

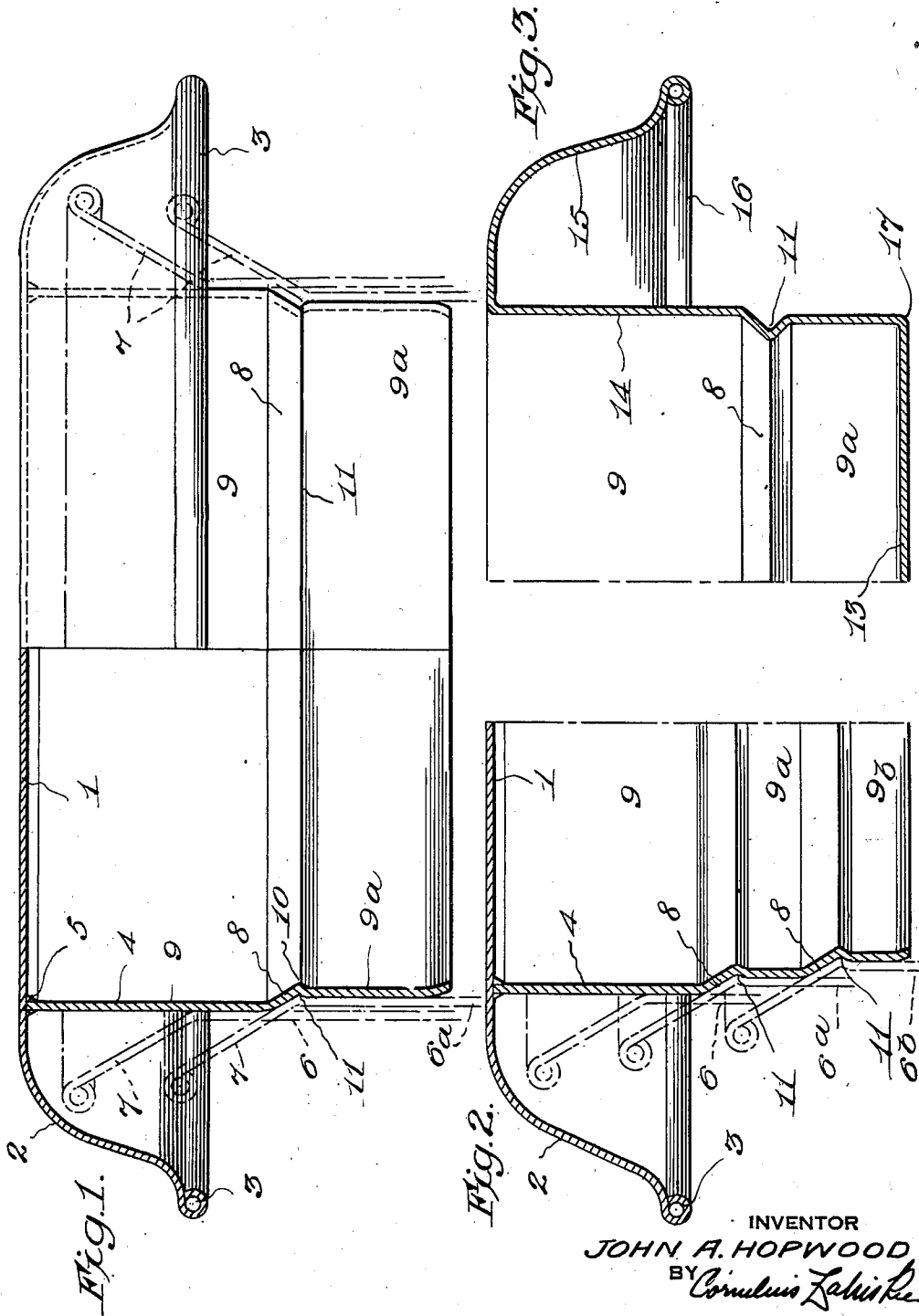
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COVER FOR MILK DELIVERY CANS

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COVER FOR MILK DELIVERY CANS

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1 Claim. (Cl. 220—42)

This invention relates to delivery cans, such as are commonly used for the delivery of milk to stores, restaurants, hotels, etc.

