July 20, 1943. O. W. WENTZ 2,324,807

CONTAINER DISCHARGE OUTLET AND RELEASABLE CLOSURE MEANS THEREFOR

Filed Sept. 18, 1941 2 Sheets-Sheet 1

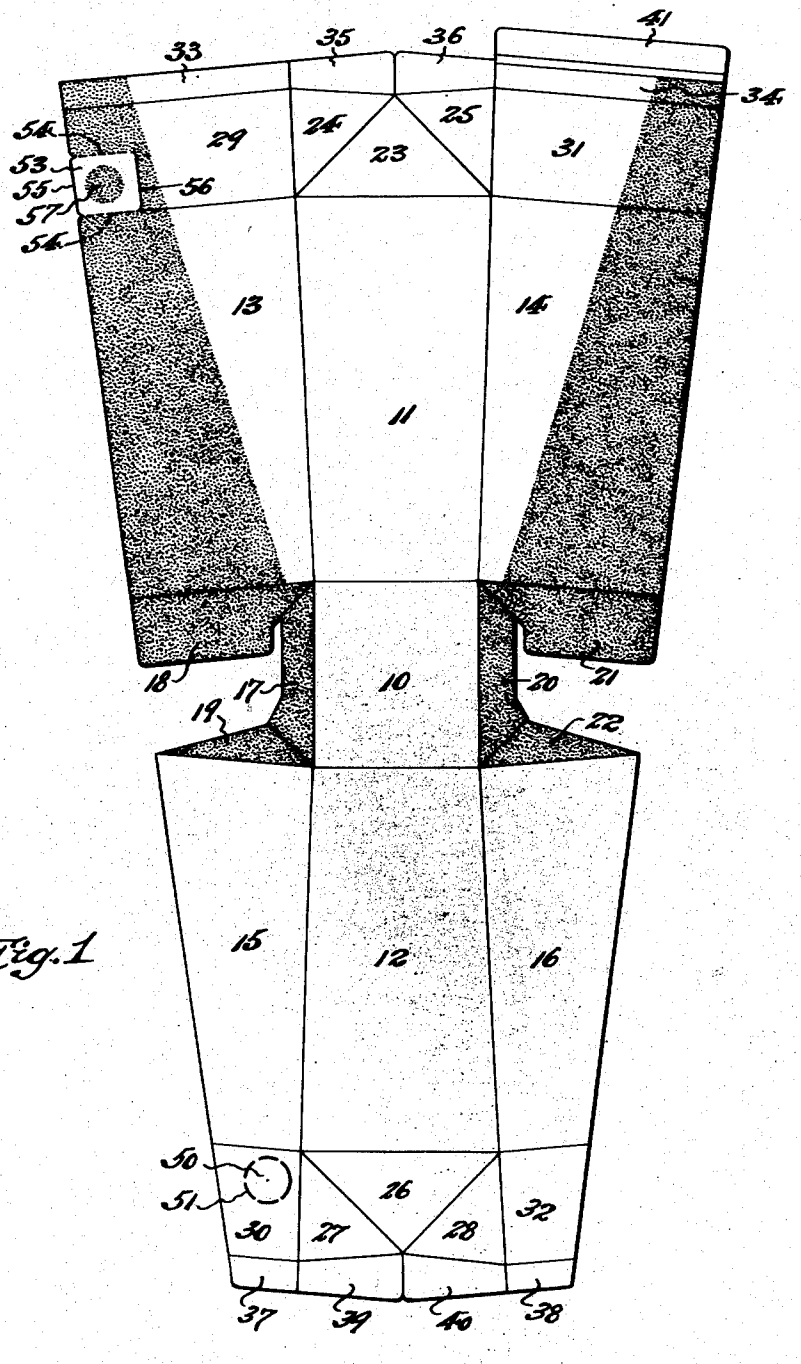



Fig. 1

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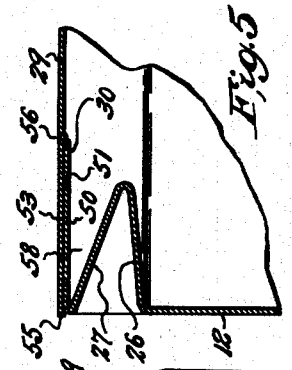


