

Dec. 30, 1930.

J. H. RENSHAW

1,787,324

ATTACHMENT FOR CAN BODY MAKERS

Filed May 18, 1929

2 Sheets-Sheet 1

Fig. 1.

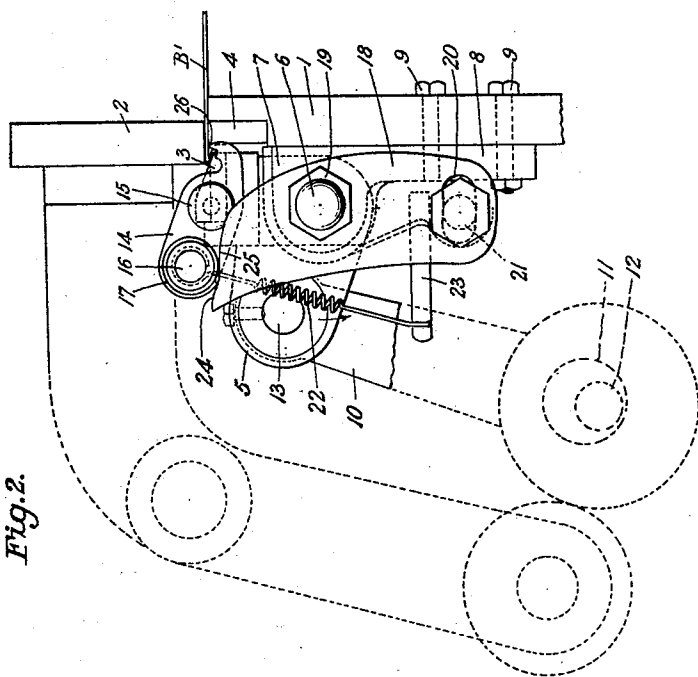


Fig. 2.

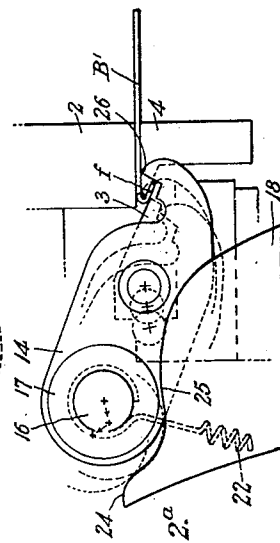


Fig. 3.

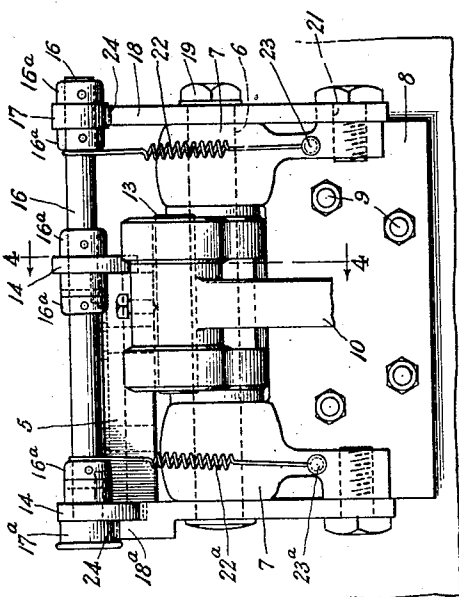
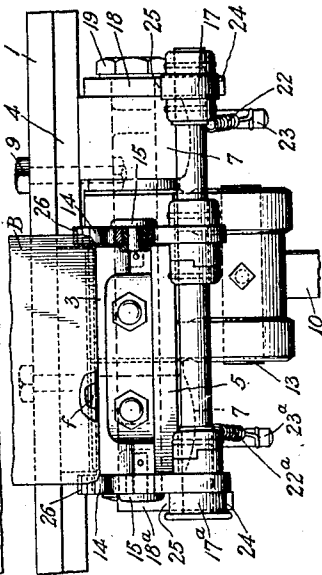


Fig. 3.



