Oct. 24, 1933. R. H. MERGENTHEIM 1,931,991

CLOSURE FOR CONTAINERS

Filed April 13, 1931

Fig. 1.

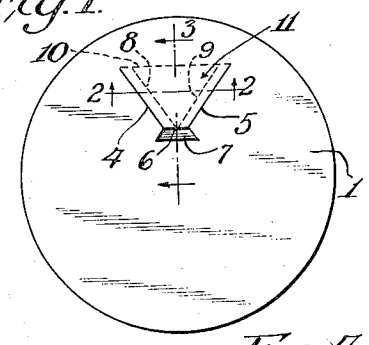


Fig. 2.

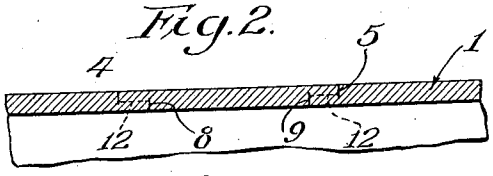


Fig. 3.

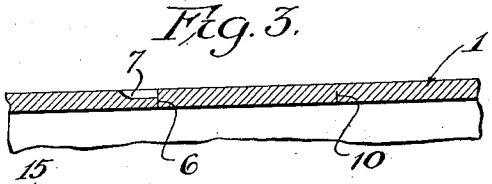


Fig. 4.

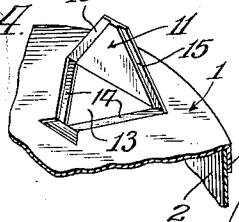


Fig. 5.

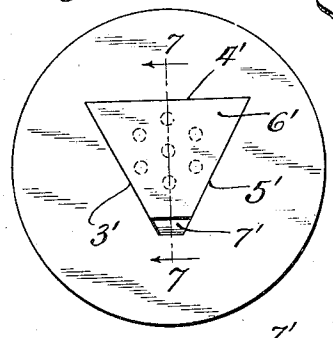


Fig. 6.

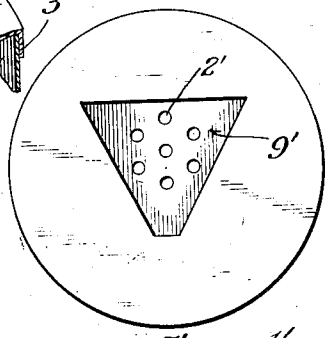


Fig. 7.

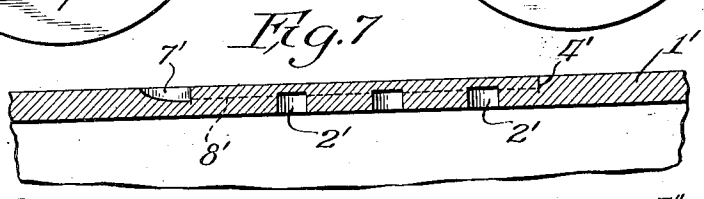


Fig. 8.

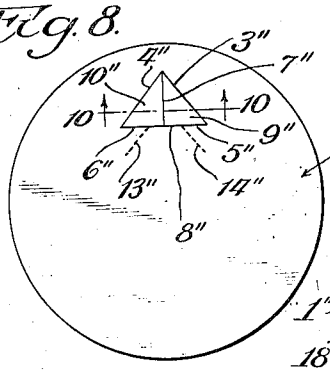


Fig. 9.

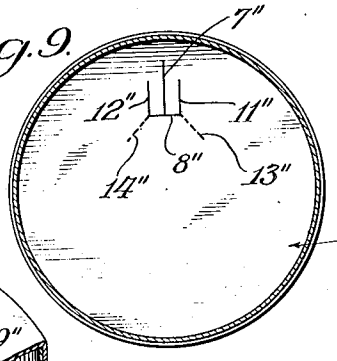


Fig. 11.

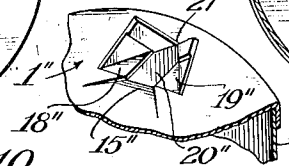
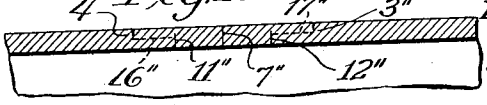


Fig. 10.



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Atty.

Patented Oct. 24, 1933 1,931,991

UNITED STATES PATENT OFFICE

1,931,991

CLOSURE FOR CONTAINERS

Rose H. Mergentheim, Winnetka, Ill.