Fig. 5

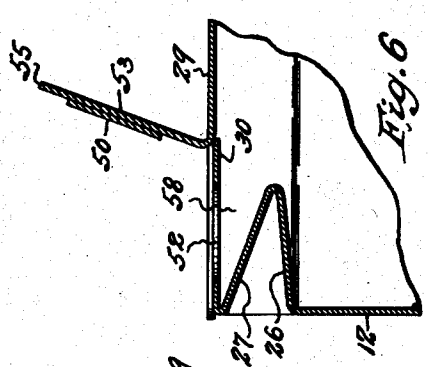


Fig. 6

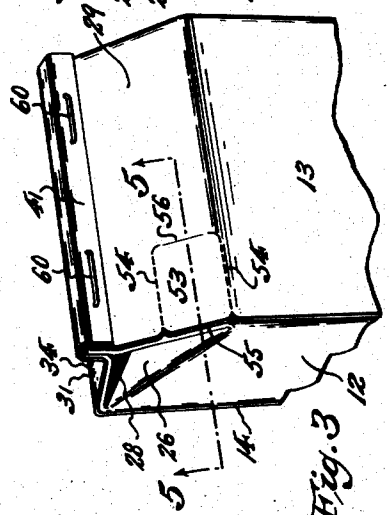


Fig. 3

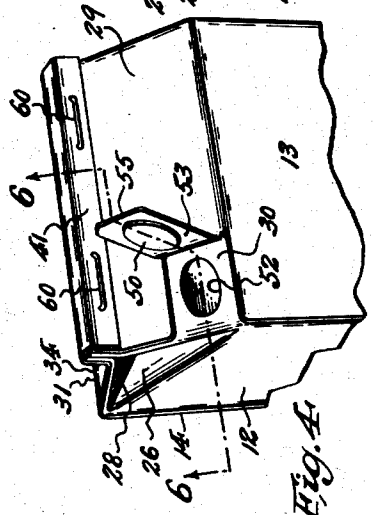


Fig. 4

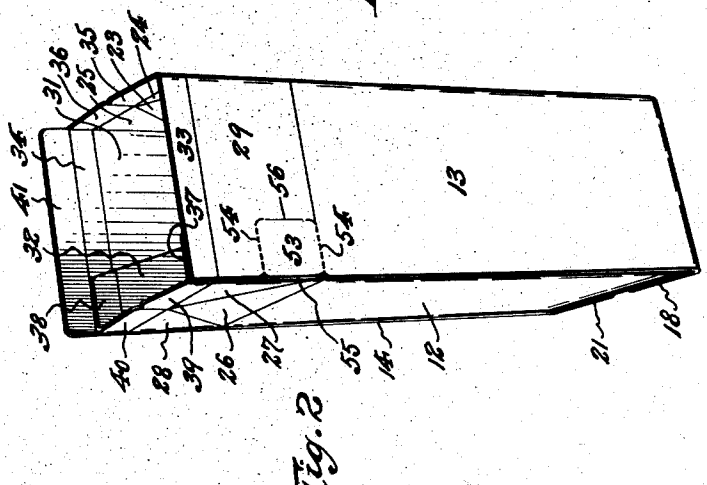


Fig. 2

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# UNITED STATES PATENT OFFICE

2,324,807

## CONTAINER DISCHARGE OUTLET AND RELEASABLE CLOSURE MEANS THEREFOR

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Application September 18, 1941, Serial No. 411,311

2 Claims. (Cl. 229—17)

This invention relates to a container made of paper or the like, and, more particularly, to the provision in such container of a novel construction of discharge outlet and releasable closure therefor.