INVENTOR.
J. Howard Renshaw
BY
Sturtevant Mason
ATTORNEYS

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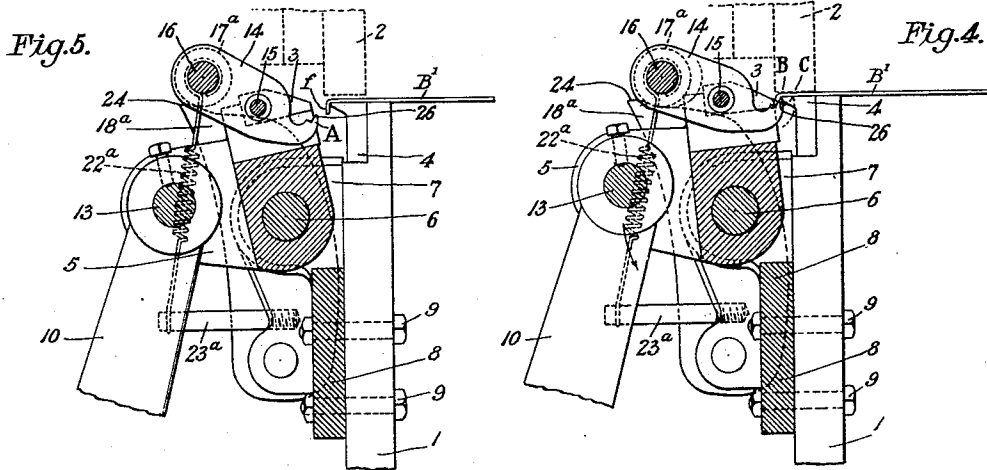
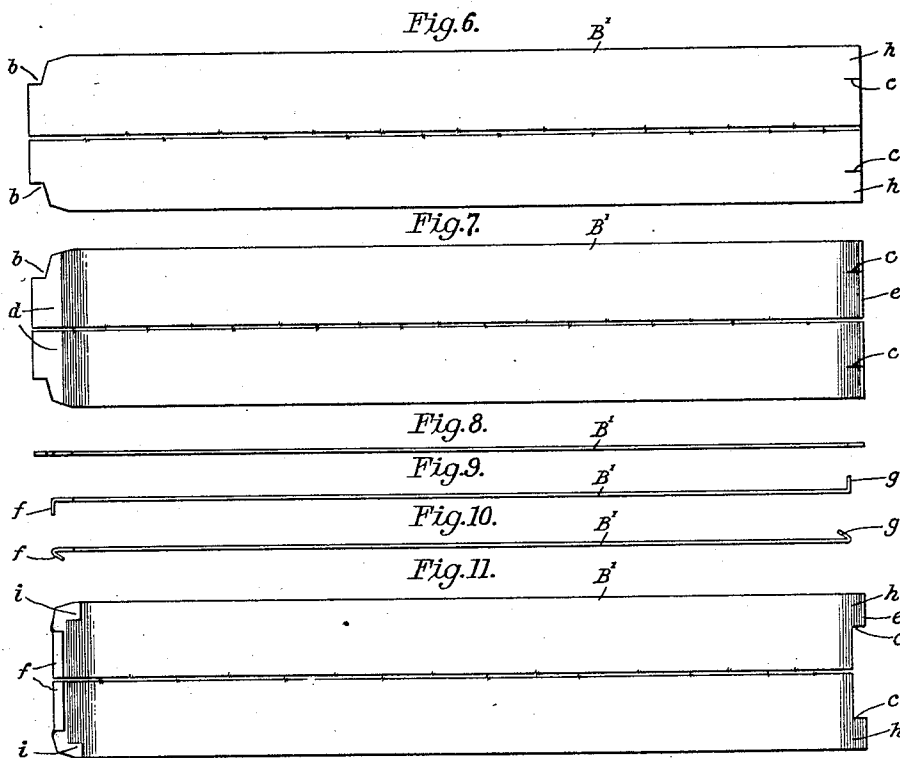
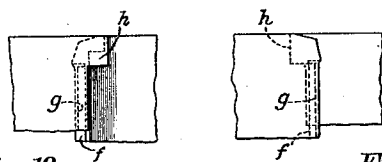
J. H. RENSHAW

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ATTACHMENT FOR CAN BODY MAKERS

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2 Sheets-Sheet 2



Inventor

J. Howard Renshaw

By

Sturtevant Mason

Attorneys

UNITED STATES PATENT OFFICE

JOSEPH HOWARD RENSHAW, OF CINCINNATI, OHIO, ASSIGNOR TO CONTINENTAL CAN COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

ATTACHMENT FOR CAN-BODY MAKERS

Application filed May 18, 1929. Serial No. 384,284.

