

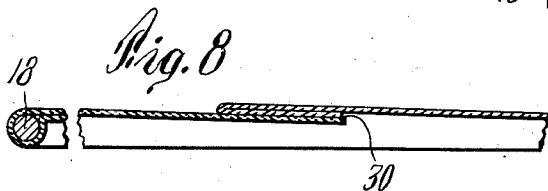
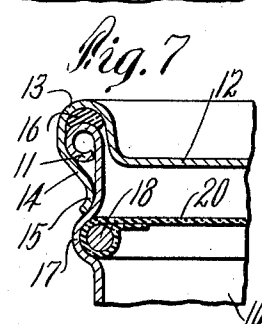
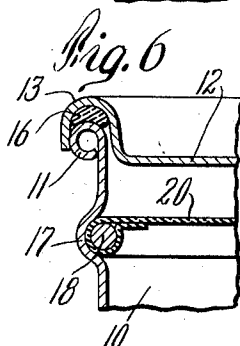
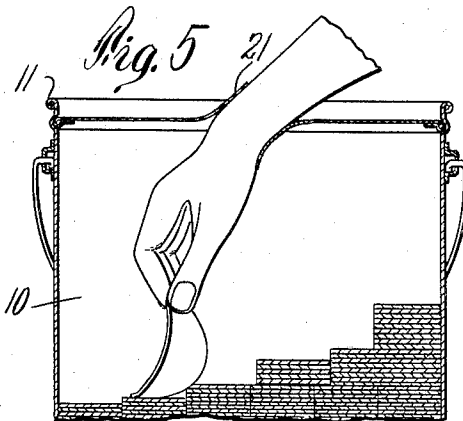
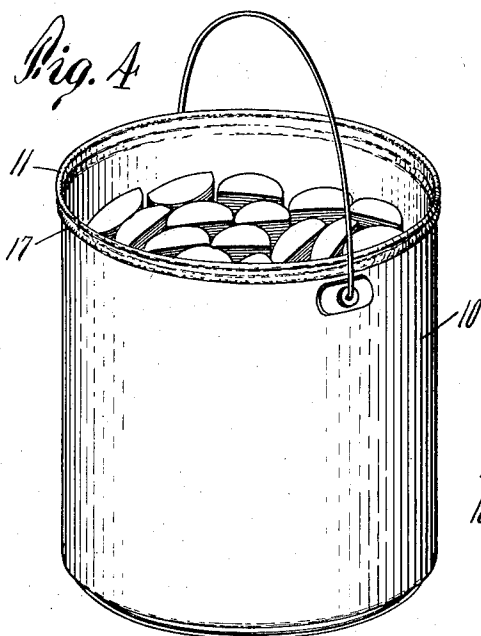
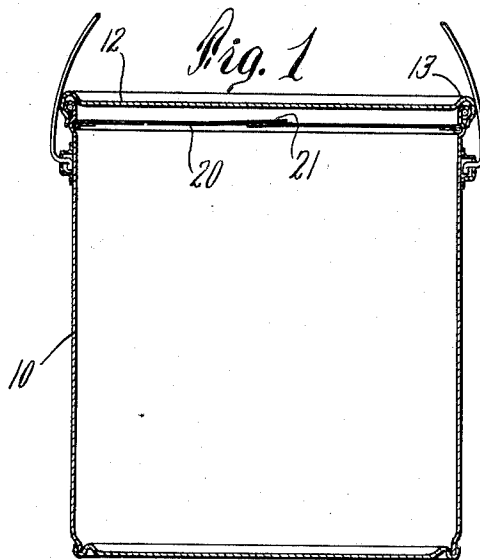
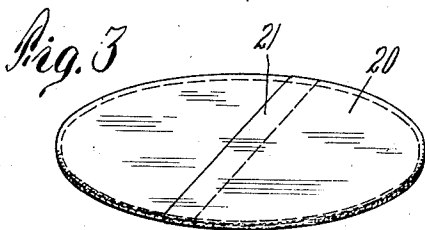
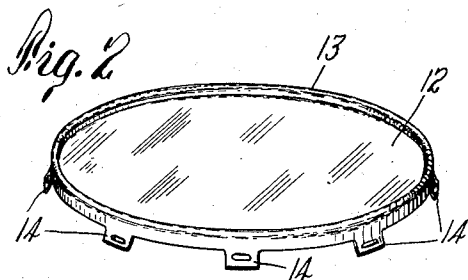
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CONTAINER AND CLOSURE THEREFOR

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CONTAINER AND CLOSURE THEREFOR

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9 Claims. (Cl. 220—24)

5 This invention relates to a container which must be kept substantially air tight either for the purpose of excluding the atmosphere from articles therein or for the purpose of preventing the escape of volatile substances.