This invention has for an object to provide, in a container made of foldable sheet material such as paper, cardboard or the like, the mouth of which is capable of being securely closed to confine within the same a content deposited therein, as a unitary part of such container, a novel discharge outlet having an initially closed releasable closure means.

Another object of this invention is to provide a container of the above mentioned character which is so shaped, in conjunction with the location therein of the novel discharge outlet and its closure, as to provide a convenient pouring spout through which the confined content of the container may, at will, be discharged.

A further object is to provide a container of paper or the like, having the novel discharge outlet and releasable closure therefor, the structural make-up of which is such as to provide a sealed, liquid-proof enclosure or package adapted to contain a liquid or like content.

Another and more specific object of this invention is to provide a pouring spout structure including a discharge outlet and releasable closure therefor which is especially well adapted for incorporation in containers of the general type and kind disclosed in my prior United States Letters Patent No. 2,158,097, dated May 16, 1939.

Other objects of this invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

Fig. 1 is a plan view of a paper blank of outline shape and fold determining scoring from which may be made one illustrative form of container including the novel discharge outlet and closure therefor according to this invention; Fig. 2 is a perspective view of a container made from the blank of Fig. 1, with its mouth end open for filling; Fig. 3 is a fragmentary perspective view, on an enlarged scale, of the container having its mouth end closed after filling, and showing the discharge outlet as initially closed and sealed; Fig. 4 is a view similar to that of Fig. 3, but showing the discharge outlet in opened condition; Fig. 5 is a fragmentary sectional view, on a further enlarged scale, taken on line 5—5 in Fig. 3; and Fig. 6 is a similar sectional view, on an enlarged scale, taken on line 6—6 in Fig. 4.

Similar characters of reference are employed in the hereinabove described views, to indicate corresponding parts.

The novel discharge outlet and releasable closure therefor, according to this invention, is shown, in the accompanying drawings, as incorporated in a container of the general type and kind disclosed in my aforesaid prior United States Letters Patent No. 2,158,097; and although there are certain specific advantages in the application thereof to such type of container, as will later appear, it is nevertheless to be understood that the same, within the broader aspects of the invention, is not necessarily to be limited in application to such container form, since it may also be applied to many other forms of containers having superposed wall sections in which the novel discharge outlet and its closure member may be formed.

The illustrated container is made from a single piece or blank of suitable fibrous or cellulose material, such as paper, cardboard, or other appropriate fibrous or cellulose material. This blank, as shown in Fig. 1, is suitably shaped and scored with fold lines to provide a bottom panel 10, from opposite transverse margins of which respectively extend side wall panels 11 and 12. Extending respectively from opposite vertical margins of the side wall panel 11 are the remaining side wall panels 13 and 14, and extending respectively from opposite vertical margins of the side wall panel 12 are anchor laps or wings 15 and 16.

Extending from one vertical margin of the bottom panel 10 is a bottom flap element 17, and extending respectively from opposed lower or inner end margins of the adjacent side wall panel 13 and anchor lap or wing 15 are bottom flap elements 18 and 19. These bottom flap elements 17, 18 and 19 are suitably shaped and connected at their adjoining portions by scored fold lines, whereby, during the manipulation of the blank to form the ultimate container, said bottom flap elements may fold upon themselves and then bodily beneath the underside of the bottom panel 10, to which the same are to be adhered, whereby not only is the bottom of the resultant container strongly reenforced, but also closed leak-proof corners are assured, all as fully disclosed in my aforesaid prior Patent No. 2,158,097.

In like manner, extending from the other vertical margin of the bottom panel 10 is a similar

bottom flap element 20, and extending respectively from opposed lower or inner end margins of the adjacent side wall panel 14 and anchor lap or wing 16 are similar bottom flap elements 21 and 22, which are similarly foldably connected by intermediate scored fold lines for similar manipulation relative to the bottom of the ultimate container.