The invention relates to new and useful improvements in an attachment for a can body maker which shapes a body blank and prepares the edges thereof for joining in a side seam.

It is well known that the edge portions of the blank at the ends of the side seam must be lapped in order that the end of the formed body can be flanged and subsequently joined to the end by a double seam. It is desirable in the forming of containers for certain food products to provide the inner face of the container with a protecting enamel. It has been found very difficult to join the lapped portions of the metal at the ends of the side seam by soldering due to the presence of the enamel covering one face of the metal parts which are to be joined.

An object of the present invention is to provide a body maker with means for removing the enamel from the inner face of the outer overlapping portion of the blank in the region at the ends of the side seam preparatory to the joining of said lapped portions by soldering.

A further object of the invention is to provide a machine of the above character wherein the inner face of the outer overlapping portion is scraped so as to remove the enamel therefrom simultaneously with the bending of the edge portion.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

In the drawings:

Figure 1 is a side view of an attachment for a body maker embodying the improvements.

Fig. 2 is an end view thereof showing in broken lines the means for actuating the edge folder and scraper.

Fig. 2a is a view showing in side elevation the scraper and control cam therefor, and in broken lines the scraper in different positions.

Fig. 3 is a top plan view of the attachment.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1, showing the scraper as placed in engagement with the under face of the over-

lapping portion of the blank preparatory to the inward movement of the scraper in contact with the blank.

Fig. 5 is a view showing the scraper as having been retracted and moved to a position away from the blank.

Fig. 6 is a plan view of a blank from the outer side thereof.

Fig. 7 is a similar view from the inner side showing the face as coated with a protecting enamel throughout the region which will be exposed after the side seam is formed.

Fig. 8 is an edge view of the blank shown in Figs. 6 and 7.

Fig. 9 is a view similar to Fig. 8 showing the edge portion of the blank folded at right angles preparatory to the forming of the interlocking portions of a lock and lap seam.

Fig. 10 is a view similar to Fig. 9, but showing the hooked portions completed.

Fig. 11 is a view of the under face of the blank as formed in Fig. 10, and after the enamel coating has been scraped from the inner face of the outer overlapping portion of the blank forming the side seam in the region at the ends of the side seam.

Fig. 12 is a detail showing a portion of the side seam at one end thereof with a view being taken from the inside of the can.

Fig. 13 is a similar view from the outside of the can.

The invention is directed to an attachment for a body maker, and more particularly to a body maker of the type shown and described in the patent to Nelson Troyer 1,543,460 granted June 23, 1925. The machine of this patent is provided with means for notching and shaping the edge portions of the blank so that they may be interlocked to form a lock and lap side seam. After the blank is shaped the body is formed and passed from the machine. The blank stops at various stations where it is notched and shaped and where the ends of the blank are properly folded so as to be interlocked.

In Figs. 6 to 11 of the drawings the blank for forming the can body is shown. This blank is indicated at B'. The blank is provided with notches b, b and with slits c, c. In order that the container formed from

the blank may be used for food products of a certain character it is desirable to provide the inner face of the container with a protecting enamel. This is of particular value in connection with containers for corn wherein the protecting enamel is so formed as to prevent discoloration of the corn.

The outer face of the blank may be free from a decorating coating and provided with a label, if desired. The inner face, however, is provided with this protecting coating of enamel which has considerable body to it. The inner face is coated with enamel except in the regions *d* and *e* which are to be interfolded in the forming of the side seam. The extreme end portion of the blank is turned downwardly at *f* as indicated in Fig. 10 and thence inwardly as indicated in Fig. 11. The portion between the slits *c*, *c* is turned upwardly as indicated at *g* in Fig. 9 and thence inwardly as indicated in Fig. 10, thus forming a hook which may be joined to the hooked portion *f* at the other end of the blank.

