Dec. 1, 1931. J. SCHMIEDEL 1,834,743

METHOD OF AND MEANS FOR PRODUCING TWO-BOX PARTS IN A SINGLE OPERATION

Filed Dec. 16, 1929

Fig. 1

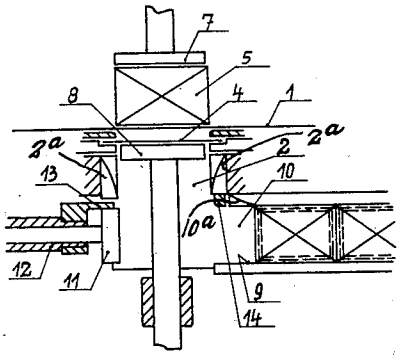


Fig. 2

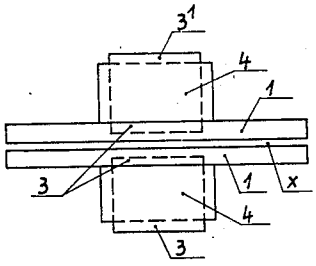


Fig. 3

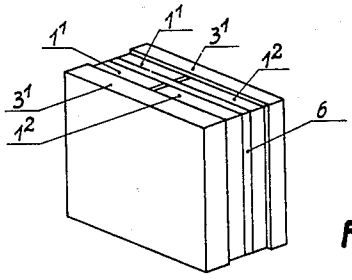


Fig. 4

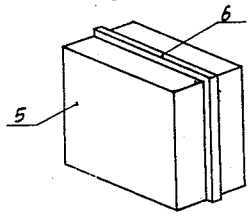
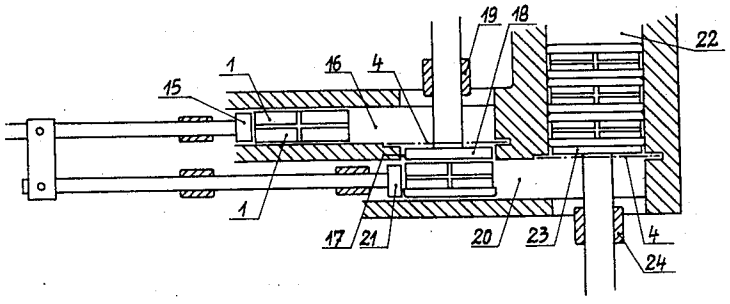


Fig. 5



Inventor
Johannes Schmiedel
by Max D. Ordmann
Attorney

Patented Dec. 1, 1931 1,834,743

UNITED STATES PATENT OFFICE

JOHANNES SCHMIEDEL, OF DRESDEN, GERMANY, ASSIGNOR TO FIRM "UNIVERSELLE" CIGARETTENMASCHINEN-FABRIK, J. C. MULLER & CO., OF DRESDEN, GERMANY

METHOD OF AND MEANS FOR PRODUCING TWO BOX PARTS IN A SINGLE OPERATION

Application filed December 16, 1929, Serial No. 414,470, and in Germany December 24, 1928.

It has been proposed to form box blanks by means of a forming block. I have already proposed to employ a forming block in the forming of box blanks having neck inserts by applying the open neck strip to a side edge of the box blank and forming the blank by means of the forming block in a shaping channel.

It has now been ascertained that the use of a forming block permits of producing two box parts at the same time in one and the same apparatus by means of a single forming block i. e. in one working operation two box parts with a neck insert, when, in accordance with the invention, a forming block of such dimensions is used that two box parts can be formed on it at one time. Various methods may be employed for forming the two box parts at one time on this forming block.

Two parallel neck strips can be placed on the corresponding parallel side edges of the blanks and the forming core placed on the neck strips adjacent the side edges introduced into a shaping channel in which the box parts are completed, except as regards that side on which the feeding device acts on the forming block, whereupon the feeding device is retracted and the remaining part of the box is closed by folding fingers and by forcing it into a second channel.

Two neck strips can be placed around the forming block pushed forward through a feed channel, whereupon the junction with the first box blank disposed in front of the shaping channel is effected by passing the forming block through such shaping channel and thereupon the junction with the second blank disposed in front of the second shaping channel is effected by passing the forming block into the second shaping channel, the shaping channels being preferably arranged parallel to one another or coaxial, so that the forming block has a reciprocating movement.

The forming block is preferably provided on the side walls about which the neck strip is wrapped with a surrounding projecting bar or rib serving as an abutment for the neck strip.

Fig. 1 is a diagrammatic longitudinal section of my device; Fig. 2 a top plan view showing the location of the parallel neck strips and blanks relative to one another before the operation; Fig. 3 is a perspective view of the two coupled box parts; Fig. 4 is a perspective view of the shaping core and Fig. 5 is a diagrammatic longitudinal section of another modification of my device.

As shown in Fig. 1 the device comprises a shaping channel 2 open on top and bottom and provided at its sides with shaping members 2*a*. The lower end of said channel is extended horizontally to form a second shaping channel 10 arranged at a right angle to the first named channel 2 and having also a shaping member 10*a*.

Movable through the lower part of channel 2 and through the second channel 10 is a plunger 11 borne in a sleeve 12 carrying fingers 13, said sleeve also being movable independently of and coaxially with said plunger 11. Movable through the channel 2 is also a plunger or die 8. 5 denotes a forming block or core which is provided with an encircling bead or rib 6 extending centrally around the side surfaces thereof. (Fig. 4). During the operation this block or core moves first through the channel 2 and then is forced into the channel 10.

