United States Patent [19]

Lankenau

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[54] **DRUM CLOSURE**

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[52] **U.S. Cl.** **220/320;** 220/321; 220/378

[51] **Int. Cl.²** **B65D 45/32;** B65D 45/34

[58] **Field of Search** ..... 220/5 R, 5 A, 46 R, 55 AN, 220/81 R, 243, 244, 315, 319–321, 378

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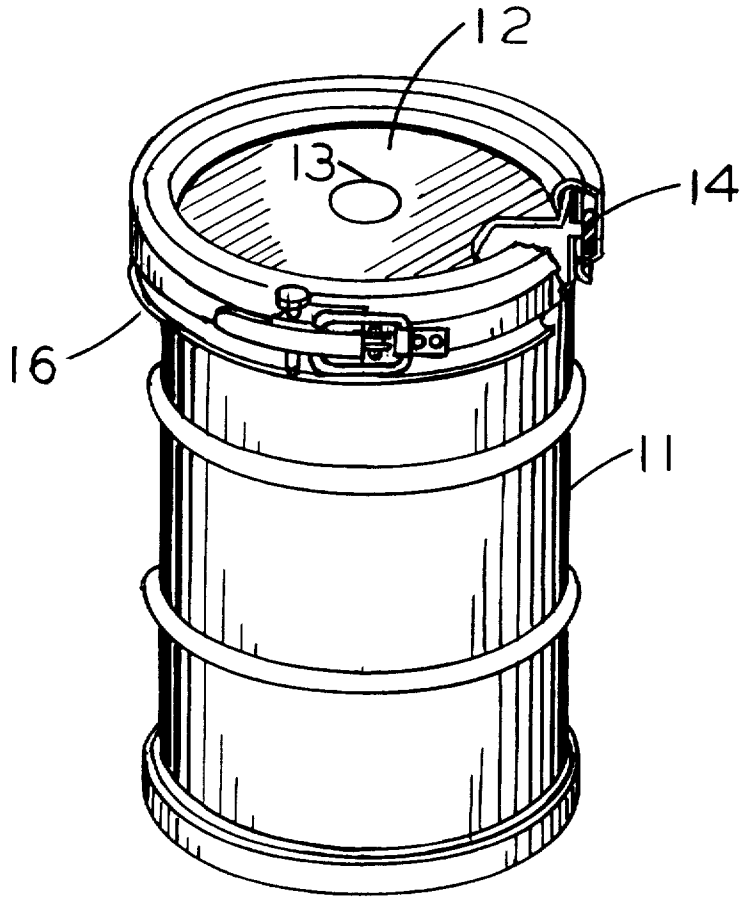
Primary Examiner—John Petrakes

[57] **ABSTRACT**

At the present time, open-top drums are sealed with a gasket resting on the top edge of the drum, causing it to be crushed when the drums are stacked. A more desirable way to seal these drums is to place the gasket on the side, covering the crack between the top and the drum, and pull it up against the crack with the lever or bolt-type ring.

The tops of drums used for tallow or tomato paste or any other products that thicken or solidify upon cooling, must be cut out to remove the contents. In prior art, these drums are cut around the inside of the chime or top of drum. To reclaim these drums it is necessary to roll down the top edge of the drum, stretch it in a mechanical device to return it to the original volume, then furnish a new top and ring. A more desirable method to reclaim these drums is to cut off the tops around the side, about halfway down the top seam. This makes it possible to use the same top and a lever or bolt type ring can be used to hold the top on and the gasket in place. Also, the same capacity is maintained.