The portions *h* between the slits *c*, *c* and the edges of the blank are not folded but overlap the portion *i* at the other end of the blank. Considerable difficulty has been experienced in the soldering of these overlapped portions so as to form a very tight joint at the ends of the side seam and particularly in the region where the metal is turned into a flange and subsequently rolled into a double seam with the end.

The present invention has particularly to do with means for scraping the enamel from the surface in the region indicated at *i* so that it will be free from the protecting corn enamel where the parts are to be soldered together. The outer face of the metal does not have this heavy corn enamel on it and is in proper condition to receive the solder.

The body blank is fed along a supporting bed 1 of the machine by suitable devices and when it reaches the station where the edge is to be folded it is clamped against the bed by a presser member 2. The edge when it reaches this station has been turned downwardly at right angles to the plane of the blank and it is bent inwardly by an edger 3. The blank at this time rests on a forming anvil 4 having an outwardly projecting ledge with the under face thereof inclined. The edger 3 is mounted on the rocking supporting frame 5. This frame is journaled on a pin 6 mounted in suitable bearings 7, 7 carried by the bracket 8 which is secured by bolts 9, 9 to the bed of the machine. The carriage is rocked by an eccentric strap 10 cooperating with an eccentric 11 on an actuating shaft 12. This eccentric strap engages a wrist pin 13 carried by the supporting frame on which the edger is mounted. As the shaft 12 rotates the supporting frame will be rocked and the edger will engage

the projecting portion of the blank and fold the same underneath the shaping anvil 4. At the same time when this edge is folded underneath the enamel is removed from the under face of the blank in the region at the ends of the side seam by scrapers.

There is a scraper 14 at each end of the edger. The scrapers are mounted on pivot bolts 15 threaded into the ends of the edger. Extending through the outer ends of the scrapers is a rod 16. This rod extends through the scrapers, and retaining sleeves fixed to the rod form a rigid frame structure of which the two scrapers are a part. At the right hand end of the rod 16 is a roller 17. Associated with the roller 17 is a control cam 18. This control cam 18 is mounted on the end of the pin 6. This pin is in the form of a bolt extending through the bearings and a nut 19 on the end of the pin or bolt holds the control cam 18 in place. The control cam is slotted as indicated at 20 and a clamping bolt 21 passes through the slot and is threaded into the bracket carrying the supporting carriage for the edger. When this clamping bolt 21 is loosened the control cam can be shifted about the pin 6 as a center for varying the position of the control cam.

A spring 22 secured at its upper end to the rod 16 and at its lower end to an arm 23 carried by the bracket 8 normally pulls down on the outer end of the scraper 14 tending to raise the inner end thereof.

There is also a control cam 18*a* at the other side of the edger and the rod 16 carries a roller 17*a* which cooperates with this control cam 18*a*. The control cam is slightly offset so as to give proper room for the scraper 14 at the left of the edger as viewed in Fig. 1. There is also a spring 22*a* hooked about the rod 16 and connected to an arm 23*a* which further tends to depress the outer end of the frame structure including the scrapers, thus holding the rollers 17 and 17*a* in contact with the control cams therefor. The control cam is provided with a rounded shoulder 24 which leads into a rounded face 25 that is nearer the center of oscillation of the support for the edger. Inasmuch as these scrapers are mounted on the supporting frame for the edger, they will be moved bodily back and forth by the eccentric strap 10 as the edger support rocks.

