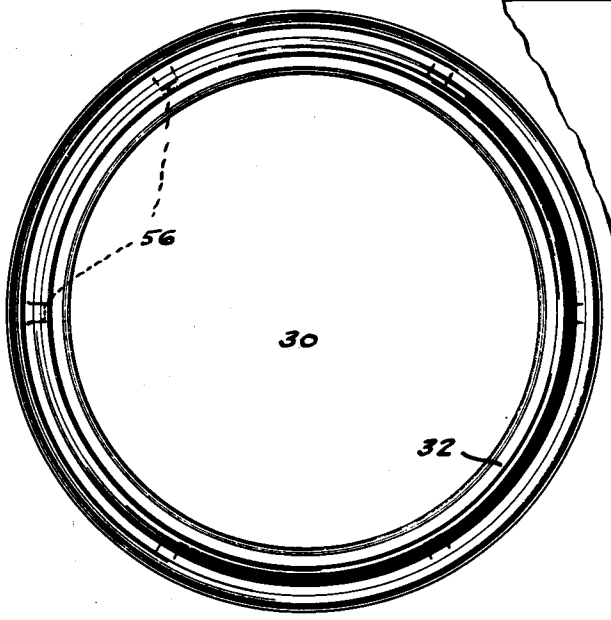
June 12, 1951 C. D. MAGNESEN 2,556,765

CONTAINER AND CLOSURE CONSTRUCTION

Filed Jan. 20, 1950

Fig. 2.



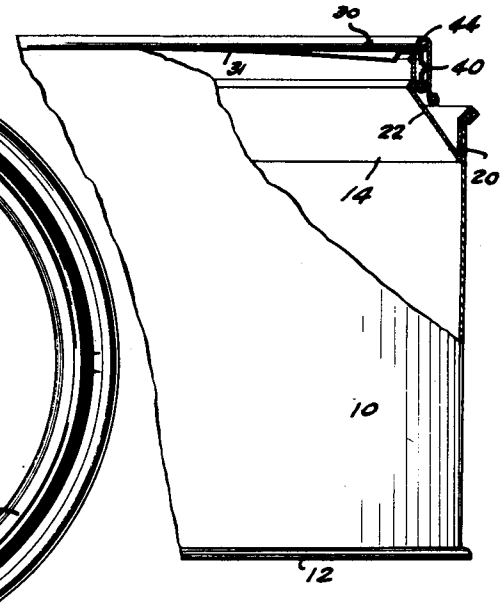


Fig. 1.

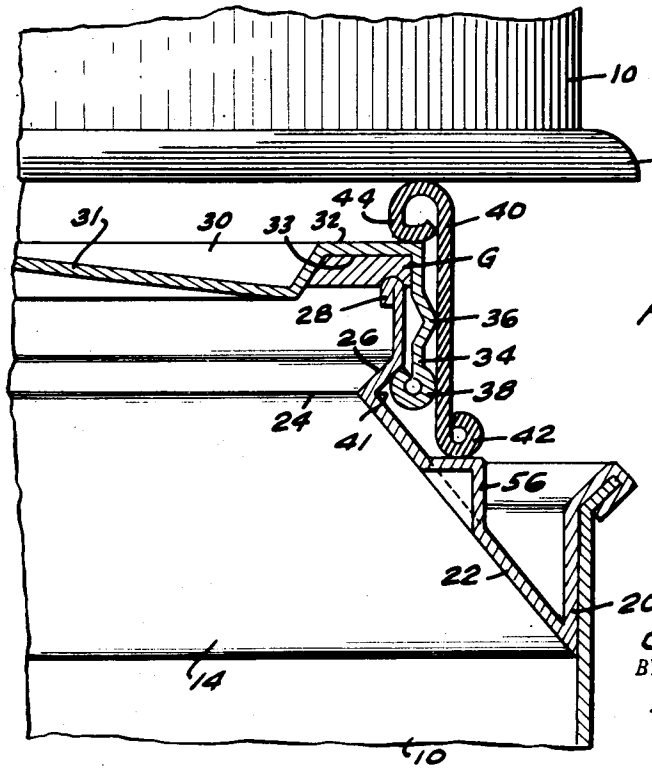


Fig. 3.