3 Claims, 4 Drawing Figures



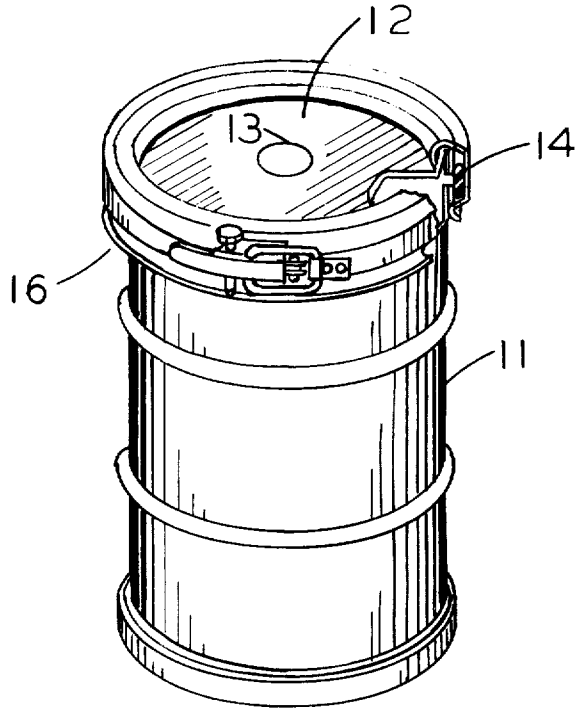


FIG. 1

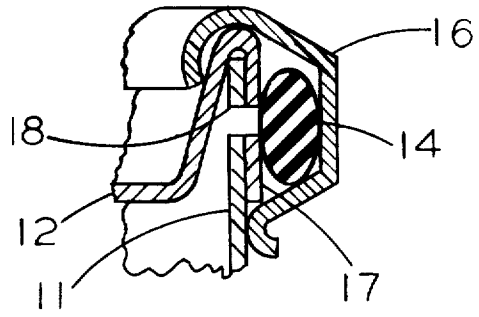


FIG. 2

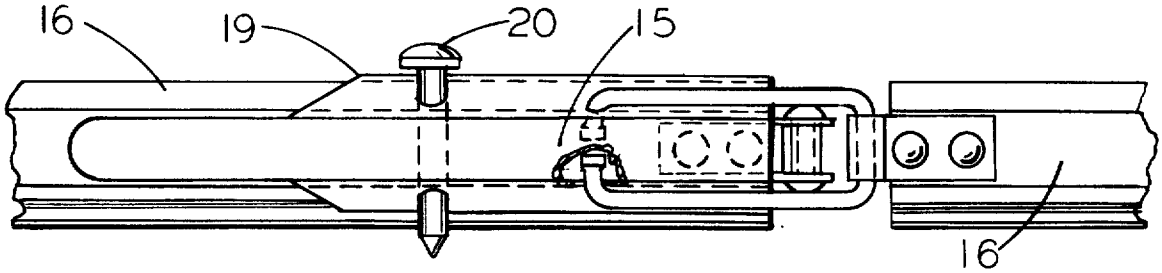


FIG. 3

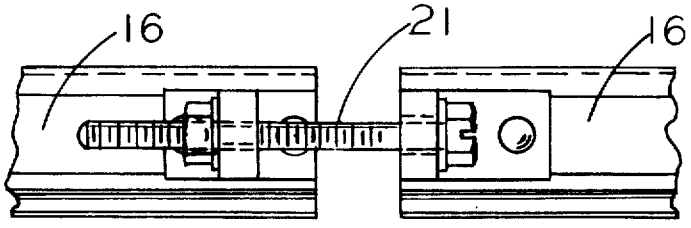


FIG. 4

DRUM CLOSURE

This invention relates to a new and better method of closure for open-top drums; also, a better method of converting regular drums to open-top drums. At the present time, open-top drums are sealed with a gasket between the top of the drum and the rolled top edge of the drum. When drums are stacked on top of each other, the gaskets are crushed and the seal is destroyed. A more desirable method to seal open-top drums is to pull the gasket in from the side, with a specially designed lever or bolt-type ring, to cover the crack between the cover edge and the drum top, making a seal that is not affected by stacking or additional weight on top of the drum.

The tops of ordinary drums used for tallow, tomato paste, and other products which solidify or thicken, upon cooling, must be cut out to remove the contents. In prior art the heads are cut out around the inside of the chime or top edge of the drum. To reclaim these drums, it is necessary to roll the top edge of the drum down, to receive the standard open-drum top, and stretch the drum in a mechanical device to return said drum to its original capacity. Also, a new top and ring must be furnished.

In accordance with this invention, the drums are opened by cutting around the outside of the drum about halfway down the seam around the top of the drum. This makes it possible to use the original drum top, and is also more sanitary, as well since dirt on top of the drum cannot contaminate its contents. Also, by cutting around the side, it is possible to re-seal the drum with a lever or bolt-type ring and gasket, and also maintain the original contents of the drum.

In the Drawings:

FIG. 1 is a perspective view of the entire drum showing the relative positions of the top ring band and gasket on the drum.

