C. W. GRAHAM.

CAN.

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1,306,809.

Patented June 17, 1919.

Fig. 1

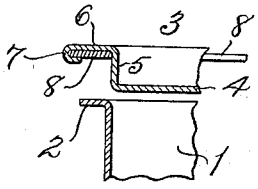


Fig. 2

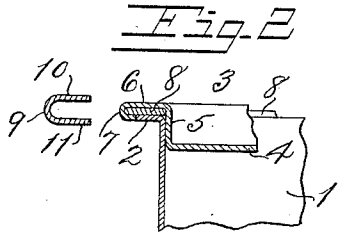


Fig. 3

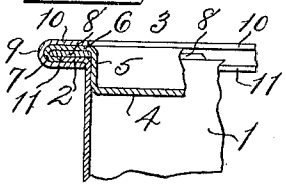


Fig. 4

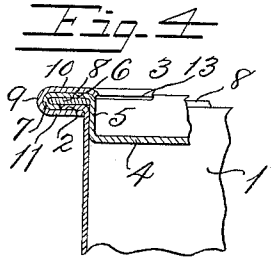
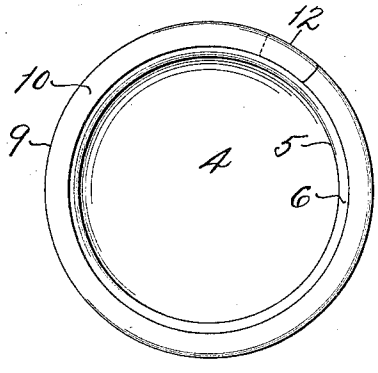


Fig. 5



WITNESS

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CHARLES W. GRAHAM, OF CRESTWOOD, NEW YORK, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAN.

1,306,809. Specification of Letters Patent. Patented June 17, 1919.

Application filed February 5, 1916. Serial No. 76,342.

To all whom it may concern:

Be it known that I, CHARLES W. GRAHAM, a citizen of the United States, residing at Crestwood, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Cans, of which the following is a specification.

The invention relates to a hermetic can seal, produced without the use of solder, and preferably by the aid of an interposed liner or gasket, of paper or equivalent material, the flanges of the can cover and body being held together to form such hermetic seam by a U-shaped sealing strip which embraces said flanges between its upper and lower members, this sealing strip being either wound around the can and the flanges thereof and being by such winding operation converted from straight form to an annular form, or being preliminarily formed of annular shape and then sprung over the said flanges and clamped down thereupon with sufficient pressure to form the hermetic seal. Or the said sealing strip may be of other suitable formation to accomplish the tight clamping together of the cover and body flanges, and so as to be removable for the unsealing of the can. The said sealing strip is of metal of such malleable character as to permit of the said operation and as to preserve the set which is imparted to it in the sealing operation, and also as to permit the strip to be unwound from the flanges without difficulty, when the can is to be opened.

The covers of cans of this character are or may be formed with a vertical wall or shoulder which is seated within the mouth of the can body in contact with the walls thereof, to permit the cover and the flanges to be firmly grasped and pressed by the sealing instrumentalities. When such cans are processed there is often a severe internal pressure exerted on the cover which tends to press it outward and draw it away from the walls of the body, and which also tends to displace the cover flange from its proper sealed position within the sealing strip; and the present invention has for one of its objects to hold the flange of the cover properly in place notwithstanding such internal pressure. To this end a portion of the cover is caused to abut against a portion of the body flange at the outer edge of the latter, so that any tendency of the cover flange to be drawn or to move inwardly is directly opposed by the body flange; also the formation of the cover flange which enables it to have such abutting function incloses and protects the ring liner or gasket and aids in maintaining the latter in its proper position on the cover flange while the cover is transported or handled prior to the sealing of the can, and may in fact be clamped flat on the gasket.

It is to be understood that "abutting" is used in the sense of "opposing", for in commercial manufacture there will or may be a slight crack or space between the opposing edges of the cover and body flanges, which is however taken up by the least indrawing of the cover flange, and the contact thus established between the flange-edges holds the cover flange from any displacement from its proper location in the seam.

Another object of the invention lies in its adaptability to forming a tight and simple seam for unprocessed goods. When used for such goods the abutting feature need not be so strictly adhered to, and more clearance may be left between the juxtaposed flange-edges, which will somewhat facilitate manufacture and to all appearance produce the same seam.

With such objects in view, as well as other advantages which may be incident to the use of the improvements, the invention consists in the parts and combinations thereof hereinafter set forth and claimed. with the understanding that the several necessary elements constituting the same may be varied in proportions and arrangement without departing from the nature of the invention.

In order to make the invention more clearly understood there are shown in the accompanying drawings means for carrying the same into practical effect, without limiting the improvements, in their useful applications, to the particular constructions which, for the purpose of explanation, have been made the subject of illustration. In the said drawings:—

Figure 1 is a sectional view at one end and corner of the can body and cover, show-

ing portions of the same, the parts being separated.

