

H. P. GEISLER.
METAL CONTAINER.
APPLICATION FILED SEPT. 23, 1920.

1,398,261.

Patented Nov. 29, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

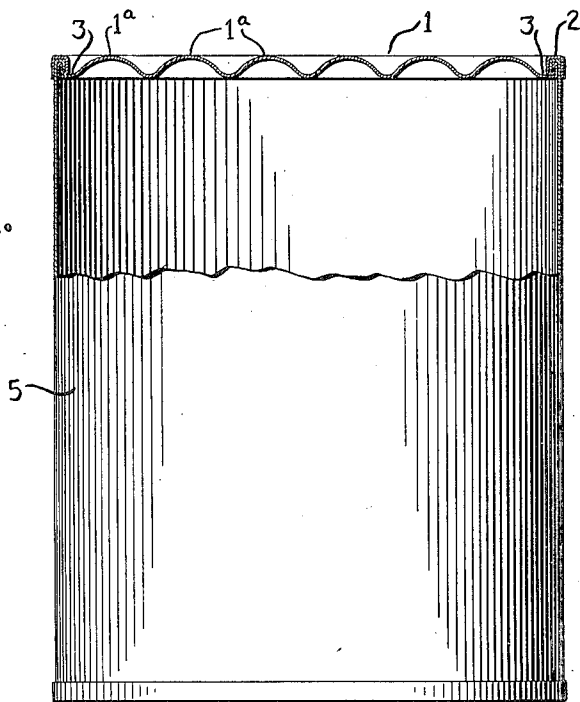
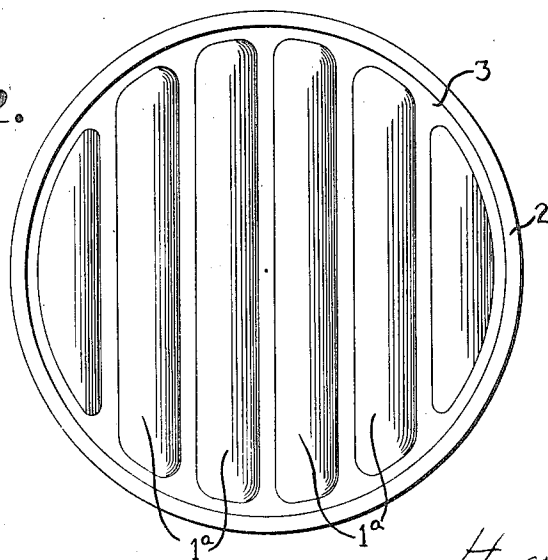


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 7.

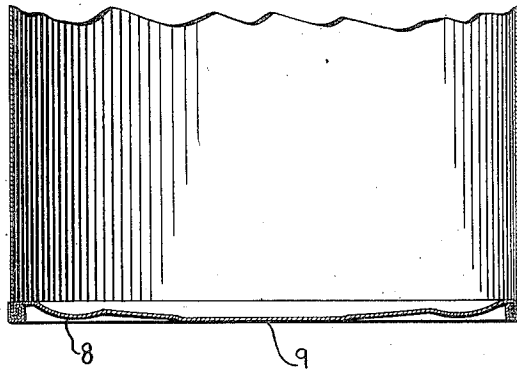


Fig. 6.

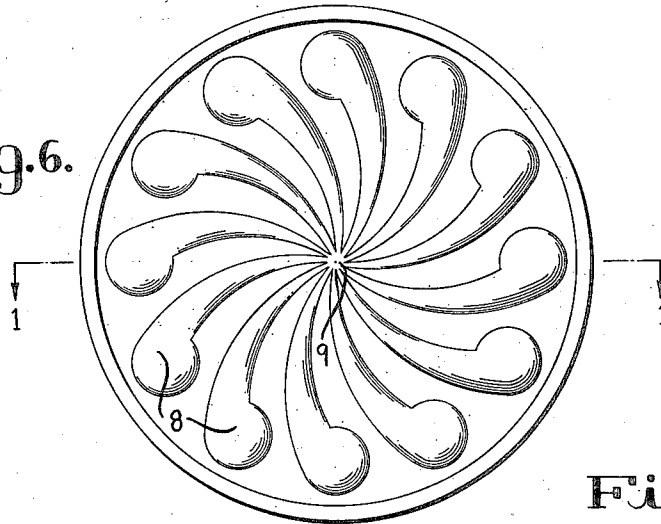


Fig. 3.