Application April 13, 1931. Serial No. 529,670

2 Claims. (Cl. 229—7)

This is a continuation in part of my copending application Serial Number 513,908, filed February 6, 1931.

This invention relates to improvements in closures for cans, cartons or boxes which may contain household staples such as cereals, salt, cleansing powder, sugar or, in general, any dry granular or flaky material, and refers specifically to the provision of closures for such containers through which access may be readily had to the contents of the container, the form of access depending upon the nature and use to which the contents of the container is adapted to be put.

The utility, objects and advantages of my invention will be apparent from the accompanying drawing and following detail description.

In the drawing, Fig. 1 is a top plan view of a container closure illustrating particularly lines of incision defining a dispensing opening therein.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary perspective view of a portion of the container showing the dispensing opening.

Fig. 5 is a top plan view of a slightly modified form of closure.

Fig. 6 is a similar view with the upper tab removed.

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5.

Fig. 8 is a top plan view of a closure having another modified form of dispensing opening.

Fig. 9 is a bottom plan view of the closure shown in Fig. 8.

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 8.

Fig. 11 is a fragmentary perspective view of a portion of the closure shown in Figs. 8, 9 and 10, illustrating particularly the dispensing opening.

Referring in detail to the drawing, 1 indicates a closure or cover for a box, can, or the like 2, adapted to contain household staples such as cereals, salt, cleansing powder, sugar or the like. The closure 1 may be constructed of a unitary fibrous material such as cardboard or the like as distinguished from a multi-ply fibrous structure. It is to be understood, of course, that inasmuch as my invention is directed particularly to the provision of a dispensing opening in a cover or closure, the specific shape or contour of the closure is immaterial. The closure 1 may be mounted upon the container 2 in any desired manner, for example, said closure may be provided with an annular flange 3 which may be adhesively united to the upper portion of the container 2. However, the particular means of mounting the closure upon the container forms no part of my present invention and any suitable means is contemplated.

The upper face of the closure 1 may be provided with lines of incision 4 and 5 which may penetrate the thickness of the material comprising the closure to a depth less than the entire thickness of said material. The lines 4 and 5 may converge and may be joined by a line of severance 6 which may be cut through the entire thickness of the disk as shown best in Fig. 3.

A notch or indentation 7 may be provided in the upper face of the closure 1 adjacent the line of incision 6, the purpose of which will be hereinafter more fully described. The opposite face of the closure 1 may be provided with lines of incision 8, 9 and 10, the lines 8 and 9 being offset or staggered inwardly from the lines 4 and 5 respectively. The lines of incision 8 and 9 may penetrate the thickness of the material comprising the closure a distance less than the entire thickness of said material and the arrangement is such that the ends of lines 4 and 5 pass the ends of the lines 8 and 9 in the thickness of the material.

It can readily be seen that the lines 4, 5, 6 and 10 outline a tab 11 which, in the form shown, is substantially triangular in shape. However, my invention broadly contemplates the formation of a tab of any desirable shape or contour.

It has heretofore been proposed to provide offset lines of incision in the upper and lower surfaces of a cover or closure, said lines defining tabs of various shapes, some being circular and some being defined by U shaped incisions. Difficulties have been experienced in the use of these closures in that when raising the tabs formed by the lines of incision the internal fibers of the closure would split along a plurality of planes and sometimes the entire tab would split along a plane parallel to the surface of the closure leaving half of the tab remaining as an integral portion of the closure and the remaining portion of the tab being bent outwardly from the surface of the closure. In this manner it can readily be seen a further separation was necessary to effect a dispensing opening in the closure.

In utilizing my invention the thumb nail may be inserted in the notch 7 and may be forced downwardly through the line of severance 6 until the nail occupies a position beneath the tab 11. An upward thrust may then be imparted to that

portion of the tab and the fibers of the closure may be ruptured along the plane 12 indicated in dotted lines in Fig. 2. It can be seen that inasmuch as the upper lines of incision are cut to a depth below the upper extremities of the lower lines of incision, that regardless of the plane along which the rupturing of the fibers takes place, so long as that plane is included between the lower extremities of the upper lines and the upper extremities of the lower lines, a clean separation of said fibers will occur.