Fig. 2 is a similar view, with the cover applied to the body, showing also the sealing strip about to be applied to inclose the cover and body flanges.

Fig. 3 is a similar view with the parts clamped together in sealing position.

Fig. 4 is a view similar to Fig. 3, but embodying a modification in which the inner edge of the upper member of the sealing strip extends somewhat over the vertical shoulder of the cover so as to obtain a hold thereon.

Fig. 5 is a plan view of the sealed can, the parts being in the position indicated in Fig. 3.

Referring to the drawings, 1 indicates the can body formed at its mouth with an outstanding peripheral flange 2. 3 is the end or cover formed with a depressed central portion 4, a vertical wall 5, and an outstanding flange 6 corresponding with the body flange 2 and formed with a downwardly bent peripheral rim, ledge or lip 7 at the outer margin of the flange 6, which lip extends downward and thence inward, sufficiently to inclose the gasket or packing ring 8 on its under side, and also to form a shoulder or abutment which engages the outer edge of the body flange, whereby the cover flange is held from horizontal inward movement relative to the body flange.

The packing is indicated as a paper ring liner, but it may be of other material and formation so long as it attains the primary object of producing a hermetic seal, and allows of the described abutting of the cover flange against the body flange. The lip 7 may curl around and lie at the under side of the packing, so as to secure it in place without clamping it tightly, or it may be pressed down on the packing when the latter is assembled with the cover. In the former case, when the sealing strip, hereinafter mentioned, is applied the pressure of the lower member of the strip will compress the body flange against the packing and at the same time compress the lip 7 against the packing, so that the lip is brought into horizontal line with the edge of the body flange to effect the said abutting engagement.

9 indicates the sealing strip formed of substantially U-shape so as to have upper and lower flanges or clamping members 10 and 11. This sealing strip is preferably applied of sufficient length so that its ends will overlap somewhat, as shown at 12 in Fig. 5.

The inner edge of the member 10 may be extended inward, as shown at 13 in Fig. 4, so as to lap slightly over or within the cover shoulder 5, thereby obtaining a hold upon the cover which coöperates with the engagement of the lip 7 against the outer edge of the body flange to hold the cover flange securely within the hermetic seam notwithstanding the severe internal pressure within the can during processing.

What is claimed is:

1. In a can, the combination of a can body having an outstanding seam flange, a can cover having a longer outstanding seam flange, a gasket interposed between said outstanding flanges, and a sealing strip encircling said flanges, and binding them together into a hermetic joint, the outstanding cover flange having a curled and flattened edge that embraces and binds the edge of the gasket and also forms an abutment with the edge of the body flange.

2. In a can, in combination: a body having an outstanding peripheral flange; a can end having a flange coöperating with the body flange to form a seam, and a lip which extends downwardly and inward toward and against the edge of the body flange; a sealing strip having opposing members between which said body and end flanges may be clamped; and a gasket interposed between said flanges and lying within and above the lip of the end flange.

3. In a can, in combination: a body having at its mouth an outstanding peripheral flange; a can cover having a flange coöperating with the body flange to form a seam; a sealing strip having opposing members between which said body and cover flanges may be clamped; the peripheral edge of the cover flange and the peripheral edge of the body flange having an abutted engagement which holds the cover flange against being drawn inward out of its sealing position; and a packing interposed between the said flanges out of line of said engagement, and extending over said line.

4. In a can, the combination of a can body having an outstanding seam flange; a shouldered can cover having a wider outstanding seam flange; and a gasket interposed between said outstanding seam flanges; said can body flange, said cover flange and said gasket lying in parallel planes and in frictional contact; a sealing strip encircling said seam flanges and said gasket, and binding them into a tight joint; the outstanding cover flange having a peripheral folded over edge that embraces and securely binds the edge of the said gasket and at the same time forms an annular space in which the said body flange lies in close proximity to the said folded over edge to form an abutment when the cover is under gaseous or atmospheric pressure.

5. In a can, the combination of a can body having an outstanding seam flange; a shouldered can cover having a wider outstanding seam flange; a gasket interposed between said outstanding seam flanges, and a sealing strip encircling and clamping said flanges

and said gasket and binding them into a joint; the outstanding cover flange having a peripheral folded over edge that embraces and securely binds the edge of the gasket; the annular opening produced by the peripheral folded over edge being of greater diameter than and in closer proximity to the outer diameter of the outstanding body flange; whereby when the can and cover are assembled the folded over edge of the cover is outside of and lies in the same plane as the body flange and abuts the same when the cover flange tends to be drawn from the seam by vertical pressure on the cover.

In testimony whereof I affix my signature.

CHARLES W. GRAHAM.