Sept. 17, 1968 W. A. MESSINA 3,401,827

REMOVABLE CONTAINER LID WITH INTEGRAL FOLDING HANDLE

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Fig. 1.

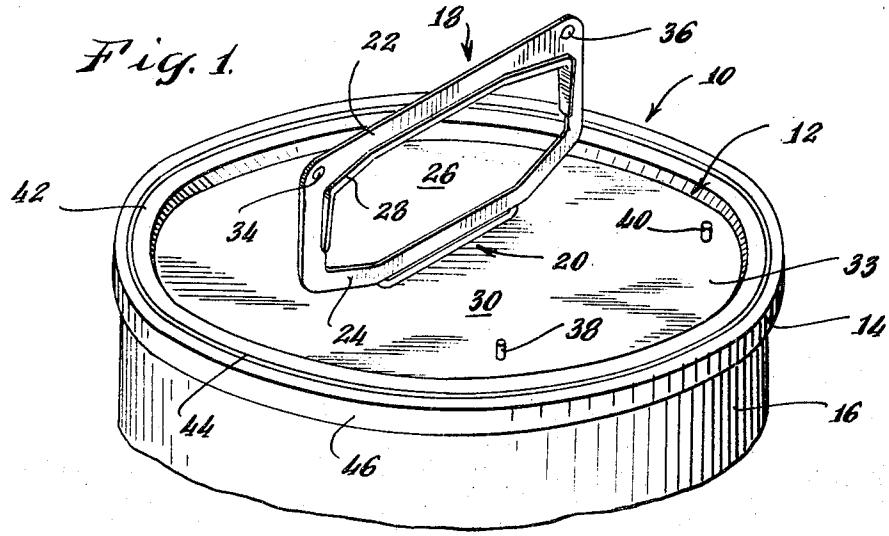


Fig. 2.

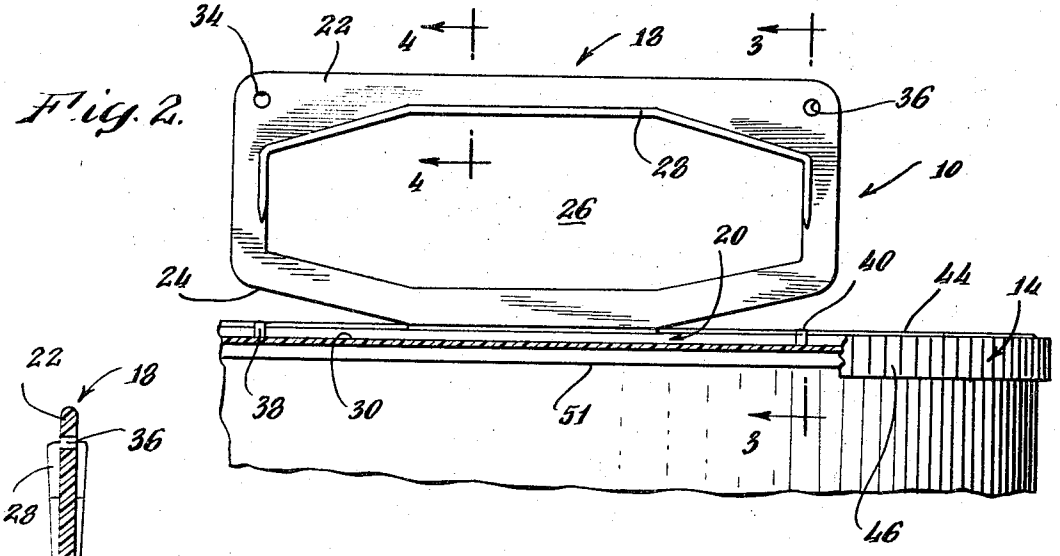


Fig. 3.