Extending from the top or outer end margin of the side wall panel 11 is a top closure tuck or bellows panel which is scored by fold lines to provide a substantially triangular intermediate section 23, based on said side wall panel 11, and from which spring relatively foldable and oppositely directed side sections 24 and 25 also of substantially triangular shape.

In like manner, extending from the top or outer margin of the side wall panel 12 is a similar top closure tuck or bellows panel which is likewise scored by fold lines to provide a substantially triangular intermediate section 26, based on said side wall panel 12, and from which spring similar relatively foldable and oppositely directed side sections 27 and 28.

Extending from the top or outer margin of the side wall panel 13 is a top closure panel 29, the inner lateral side of which joins the contiguous margin of the side section 24 of the adjacent top closure tuck or bellows panel, being foldably related thereto by an intermediate scored fold line. Similarly extending from the top or outer margin of the anchor lap or wing 15 is an anchor lap or wing extension 30, the inner lateral side of which foldably joins the contiguous margin of the side section 27 of the other top closure or bellows panel.

In like manner, extending from the top or outer margin of the side wall panel 14 is a similar top closure panel 31, the inner lateral side of which foldably joins the contiguous margin of the side section 25 of the adjacent top closure tuck or bellows panel; and extending from the top or outer margin of the anchor lap or wing 16 is an anchor lap or wing extension 32, the inner lateral side of which foldably joins the contiguous margin of the side section 28 of the other top closure or bellows panel.

Extending from the outer end margins of the top closure panels 29 and 31 and the intermediate top closure tuck or bellows panel is one set of closure meeting elements 33, 34, 35 and 36, the same being interconnected by scored fold lines for relative folding movement; and, in like manner, extending from the outer margins of the anchor lap or wing extensions 30 and 32 and the intermediate top closure tuck or bellows panel is the other set of closure meeting elements 37, 38, 39 and 40, the same being likewise interconnected by scored fold lines for relative folding movement.

Extending from one of the closure meeting elements, as e. g. the element 34, is a foldable closure lap 41.

Illustrative of one desirable location and arrangement of the novel discharge outlet and releasable closure means therefor in connection with a container to be formed from the above described blank, one of the anchor lap or wing extensions, as 30, is provided, adjacent to its juncture with the anchor lap or wing 15 and with the side section 27 of the adjoining top closure or bellows panel, with a removable stopper section 50 of suitable peripheral shape, the same being defined by outlining rouletted incisions 51, whereby, upon bodily displacement of said stopper section 50 from the anchor lap or wing extension 30, a discharge or outlet opening 52 is left in the latter. Formed in connection with a top closure panel, e. g. the panel 29, preferably as a unitary part thereof, is a releasable closure tab 53, the sides of which are defined by rows of rouletted incisions 54. The outer extremity 55 of said closure tab 53 is aligned with the free outer margin of said top closure panel 29, and the inner extremity of the same is preferably limited by a scored fold line 56 adapted to serve as a hinging point about which said closure tab may be swung or turned, when broken loose from said closure panel 29.

In manipulating the above described blank to form a container therefrom, the side wall panels 11 and 12, together with the parts extending therefrom, are first turned or swung into upstanding relation to the bottom panel 10, whereupon the anchor laps or wings 15 and 16 and then the remaining side wall panels 13 and 14, together with the parts extending endwise therefrom, are respectively swung laterally inward ninety degrees, whereby to form, in conjunction with the side wall panels 11 and 12, the four sides of the container body. In performing the latter operations, the anchor laps or wings 15 and 16 are respectively disposed in the planes of the side wall panels 13 and 14 so as to lie, optionally, contiguous to either the external or internal faces of the latter; the disposition of said anchor laps or wings 15 and 16, as shown in the accompanying drawings, being that in which they respectively lie contiguous to the internal faces of said side wall panels 13 and 14. The side wall panels 13 and 14, when thus operatively related to the anchor laps or wings 15 and 16, are adhesively secured to the latter, and to this end the former are first coated with a suitable adhesive (indicated by the stippling in Fig. 1) applied over the face areas thereof which are to meet and adhere to said anchor laps or wings 15 and 16.

