

Aug. 20, 1929.

F. F. BENTLEY
SHEET METAL CONTAINER
Filed Oct. 24, 1925

1,725,698

Fig. 1

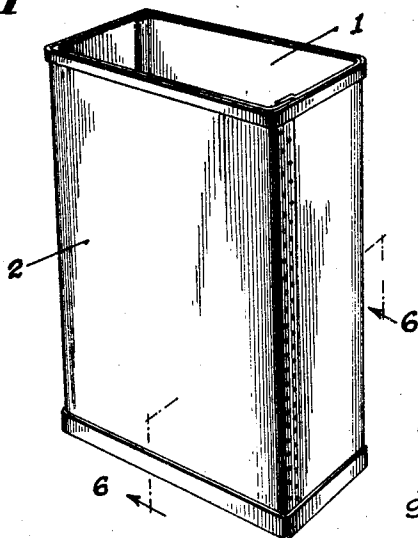


Fig. 2

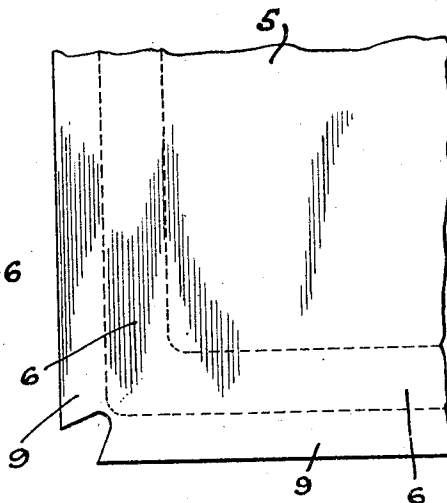


Fig. 3

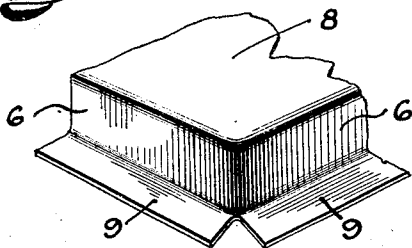


Fig. 4

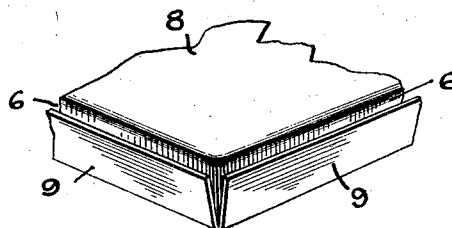


Fig. 5

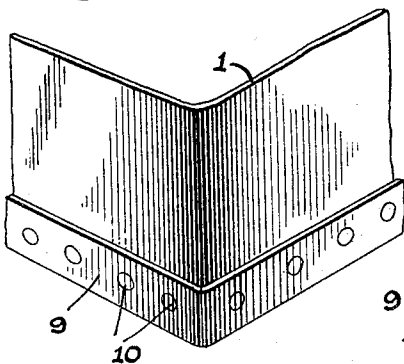
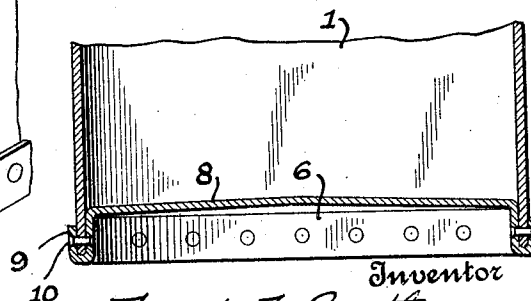


Fig. 6



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UNITED STATES PATENT OFFICE.

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SHEET-METAL CONTAINER.

Application filed October 24, 1925. Serial No. 64,518.

The present invention relates to improvements in fabricated sheet metal containers and is particularly applicable to freezing cans used in the manufacture of ice. The principal object of the invention is to provide a container which will be stronger and more durable than those heretofore known and used, particularly in respect to the construction of the bottom of the container and the attachment thereof to the side walls.

The invention will be illustrated and described as embodied in a freezing can for use in the manufacture of ice and reference will be made to the accompanying drawings, showing one illustrative embodiment of the invention, wherein

Figure 1 is a perspective view of a freezing can constructed in accordance with and embodying the principle of the invention;

Figure 2 is a plan view of a blank from which the can bottom is to be formed, the lines of folding being indicated by dotted lines;

Figure 3 is a perspective view showing a corner of the bottom after the first forming operation;

Figure 4 is a perspective view of a corner of the can bottom after the second forming operation, showing the outer wings folded back to form the U-shaped channel in which the sides of the can are received;

Figure 5 is a perspective view of a corner of the can showing the finished structure; and

Figure 6 is a sectional view of the finished can bottom taken on the line 6—6 of Figure 1.