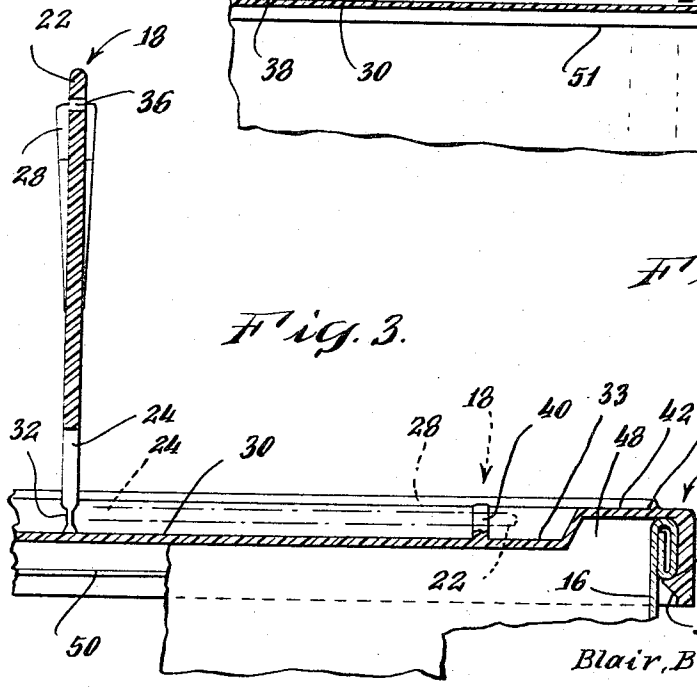
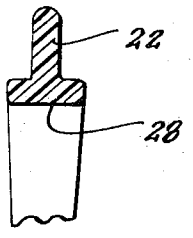


Fig. 4.



INVENTOR.
William A. Messina
BY
Blair, Buckles, Cesari & St. Onge
ATTORNEYS.

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Fig. 5.

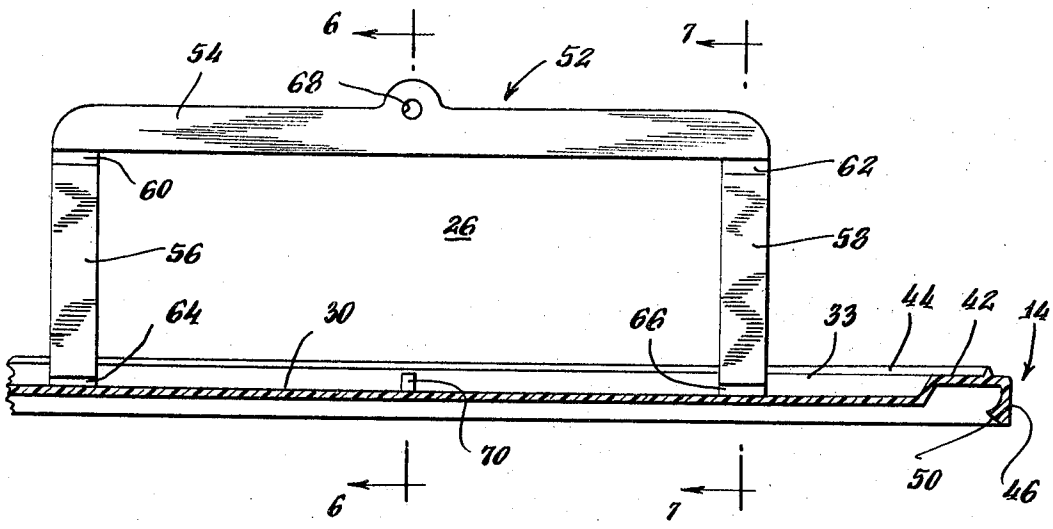


Fig. 6.

