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R. BANTON

2,227,172

COVER FOR SEALING LIQUID SURFACES

Filed July 22, 1939

Fig. 1.

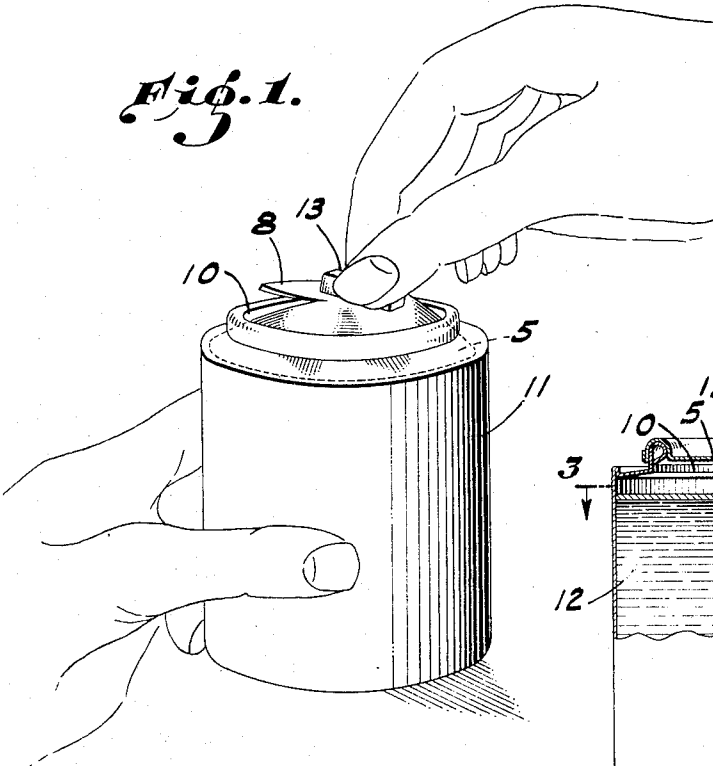


Fig. 2.

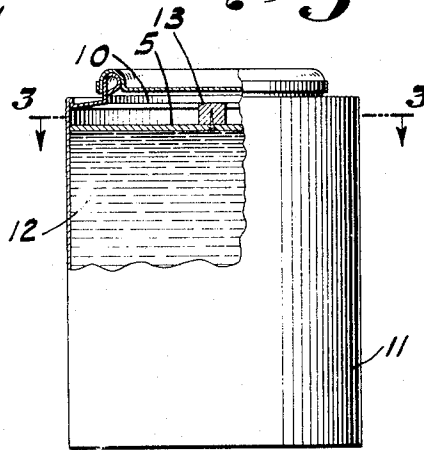


Fig. 4.

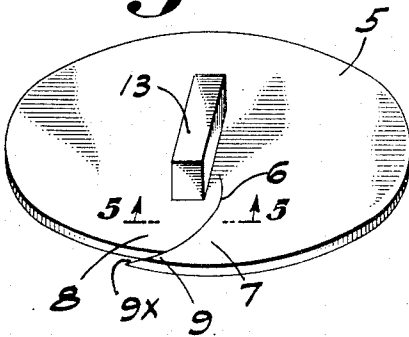


Fig. 3.

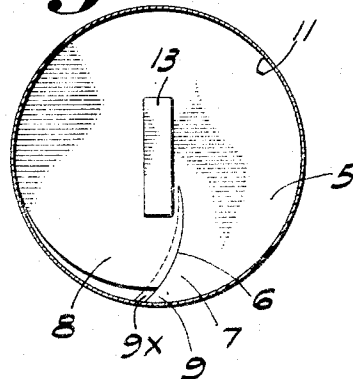
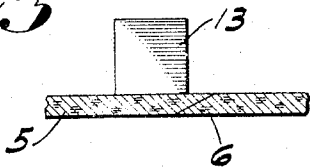


Fig. 5.



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COVER FOR SEALING LIQUID SURFACES

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Application July 22, 1939, Serial No. 285,884

6 Claims. (Cl. 220-93)

The present invention relates to improvements in covers for sealing liquid surfaces whereby the formation of "skin" is eliminated.

More particularly the invention pertains to improvements in my copending application filed August 16, 1938; Serial Number 225,171 and carries forth certain of the objects enumerated therein.