These cans are provided with covers adapted to fit into the neck of the can. Two distinct types of cover are in general use. One, the so-called umbrella type, has a substantially flat top plate with a peripheral umbrella portion curved downwardly to a rolled edge, and is provided on its under side with a cylindrical, open bottom rim of a diameter to fit into the neck of the can. In the other form, known as the plug type, the flat top plate is omitted and the cylindrical rim is closed at its bottom and provided at its top with a laterally projecting umbrella flange curved downwardly to a rolled edge.

Both of these types of cover are used in very large quantities throughout the country and, inasmuch as there has been no rigid national standard, the covers used in different sections or made by different manufacturers in the same localities, have varied. For example, some twenty quart delivery cans will have an interior neck diameter of exactly 6" and require a can cover with a 6" rim, while other cans of the same capacity will have a 6 $\frac{1}{8}$ " or a 6 $\frac{1}{4}$ " neck and require covers with rims of corresponding size.

Ordinarily, these variations in cover sizes have not been serious, but wartime conditions now render it difficult to obtain metal to make replacements for covers which are annually lost and broken in astonishing large numbers. It is not now possible to carry in stock quantities of covers of all these graduations of rim sizes. Something had to be done to solve this problem and a satisfactory solution is found in the present invention.

Speaking generally, this invention comprises the formation of a milk can cover having a rim provided, longitudinally of its axis, with a succession of rim sections of different diameters which progressively increase in an upward direction. This structure is provided by forming one or more steps in the rim so that, e. g., the lowermost cylindrical section of the rim may measure 6" in diameter, the next section will measure 6 $\frac{1}{8}$ " and the uppermost section will measure 6 $\frac{1}{4}$ " in diameter. The several sections of the rim are preferably individually cylindrical although I may taper them very slightly to conform to some cans which have necks with a slight taper. The industry cannot afford, nor is the metal available, to scrap all cans on hand and make new ones to uniform dimensions. The replacement covers must fit the old cans and the present invention provides a practically univer-

sal form for this purpose. The advantage of the stepped construction of this invention is that the lowermost rim section will fit a six inch neck, the next section will fit a 6 $\frac{1}{8}$ " neck and the next section will fit a 6 $\frac{1}{4}$ " neck, referring, of course to the application of the invention to the 20 quart can of example given. The invention is, however, not limited to use on a 20 quart can, but may be utilized for cans of other sizes, such as those of the conventional 40 quart variety.

The stepped rim cover of this invention provides for a surface seal of the can, in contradistinction to a line seal which would result from line contact between the cover rim and can neck. This latter type of seal is not practical in milk cans, for a tight line seal would require grinding or machining of the can neck. Where the can neck connects with the "bowl" at the top of the can, the parts are very rigid. They will not yield and in practically every old can, they are rough and uneven and not at all adapted for line contact with a cover. The interior of the neck is, however, substantially cylindrical and not so rigid and thus the surface seal of the present invention is well adapted to efficiently function.

Features of the invention, other than those specified, will be apparent from the hereinafter detailed description and claims, when read in conjunction with the accompanying drawing.

The accompanying drawing illustrates different practical embodiments of the invention, but the constructions therein shown are to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 shows a milk can cover of the umbrella type embodying the present invention, one lateral half of the cover being shown in central section and the other half in elevation. In this figure, the rim of the cover is shown as having one step to adapt it to fit can necks of two different diameters.

Figure 2 shows in central section one lateral half of a can cover of the umbrella type provided with two steps to fit cans of three different sizes. It will be understood that both lateral halves of the cover are the same.

Figure 3 shows one lateral half of a cover of the plug type embodying the invention and shown with one step.

Referring to Figures 1 and 2 of the drawing, 1 designates the top plate of the cover having a peripheral umbrella section 2, the edge of which is rolled as shown at 3. The rim 4 is of tubular formation and is shown as welded at its upper

edge to the under side of the top plate 1 at 5 in accordance with the usual practice.

