

Jan. 15, 1935.

F. J. DOLAN

1,988,034

CONTAINER

Filed July 26, 1934

Fig. 1,

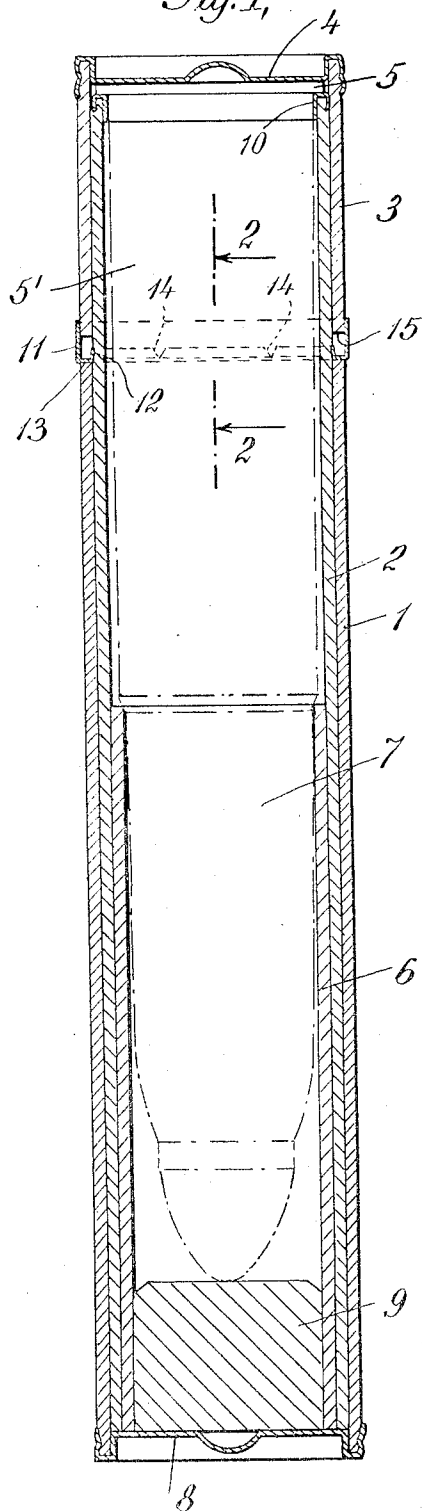


Fig. 2,

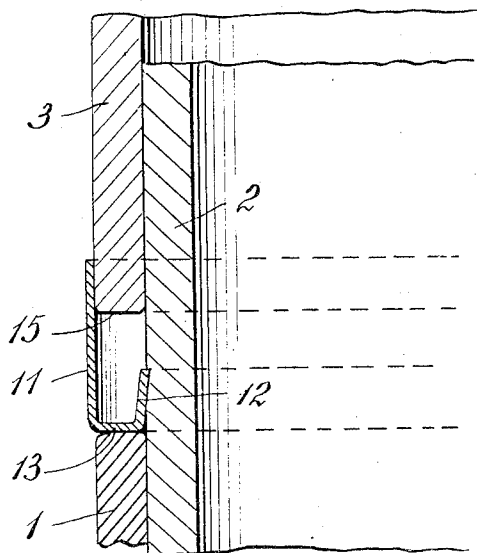


Fig. 3,

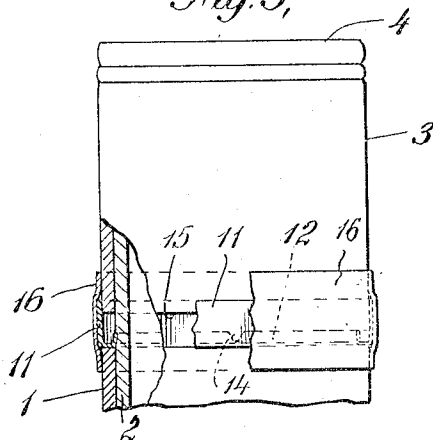
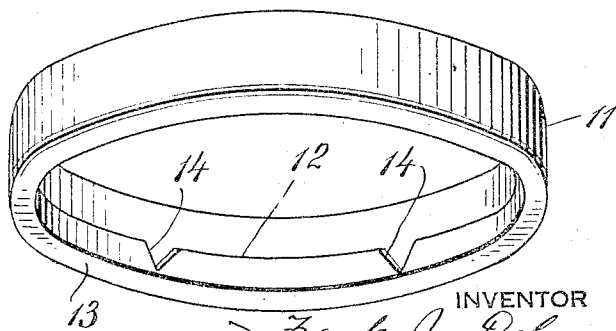