Heretofore it has been customary to form the bottom of a freezing can by cutting and bending a sheet of metal so as to provide a substantially plane portion forming the bottom proper and attached flanges for engagement with the lower edges of the side walls to which the bottom is usually riveted. The seam thus formed is thereafter soldered to render the can water-tight. One form of can of this type is illustrated in Letters Patent No. 1,027,802 granted to me May 28, 1912. Referring to that form it will be observed that the attaching flanges are formed by cutting away portions of the metal of the sheet at each corner and that the apex of each cut is in the plane of the can bottom after the flanges have been formed by bending. This is also true of other known can

bottom constructions. When a can bottom of this construction is assembled with the side walls it will be observed that an aperture is likely to be found at the junction of the apex of the cut with the inner angle of the side walls on the plane of the can bottom. In a finished can of this type this aperture is closed by solder but often the aperture is closed with difficulty and in any event it is a weak point in the construction of the can.

The construction shown herein effectively overcomes this difficulty besides securing other beneficial results which will be apparent to manufacturers and users of freezing cans.

Referring to the drawings it will be observed that the can bottom herein shown is of such form that there can be no aperture leading directly from the outside to the inside of the can except between substantially overlapping parts of the sheet metal and it is obvious that such an aperture may be more easily and effectively closed by solder than an aperture or hole leading directly from one side to the other. In the particular embodiment shown the desired result is secured by forming or drawing the bottom section to provide an upstanding continuous flange, as distinguished from four separate flanges, for attachment to the lower portions of the side walls.

The walls of the can shown in the accompanying drawings are made from two sheets of metal 1 and 2, each sheet forming an end and a side wall. The edges of these sheets may be united to each other in any suitable manner to form a substantially rectangular box-like construction. Herein the meeting edges of the two sheets are overlapped, riveted and soldered.

The bottom of the can is formed from a single sheet of metal with the aid of suitable dies so that it will have the shape illustrated by Figure 4 when it is assembled with the walls of the can. Figure 2 shows a portion of a blank which may be used for this purpose and the folding or shaping thereof is approximately indicated by the dotted lines. The first operation consists in drawing the blank into the shape illustrated by Figure 3, which obviously shows only one corner of the can bottom. The corners of the blank are suitably notched either before or after this drawing operation and it will be noted

that the apex of the notch is not in the plane of the finished bottom, but substantially remote therefrom. This drawing operation forms an integral upstanding flange 6—6 which, when the bottom is finally assembled with the side walls, fits snugly thereagainst so that there is contact between the flange and the lower portions of the side walls throughout a substantial area. It will be observed that there is no break in the continuity of this flange 6—6.

In the type of can herein shown the side walls are not folded for engagement with the flange 6—6 but extended flanges 9—9 are provided to contact with the outer surfaces of the side walls. These flanges are shown in Figure 3 as they may appear after the first drawing operation and, in Figure 4 as they may appear immediately before the assembly of the bottom with the walls of the can. In the latter figure, flanges 9—9 are disposed at a slight angle to the flange 6—6 and are spaced therefrom a distance approximately equal to the thickness of the wall of the can thus forming a channel within which the lower edge portions of the walls of the can may be received.

If desired, the central substantially plane portion of the can bottom may be slightly crowned as shown in Figure 6 to provide greater strength and to prevent weakening of the can by repeated flexing of the bottom when the can is in use. In the finished can this crowned bottom construction has a tendency to force the seams together rather than to open the seam as would be the case with a flat bottom.

A can bottom formed substantially into the shape shown in Figure 4 may then be assembled with the sides, the flanges 9—9 pressed firmly against the sides and the overlapping portions of the metal punched and riveted as indicated in Figure 5. Then the seam so formed is soldered to render the same water-tight and due to the fact that there are no apertures leading directly from the outside to the inside of the can the sol-

dering may be made very effective and permanent so that no trouble will be experienced in effectively soldering the inside corners. Furthermore, the strength of the can and its resistance to distortion will be materially increased by the shape of the bottom inasmuch as this shape is particularly rigid due to the integral formation of the flange 6—6.

The invention may be variously modified and embodied within the scope of the subjoined claims.

I claim:

1. In a freezing can of the type having side walls, a substantially rectangular bottom section and a sheet metal bottom, the combination in said bottom of a central portion fitting within said side walls, an integral continuous downward circumferential flange extending substantially at right angles thereto, and circumferentially discontinuous flange portions bent upwardly from the lower edge of said downward flange to engage the lower edges of said side walls between said continuous and discontinuous flanges.

2. In a freezing can having a substantially rectangular bottom, and side walls secured thereto, an integral bottom construction comprising a central portion and a continuous flange extending downward from the circumference thereof at substantially right angles and fitting against the inside of the lower edges of said side walls, a crown in said central portion whereby downward pressure in the can tends to bind said continuous flange against the lower edge portions of said side walls, and a flange extending upward from the bottom of said continuous flange and engaging the outside of the lower edges of said side walls, said flange being discontinuous at the corners of the bottom.

In testimony whereof, I have signed my name to this specification this 13th day of October, 1925.

FRANK F. BENTLEY.