Feb. 5, 1924. 1,482,932

H. A. KEINER

SHEET METAL CONTAINER

Filed Jan. 20, 1922

Fig 1

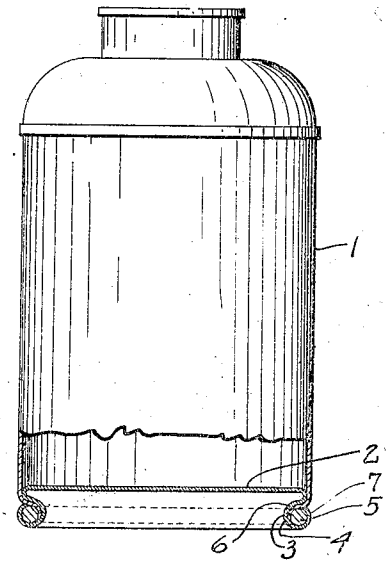


Fig 2

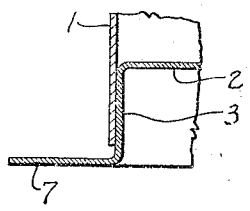


Fig 3

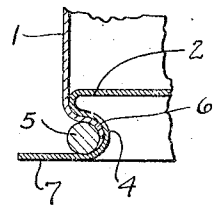


Fig 4

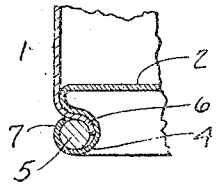


Fig 5

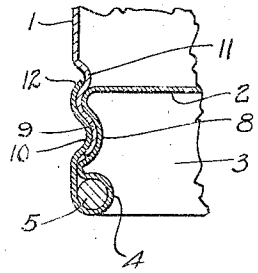
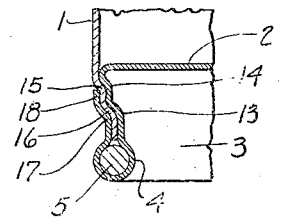


Fig 6



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UNITED STATES PATENT OFFICE.

HENRY A. KEINER, OF RICHMOND HILL, NEW YORK, ASSIGNOR TO KEINER-WILLIAMS STAMPING COMPANY, A CORPORATION OF NEW YORK.

SHEET-METAL CONTAINER.

Application filed January 20, 1922. Serial No. 530,548.

To all whom it may concern:

Be it known that I, HENRY A. KEINER, a citizen of the United States, residing at Richmond Hill, New York, have invented certain new and useful Improvements in Sheet-Metal Containers, of which the following is a clear, full, and exact description.

My invention relates to a sheet metal container, and my object is to improve the construction of the same. One of my objects is to improve the fastening arrangement between the body and the bottom whereby the same will be simpler and more secure.

In the manufacture of sheet metal containers in which a separate bottom portion is fastened to the body portion, it is important that the two shall be securely joined so that there will not be liability of leaks or displacement due to rough handling of the same as in transportation. This is particularly important in such containers as milk and ice cream cans which, when filled, are very heavy and when subjected to the ordinary rough usage of shipment, loading and unloading, are likely to open the joints or unduly strain the same so as to cause leaks. Various expedients have been proposed, but most of them are unsatisfactory for one reason or another. By my invention I have provided a simple, cheap and satisfactory closure for the bottom which avoids objections inherent in such devices of the prior art. I am aware that my invention may be embodied in various forms, but as an illustrative example which I now prefer, in the drawings—

Fig. 1 represents a side view of a milk can with the lower portion in vertical section;

Figs. 2, 3 and 4 are detail sections showing the method of assembly; and

Figs. 5 and 6 are similar views of modfications.

The cam comprises a body portion 1 and a bottom portion 2 which is inserted and securely fastened therein. The bottom portion has a downwardly extending flange 3 over which may be placed the cam body, as shown in Fig. 2, and the two then rolled or otherwise bent inward as indicated at 4 and 6, thereby securely gripping the bottom. The horizontal flange 7 (see Fig. 3) is then turned up around the strengthening ring 5 and preferably its edge turned inward against the body portion. This makes an additionally secure lock as it tends to force the body and bottom portions securely together and prevent any tendency of the two to separate, for example by the body portion bending outward through rough handling. The parts are securely locked together and make a tight effective joint. The outer surface of portion 7 is preferably flush with the outer surface of the body, as shown. This is preferably because where the can is embedded in ice for example, it may be pulled out without any projection being formed to catch on the ice and possibly open the joints or prevent removal of the can.