10 According to the invention a container is provided having a tight cover which can be secured in place to make it entirely air tight for shipment or storage, and also having a flexible resilient diaphragm beneath the removable cover which is substantially air tight but which is provided with a slit adapted to permit the removal of a portion of the contents and to close automatically after such removal.

15 While the invention is capable of use with a large variety of substances which are best kept in air tight vessels, it is more particularly designed for containers for box toe stiffeners containing a stiffening material which is softened by a suitable solvent and which becomes rigid upon the escape of such solvent. Box toe blanks of this type may be made by impregnating a suitable fabric such as a flannel with a cellulose ester. Such a blank is normally very stiff and hard and the edges may be skived. These blanks must be made soft and limp for application to shoe uppers so that the edges may be turned under and may set in place without any tendency to spring out. To soften and condition box toes of this type, a measured amount of a suitable solvent may be employed such, for example, as a mixture of ethyl acetate, denatured alcohol, butyl acetate and water. Such a mixture is volatile and its vapor is capable of penetrating rapidly through stacks of box toe blanks in a container. A properly conditioned box toe blank of this type cannot long be exposed to the atmosphere without beginning to stiffen. This rapidity of setting is a valuable and necessary characteristic in the manufacture of shoes owing to the fact that it is desirable for economical operation to proceed promptly with the further steps of manufacture of the shoes after the insertion of the box toe blanks. The rapidity of setting, however, makes it necessary to keep the blanks in an atmosphere of vapor of the solvent until used. If too many blanks are taken out at a time, some of these blanks are liable to stiffen too much while the others are being inserted in the shoes, so that a considerable number may thus have to be discarded.

55 To obviate waste resulting from this cause, box toe blanks of this type have been put in small air tight packages containing a dozen pairs each so that the contents of each package could be used

up before the last pair inserted had become too stiff for proper insertion in the shoe upper. Such packing, however, is very expensive since not only are a great number of individual air tight containers employed, but it is troublesome to measure out the correct amount of solvent for each dozen pair of blanks. It is far more convenient and economical to pack the blanks in cans containing a thousand pair or more of blanks therein. This manner of packing, however, has been objectionable since considerable time is required to use the entire contents of the can. Operators in shoe factories are inclined to be careless and not to be depended upon to replace the cover of the can so that the use of such cans has involved considerable loss in material owing to rapid evaporation of the solvent from the can when the cover has not been replaced properly after its initial removal.

It is an object of the present invention to provide a self-closing cover for the can which will be as nearly fool proof as possible and will be capable of protecting the remaining contents of the can after a portion of the contents has been removed. To this end I may provide a diaphragm of flexible resilient material having a transverse slit therein which is ordinarily closed by the tension under which the diaphragm is installed in place. The edges of the slit may be separated by an operator so as to permit the removal of a portion of the contents from the container. When released the edges of the slit automatically close together so that the container is maintained in a substantially air tight condition. In place of a simple slit I prefer to employ an over-lap of the marginal portions of the two parts of a suitable diaphragm.

For a more complete understanding of the invention reference may be had to the description thereof which follows and to the drawing of which,—

Figure 1 is a sectional view of a container embodying the invention.

Figure 2 is a perspective view of a rigid cover for the container which may be secured in place for shipment.

Figure 3 is a perspective view of an inner cover or diaphragm for the container adapted to keep the container substantially air tight after the top cover has been removed.

Figure 4 is a perspective view of the container with both covers removed.

Figure 5 is a sectional view of a container with the top cover removed, showing the method of access to the interior.

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Figures 6 and 7 are fragmentary sections on a larger scale showing how the two covers are secured to the container.

Figure 8 is a fragmentary section of a modified form of the invention.

