April 25, 1939. W. F. PUNTE 2,156,028

SIDE SEAM FOR SHEET METAL CAN BODIES

Filed Oct. 1, 1938

Fig. 1.

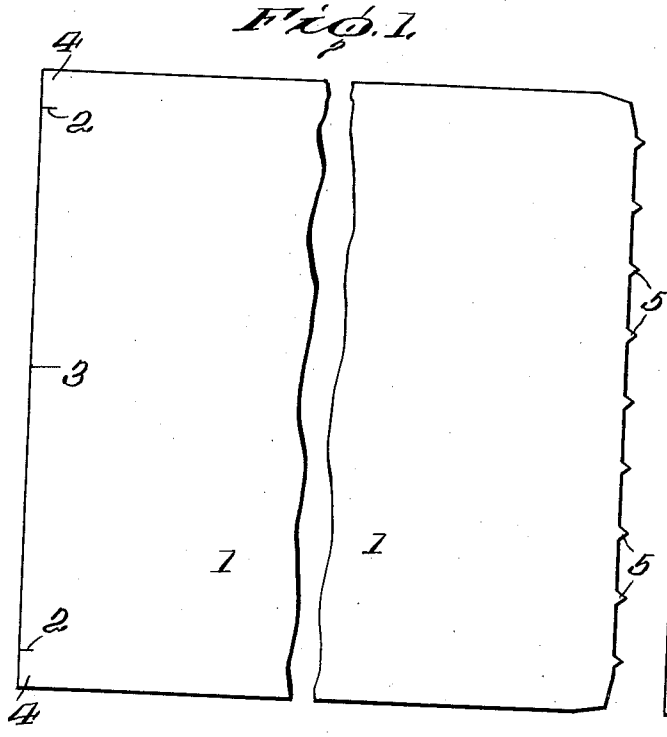


Fig. 2.

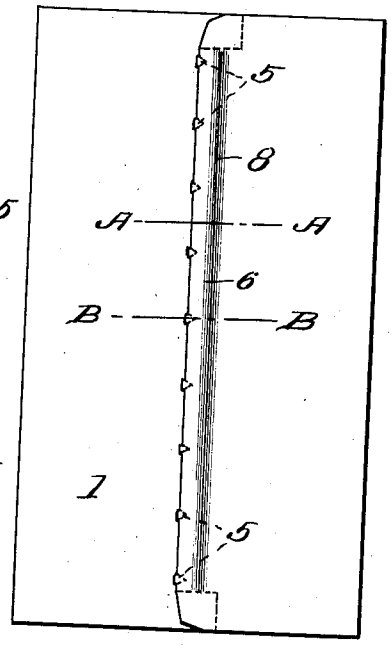


Fig. 4.

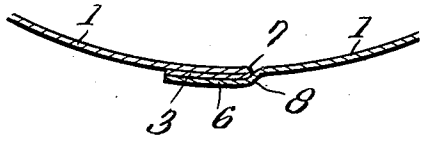


Fig. 3.

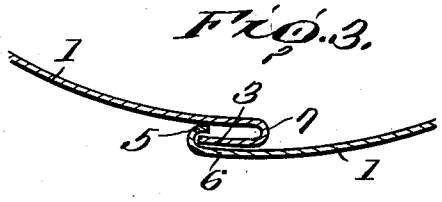


Fig. 6.

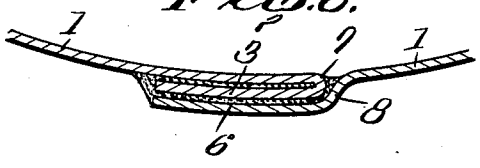
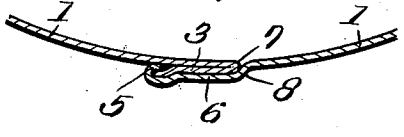


Fig. 5.



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Patented Apr. 25, 1939 2,156,028

UNITED STATES PATENT OFFICE

2,156,028

SIDE SEAM FOR SHEET METAL CAN BODIES

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Application October 1, 1938, Serial No. 232,872

1 Claim. (Cl. 220—77)

This invention relates to new and useful improvements in a side seam for sheet metal can bodies. It is well known that a side seam comprising flat lap sections solder bonded together make a very strong and efficient seam. One of the objections to such a side seam is the exposure of the raw edge of the metal at the inside of the can.