Figures 2, 3 and 4 indicate the successive operations which will, from the foregoing, be apparent to anyone skilled in the art.

Figures 5 and 6 show other forms of the invention.

In Fig. 5 the bottom portion is provided with two inward bends 4 and 8. The body is bent inwardly at 9 and the bottom is turned inwardly at 10, giving a secure fastening arrangement. If desired, the body portion may be rolled inward at 11 against the rounded corner of the bottom portion, and the upwardly extending portion of the bottom may be rolled into this bend as at 12. This will result in a construction which has additional security and also makes a very tight joint at the corner formed by the adjacent portions of the bottom proper and body.

In Fig. 6 the bottom portion is provided with two inward bends 13 and 14 and the body is inwardly rolled at 15 and 16 into these bends. The upwardly extending portion of the bottom may be rolled into the lower bend 16 as at 17, and the edge 18 may be contained in the upper bend, thus leaving the outer surface substantially flush at this point, if desired.

In constructing various embodiments of my invention it will be found that the advantages thereof will be fully attained when the tube made up of the parts 4 and 7 of the flange that is attached to the bottom of the ring 5 therein are so constructed that the circular axes of the tubes and of the ring 5 fall within a prolongation of the cylindrical walls of the body 1 of the container. With the parts in such relation a blow directly upward upon the lower edge of the tube, such as would occur when the container is dropped squarely upon a flat surface, would exert no force tending to uncurl the

tube but would on the contrary tend to curl the tube more tightly and thereby more firmly grip the contracted lower edge of the body member between the inner face of the ring 5 and the opposite inner face of the tube. The contents of the container would exert a downward pressure upon the bottom tube and would tend to force the edge of that part of the bottom that closes the container more firmly into contact with the inner face of the container. An oblique blow, such as would occur if one side of the bottom of the container struck the ground first, would exert a similar effect so long as the ring 5 has a diameter correctly proportioned to that of the body 1 of the container. The use of a ring of too great a diameter would permit the ring to be driven up outside of the body of the container, resulting in eventual destruction of the container.

I am aware that my invention may be embodied in various forms other than those illustrated, and I therefore do not limit myself to the particular embodiments above specifically described.

What I claim is—

1. A sheet metal container comprising a hollow cylindrical body member, a ring having an outer diameter not greater than that of said body member, the edge of one end of said body member being contracted and extending directly into and partially enclosing said ring, and a bottom member having a closure portion having its periphery contacting with the inner face of said body member above said contracted edge and having a marginal flange extending downwardly in close engagement with the inner face of said body member and curved around said edge thereof and said ring, into engagement with the outer face of said body member and having an outer diameter substantially equal to that of said body member.

2. A sheet metal container comprising a hollow cylindrical body member, and a bottom member having a portion constituting a body member closure and provided with a marginal flange, said flange extending downwardly in engagement with the inner face of the wall of said body member and being curved to form an annular tube having an outer diameter substantially equal to that of said body member, and a ring within said tube, the edge of said body member being contracted below the line of contact therewith said closure portion and extending directly and being firmly gripped between the inner face of said ring and the wall of said tube, the edge of said flange engaging the outer face of said body member.

3. A sheet metal container comprising a hollow cylindrical body member, a bottom and a ring, said bottom comprising a portion the periphery of which contacts with the inner face of the cylindrical wall of said body portion and completely closes one end thereof, and a marginal flange curved into an annular tube having an open slot throughout its length and enclosing said ring and having an outer diameter substantially equal to that of said body member, the lower edge of said body member extending directly through said slot in contact with the edges thereof and into and partially enclosing said ring and being shaped to snugly fit the inner face of said tube.

4. In a sheet metal container, a hollow cylindrical body-member, a bottom member and a ring, said bottom member comprising a portion constituting a body member closure having a diameter substantially equal to that of the interior of said body member and contacting the inner face of the walls of said body member and having a marginal flange extending downwardly and being formed with an inward curve, the edge of said body member being contracted below the line of engagement thereof with said closure portion of said bottom and extending directly in close engagement with said inward curve of said flange, said ring encircling and being partially enclosed by said edge of said body member and holding it in position within said curve, said flange extending below said edge and ring and upwardly outside of said ring into engagement with said body member to form an annular tube closely enclosing said ring and having an outer diameter substantially equal to that of said body member.

Signed at Richmond Hill, New York, this 13th day of January, 1922.

HENRY A. KEINER.