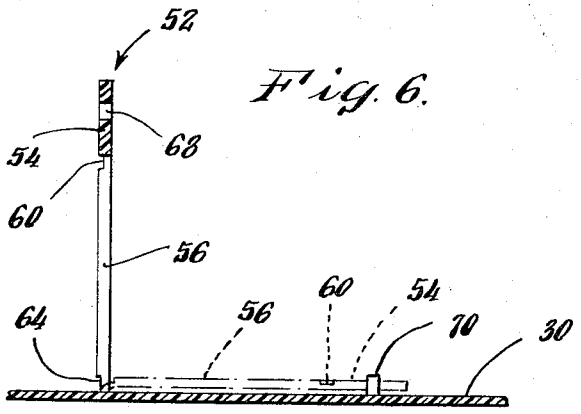
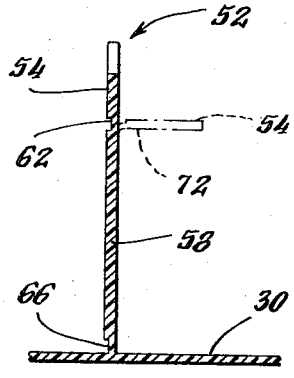


Fig. 7.



INVENTOR.
William A. Messina

BY

Blair, Buckles, Cesari & St. Onge
ATTORNEYS.

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REMOVABLE CONTAINER LID WITH INTEGRAL FOLDING HANDLE

William A. Messina, Stamford, Conn., assignor to Atlantic Plastics, Inc., Stamford, Conn.

Filed July 3, 1967, Ser. No. 650,831
3 Claims. (Cl. 220—94)

ABSTRACT OF THE DISCLOSURE

Disclosed herein is an integrally molded, removable plastic lid for containers such as vacuum sealed containers for coffee, shortening or the like. A handle is integrally molded with the lid to aid in handling heavy or bulky containers, and a flexible hinge permits the handle to fold flat against the lid to facilitate container stacking; apertures on the handle frictionally engage with protrusions on the lid top to secure the handle in its flat, folded condition. Means are also provided to cushion the user's hand from sharp plastic edges of the handle.

Background of the invention

Foodstuffs such as coffee and shortening have long been packaged in vacuum-sealed metal containers in order to preserve their freshness during shipment, storage and on the market shelves. Until recently, however, the consumer has been faced with a problem in preserving the freshness of such foodstuffs once the vacuum-sealed container has been opened. Now, food packagers are including with many such vacuum-sealed metal containers a removable plastic lid. Once the container has been opened, these lids are employed to securely seal the open end between uses.

The availability of such lids has significantly lengthened the period during which selected foodstuffs can be maintained fresh on the consumer's shelf. As a result, food packagers are now able to market larger containers of certain foodstuffs than heretofore possible since consumers need no longer fear that spoilage may occur before the larger quantity of product can be consumed.

A problem is encountered, however, in that the larger container sizes are heavy and bulky and therefore difficult to handle. The difficulty is compounded since protrusions or other aids to handling are not feasible on the side walls of such containers; they must be kept relatively smooth and cylindrical to withstand the subatmospheric internal pressure resulting from vacuum packaging, and to facilitate shipment. In addition, protruding handles or the like cannot be placed on the top or bottom surfaces of such containers since they must be stacked on supermarket shelves in order to be properly and economically displayed.

The expendable nature of vacuum-sealed metal containers for consumer products raises yet a further problem in that any aid to the handling of such containers must lend itself to easy and inexpensive mass production processes.

Accordingly, representative objects of the present invention are to provide a removable container lid which greatly facilitates the handling of its associated container without deleteriously affecting the shipment or storage characteristics thereof, and which can be easily and inexpensively mass produced.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described, and the scope of the invention will be indicated in the claims.

Summary of the invention

The present invention relates to an integrally molded plastic container lid for use in sealing containers for coffee, shortening or the like. A handle forms an integral part of the lid of the invention so that the lid may serve as an aid to the handling of its associated container.

Referring to FIGURE 1, the lid of the invention shown generally at **10** comprises a top **12** of circular configuration surrounded by an adge **14** which is adapted to securely grip and seal the periphery of an associated container **16**. A handle shown generally at **18** is integrally molded with lid **10** and is connected to top **12** through a flexible hinge shown generally at **20**. The flexibility of hinge **20** permits handle **18** to be folded flat against top **12** so that a number of containers covered with lids in accordance with the invention can be stacked for storage or display. Means more fully described below are provided to maintain the handle **18** secure in its flat, folded condition against top **12**.