By referring particularly to Fig. 4, the tab 11 is shown in its raised position and a dispensing opening 13 is provided. When the fibers split along the planes 12, shoulders 14 are formed along the defining edges of the opening 13 and registering shoulders 15 are formed along the lower defining edges of the tab 11. If granular materials such as salt or sugar are contained within the can or box 2, the same may be poured through the dispensing opening 13 and over the lower face of the tab 11, said tab acting as a directing means or a spout. In addition, if highly aromatic materials are contained within the box or can 2, after the desired quantity of said material is removed through the dispensing opening, the tab may be swung to its normal position in the plane of the closure and thus the disagreeable or offensive odor of the material contained within the box or can may be prevented from permeating the atmosphere in its vicinity. In addition the aroma of the material contained within the carton or box may be confined within the container thereby preventing deterioration of the contents such as that occasioned by loss of odor and undue absorption of moisture.

Referring particularly to Figs. 5, 6 and 7, a slightly modified form of dispensing opening is shown. In this embodiment of my invention I may provide a plurality of recesses 2' in the lower face of a closure 1', lines of incision 3', 4' and 5' may be cut upon the upper surface of the closure 1' and may define a tab 6' which may be positioned immediately above the recesses 2'. As a feature of my invention the lines of incision 3', 4' and 5' penetrate the material comprising the closure 1' to a depth beneath the upper extremities of the recesses 2'. A notch 7' may be provided adjacent the edge of the tab 6' upon the upper face of the closure 1' and may be cut to a depth equal to the depth of the lines of incision 3', 4' and 5'.

In utilizing this embodiment of my invention the thumb nail may be inserted into the notch 7' and may serve to initiate the splitting or rupturing of the fibers of the closure 1' along the surface 8' which may be in a plane substantially parallel to the upper and lower surface of the closure 1' and may be included between the lower extremities of the lines of incision 3', 4' and 5' and the upper extremities of the recesses 2'. Inasmuch as the tab 6' is defined by the lines of incision 3', 4' and 5' or cut from the upper face of the closure 1', said tab may be entirely removed exposing the recesses 2' as shown best at 9' in Fig. 6. This type of dispensing means is particularly adapted for containers for cleansing powder, spices, condiments or the like.

It is of particular importance in both of the embodiments thus far described that the lines of incision from the upper faces of the closures and the lines of incision or recesses cut from the lower faces of the closures pass each other in the thickness of the material comprising the closure. This construction materially facilitates the splitting or the rupturing of the material along a desired plane.

Referring particularly to Figs. 8, 9, 10 and 11, a further modified form of my invention is shown and comprises a closure 1'' constructed of a unitary or single ply fibrous disk of any desired shape or contour which may be adapted to be mounted upon a box or container 2''. The upper face of the disk or closure 1'' may be provided with lines of incision 3'', 4'', 5'' and 6'', which penetrate the thickness of the closure a distance less than the entire thickness of the material comprising the closure. The disk 1'' may also be provided with lines of severance 7'' and 8'' which may be cut through the entire thickness of the closure. The line of severance 8'' may join at its ends the lines of incision 5'' and 6'', and the line of severance 7'' may bisect the line of severance 8''. In this manner a substantially triangular tab is defined by the lines 3'', 4'', 6'', 8'' and 5'' and by the provision of the line of severance 7'', two similar tabs 9'' and 10'' may be provided. The opposite face of the disk or closure 1'' may be provided with lines of incision 11'' and 12'' which terminate respectively in the planes of the lines 4'', 3'', 6'' and 5''. The disk or closure 1'' may also be provided with perforated lines 13'' and 14'' which terminate at their respective ends at the point of intersection of the lines 6'', 11'' and 8'', and the lines 5'', 12'' and 8''. The lines 13'' and 14'' diverge from each other from said points of intersection.

In utilizing this embodiment of my invention, the portion of the disk or closure bounded by the perforated lines 13'' and 14'' may be depressed adjacent the line of severance 8'' as shown best at 15'' in Fig. 11. It is obvious that by depressing the portion indicated at 15'', that a grip may be obtained upon the lower surface of those portions of the tabs 9'' and 10'' adjacent the point of intersection of the lines of severance 7'' and 8''. An upward thrust may be exerted upon these portions of the tabs 9'' and 10'' and said tabs may be thereby swung upwardly about the lines of incision 3'' and 4'' as hinges. To thus swing tabs 9'' and 10'', the fibers of the disk or closure must be split or ruptured along the planes 16'' and 17'' and thereby shoulders 18'' and 19'' may be provided adjacent a dispensing opening 20'' in the closure 1''. The lower extremities of lines 3'' and 4'' may be cut short of planes 17'' and 16'' respectively so that the tabs are not separated from the disc along hinged lines 3'' and 4'' when the tabs are raised from the plane of the disc.

