Sept. 3, 1940. K. E. P. JORKE 2,213,707

DEVICE FOR SECURING EDGING STRIPS TO BOXES

Filed Feb. 25, 1939

Fig. 1

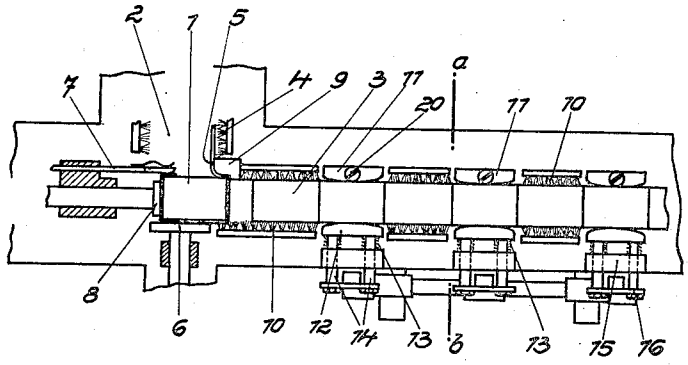


Fig. 2

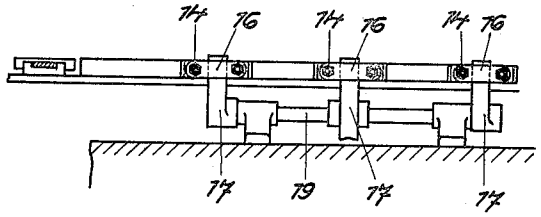
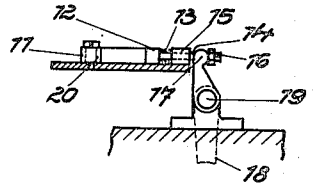


Fig. 3



Inventor:
Karl Ernst Paul Jorke

Patented Sept. 3, 1940

2,213,707

UNITED STATES PATENT OFFICE

2,213,707

DEVICE FOR SECURING EDGING STRIPS TO BOXES

Karl Ernst Paul Jorke, Dresden, Germany, assignor to Johann Carl Müller, doing business under name and style "Universelle" Cigarettenmaschinenfabrik J. C. Mueller & Co., Dresden, Germany

Application February 25, 1939, Serial No. 258,432
In Germany February 28, 1938

3 Claims. (Cl. 93—55)

This invention relates to a device for securing a covering strip to boxes.

It is known to secure covering strips to boxes by employing devices in which the boxes with the covering strips are moved past pressure applying members and brushes arranged one after the other, the pressure applying members comprising either stationary rolls or spring-actuated fingers. In these instances these elements serve as application means only during the forward motion of a box and their action is therefore restricted to a short distance, or there is only one pressure member which does not give a sufficient pressure time.

According to the invention, several brushes and pressure members are alternately arranged one after another. Therefore, the pressing and brushing effect takes place several times. The pressure members disposed between the brushes are constructed to form pressure jaws having nearly the same length as the length of the side edges of the box and carrying out a motion horizontally at right angles to the conveying direction of the boxes with the strips to press the strips firmly between the side wall or walls of the box. The device according to the invention acts therefore over a certain length for the purpose of distributing application pressure as uniformly as possible over the length of the side walls. The pressure jaws may be arranged on both length sides of the walls or only on one side. In this case, opposite the jaws abutments are provided which also extend over a certain part of the side edges of a box and are adjustably disposed for automatically adapting themselves to the longitudinal side wall of a box. The boxes are thus alternately passed between brushes and pressure jaws, and the latter exert uniformly distributed pressure upon the two longitudinal side walls of a box. Owing to the effect that the boxes are repeatedly subjected to pressing and brushing good adhesion of the covering strips is insured even in difficult cases in a relatively short time, so that edging strips may be applied also to packages covered with metal foil.

The pressure jaws preferably act while the boxes stand still and during advance of the latter are removed from the application channel by control members. This feature distinguishes the device according to the invention also from a known machine in which boxes are surrounded with strips in two directions running vertically to one another and the free ends of the strips are applied by pressure members in the second brush channel. In this known machine the pressure members do not serve for applying the strips to the longitudinal side walls of the package.

The invention is illustrated by way of example in the accompanying drawing, in which

Figure 1 is a top view of the device;

Fig. 2, a front view thereof; and

Fig. 3, a cross section of an application station in the direction *a*, *b*.

The boxes 1 pass through the edging strip feed channel 2 to the pressure channel 3. In the channel 2 a covering strip 5 is placed around three sides of a box 1 by means of brushes 4. At the point of transition from the feeding and application channel 2 to the pressure channel 3 the box 1 abuts against a stop surface 6, and a slide 7 provided with a finger at its front end applies the projecting rear end of the strip 5 to the fourth side of the box 1. The box 1 is then advanced by a piston 8, and while the box is introduced into the pressure channel 3 an abutment 9 applies the end of the strip 5 that is not yet glued on to the fourth side.

The channel 3 contains brushes 10 of known type and also presser members which repeatedly act upon the side walls of the box 1 in vertical direction to secure the strip 5 firmly to the circumference of the box 1. These presser members may act upon the two longitudinal side walls of the box 1, i. e. the side that is to form the hinge and the side where the box is to be opened. In the construction shown the presser members are arranged on one side only, and on the opposite side abutments 11 are provided. The presser members comprise jaws 12 subjected to the action of the springs 13 and guided by means of pins 14 in special guides 15 of the machine frame. The two pins 14 of each jaw or presser plate 12 are connected by a cross bar 16 behind which engages a nose 17 of a control member 18 movable about a shaft 19, as shown in Figs. 3 and 2. The control members 18 with their noses 17 for all presser members have a common drive so that each box 1 is subjected to repeated pressure while it is positioned between a jaw 12 and an abutment 11. The abutments 11 are rotatable about pins 20 and can thus automatically adapt themselves to the surfaces of the side edges of a box 1. It is further possible of course to provide for a yielding arrangement of the abutments 11.

When the boxes 1 have been moved past the application members or brushes 10 and the presser members 11, 12, they are guided into a cutting channel, where they pass in known manner cutting knives.

The device functions as follows:

The boxes 1 coming from the application channel 2 and surrounded on three sides by the strip 5 pass into the pressure channel 3 in which they are advanced to the extent of the length of a box by the piston 8 after the slide 7 has previously applied the projecting end of the strip 5 to the fourth side. During the forward motion of the box 1 the strip 5 is simultaneously applied to the fourth side of the box by the abutment 9. The boxes 1 with the strip 5 applied thereto then move between the brushes 10 and at the next stroke pass within range of the first pressure means 11, 12 which repeatedly exert pressure upon the side walls of the boxes to secure the strip 5. During the next step the boxes 1 are moved again past brushes 10 whereupon they are conducted again to pressure means 11, 12.

These operations can be repeated as often as required.

I claim:

1. In a device for securing strips to boxes, in which the boxes each with a strip adhering thereto are successively moved past presser members and brushes, the combination of a plurality of several pressure members and brushes arranged alternately one after another, the presser members having pressure jaws nearly the same length as the length of the side edges of a box, and means carrying out a motion horizontally at right angles to the conveying direction of the boxes to press the strip firmly upon the side wall or walls of the box.

2. In a device according to claim 1, spring actuated means for the pressure jaws and control means for moving the jaws out of the way of the boxes during forward motion of the boxes.

3. In a device according to claim 1, the pressure jaws being arranged only on one length side of the boxes, and adjustable abutments opposite the pressure jaws, capable of automatically adapting themselves to the longitudinal wall of a box.

KARL ERNST PAUL JORKE.