The lid of the invention is integrally molded from a plastic material, preferably from a polyolefin such as polyethylene. The integrally molded structure of the lid of the invention permits it to be easily and inexpensively mass produced for the consumer market, while providing a strong and reliable lid which efficiently performs its desired functions of both sealing and aiding in the handling of an associated container.

Brief description of the drawings

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings in which:

FIGURE 1 is a top perspective view of a container lid in accordance with the invention, shown in place on an associated container.

FIGURE 2 is an enlarged partial front elevation view of the lid of FIGURE 1 shown partially in section.

FIGURE 3 is an enlarged partial sectional view taken along line **3—3** of FIGURE 2.

FIGURE 4 is an enlarged partial sectional view taken along line **4—4** of FIGURE 2.

FIGURE 5 is a partial front elevation view of another embodiment of the lid of the invention shown partially in section.

FIGURE 6 is a partial sectional view taken along line **6—6** of FIGURE 5.

FIGURE 7 is a partial sectional view taken along line **7—7** of FIGURE 5.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Description of the preferred embodiments

Referring to FIGURES 1 and 2, the handle **18** of lid **10** comprises a cross-piece **22** integrally formed with a support member **24** so that the two define a central aperture **26** for receipt of the user's hand. An enlarged bead **28** (FIGURE 4) is preferably provided along the inner edge of cross-piece **22** facing aperture **26** to cushion the user's hand from any sharp plastic edges.

Handle **18** is integrally connected to a flexible surface **30** of top **12** which is recessed below edge **14**. A flexible hinge **20** comprising a web of reduced cross section **32** (FIGURE 3) joins support member **24** and the flexible surface **30**. As shown by dotted lines in FIGURE 3 the flexibility of web **32** permits handle **18** to be folded flat against top **12**, where it lies flush within the recess **33** formed by surface **30** and edge **14**. Thus positioned, handle **18** will not interfere with the stacking of containers carrying the lid of the invention.

Means are provided to securely maintain handle **18** in

its flat, folded condition within recess **33** so that it will not accidentally protrude. Preferably, a pair of apertures **34** and **36** are provided adjacent either end of cross-piece **22**. A pair of protrusions **38** and **40** are provided on surface **30** within recess **33** in position to register with the respective corresponding aperture **34** or **36** when handle **18** is folded flat as shown in FIGURE 4. The diameters of protrusions **38** and **40** are so correlated with the bores of apertures **34** and **36** that a tight frictional engagement occurs therebetween when handle **18** is folded flat. The frictional force so provided will maintain handle **18** in its flat folded condition for efficient stacking, storage, or shipment of containers carrying the lid of the invention.

In applications where handle **18** is not required to lie perfectly flat, a single aperture may be provided at substantially the center of cross-piece **22**, and a single corresponding protrusion may be appropriately positioned on surface **30** within recess **33**. The single aperture and protrusion function in a manner essentially similar to the double aperture and protrusion structure of FIGURE 1, except that there is some tendency for the ends of cross-piece **22** to curl upwardly from within recess **33**.

Referring to FIGURE 3, the edge **14** of lid **10** comprises a raised shelf **42** completely surrounding flexible surface **30**. Preferably, an upstanding abutment **44** runs completely around the surface of shelf **42**. The purpose of abutment **44** is to engage with the bottom of a container stacked above lid **10** and thereby impede relative lateral movement. The interlocking effect thus produced facilitates the efficient stacking of containers by inhibiting slippage which would otherwise results in containers falling from their stacked positions.

Still referring to FIGURE 3, an overhanging skirt **46** completely surrounds and depends from shelf **42**. Shelf **42** and skirt **46** together form, on the bottom surface of lid **10**, an annular recess **48** for receipt of the open end of an associated container.