Fig. 4,



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UNITED STATES PATENT OFFICE

1,988,034

CONTAINER

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Application July 26, 1934, Serial No. 736,993

13 Claims. (Cl. 206—3)

This invention relates to containers, and more particularly to containers used for packaging ammunition shells. Such a container is disclosed in my Patent No. 1,939,339, issued December 12, 1933, and this invention is in the nature of an improvement on the container therein disclosed. The improvement constituting the subject matter of this application pertains to the sealing of the container, and the principal object of the invention is to provide means for facilitating the proper sealing of the container after the shell, or other object, has been packaged therein.

The invention is illustrated in the accompanying drawing in which:—

Figure 1 is a vertical longitudinal section of a container of the type disclosed in my prior patent above referred to, having associated with it the improved means for facilitating the sealing of the container.

Fig. 2 is a broken sectional view of that portion of the container to which the means for facilitating its sealing is applied; this figure being drawn on a larger scale than Fig. 1.

Fig. 3 is an elevation of the upper part of the container, certain parts being broken away and certain parts being shown in section to more clearly disclose the invention. This figure also illustrates the manner in which the container may be sealed and makes it clear how the means for facilitating the sealing of the container cooperates with the sealing means itself, and

Fig. 4 is a perspective view of the means employed for facilitating the sealing of the container.

The container illustrated in the drawing has a body portion which comprises an outer tube 1 and an inner sleeve or tube 2. The inner tube 2 extends upwardly beyond the upper edge of the outer tube and constitutes a neck for receiving a cover portion. The cover portion, or cap, comprises a tube 3 to the upper end of which is clamped a metal end portion 4. This cover, or cap, is adapted to fit over the protruding neck portion of the inner tube 2 with a sliding friction fit. When the container is used for packaging shells the rim 5 of the shell 5' rests upon the upper edge of the inner tube 2 and the body of the shell extends downwardly into the container as shown in the drawing. A lining sleeve 6 may be inserted in the lower part of the container to surround the lower and smaller portion 7 of the shell to assist in steadying it. The lower end of the container may be closed by a metal end portion 8 rigidly clamped to the lower end of the tube 1. If desired a loose support 9 may be posi-

tioned in the bottom of the container. The upper edge of the tube 2, upon which the rim 5 of the shell rests, may be reinforced by a metal rim 10. All of the non-metallic tubular parts of the container, such as the tubes 1, 2 and 6, and the tube 3 of the friction cover may be made out of cardboard or any other suitable material.

The container thus far described is substantially identical with the container disclosed in my prior patent above referred to. When the container is used for packaging ammunition shells the shell is inserted into the container until the rim 5 of the shell rests upon the metal rim 10 at the upper edge of the sleeve or tube 2. The friction cover is then applied to the protruding neck portion of the tube 2 until its metal end portion 4 engages with the end of the shell and tends to clamp the rim portion 5 of the shell between the upper edge of the tube 2 and the end portion of the cover. It is desirable to bring about this clamping action of the rim 5 of the shell before the lower edge 15 of the cover tube 3 contacts with the upper edge of the outer tube 1, otherwise the clamping action could not be obtained, and it is, therefore, customary to make the length of the tube 3 such that this clamping action can be obtained before the lower edge 15 of the cover makes contact with the upper edge of the tube 1. This usually results in the occurrence of a gap on the surface of the container between the lower edge of the cover and the upper edge of the tube 1. Some shells may have thicker rims than others and therefore the size of this gap will depend upon the thickness of the rim of the particular shell that happens to be placed in the container. The gap may vary from one quarter of an inch to one half of an inch, or more, depending upon the thickness of the rim on the shell housed within the container. It is customary to seal the container by winding a strip of adhesive tape around the container over the joint between the lower edge of the cover and the upper edge of the tube 1. It has been found, however, that where an appreciable gap occurs at this joint the adhesive tape tends to sag inwardly into the gap and thus cause wrinkling and irregularities along the edge portions of the tape. This inward sagging of the tape may occur when the tape is initially applied under tension or it may occur later. In any event, it has been found that a proper sealing of the container by the adhesive tape cannot be obtained when an appreciable gap exists at the joint. It has been found that the portion of the container in the vicinity of the joint becomes damp and it is thought that this is

caused by moisture which seeps in along the wrinkled edges of the adhesive tape. To overcome this difficulty I form out of sheet metal in any suitable way a ring of the type shown in Fig.