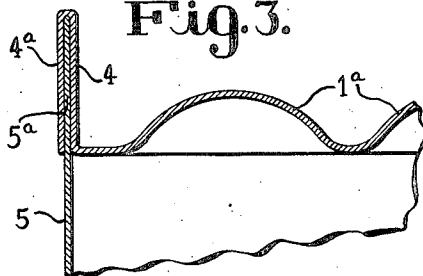


Fig. 4.

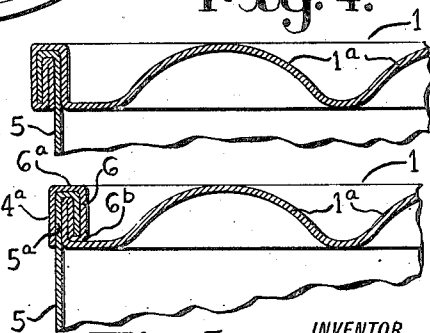


Fig. 5. INVENTOR
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UNITED STATES PATENT OFFICE.

HUGO P. GEISLER, OF NEW YORK, N. Y.

METAL CONTAINER.

1,398,261.

Specification of Letters Patent.

Patented Nov. 29, 1921.

Application filed September 23, 1920. Serial No. 412,273.

To all whom it may concern:

Be it known that I, HUGO P. GEISLER, a citizen of the United States, residing at 720 Riverside Drive, New York, N. Y., have
5 invented certain new and useful Improvements in Metal Containers, of which the following is a specification.

My invention relates to containers with a metal end or ends whose contents are liable
10 to evolve gas, thus causing the walls to swell or the ends to bulge, and which are often rejected erroneously because of a bulging of the tops not due to fermentation but to
15 the shocks or blows given by the contents to the ends or sides, in their transportation, or in the handling of the containers.

One of the objects of my invention is to greatly lessen or prevent the "bulging" and "buckling" of the ends, and also to prevent
20 what are known in the trade as "springers" or "slackers" produced by the dropping of the container or case in which the containers are packed for shipment.

Another object of my invention is to enlarge the carrying capacity of the container without enlarging its size where the material within the container is such that will not permit the soldering of the ends to the
25 body of the container.

Another feature of my invention is to construct a rim or flange on a container that will act as a base or cushion against which the ends rest and press in the event of pressure from within; also to prevent the sides
30 of the container being torn away from the ends of the flange or rim joint of the container, in the event of the container becoming crushed.

Another object is to construct a rim or flange on a container that will be air tight and leak proof without the aid of a gasket.

One or more illustrative embodiments of my invention are represented in the accompanying drawing, viz.—

35 Figure 1 is a side elevation of a container embodying my invention, the top and bottom being the same.

Fig. 2 is a top or bottom view of the container of Fig. 1.

40 Fig. 3 illustrates one step in making the flange.

Figs. 4 and 5 are sectional views showing two forms of flange or rim of the container and the manner in which the ends (top and
55 bottom) are fastened to the side or body of the container and held in place.

Fig. 6 shows a top with a different kind of corrugation.

Fig. 7 is a section of the lower portion of the container shown in Fig. 6, on line 1—1.

Shipments of metal containers such as cans of condensed milk are frequently rejected, thus causing great loss, because of the appearance of swelled, bulged or buckled ends on some of the cans, erroneously
60 attributed to spoiled contents due to fermentation and gas forming inside the container whereas in many cases the buckled or bulged ends arise from the blow given to the ends of the containers by their contents
65 when they are dropped from a height or violently knocked in shipping. Although the containers are stacked upon each other their ends are unsupported and are free to move under the blows and shocks dealt by their
70 contents. In accordance with my invention I prevent the ends of the container from bulging or buckling by taking up the space between the ends of adjacent or juxtaposed containers, filling this space with
75 the metal corrugated tops of the containers so that not only is each end made stronger but the two adjacent ends support each other against the shock of their contents. The
80 corrugations are so closely spaced that the metal between the corrugations will not be flexed, due to shocks on the ends or crushing of the sides. The entire center of the ends
85 (top and bottom) is ridged and non-flexible when crushed or dented at the sides of the container. The spaces between the ribs are preferably not wider than the ribs. Swells
90 due to spoiled contents and consequent gas formation with resulting high pressure will, however, bulge the sides of the container
95 or even the tops so that they can be readily detected and the cans rejected.

Referring to the drawings, it will be observed that in the construction of the ends from tin or other metal, I, by suitable
100 means, form preferably in ridges straight across as shown in Fig. 1, at 1, all or a portion of the metal forming the ends (top and bottom) surrounded by the flange or rim 2 of the container. I leave a slight space
105 which may be used for cutting purposes between the ends of the corrugations 1 and the flange or rim 2 in such a manner as to give the greatest strength and rigidity to the metal used and serving to anchor the
110 ends of the corrugations therein.

