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J. M. YOUNG

HOOKE AND LAPPED SIDE SEAM FOR TUBULAR BODIES AND METHOD OF MAKING THE SAME

Filed Feb. 19, 1926

2 Sheets-Sheet 1

Fig. 1

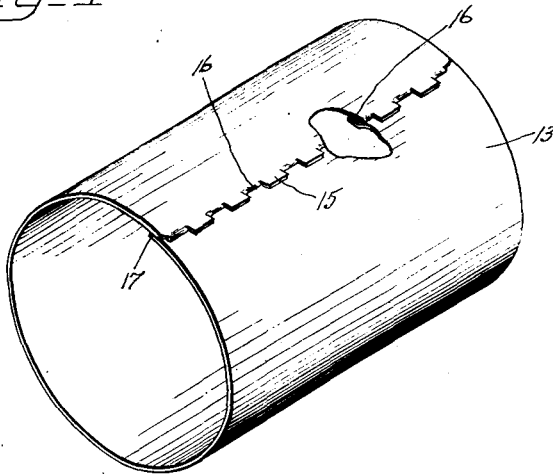
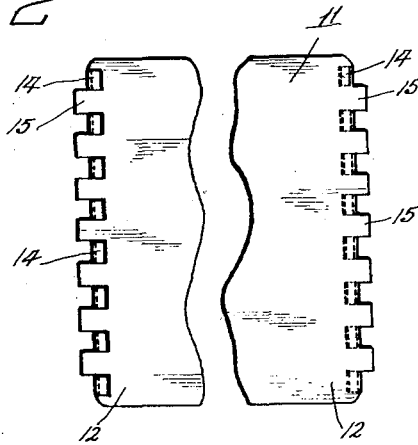


Fig. 2



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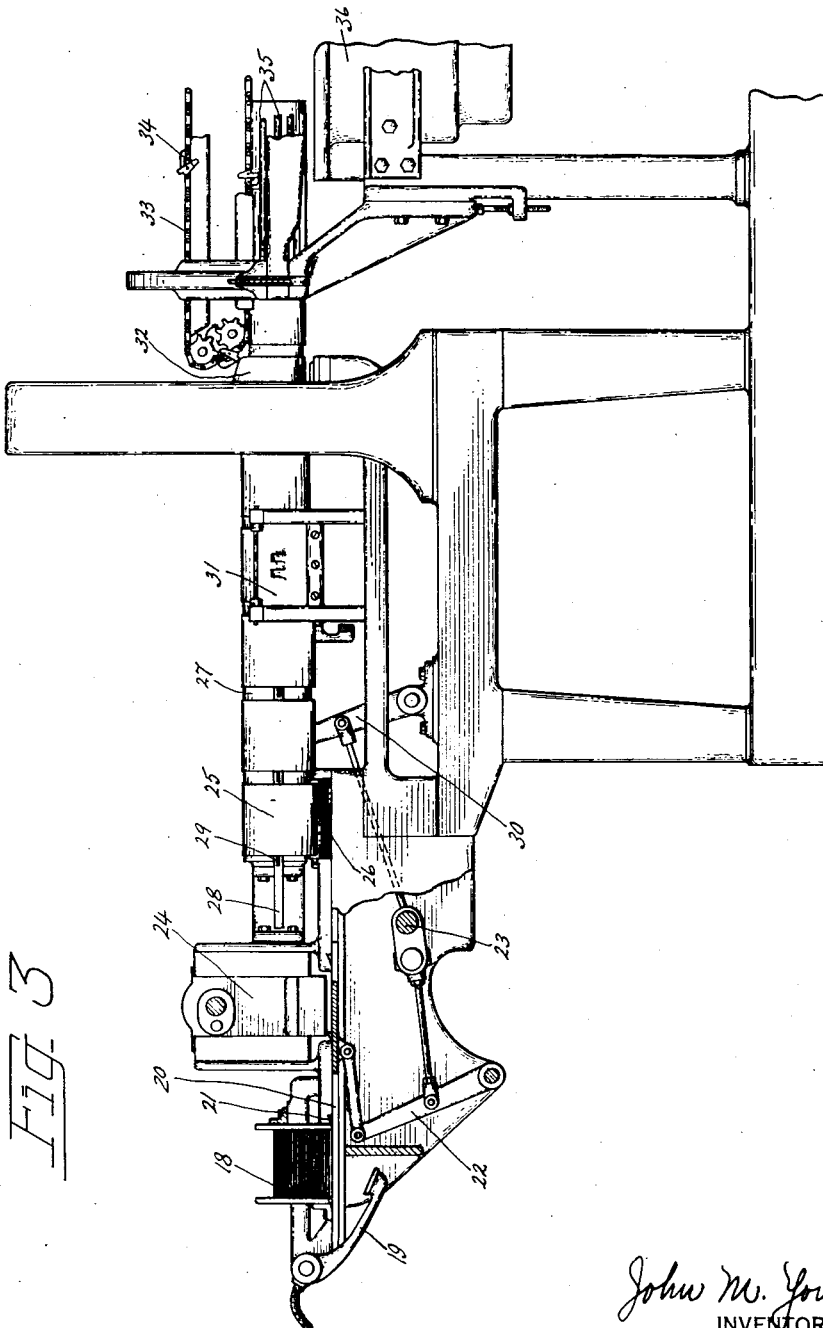