An inwardly protruding ledge **50** runs around the inner surface of skirt **46**. Ledge **50** is constructed to interlock with a corresponding lip **51** (FIGURE 3) on the open end of an associated container so that lid **10** can be snapped on to seal said container between uses. Further, the interlock between ledge **50** and the lip **51** of the container keeps the combination intact when it is lifted by handle **18**. The flexible nature of surface **30** enhances this interlock between ledge **50** and container lip **51**. Upon lifting of the lid-container combination with handle **18**, the container weight pulling downwardly cause flexible surface **30** to bow upwardly; this in turn causes edge **14** to be drawn more lightly about the periphery of the container, forcing ledge **50** to even more securely engage the corresponding lip **51** thereon. Thus, the lid of the invention automatically compensates for heavier containers by providing for more gripping force to be exerted thereon in lifting.

Referring to FIGURE 5, there is shown another embodiment of the lid of the invention. The handle **52** of this embodiment comprises a cross-piece **54**, integrally connected at its ends to a pair of support members **56** and **58** through webs **60** and **62** of reduced cross section (FIGURES 6 and 7). Support members **56** and **58** are integrally attached to flexible surface **30** respectively by flexible hinges **64** and **66**. As shown in FIGURES 6 and 7, hinges **64** and **66** each comprise a web of reduced cross section. The flexibility of hinges **64** and **66** permit handle **52** to be folded flat within recess **33** as shown in dotted lines in FIGURE 6.

To maintain handle **52** secure in its flat, folded position there is provided a single aperture **68** on cross-piece **54** and a corresponding single protrusion **70** on surface **30** as shown in FIGURE 5. Protrusion **70** and aperture **68** frictionally engage (FIGURE 6) in the same manner as hereinabove described for the corresponding members of the embodiment of FIGURE 1. It will also be understood that a plurality of apertures and corresponding protrusions may be provided in this embodiment where it is desirable that handle **52** be held extremely flat.

As shown by dotted lines in FIGURE 7, the webs **60** and **62** permit cross-piece **54** to twist or rotate so that one flat surface **72** may lie generally parallel to the surface of lid **10**. Such rotation of cross-piece **54** will occur when a container carrying lid **10** is lifted by means of handle **52**. Rotation of cross-piece **54** permits flat surface **72** to rest against the user's hand, thus cushioning same from any sharp plastic edges.

The edge **14** surrounding the lid of the embodiment shown in FIGURE 5 is identical in structure and function to the edge **14** of the lid embodiment shown in FIGURE 3.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above article without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An integrally molded, removable, plastic container lid comprising, in combination:

(A) a top having

(1) a recessed central area for receiving a folded handle and

(2) a peripheral edge adapted to securely grip and seal the periphery of a container,

(B) a foldable handle centrally mounted in said recessed area comprising

(1) an integral cross-piece and support member defining a central aperture for the user's hand,

(a) said cross-piece having an enlarged bead on the edge thereof adjacent to the upper portion of said central opening for cushioning the user's hand,

(b) said support member being integrally connected to said top within the center portion of the recess thereof by a flexible hinge comprising a web of reduced cross-section centered in said recess, and

(c) said support member comprising a pair of oppositely disposed leg portions extending upwardly at an acute angle from opposite ends of said hinge when said handle is in its unfolded upright position,

(i) said angular leg portions integrally connecting with a pair of substantially vertical end portions connected to the upper portion of said cross piece and forming therebetween said central aperture for the user's hand,

(C) means for securing said handle in its folded condition against said top comprising

(1) at least one aperture in said crosspiece, and

(2) at least one protrusion on said top within said recess in position to frictionally engage said aperture when said handle is folded, whereby said handle may be secured substantially flat against said top within said recess to facilitate shipment, storage and stacking of containers having said lid thereon.

2. A lid as defined in claim **1** wherein said top is flexible, whereby in use said handle causes flexure of said top and a resultant tightening grip by said edge about the periphery of an associated container.

3. A lid as defined in claim **1** having a pair of said aper-

tures, one adjacent either end of said cross-piece, and a pair of said protrusions each in position to frictionally engage one said aperture.

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RAPHAEL H. SCHWARTZ, *Primary Examiner.*