The corrugations 1 in the ends (top and

bottom) of the container are to be of sufficient height and of sufficient number so as to give the requisite strength and rigidity to the metal used, according to the size of the container, and are preferably of uniform width and uniformly spaced. The corrugations are so closely spaced that the metal between the corrugations will not be flexed, due to shocks on the ends or crushing of the sides. They are of such a height that the outside surface of the ends (top and bottom) 1^a, 1^a, 1^a will, when the ends are in place on the container, be approximately on a level with the top of the edge of the rim or flange 2 or side of the container. Or the ends (top and bottom) of the container, may be crimped in any design desired and the ends (top and bottom) slightly bulged outward, so that the outside surface and center of the ends (top and bottom) will, when the ends are attached to the body of the container, be on a level with the top of the edge of the rim or flange 2 or side of the container (see Fig. 7).

In either case the outside surface 1^a, 1^a, 1^a of the ends (or center when bulged outward) as well as the rim or flange 2 of the container will be approximately flush with, or resting approximately on the shelf or article on which the container is placed. Or, in shipping, when one container is placed on top of the other, (end to end) the outside surface 1^a, 1^a, 1^a of the ends, as well as the flange or rim 2 will be resting against each other, thereby preventing the ends (top and bottom) from bulging, springing or buckling in the event of rough handling or being dropped while packed in cases for shipment.

Where the container is constructed as a receptacle for articles that will not permit the soldering of the ends to the container after filling, as when used to store condensed milk, the outside portion 4, 4^a of the metal of the ends is suitably bent so as to form a groove (Fig. 3) with sides of equal depth to fit and slip over the top 5^a of the side 5 (Fig. 3) of the container. Before putting the ends on to the container and fastening them in place, the groove in the end into which the top 5^a of the side 5 of the container is inserted may, or may not, be filled with a proper self cementing substance as for example, paraffin, waxy or resinous compounds of a suitably high melting point; or, when the containers are to be used as a receptacle for oils, gelatin like compounds insoluble in oil, may be used, the kind depending upon the article the container is to hold. After placing the ends on the container and inserting the top 5^a of the side 5 into the groove (Fig. 3) the same is tightly crimped and compressed, and then may be bent outward and crimped as in Fig. 4, but preferably according to the best em-

bodiment of my invention, bent inward and down against itself, and again tightly crimped and compressed forming the rim or flange 6 of Fig. 5 with top 6^a and base 6^b.

The rim or flange so formed more securely fastens the ends to the container, gives a long anti-leakage path, and acts as a base or cushion against which at 6^b the ends (top and bottom) rest or press in the event of pressure from within. The rim or flange so formed produces a more rigid and air tight flange, rim and joint, than present methods; and also prevents the side 5 from being torn away from the flange in the event that the container be crushed; besides reducing the effective diameter of the container at the ends by the thickness of the rim or flange, if it were on the outside, thus enabling more containers to be packed in the same space. The flange is free from leakage and does away with the use or necessity of a gasket that is now used and in many cases found objectionable to the contents of the tins or containers, where an air tight and leak proof joint, flange or rim is required.

In the embodiment of the invention shown in Figs. 6 and 7 the corrugations 8 start a short distance from the rim, to give a cutting strip which anchor the ends of the corrugations, and run spirally toward the central portion, leaving space for a number or mark. The central portion or topmost portion 9 is on a level with the rim.

Where the container is constructed to act as a receptacle for articles where the ends (top and bottom) may be soldered to the side of the container, the outside portion of the tin, or metal of the ends surrounding the crimp or corrugation is sufficiently raised and formed so that when the ends are fastened and soldered to the container, the outside surface of the ends will likewise be approximately on a level with the top of the edge or side of the container, the same as containers where the ends are not soldered, as heretofore described.

What I claim as new and desire to secure by Letters Patent is:

1. A sheet metal container adapted to receive contents liable to fermentation, said container provided with sheet metal ends, the ends and body of the container being connected by an air-tight seal, said ends provided with a plurality of outwardly projecting corrugated ribs, the corrugations being so spaced as to prevent the flexing of the metal between corrugations, the corrugations throughout their length rising to the level of the edge of the rim of the container, so that adjacent containers when stacked one on top of the other will have the corrugations of their adjacent tops and bottoms in contact with each other, the distance between the ends of adjacent containers being filled

with the metal corrugations, whereby the adjacent ends as well as the rims support each other against the shock of their contents.

