

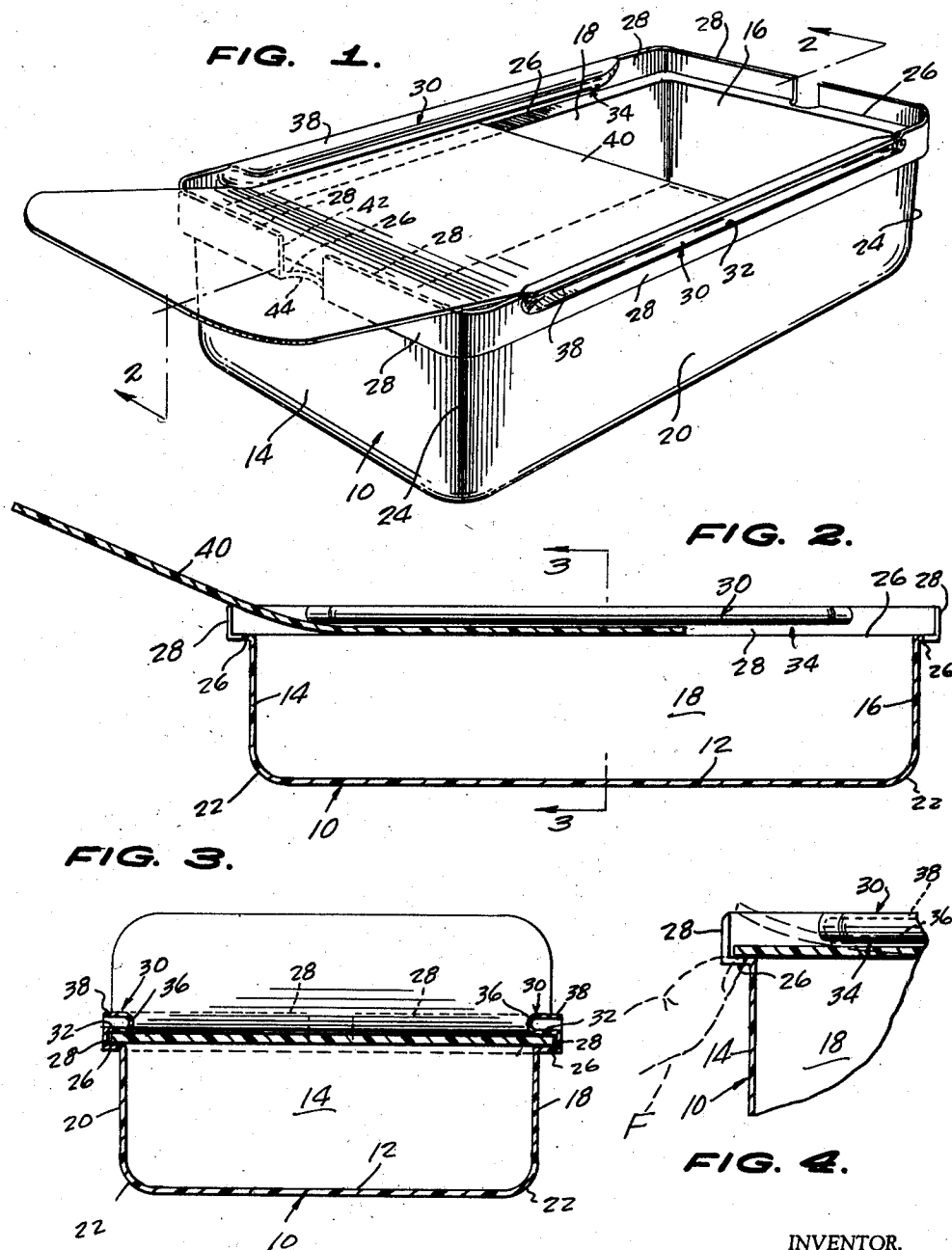
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TOTE BOX

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TOTE BOX

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1 Claim. (Cl. 220—41)

This invention relates to containers, in general, and more specifically, the present invention pertains to shipping containers generally known in the art as "tote boxes."

One of the primary objects of the present invention is to provide an improved container of the character described, which is designed to produce a high degree of efficiency with respect to the materials capable of being packed in the container, while still being adapted for manufacture at a comparatively low cost.

