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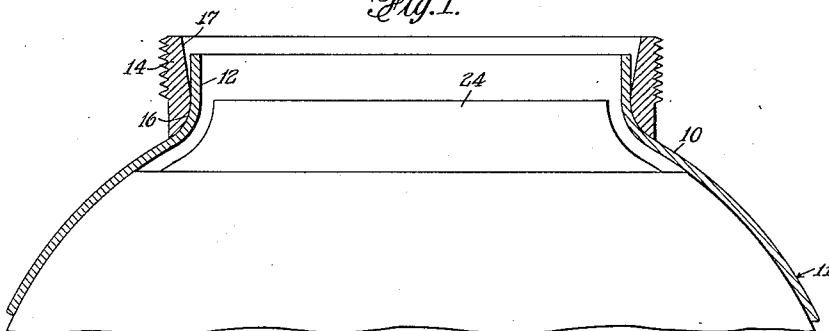
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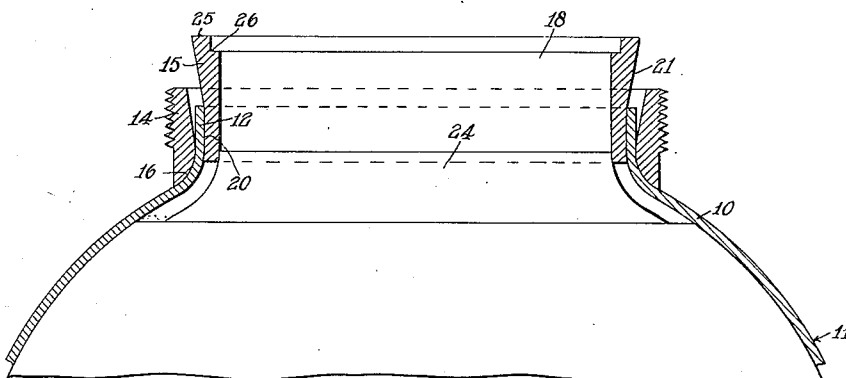
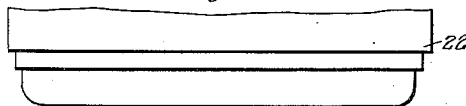
FITTING FOR CONTAINERS

Filed June 1, 1935

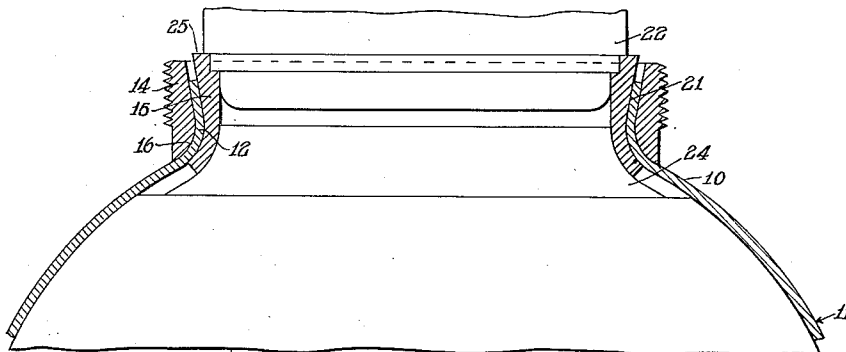
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE

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## FITTING FOR CONTAINERS

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4 Claims. (Cl. 285-56)

This invention relates to fittings for use generally in connection with sheet metal containers and is herein illustrated in connection with a fire extinguisher, although it may, of course, be employed to advantage in many other instances.

The general objects of the invention are to provide an improved metal fitting and an improved metallic structure of which such fitting forms a part.

The invention will be understood from the following description taken in connection with the accompanying drawing, in which—

Fig. 1 is a sectional view of the upper end of a sheet metal container, showing an element of the present fitting, namely, a screw-threaded ring in position to be attached to the container; Fig. 2 is a view similar to that of Fig. 1 and showing an additional element of the fitting, namely, a locking ring positioned within the neck portion of the sheet metal container preparatory to the execution of a die-forming operation by which the screw-thread ring, the neck portion of the container and the locking ring are secured together as elements of a metallic structure embodying the present invention, and Fig. 3 is a view similar to that of Figs. 1 and 2 and showing the screw-threaded ring, the neck portion of the container and the locking ring in a metallic structure produced in accordance with the present invention.

