body in engagement with said fulcrum and for holding said cover in its closed position, said retaining means being resilient and compressible whereby said edge of said cover may be depressed to compress said retaining means and to rotate said cover about said fulcrum to an open position affording access to the interior of said compartment and whereby said cover is returned to its closed position by the resilience of said retaining means upon release.

2. A box of the hinged cover type comprising a body member and a cover member cooperating to form a closed compartment, fulcrum means provided along one wall of the box constituting a hinge for the cover and spaced inwardly from the adjacent edge of said cover a distance sufficient to afford leverage for pivoting the cover member about the fulcrum, said body and said cover being constructed of rigid material, means adjacent said fulcrum means and comprising a hollow plastic closure of resilient flexible material secured to said members adjacent said edges for sealing said members together and for holding said cover in its closed position, said hollow closure being collapsible whereby said adjacent edges of said cover may be depressed and said cover thereby rotated about said fulcrum to a position affording access to the interior of the box, said cover being returned to its closed position upon release by the resilience of said material.

3. A box of the hinged cover type comprising a body member and a cover member cooperating to form a closed compartment, means on one of said members along one wall of the compartment providing a fulcrum for facilitating pivotal movement of said cover about said wall, said fulcrum being near but spaced from one edge of said cover to provide a leverage portion on the side of the fulcrum remote from said compartment, collapsible resilient hollow wall means for sealing said members together and for retaining said cover in its closed position on said body member in engagement with said fulcrum, said members having edge portions spaced from one another and extending beyond said fulcrum outside said compartment a distance sufficient to provide leverage about said fulcrum, said hollow wall means being of a flexible and resilient material attached to said edge portions and readily compressible whereby said edge portions may be pressed toward one another and said cover rotated by leverage about said fulcrum to a position affording access to the interior of the box, said cover being returned to its closed position by the resilience of said wall means upon release of said portions.

4. A box of the hinged cover type as set forth in claim **3** wherein the edge portion on said cover extends beyond said fulcrum a distance of about the depth of said box and affords wide opening of said box upon pressing said edge portions toward one another.

5. A box of the hinged cover type as set forth in claim **3** wherein said hollow wall means is securely bonded to said members to hold them in assembled relationship with said cover member biased toward its closed position, said wall means being sealed to said members along its entire periphery to provide a closed chamber, and a vent opening in said wall member to afford passage of air upon compression and upon release of said wall means.

6. A box of the hinged cover type comprising a body member and a cover member cooperating to form a closed compartment, one of said members having a rigid wall portion extending in a plane normal thereto and having an edge portion engaging the other of said members along a straight line to provide a fulcrum for hinging movement of said members with respect to one another, said body and said cover being constructed of rigid material and having portions extending outside said compartment in generally parallel spaced relationship and to a distance sufficient to provide leverage about said fulcrum, means adjacent said rigid wall portion and comprising a flexible and resilient plastic material secured to said members for sealing said members together and for holding said cover in its closed position, said last mentioned means being collapsible whereby said extending portion of said cover may be depressed and rotated about said fulcrum to raise said cover by leverage to a position affording access to the interior of the box, said cover being returned to its closed position by the resilience of said material upon release.

7. A box of the hinged cover type as set forth in claim **6** wherein said cover is provided with a groove shaped to conform to the top of said wall portion along said fulcrum line for minimizing shifting of said cover member with respect to said body member.

8. A box of the hinged cover type comprising a body member of rigid material having upright walls and an outside extension in the plane of the bottom wall thereof adjacent one of said walls, a rigid cover member fitting over said walls to provide a closed compartment and having an extension beyond said one wall spaced from said bottom wall extension and of a sufficient length to afford leverage about the top of said one wall as a fulcrum, and a body of compressible synthetic plastic filling the space between said extensions and bonded to said cover and to said body member for securing said members together and for maintaining said cover in its closed position, said plastic means being resilient and compressible upon pressure urging said extensions toward one another whereby said cover is fulcrumed about said one wall and rotated to an open position, said cover being returned to its closed

position by the resilience of said plastic means upon release.

9. A box of the hinged cover type as set forth in claim 8 wherein said compressible plastic means comprises a block of foamed plastic material mounted between said extensions and bonded to said one wall and to said extensions.

10. A box of the hinged cover type as set forth in claim 9 wherein said extension on said cover is of reduced width and wherein said block of foamed plastic extends over the top of said cover and completely embeds said extension of said cover.

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