As the above described operations are carried out, the top closure panels 29 and 31 will likewise be respectively brought into the planes of the anchor lap or wing extensions 30 and 32, so as to lie contiguous to the external faces thereof, to which they will be adhesively secured by their coatings of adhesive (also indicated by the stippling in Fig. 1).

Also during the performance of the above described operations, the bottom flap elements, 17—18—19 and 20—21—22 will be folded upon themselves, subject to being thereafter inturned over and contiguous to the underside of the bottom panel 10; the same being adhesively secured together in their interfolded relation and thereupon to the underside of said bottom panel 10 by adhesive coatings with which they are provided (which coatings are likewise indicated by the stippling in Fig. 1).

In the application of adhesive to the top closure panel 29 in which is located the closure tab 53, the internal face of said tab 53 which is to meet the face of the anchor lap or wing extension 30, during the container forming operation, is left bare of adhesive except for a spot 57 thereof which will register with the stopper section 50, contained in said anchor lap or wing extension 30, so that when said anchor lap or wing extension 30 meets the top closure panel 29, said stopper section 50 will be strongly adhered to the under surface of said closure tab 53 so as to become unitary therewith, but otherwise the

latter will be unattached to said anchor lap or wing extension **30**; thus being free for easy separation therefrom when it is desired to open the discharge or outlet opening **52**, as will be hereinafter more fully described.

By the above described operations, a container body, as shown in Fig. 2 of the drawings, is obtained in which the upper end is in initially open condition subject to introduction of a desired content into the container interior.

After the container is filled, its initially open end may be closed and suitably sealed. Such closing is accomplished by inwardly collapsing the top closure tuck or bellows panels **23—24—25** and **26—27—28**, thereby permitting the top closure panels **29** and **31** to be closed together, so that the closure meeting elements **33** and **34**, together with the infolded elements **35—36** and **39—40**, are brought into upstanding meeting or abutting relation, whereupon the foldable closure lap **41** is folded over and into embracing relation to such meeting elements (see Figs. 3 and 4). These parts as thus disposed in closed together relation may be secured, and sealed, if desired, against separation in any suitable manner. To this end the same may be adhesively joined together, or fastened together by staples **60** (as shown in Figs. 3 and 4), or otherwise secured by any other suitable method or means.

When it is desired to discharge the content of the container, the user merely grasps the free outer extremity of the closure tab **53** and exerts lifting and back swinging pressure thereupon. Since the stopper section **50**, although still united at peripheral points formed by the interruptions of the rouletted incisions **51** to the body of the anchor lap or wing extension **30**, it is, nevertheless, strongly adhered to the underside of said closure tab **53** so as to form a unitary part thereof. Consequently, when the closure tab **53** is lifted and swung back, not only will the sides of said closure tab **53** be torn free from the body of the top closure panel **29** along the lines of the rouletted incisions **54**, but at the same time said stopper section **50** will be likewise torn free from the extension **30** along the lines of the rouletted incisions **51** by which its periphery is defined. Such removal of said stopper section **50** leaves a discharge or outlet opening **52** which leads directly out of the interior of the container, through which the content of the container may be conveniently poured. A further advantage of the discharge outlet and releasable closure structure thus provided is that in the event but partial discharge of the container content is desired, after such partial discharge, the closure tab **53** may be returned to down-folded initial position and the stopper section **50** again entered in the opening **52**, whereby the container is substantially closed again until further discharge of its content is desired.