4. It has an outer axially extending flange 11 and an inner axially extending flange 12 the two flanges being connected at the bottom of the ring by a radially extending web portion 13. In other words, the ring is substantially U-shaped in cross section as shown in Fig. 2 with the outer flange 11 of the ring extending axially a longer distance than the inner flange 12. The inner flange 12 is provided with a suitable number of notches 14 to make it slightly yielding and springy. Moreover, the inner flange 12 is preferably not parallel with the outer flange 11, but is inclined slightly as best shown in Fig. 2, the inclination being such that the inner diameter of the flange at its upper edge is slightly less than the inner diameter of the flange 12 at its lower edge. The ring thus formed is forced downwardly over the upper end of the tube 2 of the container until the web portion 13 contacts with the upper edge of the tube 1. The ring is so designed as to size and dimensions that the inner flange 12 will have a close force-fit on the tube 2 and so that the space between the flange 11 and the surface of the tube 2 corresponds to the thickness of the cover tube 3. The notches 14 impart enough springiness to the inwardly inclined flange 12 to permit the ring to be forced on the tube 2, and after the ring has been positioned the inner flange 12 locks the ring in place and resists any upward movement because this flange is inherently biased towards its inclined position and tends to bite into the material of the tube 2. The outer flange 11 of the ring is made of sufficient axial length to cover the largest size gap that is likely to exist between the lower edge 15 of the cover and the upper edge of the tube 1.

When the cover is applied its lower edge portion is received within the annular space formed between the flange 11 of the ring and the surface of the tube 2, and the flange 11 bridges the gap between the lower edge 15 of the cover and the upper edge of the tube 1 no matter whether the gap is caused to be made large or small by the rim of the shell.

The flange or sleeve 11 provides a solid surface at the gap over which the adhesive tape may be applied, and thus prevents the above mentioned inward sagging of the strip of adhesive tape such as might result in leakage at the edges of the tape. In other words, the flange 11 of the ring causes the outer surface of the container at the joint to be in effect substantially continuous and solid, thereby facilitating the application of the strip of adhesive tape indicated at 16 in Fig. 3, and preventing it from becoming so deformed, either when it is applied or at a later time, as to permit leakage of moisture into the joint. By applying the adhesive tape to the joint over the flange 11 of the ring a smooth and solid sealed joint may be obtained which is substantially weather proof.

The invention is not limited to containers of the particular type herein disclosed. It may be used in connection with various types of containers regardless of whether they are for packaging shells or other articles.

I claim:

1. In a container having a cover portion and a body portion, means for facilitating sealing of the container comprising a rigid sleeve firmly

held adjacent to and with respect to one of said portions and into which the edge part of the other portion may be moved, said sleeve being adapted when the cover is on the body to extend from the body portion to the cover portion whereby said sleeve will close a gap that might otherwise exist on the surface of the container between the cover portion and the body portion.

2. In a container having a cover portion and a body portion, means for facilitating sealing of the container comprising a rigid sleeve firmly held adjacent to and with respect to the body portion and into which the edge part of the cover portion may be moved, said sleeve being adapted when the cover is on the body to extend from the body portion to the cover portion whereby said sleeve will close a gap that might otherwise exist on the surface of the container between the cover portion and the body portion.

3. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sleeve rigidly supported on said inner tube adjacent the upper edge of the outer tube and forming with the surface of said inner tube an annular space into which the lower edge portion of the cover-tube extends, whereby said sleeve closes a gap that might otherwise exist on the surface of the container between the lower edge of the cover-tube and the upper edge of said outer tube.

4. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sleeve rigidly supported adjacent to and with respect to said outer tube and forming with the surface of said inner tube an annular space into which the lower edge portion of the cover-tube extends, whereby said sleeve closes a gap that might otherwise exist on the surface of the container between the lower edge of the cover tube and the upper edge of said outer tube.

5. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sheet metal ring having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said inner flange surrounding and gripping said inner tube adjacent the upper end of said outer tube, said outer flange serving to receive the lower edge portion of the cover-tube and thereby close a gap that might otherwise exist on the surface of the container between the lower edge of the cover-tube and the upper edge of said outer tube.

6. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sheet metal ring having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said inner flange being inclined inwardly so that it is of smaller diameter at its upper edge than at its

lower edge, said inner flange surrounding and gripping said inner tube adjacent the upper end of said outer tube, said outer flange serving to receive the lower edge portion of the cover-tube and thereby close a gap that might otherwise exist on the surface of the container between the lower edge of the cover-tube and the upper edge of said outer tube.

7. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sheet metal ring having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said inner flange being inclined inwardly so that it is of smaller diameter at its upper edge than at its lower edge and being notched to make it springy and yielding, said inner flange surrounding and gripping the inner tube adjacent the upper end of the outer tube and resisting upward movement on the inner tube, and said outer flange serving to receive the lower edge portion of the cover-tube and thereby close a gap that might otherwise exist on the surface of the container between the lower edge of the cover-tube and the upper edge of said outer tube.

8. In a container having a body portion comprising an outer tube and an inner tube projecting beyond the outer tube, and a cover portion comprising a tube adapted to telescope over the projecting portion of said inner tube, means for facilitating sealing of the container comprising a sheet metal ring which is substantially U-shaped in cross section and which has an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, the two flanges being connected at the bottom of the ring by a radially extending web portion, said inner flange surrounding and gripping the inner tube and said web portion abutting against the upper end of said outer tube, said outer flange forming with the surface of said inner tube an annular space into which the lower edge portion of the cover-tube extends, whereby said outer flange closes a gap that might otherwise exist on the surface of the container between the lower edge of the cover-tube and the upper edge of said outer tube.

9. A sheet metal ring for closing a gap that might exist on the surface of a cylindrical container between the lower edge of the cover-tube and the upper edge of the body-tube, said ring being substantially U-shaped in cross section and having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said flanges being

connected at the bottom of the ring by a radially extending web portion, said inner flange being inclined inwardly so that it is of smaller diameter at its upper edge than at its lower edge.

10. A sheet metal ring for closing a gap that might exist on the surface of a cylindrical container between the lower edge of the cover-tube and the upper edge of the body-tube, said ring being substantially U-shaped in cross section and having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said flanges being connected at the bottom of the ring by a radially extending web portion, said inner flange being inclined inwardly so that it is of smaller diameter at its upper edge than at its lower edge, and said inner flange being notched for the purpose described.

11. A sheet metal ring for closing a gap that might exist on the surface of a cylindrical container between the lower edge of the cover-tube and the upper edge of the body-tube, said ring being substantially U-shaped in cross section and having an axially extending inner flange and an axially extending outer flange spaced radially from the inner flange, said flanges being connected at the bottom of the ring by a radially extending web portion, said inner flange being inclined inwardly so that it is of smaller diameter at its upper edge than at its lower edge, and said outer flange being longer in an axial direction than said inner flange.

12. In a container having a cover portion and a body portion, means for facilitating sealing of the container comprising a metallic sleeve rigidly held adjacent to and with respect to one of said portions and within which the other portion extends, said sleeve being adapted when the cover is on the body to extend from the body portion to the cover portion whereby said sleeve closes a gap that might otherwise exist on the surface of the container between the cover portion and the body portion.

13. In a container having a body portion comprising an outer tube and an inner cylinder projecting beyond the outer tube and forming a neck, and a cover portion comprising a tube adapted to telescope over said neck, means for facilitating sealing of the container comprising a rigid sleeve firmly supported adjacent to and with respect to one of said tubes and into which the edge part of the other tube may be moved, said sleeve being adapted when the cover is on the body to extend from the body portion to the cover portion whereby said sleeve closes a gap that might otherwise exist on the surface of the container between the lower edge of the cover tube and the upper edge of said outer tube.

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