June 9, 1936. H. K. STRICKLER 2,043,339

FLUID CONTAINER

Filed Oct. 17, 1929

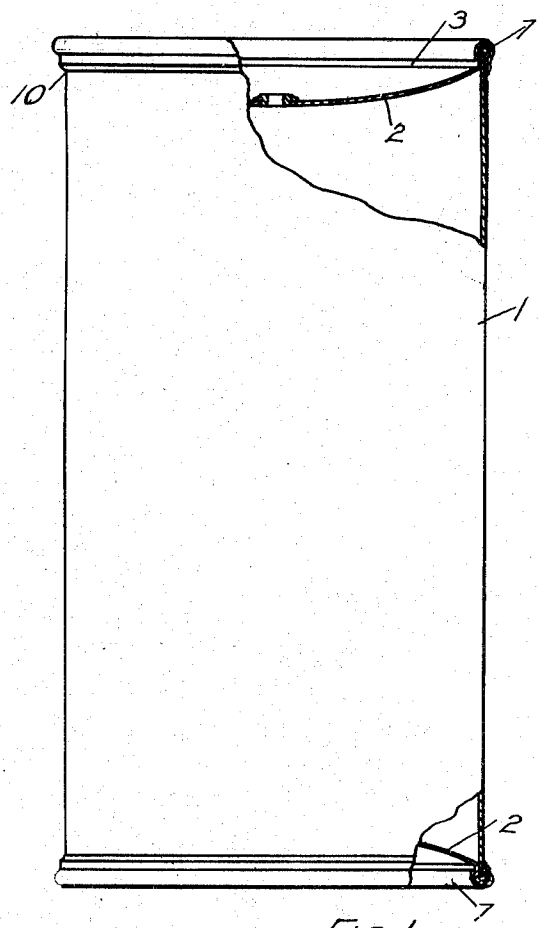



FIG. 1.

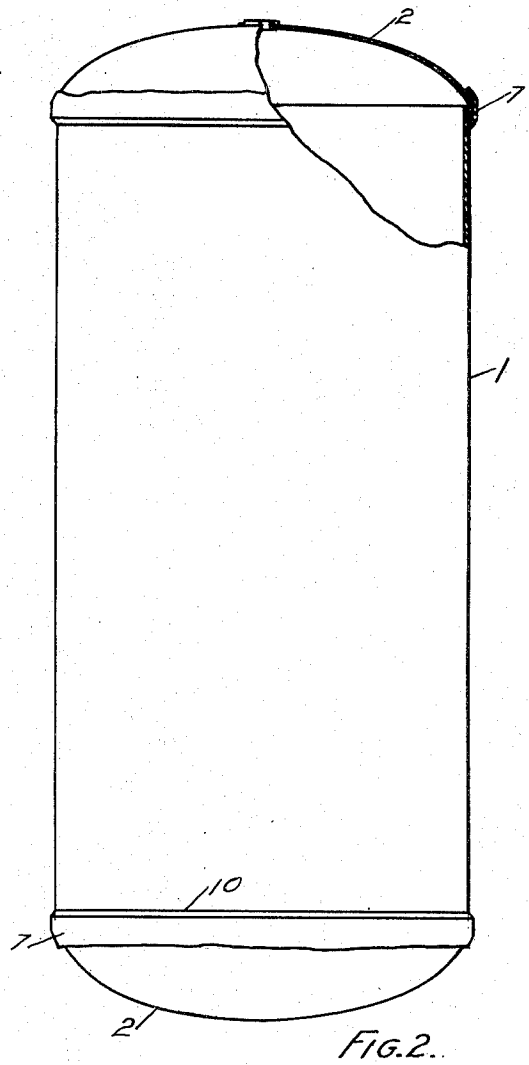



FIG. 2.

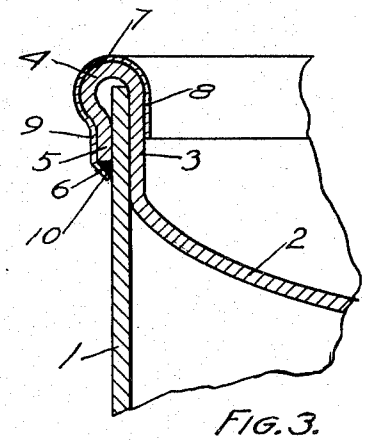



FIG. 3.

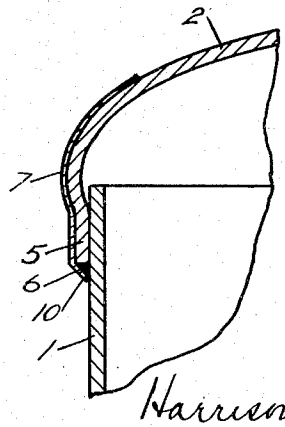



FIG. 4.