This invention includes additional objects, some of which are—

First to provide in a device of the above character means whereby the device may be more easily inserted in containers having contracted mouths and more especially when only small amounts have been dispensed from the container.

Second to provide improved handle means whereby the device may be more easily flexed and after being put into its operative position may have a torsional force more effectively applied thereto to break adhesions between its periphery and that of the container.

Third to provide in a disk-like cover means whereby the cover may have certain edge portions held in a detached relation with one another which after insertion become automatically adhered together.

Fourth to provide in a cover improved means for contracting the cover in such a manner as to reduce its outer periphery.

Fifth to provide improved slitting means permitting the device to be conically configured incident to its insertion in a contracted mouth and then permitted to expand in a flatwise manner in a contacting relation with the surface to which the cover is to be applied.

Sixth to provide in a universally flexible cover of sheet material a slit directed inwardly from its outer periphery and being located between two flaps one of which is of a greater peripheral extent than the other, thus providing a shoulder where the peripheries of the flaps meet, said shoulder assisting the operator to put the device into its operative position.

Still further objects, advantages, and features of invention will, as a matter of fact, hereinafter appear.

Referring to the accompanying drawing, which illustrates what is at present deemed to be a preferred embodiment of the invention,

Fig. 1 is a perspective view of the device, illustrating the manual operation thereof.

Fig. 2 is a side elevation thereof, except that parts are shown in vertical mid-section.

Fig. 3 is a section taken on line 3-3 of Fig. 2,

Fig. 4 is a perspective view, with the upper face of the cover directed toward the observer, and,

Fig. 5 is a fragmental section shown on an en-

larged scale, the plane of section being indicated by the line 5-5 on Fig. 4.

Referring in detail to the drawing, the approximately disk-shaped cover 5, like that described in my aforesaid copending application, is of a sufficiently flexible character to render it insertable through an opening having a diameter somewhat less than its own, the insertion of the present cover being facilitated by providing it with an arcuate cut 6 which leads inwardly from its periphery to a point adjacent to the center of said cover. Said cut is located between the flaps 7 and 8, the flap 8 being of a lesser radial extent than the flap 7, thus providing a shoulder 9 where the peripheries of said flaps meet. The portion of said flap 7 adjacent to said shoulder is adapted to be fed under the rim 10 of the can 11 when the device is being inserted as indicated in Fig. 1. When inserted in this manner the periphery of the disk does not dip into the paint 12 even though the can is full.

By slitting the disk in the manner stated two flaps result, which are separated by the slit. The flaps are both shown as having radii of the same length, but the radius of the flap 8 swings about a center which is located the farthest from the periphery of the slitted portion of the disk. The shoulder 9 forms one side of an arcuate extension 9a of a pointed character, the point of said extension being directed tangentially of the disk thus adapting such pointed extension for being nosed under the rim portion of the can when the disk is being put into its operative position.

The slit or cut 6 is made in an inclined manner, as well shown in Figs. 3 and 5, in order that, when the cover 5 is resting in a flatwise manner upon the liquid as shown in Fig. 2, the pressure of the liquid against the lower face of the flap 7 will cause the two inclined sides of said slit to contact with each other, thus effectively excluding the air from the liquid surface underlying the applied disk. The marginal surfaces of the flap lips resulting from the forming of the slit 6 will soon adhere to each other when the device is used in cans of paint or like materials, thus rendering it a virtually integral disk, like that described in my copending application, but this fact is not a disadvantage because the two separate flaps originally produced by the slit are not needed after any considerable portion of the paint has been removed from the can.

The disk-like cover 5 is furnished with a substantial handle 13 shown as a bar which is secured to the central portion of the upper face of the disk in the same diametrical direction as the general direction of the slit 6.

This is important because during the withdrawal of the cover, the peripheral portion of the

disk opposite to the slit may be elevated first and then a wiping action of the disk across the can rim 10 can be performed without the shoulder 9 becoming engaged with the under side of the can rim in such a way as to obstruct the withdrawal of the cover. The bar 13 is of a sufficient size to provide a 3-finger hold whereby enough torsional force may be applied to twist the disk in such a manner as to separate its outer 10 periphery from engagement of the can, even when a considerable amount of adhesion is present.