FIG. 3

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# UNITED STATES PATENT OFFICE.

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HOOKED AND LAPPED SIDE SEAM FOR TUBULAR BODIES AND METHOD OF MAKING  
THE SAME.

Application filed February 19, 1926. Serial No. 89,449.

This invention relates in general to cans and containers and has more particular reference to the provision of a container with a greatly strengthened side seam.

5 A principal object of the invention is the provision of a can or container, the side seam of which will, by reason of features inherent in its reinforced construction, be much stiffer and stronger than has heretofore been accomplished with side seams constructed in accordance with the practice usual in can and container making.

10 The invention contemplates the provision of a can capable of successfully withstanding greater internal pressure and greater external pressure which may be caused by reason of sudden shocks, blows and concussions incidental to rough handling in transit.

15 My invention contemplates the provision of a side seam construction which will consist of alternately arranged lock seam and lap seam portions, the individual said portions being of narrow height. I have found that short sectional lock and lap seam portions reinforce each other so that each adds more than its individual strength to the total strength of the seam.

20 Cans embodying my present invention are particularly adapted for the packaging of heavy paints, as for example, paint that will weigh approximately twenty-five pounds to the gallon, a purpose of the invention being to so construct the can that with its heavy contents the seam will not burst open if it is dropped from an ordinary vehicle or other usual carrying height. It will be manifest that a can seam so constructed permits the use of a lighter gauge tin plate stock with its resulting saving in cost of material.

30 A further object of the invention is the provision of a can in which a relatively small amount of solder may be employed to greatly reinforce the strength of the side seam and in this connection my invention contemplates the circumstance that the construction of the side seam is such that the solder easily sweats through the small holes or slots between the lock and lap portion and upon cooling acts itself as a substantial seam reinforcement.

40 A further object of the invention is the provision of a can having a new and improved side seam of greater strength than has heretofore been usual, which may be commercial-

ly manufactured on high speed body makers without requiring appreciable alteration or substitution of machine parts. Differently stated, my invention may be said to have for its prime purpose the provision of a stronger can, which may be produced at no increase of cost and upon the equipment usually available for the purpose.

55 Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

On the drawings,

60 Fig. 1 illustrates a perspective view of a tubular article formed with my improved side seam, a portion of the surface of the article being broken away more clearly to illustrate the construction of the same;

70 Fig. 2 is a front elevation of a blank embodying my improved side seam construction and illustrates the alternate straight and hooked portions of the seam; and

75 Fig. 3 is a side elevation of one form of a standard body maker and soldering machine, illustrating graphically the various operations through which the blank of my improved construction passes during the course of its formation.