2. A cylindrical sheet metal container adapted to receive contents liable to fermentation, said container provided with sheet metal ends, the ends and body of the container being connected by an air-tight seal, said ends provided with a plurality of parallel, adjacent, corrugated ribs of uniform width, extending across the ends, the corrugations throughout their length rising to the level of the edge of the rim of the container, so that adjacent containers when stacked one on top of the other will have the corrugations of their adjacent tops and bottoms as well as their rims in contact with each other, the distance between the ends of adjacent containers being filled with the metal corrugations, whereby the adjacent ends support each other against the shock of their contents, and prevent the buckling of the metal in the ends if the sides become crushed or dented.

3. A container having corrugated metal ends of tin or other metal, the corrugations being of uniform width and uniformly spaced, and having the outer edges of the ends bent to form a circumferential recess connected with and overlapping the projecting end of the body of the container, said overlapping edges and the end of the body being turned inwardly, and tightly folded against themselves so as to form an anti-leakage path, and providing a base or cushion against which the ends press in the event of pressure from within, the height of the rim being equal to the depth of the corrugations, substantially as described.

4. A container having corrugated metal ends of tin or other metal, and having the outer edges of the ends bent to form an outwardly projecting flanged portion so as to form a circumferential recess connected with and overlapping the projecting end of the body of the container, said overlapping edges and the end of the body being turned inwardly at their middle, and tightly folded against themselves so as to form an anti-leakage path and a rim consisting of six thicknesses of metal providing a base or cushion against which the ends press in the event of pressure from within, the height of the rim being equal to the depth of the corrugations, substantially as described.

5. A sheet metal container adapted to receive contents liable to fermentation, said container provided with sheet metal ends, the ends and body of the container being connected by an air-tight seal, said ends provided with a plurality of outwardly projecting closely spaced corrugated ribs the corrugations throughout their length rising to the level of the edge of the rim of the con-

tainer, so that adjacent containers when stacked one on top of the other will have the corrugations of their adjacent tops and bottoms in contact with each other, the distance between the ends of adjacent containers being filled with the metal corrugations, whereby the adjacent ends as well as the rims support each other against the shock of their contents, the corrugations starting a short distance from the inside of the rim so as to provide a cutting strip and being so spaced as to prevent flexing of the metal between corrugations, if the sides of the container become buckled or crushed.

6. A container adapted to receive contents liable to evolve gas, said container provided with a sheet metal end, the end and body of the container being connected by an air-tight seal, said end provided with a plurality of parallel, adjacent corrugations extending transversely across the end with narrow intermediate spaces, avoiding everywhere flexibility of metal between corrugations, the space between the corrugations being not wider than the corrugations themselves and the ends of the corrugations being anchored in a perimetric band of metal forming part of the top and extending around its edge.

7. A cylindrical sheet metal container adapted to receive contents liable to evolve gas, said container provided with circular sheet metal ends, the ends and body of the container being connected by an air-tight seal, said ends provided with a plurality of corrugations extending transversely across the ends with narrow intermediate spaces, everywhere avoiding flexibility of metal between corrugations, the space between the corrugations being not wider than the corrugations themselves and the ends of the corrugations being anchored in a circumferential band of metal forming part of the top and extending around its edge.

8. A sheet metal container adapted to receive contents liable to evolve gas, said container provided with sheet metal ends, the ends and body of the container being connected by an air-tight seal, said ends provided with a plurality of corrugations each of the same width as the other, extending transversely across the ends with narrow intermediate spaces, everywhere avoiding flexibility of metal between corrugations, the space between the corrugations being not wider than the corrugations themselves and the ends of the corrugations being anchored in a perimetric band of metal forming part of the top and extending around its edge.

9. A container adapted to receive contents liable to evolve gas, said container provided with a sheet metal end, the end and body of the container being connected by an air-tight seal, said end provided with a plurality of corrugations extending transversely across

the end with narrow intermediate spaces, everywhere avoiding flexibility of metal between corrugations, the ends of the corrugations being anchored in a perimetric band of metal forming part of the end and extending around its edge.

10. A sheet metal end for a container, said end provided with a plurality of transverse corrugations with narrow intermediate spaces, everywhere avoiding flexibility of metal between corrugations, the ends of the corrugations being anchored in a perimetric band of metal forming part of the end and said corrugations being approximately flush with the perimeter of the end.

11. A sheet metal end for a container, said

end provided with a plurality of corrugations extending transversely across the end with narrow intermediate spaces, everywhere avoiding flexibility of metal between corrugations, the ends of the corrugations being anchored in a perimetric band of metal forming part of the end, the end and body of the container being adapted to be connected by an air-tight seal.

In testimony whereof, I have signed my name to this specification, in the presence of a subscribing witness.

HUGO P. GEISLER.

Witness:

LOUELLA F. LITTLE.