There is a continuing need in industry, for containers which are capable of manufacture at low cost, so as to be adapted for use as shipping containers and as receptacles or bins in various operations to be carried out in different industries, with the containers or receptacles being so designed as to be manufactured at a low cost, and further, to provide lids for the containers which may be effectively and swiftly locked in place. In meeting these requirements, the present invention is particularly designed for manufacture from any of various thermoplastic or thermosetting materials, with the body of the container being formed from a single piece of such materials.

The invention, further, has incorporated therein a lid which locks in place in response to slidable movement thereof to a closed position.

A more specific object of the present invention is to incorporate, in the container body, guide means for the lid which results in the lid being guided during its slidable movement to a closed position, in a path such as to cause the ends of the container body to be disposed as abutments adjacent opposite ends of the lid, when the lid is moved to its fully closed position.

Another object of importance in connection with this invention is to provide a lid which is formed of a flexible material, the lid being temporarily deformable into a configuration such as to allow it to be shifted between its open and closed positions, the lid assuming a planar condition when in its fully closed position, and being so disposed as to be locked securely in place in the particular circumstances.

This invention contemplates, as a still further object thereof, the provision of a container of the type generally described above, which is non-complex in construction and assembly, inexpensive to manufacture, and durable in use.

Other and further objects and advantages of the instant invention will become more evident from a consideration of the following specification when read in conjunction with the annexed drawing, in which:

Figure 1 is a perspective view of a container constructed in accordance with the present invention, the view illustrating the lid as being disposed in a partially open position;

Figure 2 is a longitudinal cross-sectional view taken substantially on the vertical plane of line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a transverse cross-sectional view taken sub-

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stantially on the vertical plane of line 3—3 of Figure 2, looking in the direction of the arrows; and,

Figure 4 is an enlarged fragmentary detail cross-sectional view taken substantially on the same cutting plane as Figure 2, with the lid being shown in full lines in its closed, locked position, and in dotted lines as it appears when flexed by the finger of the user for removal of the same.

Referring now more specifically to the drawing, designated generally at 10 is a container body, which, in the preferred embodiment of this invention, is formed from a single piece of plastic material. It is to be understood, however, that the materials of which the device is formed may be varied without departure from the spirit and scope of the invention as hereinafter claimed.

In the illustrated embodiment of this invention, the container body 10 is formed with a flat, substantially rectangular bottom wall 12, integral at its opposite ends with a pair of opposed upwardly projecting end walls 14, 16, and integral along its opposed sides with a pair of upwardly projecting side walls 18, 20. Preferably, the several corners of the container are rounded off as at 22, 24 so that the container is substantially completely devoid of sharp corners, both along the periphery of the bottom wall and along the junctures between the side and end walls.

Integrally formed along the upper edges of the end walls 14, 16 and the side walls 18, 20 is a continuous outwardly directed peripheral flange 26. The flange 26 at the end walls 14, 16 and side walls 18, 20 lies in a common horizontal plane and is integrally formed along its outer marginal edge with a low, upwardly projecting continuous lip 28. As is seen in the drawing, the lip 28 extending from the side walls 18, 20 is inwardly expressed at 30, intermediate the ends thereof, to form elongated flanges 32 reverted over and extending substantially parallel to adjacent portions of the flange 26 in vertically spaced relation relative thereto. The flange 26, lip 28 and the reverted flanges 32 co-act to form a pair of opposed confronting and parallel guideways 34. The expressed portions include arcuate bights 36 integrally connected with outwardly reverted flanges 38 which are substantially co-extensive with the adjacent flanges 32 and are disposed in vertically spaced relation relative thereto.

It should be here noted that the guideways 34 terminate at each of their respective ends short of the lip 28 extending from the end walls 14, 16 to serve a function to be described.

Reference numeral 40 denotes a transparent sheet of plastic material having a substantially rectangular configuration and comprising a lid or closure member for the upper end of the container 10. The lid 40 is flexible along lines extending transversely thereof and is placed in its operative position by passing either end thereof over the lip 28 extending from either of the end walls 14 or 16 and inserting the extended end into the guideways 34. The lid 40 slides on the flange 26 until the inserted end thereof abuts against the flange 28 at that end of the container remote from the point of insertion.