In Figure 1, two can necks 6 and 6a are shown provided, respectively, with the usual bowls or lips 7. These can necks and lips are shown in dot and dash lines and, as illustrated, they are of different internal diameter. To permit of the use of a single can cover with cans having necks of these two diameters, the rim 4 is provided intermediate its length with an offset or step 8 providing an upper section 9 of a diameter adapted to fit into the neck 6 and a lower section 9a of a smaller diameter adapted to fit into the neck 6a. I may use a sharp angular offset at the step if desired, but I preferably employ the angle shown which is substantially the angle of inclination of the bowl or lip 7 of the can. This angle is practically constant in all cans.

Instead of terminating the step 8 exactly at the circumferential surface of the section 9a, I preferably carry this step slightly inwardly of this latter section, as shown at 10, and then draw or spin the metal outwardly again to meet the section 9a. This provides an exterior annular recess 11 at the base of the step 8 which permits the step to more readily seat in the lip or bowl 7 of the can. Furthermore, by providing this external recess, a more accurate fit can be obtained throughout the height of the section 9a by eliminating the possible formation of fillets which would interfere with the seating of the cover.

The lower edge of the rim is preferably contracted inwardly, as shown in Figs. 1 and 2, to facilitate the entry of the rim into the neck of the can, when positioning the cover thereon.

Figure 2 shows an arrangement the same as that shown in Figure 1 except that there are two steps 8 provided, so as to divide the rim into three sections 9, 9a and 9b adapted to fit, respectively, can necks 6, 6a and 6b which are of corresponding diameters.

Figure 3 shows the adaptation of the invention to the plug type cover. Here the cover has a closed bottom plate 13 having an upstanding rim 14 merging into an umbrella section 15, the edge of which is rolled as at 16.

In adapting the invention to this type of cover, the rim 14 is provided with one or more steps or offsets 8 formed in a manner hereinbefore described to provide a plurality of rim sections 9, 9a, etc., adapted to fit can necks of corresponding dimension. The inward contraction at the bottom of the rim to facilitate entry of the rim into the can, as in Figures 1 and 2, is not necessary in Figure 3, for the curve 17, formed by joining the rim to the bottom plate 13, may serve this purpose.

In the great majority of cases, a single step to provide a rim of two different diameters, as shown in Figures 1 and 3, will suffice, but any appropriate number of steps may be provided with-

out departing from this invention, so long as each rim section is of sufficient axial dimension to form with the can neck a surface seal, i. e., make contact with the can neck for an appreciable distance in a direction longitudinally of the axis of the neck. This distance need not be great as a relatively narrow band of contact between the parts will suffice, but no attempt should be made to rely upon line contacts because practice has shown that milk can seals cannot be satisfactorily produced in this manner.

One important advantage of the present invention is that it is possible to modify can covers now on hand to incorporate the present invention therein as by spinning, pressing, swedging, or otherwise manipulating the metal of the cover to form therein the sections of different diameter with intervening steps. Therefore old covers now in stock can be readily changed to meet present-day requirements.

In the disclosure hereinbefore made, the rim 4 is shown in the form of a one-piece sleeve, the metal in the different portions of which is manipulated to produce the different sizes and steps to which I have referred. It is entirely practical, however, in carrying out the present invention, particularly in connection with the manufacture of new covers, to make each step separately of the desired diameter and thereafter weld or otherwise join these consecutive steps together.

Furthermore, while I have shown the rim as welded to the top plate and umbrella portion, these parts may be otherwise fabricated and joined. The invention fundamentally relates to the rim portion of the cover and the particular structure of the remaining parts of the cover may vary without departing from the invention.

The foregoing detailed description sets forth the invention in its preferred practical forms, but the invention shown is to be understood as fully commensurate with the appended claim.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

In an assembly of the character described, a milk deliver can comprising a substantially cylindrical neck surmounted by an upwardly and outwardly flaring substantially frusto-conical lip, in combination with a cover having a rim with consecutive portions of its length of different diameters, one of which is such as to fit the cylindrical neck of said can and another of which is such as to fit a like can having a neck of the same kind but of a different diameter, the consecutive rim portions being joined to one another by an inclined offset having substantially the same angle of inclination as the flare of the lip of the can.

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