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## FLUID CONTAINER

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Application October 17, 1929, Serial No. 400,392

4 Claims. (Cl. 220—66)

This device is designed to hold fluid under pressure, particularly such fluids as the more volatile hydrocarbons which at ordinary atmospheric temperature exert pressure. Such receptacles are used for transportation and storage of such liquids particularly at the point of use. It is desirable to make the containers of as light metal as possible in order to save expense both in transportation and in original fabrication. At the same time it is desirable to have such receptacles capable of withstanding a pressure very considerably in excess of the normal pressure to which the container is subjected. In order that the container may be readily handled and have flat ends it is desirable that the ends be of concave form, the dome shape strengthening the end, but not interfering with the stability of the container when arranged upon its end. The present invention is directed to strengthening the container and providing for greater durability. Features and details of the invention will appear from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing as follows:—

Fig. 1 shows a side elevation of a container, partly in section.

Fig. 2 a similar view of a container which has been subjected to an abnormal pressure.

Fig. 3 an enlarged sectional view of the end structure of the container.

Fig. 4 a similar view with the container having been subjected to an abnormal pressure.

1 marks the wall of the container, and 2 the ends. These are formed of sheet metal and the end is concave. The end has a flange 3 which is cylindrically shaped and engages the inner surface of the wall. The edge of the end of the container has a fold 4 which extends over the edge of the wall. A return flange 5 extends from the fold along the outer face of the wall. The corner between the edge of the flange 5 and the outer surface of the wall 1 receives the material 6 of an electric weld.

A protecting plate 7 is of channel form, the inner member 8 of the channel extending along the inner face of the flange 3, the outer member 9 of the channel extending down along the return flange 5. The edge of the member 9 extends beyond the edge of the flange and is bent in toward the surface of the wall 1, thus protecting the material of the weld 6. This plate 7, therefore, particularly strengthens the fold 4 and the flange 3 and also receives the wear along the edge of the container in use. The lower edge of the outer member of the channel at 10 also protects the weld.

When the container is subjected to normal pressure, the stiffness of the end due to its concave shape readily sustains the pressure, but under an abnormal pressure the end will be forced outwardly and ultimately will assume a dome shape, as illustrated in Fig. 2. Heretofore containers of this type have been made, as particularly illustrated in the patent to John M. Kelley, #1,577,974, March 23rd, 1926 where the edge of the end was welded to the edge of the wall. When this excessive pressure took place there was a tendency to break the weld along the edge through the abrupt bending at that point. The present invention with the weld down the outside is away from the part of the end which is bent in forcing the end from the concave to the outward form and the outer strain on the end is, therefore, a direct outward pull on the weld, as distinguished from a tearing strain localized at one edge of the weld. The plate 7 also extends over the bend of the end and to the extent of its stiffness tends to supplement the weld in resisting a severance of the end from the side walls under this pressure.

What I claim as new is:—

1. A container including a surrounding wall, a flanged pressure resisting end closure plate, said plate being concave with an outwardly extending peripheral flange engaging the inner face of the wall and extending over the edge of the wall with a return flange engaging the outer face of the wall, said return flange being secured to a portion of the wall having a face not greater than 90° from a plane at right angles to the axis of the container, and a protecting ring of channel shape, the inner member of the channel engaging the outwardly extending flange and the outer member of the channel engaging the outer face of the return flange.

2. A container including a surrounding wall, a flanged pressure resisting end closure plate, said plate being concave with an outwardly extending peripheral flange engaging the inner face of the wall and extending over the edge of the wall with a return flange engaging the outer face of the wall, said return flange being secured to a portion of the wall, having a face not greater than 90° from a plane at right angles to the axis of the container, and a protecting ring of channel shape, the inner member of the channel engaging the outwardly extending flange and the outer member of the channel engaging the outer face of the return

flange, said outer member of the channel having its edge extending beyond and around the edge of the return flange.

3. A container including a surrounding wall, a flanged pressure resisting end closure plate, said plate being concave with an outwardly extending peripheral flange engaging the inner face of the wall and extending over the edge of the wall with a return flange engaging the outer face of the wall, said return flange being secured to a portion of the wall having a face not greater than 90° from a plane at right angles to the axis of the container, by material in the corner formed by the wall and the edge of the return flange, and a protecting ring of channel shape, the inner member of the channel engaging the outwardly extending flange and the outer member of the channel engaging the outer face of the return flange, said outer member of the channel having its edge extending beyond and around the edge of the return flange and enclosing the material.

4. A container including a surrounding cylindrical wall and a flanged flexible end closure plate, said plate being concave when viewed on its outer face and capable of expansion to substantially dome shape, due to abnormal pressure within the container and the flange extending over the edge of the wall and downwardly along the outer face of the cylindrical wall, the flange being secured to the wall by material in the corner formed by the wall and the edge of the flange.

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