In Figure 1, the lid 40 is shown as being inserted over the lip 28 extending from the end wall 14 and moving towards the lip 28 extending from the end wall 16. The length of the lid 40 is such that as the inserted end of the lid 40 engages the lip 28 extending from the end wall 16, the other end of the lid 40 clears the lip 28 extending from the end wall 14 and comes to rest on that portion of the flange 26 associated therewith, and due to its flexibility, the lid 40 assumes its normal planar configuration. With the lid 40 in its closed position, the lip portions 28 at each end of the container 10 serve as abutments to prevent the inadvertent or accidental displacement of the lid 40 relative to the container 10.

Referring now more particularly to Figure 1 of the drawings, medially between opposite sides of the container body, the end lip associated with the end walls 14 and 16 is cut away as at 42 to provide a wide notch extending the full depth of the lip portions. The notches 42 continue into identical recesses 44 formed in the flange 26. The purpose of the notches 42 and recesses 44 is to provide an opening in which a finger F may be inserted, as shown in Figure 4, into a position below the adjacent extremity of the lid 40. Consequently, upward movement of the finger when engaged with the adjacent end portion of the lid 40 will cause this end portion of the lid to flex upwardly within the space between the adjacent extremity of the expressed portion 30 until it clears the adjacent portion of the lip 28. The lid 40 may now be grasped for the purpose of sliding the same from its closed position to an open position such as that shown in Figure 1. Of course, the lid could be removed completely, if desired, since it is adapted to slide over the lip portion 28 serving as one of the abutments, until it is completely clear of the confronting and parallel guideways 34.

It will be apparent that when the lid 40 is in its fully closed position, the opposite ends thereof will be in their full line positions as shown in fragment in Figure 4, with the sides of the lid being engaged in the guideways 34 as shown in Figure 3. Therefore, upward movement of the lid 40 will be prevented by the expressed portion 30, while longitudinal movement of the lid will be prevented by the upwardly projecting abutment defining portions of the lip 28 disposed adjacent each of the end walls 14, 16. In this manner, the lid is effectively locked in position, and will so remain even if the box is treated roughly, inverted, etc. Despite the adaptability of the lid 40 for remaining in a normally locked, closed position, it can still be moved to open position with maximum speed and ease, in the manner previously described herein.

Having described and illustrated one embodiment of this invention, it will be understood that the same is offered merely by way of example, and that the invention is to be limited only by the scope of the appended claim.

What is claimed is:

A container comprising an elongated substantially rectangular container body having a bottom wall, and continuous opposed pairs of said walls and end walls integrally connected with the marginal edges of said bottom wall and projecting laterally from one side thereof, said container having an open end oppositely disposed with respect to said bottom wall, said opposed pairs of side and end walls having a continuous, outwardly extending

peripheral flange integrally connected therewith adjacent said open end of said container, a continuous lip integrally connected with the marginal edges of said peripheral flange and projecting away from said peripheral flange in a direction opposite to the projection of said opposed side and end walls from said flange, the portions of said lip adjacent said side walls being inwardly expressed between points spaced equal distances inwardly from the portions of the lip located adjacent said end walls to form a pair of spaced and substantially parallel flanges having their respective inner longitudinally extending marginal edges connected integrally by bight members, said pair of parallel flanges extending parallel to said peripheral flange in spaced relation relative thereto, said peripheral flange, the immediately adjacent one of said pair of parallel flanges and that portion of said lip extending therebetween forming a substantially U-shaped groove opening inwardly into said container, said U-shaped grooves on said oppositely disposed side walls being disposed in laterally spaced and confronting relation, said lip at each end wall of said container and a portion of said peripheral flange immediately adjacent thereto having a continuous finger receiving recess formed therein, and a removable closure member for said open end of said container, said closure member having an elongated substantially rectangular configuration and being formed of a resilient flexible material adapted to be flexed in a direction transverse to its longitudinal axis, said closure member having an end thereof slidably engaging over said lip contiguous with one of said end walls and being flexed into a substantially curvilinear configuration for slidable engagement within said grooves to a point immediately adjacent the portion of said lip contiguous with the other of said end walls at which point the other end of said closure member clears the portion of said lip contiguous with said one of said end walls and said closure member flexes into its normal planar condition with said ends thereof and immediately adjacent portions of its sides not engaged within said grooves resting on and being supported by adjacent portions of said peripheral flange.

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