FIG. 2 is an enlarged cross section view showing the side and cover of the drum with the ring and gasket in place.

FIG. 3 is an enlarged view of the lever type ring closure in closed position.

FIG. 4 is an enlarged view of the bolt type ring closure in closed position.

In prior art, open top drums are sealed with a load bearing gasket between top of the drum and said drum's sidewall. A more desirable way of sealing drums is by pulling the gasket in from the side and allowing all of the weight placed on the drum to pass through the metal to metal contact between said drum's top and sidewalls.

In the drawings FIG. 1 is a perspective view of the entire drum showing the relative positions of the top **12**, the split ring **16**, the gasket **14** and the drum sidewall **11**, a hole and stopper **13** are provided for inspection and filling of the drum's contents. The cover **12** is placed on the drum so that it rests on the drum's side **11**, the gasket **14** is then placed around the drum covering the cut made in said drum's top seam to separate the cover from the drum, a split band closing ring **16** is then placed over the gasket **14** and around the drum **12** and its side **11**.

FIG. 2 shows how the slip ring **16** is shaped so that it provides a clamping action between the top **12**, side **11** and remaining portion of top seam **17** of said drum, also it has a channel section to hold the gasket.

The space between the cover **12** and the cut portion of the drum's sidewall **18** and the side of said drum **11** and the cut portion of the drum cover **17** is enlarged to show the position of the gasket **14** and to show how it seals the crack formed by cutting the top seam to separate the top **12** from the drum's sides, in actual use the top of the drum **12** and the cut portion of the drum's sidewall **18** will rest directly on the said drum's sidewall **11** and the cut portion of the cover **17**, this allows all of the weight placed on top of the drum to be carried by metal to metal contact directly to the drum's sidewall **11**. This direct transfer of weight from the drum top **12** and side of drum **11** allows the gasket **14** to seal the crack between the top **12** and sidewall **11** without being crushed.

FIG. 3 shows the lever type closure in closed position, the lever **15** is hinged to one end of the split ring **16**, the other end of the split ring **16** is attached to a hinged ring which in turn is hinged to the lever **15** at a point above said lever's connection to the split ring **16** — the lever action provided when the lever **15** is pulled down against the split ring **16** pulls the ends of the split ring **16** together with a clamping action against the drum and also between the drum's top **12** and the top seam **17**, the lever **15** is locked in closed position by the pin **20** which passes through the channel in the split ring and the channel on the lever **15** through the holes provided.

FIG. 4 shows the bolt type split ring closure in closed position, the bolt **21** passes through holes in the lugs attached to each end of the split ring **16** as the bolt is tightened it pulls the ends of the split ring together providing a clamping action between the drum's top **12** and sides, to remove the top the bolt is loosened or removed to allow the ring **16** to expand so that it can be slipped off.

What is claimed:

1. An improved closing ring assembly for open top drums in which the top seam around the perimeter of the drum is cut from the outside of said drum about halfway down the seam allowing a substantial portion of said seam to remain both on the drums side and on its cover, allowing the entire top of the drum to be removed in one piece, comprising a closing split ring provided to clamp the cover on the drum, said ring being formed in a channel section with the top flange being longer to fit over the top chime on the cover and the lower flange being smaller to fit against the drum under the portion of the seam remaining on the drum, a closing device for the ring, the upper flange being tapered downward at its outer perimeter to provide a downward clamping effect as the ring is drawn tight around the drum and cover by the closing device, a space provided in the channel section of the closing ring, a gasket located in the space which is pulled into the cut in the top seam of the drum from the side and makes an air tight seal as the split ring is closed by the closing device.

2. A closing ring assembly as in claim **1** in which all of the weight placed on top of the drum is transferred to said drum's sidewalls through the metal to metal contact between the drum's top and sidewalls leaving the gasket free to perform only the air tight seal of the cut between the cover and sidewall of the drum, said closing device comprising a lever type closure in which a lever is hinged to one end of the split ring and a hinged ring is attached to the other end of the split ring, the other end of the hinged ring being attached to the

lever at a point above the connection to the split ring to give a lever action.

3. A closing ring assembly as in claim 1 in which said closing device comprises a bolt type closure in which a lug is provided on each end of the split ring and a bolt runs through holes in the lugs to pull the ring together to provide the clamping action.

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