Referring to the drawing, the numeral 10 indicates a metallic wall, such, for example, as that of a fire extinguisher head 11, having in its unfinished state an upwardly extending flange-like neck portion 12 defining the usual opening through which access to the extinguisher may be had.

It is to the neck portion 12 that the elements of the present fitting, namely, an externally screw-threaded ring 14 and a locking ring 15, are adapted to be attached by the present method so as to produce the improved metallic structure shown in Fig. 3.

According to the present invention, the screw-threaded ring 14 is so shaped interiorly thereof that it presents at its lower end a downwardly and outwardly curved surface 16 which conforms to the curvature of the sheet metal wall at the juncture of the neck portion 12 of that wall with the main or dome-like portion of the same when the ring is placed or positioned on the extinguisher head 11 as shown in Fig. 1. It is to be noted that the curved surface 16 terminates on a horizontal plane passing through the screw-

threaded ring at a substantial distance above the lower end thereof, and that the ring is so shaped throughout its remaining interior area as to present a neck-receiving surface 17 which is inclined upwardly and outwardly, as reckoned from its juncture with the curved surface 16, thus affording between itself and the outer surface of the neck portion 12 a substantially V-shaped channel or clearance, reference being had to Figs. 1 and 2.

As to the locking ring 15, it is to be noted that its interior wall is initially such as to present a cylindrical surface 18, whereas its peripheral wall is so shaped as to present at its lower margin a cylindrical surface 20 and at its upper margin an upwardly and outwardly inclined neck-engaging surface 21, the angular inclination of which latter surface corresponds to that of the neck-receiving surface 17. Referring particularly to Fig. 2, wherein the locking ring 15 is shown properly positioned preparatory to its being permanently attached to the extinguisher head 11, it will be noted that the outer diameter of the lower margin of the ring 15 is such as to permit that portion of the ring to be readily introduced into the neck portion 12 of the extinguisher to such an extent that the upper edge of the neck portion will engage the outwardly inclined neck-engaging surface 21 in the vicinity of the juncture of that surface with the cylindrical surface 20.

According to the present invention, the screw-threaded ring 14 and the locking ring 15 are permanently attached to the neck portion 12 of the container by forcing the ring 15 downwardly, under the action of a suitable press-actuated die or plunger 22, into forming or upsetting engagement with a suitable die 24, on which the extinguisher head 11 is supported during that operation and by which the lower margin of the ring is forced outwardly into intimate locking engagement with the sheet metal wall, as shown in Fig. 3, the neck portion 12 of the extinguisher being simultaneously flared or expanded into engagement with the neck-receiving surface 17 of the screw-threaded ring under the wedging action of the neck-engaging surface 21 of the locking ring.

It is to be observed that the upper marginal portion of the locking ring 15 retains its original shape and dimensions while the lower marginal portion of that ring is being forced into impinging engagement with the sheet metal wall 10; but despite the fact that the upper marginal portion of that ring remains undistorted, it, by reason of the angular relation of its neck-engaging surface

21 to the neck-receiving surface 17 of the screw-threaded ring 14, functions to exert and maintain an effective clamping action on the neck portion 12 of the sheet metal wall in the finished metallic structure.

In the form of the invention herein shown, particular reference being had to the fire-extinguisher-embodiment of Fig. 3, the locking ring 15 is of such height that it protrudes a slight distance above the upper end of the screw-threaded ring 14 and there presents a seating surface 25 adapted to receive the gasket or sealing element, with which the usual fire-extinguisher-head-cap, not shown, is provided. It is to be noted that the locking ring 15, when employed in connection with fire extinguishers of the so-called acid-soda type, may be provided at its upper end with an internal shoulder or ledge 26, adapted to support the customary bottle-cage, not shown, within which the ordinary acid-retaining bottle is held ready to dump its contents as the fire extinguisher is inverted to condition it for use.