To efficiently split or separate the fibers in this manner, the lines of incision 5'' and 6'' cut from the upper face of the disk or closure 1'', must pass the lines of incision 11'' and 12'' cut from the lower face of the disk or closure 1'' in the thickness of the disk or closure. It can readily be seen that by this provision the planes 16'' and 17'' will be included between the lower extremities of the upper lines of incision 5'' and 6'' and the upper extremities of the lower lines of incision 11'' and 12'' and will be substantially parallel to the upper and lower face of the disk or closure 1.

The dispensing opening 20'' is particularly useful when granular material such as salt, sugar, bird seed, pepper or the like is contained within the box or can 2''. It can readily be seen that to fill a salt cellar, for instance, the stream of salt leaving the container 2'' through the dispensing opening 20'' passes over the apex 21'' and hence can be readily directed into the relatively

small opening of the salt cellar. Of course, it is to be understood that the particular shape of the tabs 9'' and 10'' as shown are not to serve as a limitation of my invention inasmuch as any shaped tab or tabs is broadly contemplated.

In utilizing those embodiments of my invention wherein lines of severance are produced upon the closure such as the line 6 in Fig. 1 and the lines 7'' and 8'' in Fig. 8, if a highly comminuted material such as, for instance, pulverized sugar is contained within the cans or boxes 2 and 2'', a "glassine" seal may be pasted over said lines of severance and thus leakage of the material through said lines of severance may be prevented.

It is apparent that closures having dispensing openings made in conformity with the principles of my invention may be economically manufactured and may supplant the relatively expensive metallic spouts which have heretofore been used. In addition, a perforated closure may be provided from a uni-ply fibrous disk which may supplant the relatively expensive metallic perforated closure now being used, for instance, upon cleansing powder containers.

I am aware that many modified forms of my invention may be constructed and many details may be devised and incorporated into constructions which will not depart from the spirit of my invention and, hence, I do not wish to be limited except as necessitated by the prior art.

By the expression "lines of incision" as used in the specification and claims, is meant cuts or apertures produced in the cover, closure or disk which penetrate the thickness of the cover, closure or disk a distance less than the entire thickness of the disk.

By the expression "lines of severance", is meant cuts or slits which extend or project through the entire thickness of the disk or closure. By the expression "perforations" or "discontinuous lines of severance" is meant a series of slits or cuts occurring in a line and extending through the entire thickness of the disk or closure.

Inasmuch as one of the important features of my invention is dependent upon the splitting of the fibers, of the fibrous disk or closure, in a plane substantially parallel to the planes of the faces of the closure, a fibrous stock whose fibers lie in such parallel planes is preferable for use in constructing the closures.

It is to be understood, of course, that combinations of the various embodiments of my invention may be devised. For instance, the form shown in Figs. 1, 2, 3 and 4 may be combined with the form shown in Figs. 5, 6 and 7, that is, a tab corresponding to the tab 6' may be defined by the lines of incision corresponding to lines 3', 4' and 5', and recesses corresponding to recesses 2' may be provided beneath said tab. The portion of the closure 1' corresponding to the closure provided with the recesses may correspond to the tab 11.

This combination may be adaptable for cheese in granular form for instance. The upper tab corresponding to the tab 6' may be removed exposing the recesses. The cheese may be shaken out through the apertures thus provided. After all of the granular material has been used, lumps of cheese too large to be dispensed through the apertures may be removed by lifting the tab, as in the modification shown in Figs. 1 to 4, which in this instance is provided with the apertures.

It is to be understood, of course, that the above is merely an illustratory combination and is not intended as a limitation.

I claim as my invention:

1. A closure for containers which comprises in combination a disk constructed of fibrous material having a plurality of lines of incision on one face of the disk and a plurality of lines of incision on the opposite face defining a plurality of tabs, said disk also being provided with lines of severance dividing the tabs from each other and from a portion of the disk proper, and means for obtaining a purchase upon said tabs to split the fibers of the disk between lines of incision upon opposite faces of the disk to remove the tabs from the plane of the disk.

2. A closure for containers which comprises in combination a disk constructed of fibrous material having a plurality of lines of incision on one face of the disk and a plurality of lines of incision on the opposite face defining a plurality of tabs, said disk also being provided with lines of severance dividing the tabs from each other and from a portion of the disk proper, and means for obtaining a purchase upon said tabs to split the fibers of the disk between lines of incision upon opposite faces of the disk to remove the tabs from the plane of the disk, said means comprising a tongue defined by discontinuous lines of severance and a line of severance separating the tabs from the disk proper, which may be depressed below the plane of the disk adjacent said line of severance.

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