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Patented June 12, 1951 2,556,765

UNITED STATES PATENT OFFICE

2,556,765

CONTAINER AND CLOSURE CONSTRUCTION

Charles D. Magnesen, Chicago, Ill.

Application January 20, 1950, Serial No. 139,615

1 Claim. (Cl. 220—46)

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My invention relates to improvements in the construction of containers and covers therefor;

My invention relates more particularly to the construction of a can and cover for paint or similar materials whereby the cover is removable and replaceable and yet, whenever replaced, capable of providing an effective sealing closure for the paint can.

The principal object of the present invention is to provide an improved construction of paint can, or similar container, and a cover for the same of the type which is removable and replaceable and which will always provide an effective seal for the opening in the paint can when the cover is replaced.

A further object of the invention is to provide a paint can or similar container, and a cover for the same of such construction that a tapered or funnel-shaped opening will be provided in the container, so that paint or other material therein can be easily poured from the same and the entire contents of the container may be emptied therefrom.

A further object of the invention is to provide a paint can, or similar container, having a cover of the type described that is comparatively simple in construction yet highly effective as a sealing medium and capable of long and hard usage without becoming broken or out of order.

In using the aforementioned container and closures for paint or similar materials, after the filling operation they are closed and frequently stacked in columns, perhaps ten high, and remain in storage a considerable length of time. Since the gasket which forms the seal is usually formed of rubber or some similar synthetic or plastic material, it can be seen that the weight of nine filled containers on the lower container would compress the gasket of the lower container that its use for resealing would be definitely destroyed. Accordingly, I have provided a construction whereby the weight of the column of containers is taken by the containers, themselves, instead of the sealing gasket. This may be accomplished by means of a plurality of shoulders provided in the neck of the container to limit the downward movement of the retainer ring of the closure. Another method of securing the same result is to provide a circular ridge on the neck of the container, so that the retainer ring can rest upon the same in closed position.

Containers and closures of the type thus far described are shown in my co-pending application for patent Serial Number 745,073 heretofore filed and now Patent No. 2,461,908. However,

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with the construction shown therein and after thorough experiment and trial before production on a large commercial basis certain defects, while not too serious nevertheless warranted further development to secure more nearly perfect construction. For example, it was discovered that the peripheral edge of the retainer ring as shown in the above application was extremely difficult to construct in quantity with uniform results. Due to its wide skirt or inward flange portion it was found to be difficult to keep the inner edge of the same constant as in handling it was easily bent or distorted. In addition, in sealing position the edge is spaced away from the cover of the container so that dust, dirt and other sediment easily accumulated under the ledge causing an unsightly appearance and causing doubt in the minds of prospective customers as to the sealing qualities of the construction.

The improved structure which I provide eliminates the objections above referred to and has in addition certain important advantages thereover.

One of the advantages resides in the provision of a seal between the container and closure which has the double function of acting both as a pressure and vacuum seal.

Another advantage is in the strengthening of the shoulder which carries the weight of superimposed containers the shoulder being rolled inwardly instead of outwardly, thereby greatly inincreasing its effective load supporting qualities.

Another advantage is in the improved appearance of the combination, the container and closure, in that viewed from the top the closing line between the cover and retainer ring presents an unbroken straight line, easily visible and indicating a seal as well as actually effecting one.

Other advantages will be more apparent from the following description wherein reference is had to the accompanying drawing upon which Fig. 1 is a fragmentary front elevational view of a container and closure with a portion of the container and closure means broken away in cross-section to more clearly show details thereof;

Fig. 2 is a plan view thereof and

Fig. 3 is an enlarged fragmentary cross-sectional view showing the manner in which the necks of the containers support the weight of superimposed containers to protect the sealing gasket.

In the embodiment of the invention which I have chosen to illustrate and describe, in the drawings I have shown a cylindrical paint container 10 which may have a bottom wall 12 se-

cured thereto, by rolling or otherwise, and a top or neck portion **14**.

The top of the container may have a neck portion **20** which is rolled over the upper edge of the container **10** and an inwardly tapered portion **22** terminating at an edge **24** from which a portion **26** is tapered outwardly to form a groove in the neck of the top. The top also has a mouth portion **28** continuing upwardly and bent back upon itself at its upper edge.