An object of the present invention is to provide a solder bonded lap seam wherein the raw edge of the inner lapping section is concealed so that it is not exposed to the inside of the can.

A further object of the invention is to provide a lap seam of the above character which is so constructed that the lapping sections are held in a predetermined position relative to each other during solder bonding.

In the drawing which shows one embodiment of the invention—

Figure 1 is a plan view of a body blank embodying the improvements;

Fig. 2 is a side view of a can body made from said blank;

Fig. 3 is a sectional view showing the edge portions brought together and the retaining lugs engaged with the turned back section preparatory to bumping;

Fig. 4 is a sectional view on the line A—A of Fig. 2, after bumping and prior to solder bonding;

Fig. 5 is a similar section on the line B—B of Fig. 2, and

Fig. 6 is a section similar to Fig. 4, but showing the solder bond applied to the seam.

In carrying out the invention a body blank 1 is cut to the proper size to form a can body of a desired diameter and also of a size sufficient to provide the desired lapping portions included in the side seam joining the edges of the body blank. This body blank is slit at 2, 2, and the portion 3 between the slits 2, 2 is folded back against the outer face of the body blank as shown in Fig. 4. This edge portion of the body blank forms the inner lapping section of the side seam. The slits 2, 2 are formed a short distance from the edges of the body blank, thus providing sections 4, 4, which are lapped by the other edge portion of the body blank in the usual manner.

At the other edge of the body blank the metal is cut so as to provide small holding lugs 5. These holding lugs are located at widely spaced intervals along the edge of the blank. These holding lugs are bent inwardly and positioned so that when the body blank is bent into cylindrical shape and the edge portions overlapped, these holding lugs will engage about the free edge of the turned back portion 2 of the inner lapping section as shown in Fig. 3. After the parts are thus assembled, then the seam is bumped by a bumping horn and spline which are shaped so that the outer lapping section 6 is curved sharply about the fold edge 7 of the inner lapping section. This provides a shoulder 8 in the outer lapping section against which the fold edge abuts. Throughout the greater portion of the seam between the slits 2, 2, there are three thicknesses of metal which are brought tightly into contact with each other as shown in Figures 3, 4 and 5. The holding lugs are relatively small and widely spaced and extend only a very slight distance underneath the edge of the turned back portion of the inner lapping section. The purpose of these holding lugs and the shoulder 8 is to retain the lapping sections in a predetermined position relative to each other so that they can be presented to the solder bonding mechanism and properly solder bonded. The outer lapping section at the ends of the side seam overlie the sections 4, 4 so that there are only two thicknesses of metal.

When the seam is solder bonded, the solder will sweat in between the lapping sections and firmly unite the same. It will also sweat in between the turned back portion 2 and the body blank so that this turned back portion will be firmly held against any unfolding strain. The strain on the solder bond throughout the greater portion of the side seam is a shearing stress, and therefore, the side seam, as a whole, is very strong and efficient in the resisting of internal pressure which tends to separate the lapping sections. The metal in the inner lap section being folded back upon the body blank, places the raw edge of the inner lapping section so that there is no chance of the contents of the can contacting therewith. The two lap sections at the ends of the side seam are turned outwardly into a flange and rolled, to a large extent, into the side seams which join the ends to the can body.

By the improved construction described, a side seam is produced which has the strength of the solder bonded lap seam, without the disadvantage of any raw edge of metal at the inside of the can, and without necessitating any special mechanism for holding the parts properly lapped and in contact for the solder bonding operation.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claim.

Having thus described the invention, what I

claim as new and desire to secure by Letters Patent, is—

A side seam for sheet metal can bodies comprising a body blank having the edge portions lapped and solder bonded, the inner lapping section being bent outwardly and backwardly flat against the outer face of the blank, and the outer lapping section being offset outwardly to form a shoulder against which the fold edge of the inner section abuts, said outer lapping section having at widely spaced intervals relatively small holding lugs bent about the edge of the folded back portion of the inner lapping section.

WILLIAM F. PUNTE.