It will be understood that various departures may be made with respect to the article and the product herein described without deviating from the spirit of the invention or the scope of the following claims.

What is claimed is:

1. A metal fitting adapted to be attached to a metal wall having a flange-like neck portion extending upwardly therefrom, characterized prior to its attachment by a ring adapted to be placed about said neck portion and having an upwardly and outwardly inclined neck-receiving surface between which and said neck portion a channel-like clearance is initially afforded and into engagement with which said neck portion is adapted to be outwardly distorted, and a locking ring adapted to assume clamping position within the first-mentioned ring and having a lower marginal portion and an upper marginal portion presenting an upwardly and outwardly inclined neck-engaging surface having a contour conforming substantially to that of said neck-receiving surface, said upper marginal portion of said locking ring being adapted upon assuming clamping position with relation to the first-mentioned ring to impinge on and anchor said neck portion intermediate said neck-receiving and neck-engaging surfaces and the lower marginal portion of said locking ring being adapted to be distorted into a cooperative relation to the first-mentioned ring to retain said locking ring in clamping position.

2. A metal fitting adapted to be attached to a metal wall having a flange-like neck portion extending upwardly therefrom, characterized prior to its attachment by a ring adapted to be placed about said neck portion and having interiorly thereof an upwardly and outwardly inclined neck-receiving surface between which and said neck portion a substantially V-shaped channel-like clearance is initially afforded and into engagement with which said neck portion is adapted to be outwardly distorted, and a locking ring adapted to assume clamping position within the first-mentioned ring and having a lower marginal portion so dimensioned as to permit it to be unobstructedly introduced into said neck por-

tion and an upper marginal portion presenting on its outer face an upwardly and outwardly inclined neck-engaging surface shaped to conform substantially to the contour of said neck-receiving surface and so dimensioned as to distort said neck portion and move it outwardly into engagement with said neck-receiving surface upon movement of said locking ring to clamping position, said upper marginal portion of said locking ring being adapted upon assuming clamping position with relation to the first-mentioned ring to impinge on and anchor said neck portion intermediate said neck-receiving and neck-engaging surfaces and the lower marginal portion of said locking ring being adapted to be distorted into a cooperative relation to the first-mentioned ring to retain said locking ring in clamping position.

3. In a metallic structure, a metallic wall having a flange-like neck portion extending upwardly and outwardly therefrom, a fitting including a ring embracing said neck portion and having an upwardly and outwardly inclined neck-receiving surface in underlying engagement with said neck portion, and a locking ring disposed within said neck portion and having a lower marginal portion and an upper marginal portion presenting an upwardly and outwardly inclined neck-engaging surface conforming substantially to the contour of said neck-receiving surface and in overlying engagement with said neck portion, the first-mentioned ring and said upper marginal portion of said locking ring cooperating with each other to impinge on and anchor said neck portion intermediate said neck-receiving and said neck-engaging surfaces and the lower marginal portion of said locking ring being distorted into a cooperative relation to the first-mentioned ring to retain that ring and said locking ring against relative displacement whereby said neck portion is maintained anchored intermediate said neck-receiving and said neck-engaging surfaces.

4. In a metallic structure, a metallic wall having a flange-like neck portion extending upwardly and outwardly therefrom, a fitting including a ring embracing said neck portion and having interiorly thereof an upwardly and outwardly inclined neck-receiving surface in underlying engagement with said neck portion, and a locking ring disposed within said neck portion and having a lower marginal portion and an upper marginal portion presenting on its outer face an upwardly and outwardly inclined neck-engaging surface shaped to conform substantially to the contour of said neck-receiving surface and in overlying engagement with said neck portion, the first-mentioned ring and said upper marginal portion of said locking ring cooperating with each other to impinge on and anchor said neck portion intermediate said neck-receiving and said neck-engaging surfaces and the lower marginal portion of said locking ring being distorted into a cooperative relation to the first-mentioned ring to retain that ring and said locking ring against relative displacement whereby said neck portion is maintained anchored intermediate said neck-receiving and said neck-engaging surfaces.

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