With this construction, I have provided an inwardly directed pouring spout for the container which permits the entire contents of the container to be drained out when it is tilted. The type of mouth which I have provided is also desirable for the purpose of mixing paints in the container since all parts of the interior of the container are accessible by means of this construction.

The cover **30** which I provide is formed with a circular ridge **32** about its periphery, the ridge having a plurality of downwardly depending finger members **34**. A circular gasket G of rubber, synthetic rubber, plastic or other suitable material having a compressibility is adapted to be positioned in the groove **33** formed in the lower side of ridge **32**. The finger members **34** each have a ridge **36** intermediate their ends with the lower ends of the same curled inwardly as shown in **38**. This is for the purpose of effecting a locking grip on the top of the container as more clearly described in the aforementioned co-pending application.

I provide a retainer ring **40** to seal the cover in place on the mouth of the container, the ring being provided with a rolled up lower edge **42** and a downwardly and inwardly turned rolled edge **44** at its top. When the retainer ring is pressed down over the cap **30**, the ridges on the fingers **34** are pressed into the groove **41** in the top of the container. The action of distorting the ridges **36** of the fingers **34** and forcing the ridges **38** into the groove **41** tends to force the surface **31** of the top **30** outwardly into an arcuate bulge, as shown in Fig. 1, when the cover is in place and the retainer ring is holding it in a sealing position. When the retainer ring **40** is removed, the fingers **34** can be slightly sprung outwardly by pressing the surface **31** of the cap downwardly to form an inwardly directed arcuate bulge. In this way, the cover can be lifted from the mouth of the container.

Referring now to Fig. 3 of the drawings, it can be seen that when a plurality of containers **10** are superimposed one upon the other the bottoms will rest on the tops of the lower retainer rings **40**. Since, in the position shown in Fig. 3, the closure is in a sealing position and since further downward movement such as from a heavy weight would only press the mouth portion **28** further through the sealing gasket G, I have provided a plurality of shoulders **56** about the periphery of the mouth portion **22** of the top **14** of the container. With this construction the gasket can only be compressed to a specific distance, thus keeping the gaskets resilient even though a column of containers are stacked upon the lowermost one.

By rolling over the upper edge of the retainer ring as shown, so that in effect a line contact is obtained between the upper edge **28** of the top and the lower edge of the roll **44**, absolute sealing action is obtained. This will adhere whether the container is used for paint or other products of that nature or used for products which it is desired to pack in a vacuum container. The providing of the curled over edge, as contrasted with my previous application, presents a peripheral line sealing contact which cannot be distorted nor bent out of shape when the retaining ring is removed or during manufacture. In addition, the appearance of the container and closure is such that it adds inherently to the attractiveness of the same and dirt, dust or other sediment cannot enter or appear to enter between the line contact of the retaining ring and the ridge on the cover of the container.

While I have illustrated and described a specific embodiment of the invention, it will be apparent to those skilled in the art that changes and modifications may be made in the exact details shown.

I do not wish to be limited in any particular; rather what I desire to secure and protect by Letters Patent is:

A container and closure for paint or similar substances, said container having a cylindrical top of a diameter smaller than the diameter of the container, a tapered throat in said top, a groove about the neck of said top spaced away from the open end thereof and a closure member adapted to fit over the open end of said top, said closure member having a circular shoulder having a groove therein into which the neck of said top is positioned, a compressible gasket in said groove, a plurality of downwardly depending fingers extending below the edge of said neck and a retainer ring which, when positioned over said cover, fastens the curled over edges of said fingers into said groove to seal said cover on said container, the closure member being so constructed that in a sealing position the same is flexed outwardly between said circular groove, and when the retainer ring is removed, the closure member is flexed inwardly to spread the fingers to permit the easy removal of the same, means associated with the neck of said container for preventing complete compressing of said gasket, said means comprising a plurality of equally spaced ledge embossments struck outwardly from the neck and the upper edge of said retainer ring terminating in an inwardly curled bead, the lower edge of said bead effecting line contact on top of the shoulder of the closure member.

CHARLES D. MAGNESEN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,461,908	Magnesen	Feb. 15, 1949