My method is carried out as follows:—open neck strips 1 are placed in front of the shaping channel 2 parallel to one another with their centre portions over the side edges 3 of the two blanks 4 which are disposed in front of an opening in the shaping channel 2 beneath the neck strips 1.

The forming block 5 is now placed on the neck strips in such manner that it is located with one side adjacent the sides 3. With the forming block in position this rib lies in the gap *x* between the two neck strips.

The forming block is now depressed by a downwardly moving die 7, the projecting ends of the neck strip are folded on the vertical side walls of the forming block, then the forming block presses on the side edges 3 of the blanks 4 and on the lower die 8. On the further downward movement in the shaping channel 2 the side walls of the box

part being formed are folded against the front wall of the forming block and against the neck strip, so that the box blank is closed except for the side acted on by the die 7.

After the forming block has passed completely through the shaping channel 2 the surface of the die 8 is flush with the bottom 9 of a channel 10. In this position the upper die 7 is retracted and a plunger 11 now moves forward, which plunger is horizontally movable in the sleeve 12 which carries a folding finger 13. This folding finger is first pushed forwards with the sleeve 12 in order to bring the end 1′ of the neck strip against the forming block. Then the plunger 11 moves forward and forces the forming block with the work thereon into the channel 10, the ends 1″ of the neck strip being first folded around the forming block by the projection 14, and the remaining sides 3′ being then folded on the neck strip. The completed box blanks pass through the channel 10 which may be heated in known manner in order to ensure effective adhesion of the gummed portions, as of course gummed neck strips are employed.

In the embodiment shown in Fig. 5 a forming block is used which may have the same shape as that shown in Fig. 4. Around this forming block are previously laid the neck strips 1 and the forming block provided with the neck strip is fed by means of a plunger 15 through a channel 16 to the point where the forming of the box parts commences.

At the end of the horizontal channel 16 is provided a vertical forming channel 17 in front of which the box blank 4 is disposed. The forming block in position over the blank is pressed by the vertical die 18, guided at 19, through the forming channel 17, the sides of the box blank bearing against the lower neck strip on the forming block.

When it leaves the forming channel 17 the forming block which now carries a completed box blank passes into a second horizontal channel 20 into which it is pushed by a plunger 21. At the end of this channel 20 is provided a vertical upwardly extending forming channel 22 in front of the inlet of which is disposed the second blank 4. By means of a vertically movable die 23 guided at 24 the forming block is pushed into the forming channel 22, the second blank 4 with its sides which is brought to the second neck strip carried by the forming block, so that the box structure shown in Fig. 3 is produced. This box is pushed through the forming channel 22 which again may be heated to ensure adhesion of the gummed portions.

Claims:

1. A method of producing box blanks having neck inserts in which a previously gummed open neck insert strip is placed on one side edge of the box blank, consisting in disposing two parallel neck strips on the corresponding parallel side edges of a blank and introducing a forming core resting on the neck strips adjacent the side edges into a shaping channel in which the box parts are completed except for the side at which the feeding device acts on the forming block, whereupon the feeding device is retracted and the remaining part of the box closed by means of folding fingers and by inserting it in a second shaping channel.

2. A forming block for producing box blanks having neck inserts said block provided with an encircling projecting rib or bar intended as an abutment for the neck strips, on the side intended for folding the neck strips.

3. A method of producing simultaneously two uniform box parts having neck inserts, consisting in disposing two uniform box blanks parallel to one another and each projecting with one side edge over a common shaping channel, then placing a gummed neck strip over each of said edges, then pressing a single forming core against said two strips and forcing the latter and the two box blanks through said common channel, thereby effecting the folding of the side edges of each box part and of the neck strips around three sides of said core, then forcing said blanks and core through a second shaping channel and causing thereby the folding of the remaining side edge and part of the strip around the fourth side of said core.

4. A method of producing two uniform box parts, consisting in disposing two blanks parallel to one another in front of a common shaping channel, then pressing a single forming core against the opposite edges of said two blanks and thereby forcing the latter into said channel, whereby three sides edges of each box blank are folded, then forcing said blanks and core through a second shaping channel and thereby causing the folding of the fourth side of each box blank.

5. In a device for producing two box parts from box blanks in one operation, the combination with shaping channels of a single forming core movable through said channels and adapted in cooperation with the latter to fold the edges of said blanks to form said box parts.

6. In a device for producing two box parts from box blanks in one operation, two shaping channels arranged at an angle with one another and each having shaping members, a single forming core movable through said channels and adapted while moving through the first channel, in cooperation with the shaping members thereof, to fold three sides of each box blank and when moving through the second channel in cooperation with the shaping member of the latter to fold the remaining side edge of each box blank to form the box parts.

7. A method of producing two uniform

box parts in one operation comprising the steps of disposing box blanks in front of shaping channels and pressing a single forming block against said blanks thereby forcing the latter into said channels to fold the edges of said blanks about said single forming core.

8. A method of producing two uniform box parts having neck inserts with a single forming block consisting in mounting said neck inserts on said forming block then disposing a box blank in front of a shaping channel, then pressing said forming core against said blank and thereby forcing the latter through said channel to fold the side edges of said blank about one of the neck inserts on said core, then disposing a second box blank in front of a second channel and then pressing said forming core against said second box blank thereby forcing the latter through said second channel to fold the side edges of said blank about the other neck insert on said core.

In testimony whereof I affix my signature.

JOHANNES SCHMIEDEL.