80 Referring more in detail to the drawings wherein the same reference character is used throughout the various views to designate the same parts, the numeral 11 indicates a container blank having ends 12 which are brought together to form a tubular body or container part 13. The edges 12 are formed with alternate hooks 14 and extensions 15, the hooks on one of the edges 12 being turned opposite to the hooks on the other edge 12, to permit interlocking, as is shown at 16 in Fig. 1. The connections 16 thus hold the walls of the tubular body 13 in proper shape, and adjacent each connection are the extensions 15 which overlie one another as shown at 17 in Fig. 1. The tubular body 13 thus formed is subsequently subjected to a soldering operation which evenly covers the adjoining edge parts 12, completely sealing the connections 16 and 17.

85 The blanks 11 in the standard practice of manufacture are placed in the magazine or stack 18 of a machine (see Fig. 3). The low-

ermost blank is removed by means of a vacuum feed 19 and is further fed forward by means of a reciprocating feed bar 20 provided with spring-pressed feed dogs 21 actuated by a lever mechanism 22 connected with a power shaft 23, this being a standard construction in machines of this class. The blank so fed is advanced by an intermittent motion wherein the same comes to rest at a notching station 24, which prepares the edges 12 of the blank by slitting the said edges. The blank is then moved to a forming station 25 where the cylindrical shape is imparted to it by means of forming rollers 26. At this station the formed blank is positioned over a mandrel 27 and is moved by an intermittent motion along the same by means of a reciprocating feed bar 28 which carries spring pressed dogs 29. The bar is actuated by a lever mechanism 30 connected to the drive shaft 23. The formed blank thus moved is positioned at an edging station 31 where the hooks 14 are formed on the two edges 12 of the blank 11. Subsequent movement of the formed and now edged body positions it at a hooking and bumping station 32 wherein the parts are joined as illustrated in Fig. 1. The said formed and interhooked container part is thereupon removed from the mandrel 27 by means of a conveyor chain 33 carrying catches 34 which move the container part inside a guideway 35 and over a solder bath 36 where the seam is fully soldered.

It will be manifest from the foregoing that the short alternately arranged lock and lap portions strengthen the can as hereinabove described and that in merely passing over the solder rolls, the solder sweats into the lock portions of the seam through the small slots or minute openings at the junctions of each portion 14 with adjacent tongue portions 15.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A can body made of comparatively light gauge tin plate, said body having its free edges united by a series of interlocked hooks and a series of overlaps, the members of the one series alternating with the members of

the other, said hooks being formed of bent-back parts of the can body engaging each other at points between the overlaps.

2. A can body made of comparatively light gauge tin plate, said body having its free edges united by a series of interlocked hooks and overlaps, said hooks and overlaps being hermetically sealed by solder, said hooks being formed of bent-back parts of the can body engaging each other at points between the overlaps.

3. A can body having its free edges formed with alternate interlocking hooks and overlaps coextensive with the length thereof, said hooks being formed of bent-back parts of the can body engaging each other at points between the overlaps.

4. A can body side seam formed of alternately arranged interengaged short hook portions spaced apart by lap portions and solder sweated into said hooked portions through the junctions between said lap and hook portions, said hook portions being formed of bent-back parts of the can body engaging each other at points between the lap portions.

5. The method of uniting the free edges of a can body of comparatively light gauge commercial tin plate, which includes forming the free edges thereof with alternate hooks and overlaps, the hooks of one edge being bent reversely to those of the other edge, bringing said edges together to interlock said hook portions and superimpose said overlaps and thereafter soldering said hooks and overlaps to form a hermetically sealed seam.

6. The method of uniting the edges of a tubular body, comprising, forming the free edges of said body with a series of alternate hooked portions and flaps, the hooked portions of the edges to be united being reversely arranged, bringing said edges together to interlock said hooks and superimpose said flaps and finally sealing the hooked portions and flaps with a sealing medium.

7. The method of uniting the edges of a tubular body, comprising, forming the free edges of the body with a series of hooked portions and flaps coextensive with the length of said edges, the hooked portions of one edge being reversely arranged to those of the other, and thereafter guiding said edges by interlocking said hooked portions and overlapping said flaps.

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