In the operation of the device, the handle is grasped between the thumb and fingers of the operator and the disk is operated in such a manner as to feed the shoulder 9 thereof under the rim of the can, whereupon the disk is given a clockwise rotation until its radially reduced peripheral portion permits it to pass within the can and then be seated upon the surface of the paint or other liquid contained therein. In the performance of this operation the disk does not have to be materially warped out of a flat plane, hence, no part of its edge portion need be dipped 20 into the contents of the can even though the can be nearly filled by the liquid contained therein.

The withdrawal of the disk from a nearly full can is readily effected, without dipping its peripheral portion more deeply into the liquid (even though the material at opposite sides of the slit has become adhered so as to obliterate the slit) because the central portion of the disk may first be protruded through the mouth of the can, thus causing an upward movement of the disk as a whole while giving it a broadly conical shape. Then a little more manual traction upon the handle will completely withdraw the disk.

In certain instances the handle may be omitted. In such a case to insert the disk the operator will conically configure the disk by overlapping the slitted edges thus reducing the disk's diameter, whereupon the device may be fed through a contracted opening of lesser diameter than the normal diameter of the disk and then permitted to expand in a flatwise manner in a contacting relation with the surface to which the cover is to be applied.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the subject matter claimed.

What is claimed is:

1. As a new article of manufacture, a disk of flexible sheet material having sufficient stiffness normally to maintain itself in a substantially flat plane, said disk having a centrally located rigid handle means upstanding from one of its faces, there being a slit cut into said disk from its periphery to a point adjacent to one end of said handle, the material at one side of said slit being of less radial extent than the material at its opposite side, thus providing a shouldered, peripherally projecting part at such side of the slit, said slit being spirally curved and said shoulder forming one side of a pointed extension which is directed tangentially of the disk.

2. As a new article of manufacture, a disk of flexible sheet material having sufficient stiffness normally to maintain itself in a substantially flat plane, said disk having a centrally located diametrically extending bar secured in a flatwise manner to one of its faces thereby affording a 70 finger-hold handle means therefor, there being

a slit cut into said disk from its periphery to a point adjacent to one end of said bar, the material at one side of said slit being of less radial extent than the material at its opposite side, thus providing a shouldered, peripherally projecting part at such side of the slit, said shoulder forming one side of a pointed extension which is directed tangentially of the disk, said slit being inclined in relation to the plane in which the disk lies.

3. As a new article of manufacture, a disk of flexible sheet material having sufficient stiffness normally to maintain itself in a substantially flat plane, said disk having a centrally located diametrically extending bar secured in a flatwise manner to one of its faces thereby affording a finger-hold handle means therefor, there being a slit cut into said disk from its periphery to a point adjacent to one end of said bar, the material at one side of said slit being of less radial extent than the material at its opposite side, thus providing a shouldered, peripherally projecting part at such side of the slit, said shoulder forming one side of a pointed extension which is directed tangentially of the disk, said slit, in its general course, being approximately in alignment with said bar.

4. As an article of manufacture, a disk of flexible sheet material having sufficient stiffness normally to maintain itself in a substantially flat plane, there being a slit cut into said disk from its periphery to a point adjacent its center, said slit producing opposed flaps having inclined surfaces normally in a contacting, substantially air tight relation to each other, the portions of said disk adjacent said slit being adapted to be overlapped whereby to conically configure the device to contract the disk's outer periphery for insertion through an opening of lesser diameter than its own.

5. As an article of manufacture, a disk of relatively flexible sheet material having sufficient stiffness normally to restore itself in a substantially flat plane after once being manually distorted, there being an arcuate slit cut into said disk from its periphery to a point adjacent its center, the material at one side of said slit being of less radial extent than the material at its opposite side, the outer portion of said slit being tangentially deflected toward the part of the disk which is of lesser radial extent.

6. The combination, with a cylindrical container having a contracted mouth; of a floatable disk insertable within said container to form an air-excluding seal for a body of liquid occupying said container, said disk having a normal diameter approximately equal to the internal diameter of said container, said disk having a slit extending inwardly from its periphery to a point adjacent the center of the disk, the material at one side of said slit being of less radial extent than the material at its opposite side, thus providing a shouldered, peripherally projecting part at such side of the slit, said shoulder forming one side of a pointed extension which is directed tangentially of the disk and adapted to be fed under the rim of the contracted mouth incident to seating the disk in said container, and a centrally located diametrically extending bar secured in a flatwise manner to one of the disk's faces affording a finger-hold handle means therefor, said handle being approximately in alignment with said slit.