When the edger moves in to fold the edge of the metal the scraper will be carried in underneath the blank. When the scraper is at the extreme outer position, that is, the position A in Fig. 5, the roller runs up on the high points of the control cams and this will depress the active scraping end 26 of the scrapers. It will be noted that the end of the scraper is rounded off on its outer face and extends at a sharp angle at its inner face so as to provide a scraping edge. When the scraper moves in with the edger to the

position indicated at B in Fig. 4, the rollers run off from the high points of the control cams and allow the springs to pull the scrapers into contact with the under face of the blank; the low part 25 of the control cam is so proportioned that the rollers are out of actual contact therewith when the blank is in the machine and the scraper is beneath the blank. Thus it is that the movement of the scrapers in a counterclockwise direction about their pivot supports through the action of the springs is limited by the sharp edge of the scraper bearing against the metal. The control cams are so timed that the scraping edge 26 will pass beneath the blank before it moves up into engagement with the blank so that when the scraper moves bodily to the right from the position shown in Fig. 5, it will not strike the edge of the metal but pass underneath the same. The hooked portion of the blank is beyond the scraper as viewed in Figs. 2a and 5 as the region *i* where the scraping is to be effected is between the edge of the blank and the part bent in to form the interlocking parts of the lock seam. When the scraper moves from the position B to the position C as viewed in Fig. 4 which is the completion of the movement of the edger forming the hook on the blank, the scraper will slide along the surface of the blank in yielding engagement therewith and when the edger moves away after it has completed its edge forming movement the scraper will be moved outward and held in yielding contact with the blank so that the cutting edge of the scraper will remove the enamel from the blank in the region indicated at *i* in Fig. 11 of the drawings. This, as noted above, is the region where the outer overlapping portion makes contact with the inner overlapping portion. The parts are now joined and prepared for soldering and a very efficient soldered side seam may be produced at the end of the side seam which will hold the parts for flanging and double seaming.

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

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

1. A body maker including means for supporting a body blank, means for scraping the inner overlapping portion of the blank forming the side seam in the region at the ends of the side seam for removing the enamel preparatory to the joining of the lapped portions by soldering.

2. A body maker including means for supporting a blank, a scraper for engaging the inner overlapping portion of the blank forming the side seam in the region at the ends of the side seam for removing the enamel, and

means for yieldingly holding said scraper in contact with the blank.

3. A body maker including means for supporting a blank, a scraper for engaging the inner overlapping portion of the blank forming the side seam in the region at the ends of the side seam for removing the enamel, means for yieldingly holding said scraper in contact with the blank, and a control cam for moving the scraper into and out of engagement with the blank at a point inside of the extreme edge of the blank.

4. A body maker including means for supporting a body blank, means for turning the edge of the blank preparatory to the interlocking of the edge portions to form the side seam for removing the enamel, and means for scraping the inner overlapping portions of the blank forming the side seam in the region at the ends of the side seam preparatory to the joining of the lapped portions by soldering.

5. A body maker including means for supporting a body blank, an edger for turning the edge of the blank preparatory to the interlocking of the edge portions to form the side seam for removing the enamel, a scraper pivotally mounted on said edger and movable bodily therewith, means for moving said scraper on its pivot whereby the scraper is moved into and out of engagement with the blank at a point inside the extreme edge thereof and yieldingly held in contact with the blank for scraping the same.

6. A body maker including means for supporting a blank, means for scraping the inner overlapping portions of the blank simultaneously in the region at both ends of the side seam for removing the enamel preparatory to the joining of the lapped portions by soldering.

7. A body maker including means for supporting a body blank, an edger, a rocking frame for supporting the same, scraping devices pivotally supported by the edger at each end thereof for scraping the inner overlapping portions of the blank in the region at the ends of the side seam for removing the enamel, means for connecting said scrapers, yielding means for swinging said scrapers into contact with the metal, and a control cam for moving the scrapers out of contact with the metal when the edger is retracted after the scraping has been accomplished.

8. A body maker including means for supporting a body blank, an edger, a rocking frame for supporting the same, scraping devices pivotally supported by the edger at each end thereof for scraping the inner overlapping portions of the blank in the region at the ends of the side seam for removing the enamel, means for connecting said scrapers, yielding means for swinging said scrapers into contact with the metal, a control cam for moving the scrapers out of contact with the

metal when the edger is retracted after the
scraping has been accomplished, and means
for permitting the cam to be adjusted for
varying the time when the scraper is moved
into and out of contact with the blank.

5 In testimony whereof, I affix my signature.

J. HOWARD RENSHAW.

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