It is preferable that the discharge outlet and its releasable closure structure is embodied in the specific or like form of container hereinabove described and shown in the accompanying drawings, so that its location in connection with a portion of the top closure structure thereof is adjacent a corner of the container body, and above the adjacent portions of an inwardly projecting collapsed tuck or bellows panel of said top closure structure; such arrangement possesses the advantage that said underlying portion of the latter, since it converges upon the top closure panel with which said outlet and its closure is associated, provides an outlet passage **58** (see Figs. 5 and 6) which leads to the outlet opening **52**, and which, in effect, constitutes a convenient pouring spout adapted to terminate in said outlet opening **52**.

While I have described and shown the novel discharge outlet and its closure structure in association with a specific form of container, it is not intended thereby to limit this invention merely to such association, for it will be obvious that said discharge outlet and its closure structure may be embodied in any other form or design of container make-up, provided the latter includes in any part of its wall structure the contiguous superposed sections or plies of sheet material in which the stopper section **50** and the closure tab **53** may be respectively formed, so as to be mutually related in the manner shown and described. Consequently the herefollowing claims, unless specifically including the particular container form or features thereof hereinabove described, are not to be deemed as limited thereto.

Having now described my invention, I claim:

1. A container made of sheet material having a closed bottom, sides and an initially open top, said sides including opposed closure sections and intermediate bellows sections adapted to be closed together in secured relation to thereby close said open top, said bellows sections being respectively adapted to collapse and fold upon themselves for projection into the interior of the container beneath the closure sections, one of said bellows sections and an adjoining closure section being connected by an anchor lap extending from the margin of said bellows section into superposed attached relation to said closure section, thus providing superposed plies of sheet material adjacent the juncture of such sections, a stopper section provided in connection with the underlying of said plies, the periphery of which is separably attached and coincident to the margins of an outlet opening in said ply, a closure tab formed in the overlying ply subject to outswinging displacement therefrom, said closure tab overlying said stopper section, said stopper section being united to said closure tab so as to be unitary and movable therewith, said closure tab and stopper section and the outlet opening closed by the latter being contiguous to a top corner of the closed container, and a portion of the underlying bellow section being convergent upon the overlying closure section in which said closure tab and stopper section are formed, whereby to provide a tapering funnel-like spout passage leading to the outlet opening.

2. A container made of sheet material having a closed bottom, sides and an initially open top, said sides including opposed closure sections and intermediate bellows sections adapted to be closed together in secured relation to thereby close said open top, said bellows sections being respectively adapted to collapse and fold upon themselves for projection into the interior of the container beneath the closure sections, one of said bellows sections and an adjoining closure section being connected by an anchor lap extending from the margin of said bellows section into superposed attached relation to said closure section, thus providing superposed plies of sheet material adjacent the juncture of such sections, a stopper section initially integral with the underlying of said plies, the entire periphery of said stopper section being defined by rouletted incisions, whereby said stopper section is separable and bodily removable as a whole outwardly

from said ply and when bodily removed leaving an outlet opening in the latter, a closure tab formed out of and having an inner end integral with the overlying ply for hinged connection thereto and having side bounding portions defined by rouletted incisions, said tab overlying said stopper section and the latter being disposed wholly within the area of the tab whereby marginal portions of the latter surround and extend beyond the entire periphery of said stopper section, said stopper section being adhesively united to said tab but the said marginal portions of the tab being unsecured to the contiguous surface of the underlying closure section ply, the free forward end portion of the tab lying substantially coincident to a fold line between said closure section and an adjoining bellows section, whereby to permit insertion of a fingernail thereunder for manual engagement and lifting of the tab to upswung open position with attendant disruption of its rouletted side margins and like disruption of the rouletted periphery of the attached stopper section, one side of said tab being coincident to a fold line between said closure section and the container side from which the latter extends, whereby the closure tab and stopper section and outlet opening are located contiguous to a top corner of the closed container, and a portion of the underlying bellows section being convergent upon the overlying closure section in which said closure tab and stopper section are formed, whereby to provide a tapering funnel-like spout passage leading to the outlet opening.

OSCAR W. WENTZ.