Referring to Figure 1, a metal can 10 of generally cylindrical shape may be provided, this can being of suitable size to hold a desired number of box toe blanks or other articles. The upper lip of the container may be curved outwardly as at 11 to form a suitable stiffening bead over which the top cover 12 may be clamped. This cover may have an elevated channel 13 around its rim adapted to fit over the bead 11. At intervals the inner portion of the cover 12 extends downwardly in the form of tongues 14 which are bent inwardly with a reverse bend at their lower ends 15 so as to be readily snapped over the bead 11 and to clamp the cover 12 securely in place. In order to make the closure air tight, a suitable rubber gasket 16 may be inserted in the channel 13 to rest on the bead 11 and to be pressed thereon by the clamping engagement of the tongue 14 on the lower surface of the bead. Below the beading 11, the wall of the container may be provided with an annular outward bulge 17 resulting in an inner groove to receive a split ring 18 which may be sprung into this groove. The ring 18 is circular in form. Across this circular ring is stretched a diaphragm 20 which may be a single piece of flexible and stretchable material such as soft rubber or as shown in Figure 3 it may be in the form of two pieces, each greater than a half circle, these pieces having diametrical marginal portions overlapping as at 21. The diaphragm is stretched tightly across the ring and is secured thereto as by suitable adhesives or otherwise so that the entire diaphragm is normally under considerable tension. The marginal portions at 21 are thus held together by this tension but may be readily separated to admit the hand of an operator into the container. In preparing a shipment of box toe blanks, the hard blanks are suitably stacked in the container as illustrated in Figures 4 and 5. A measured amount of solvent is then poured into the container, the split ring 18 with its diaphragm is sprung into place, and the top cover 12 is clamped on. The space between the diaphragm 20 and the top cover 12 may be filled with any desirable packing material such as corrugated paper board, wax paper shavings, etc., to provide a backing for the diaphragm 20 in case the container is inverted in handling. When the cover 12 has been clamped in place the container is ready for shipment or storage. The solvent inserted in the container quickly volatilizes and permeates the box toe blanks, softening each blank and conditioning it for use. When the blanks are desired for use, the top cover 12 is removed and a handful of blanks may be taken from the interior of the container through the opening made by inserting the hand between the marginal portions of the diaphragm at 21. Upon withdrawal of the hand, the diaphragm becomes substantially air tight again so that the container may be kept for several days in this condition without deterioration of the contents through loss of solvent vapor. The handful of box toe

blanks removed from the container may be successively used up before the last of the blanks has stiffened sufficiently to necessitate discarding. Thereupon another handful may be removed for use.

Instead of applying the diaphragm in two overlapping pieces in Figure 3 I may take a single sheet of rubber or the like and may form a simple plait therein. The sheet may be applied to the split ring in such a way that the plait extends across the circle on the diameter. The inner fold of this plait may then be slit as at 30, the resulting structure being very similar to that shown in Figure 3 except that the upper one of the overlapping portions is double in this case instead of a single ply.

I claim:

1. A container of rigid air-tight material having a diaphragm of resilient air-tight material stretched across the mouth of the container, said diaphragm having a central normally closed slit therein.

2. A rigid can having a diaphragm of resilient air-tight material stretched across the mouth thereof, said diaphragm having a normally closed slit therein of sufficient length to admit the hand of an operator.

3. A container of rigid air-tight material having a diaphragm of resilient air-tight material stretched across the mouth thereof, said diaphragm having areas abutting face to face and separable to provide an opening for access to the interior of the container.

4. A rigid can having a normally plane diaphragm of resilient air-tight material extending across the mouth thereof, said diaphragm having overlapping areas separable to form an opening for access to the interior of the can.

5. A rigid can having a soft rubber diaphragm stretched across its mouth, said diaphragm having a normally closed slit therein with edges separable to admit the hand of an operator.

6. A closure for a container, comprising a substantially closed loop of slightly resilient material adapted to fit and to be sprung into place within the mouth of the container, and a resilient diaphragm stretched over said loop, said diaphragm having a normally closed slit therein.

7. A closure for a container, comprising a substantially closed loop of slightly resilient material adapted to fit and to be sprung into place within the mouth of the container, and a resilient diaphragm stretched over said loop, said diaphragm having overlapping areas separable to form an opening therethrough.

8. A container having a removable air-tight cover, and a diaphragm stretched across the mouth of the container beneath the cover, said diaphragm having a normally closed slit therein with edges resiliently separable to form an opening therethrough.

9. A container comprising a metal can and a sheet-rubber diaphragm stretched over the mouth thereof, said diaphragm having a normally closed slit therein large enough to admit the hand of an operator.

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