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E. G. STAUDE

MEANS FOR SOFTENING A CARTON BLANK SURFACE

Filed Nov. 9, 1922

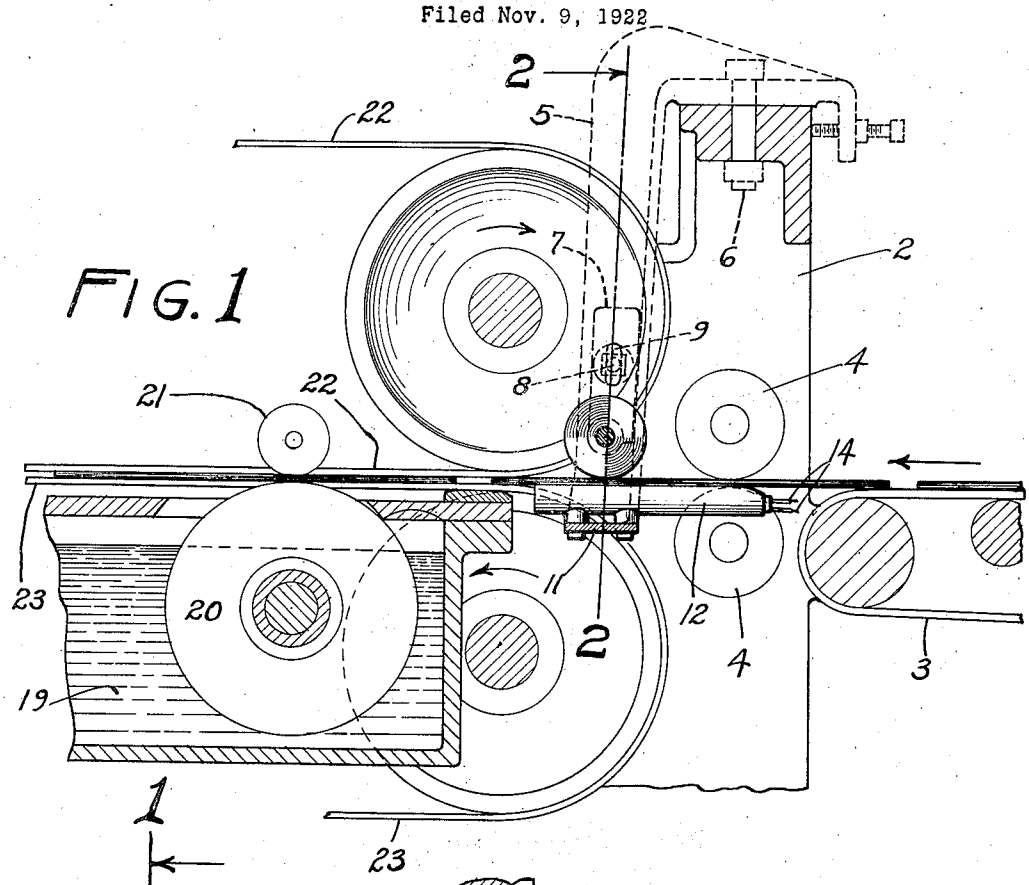


FIG. 1

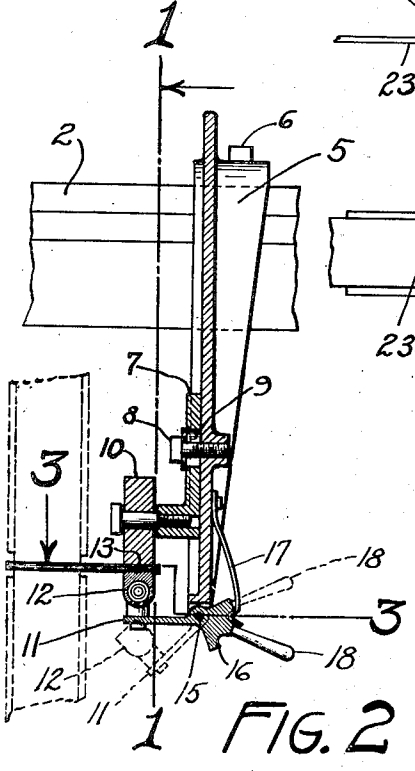


FIG. 2

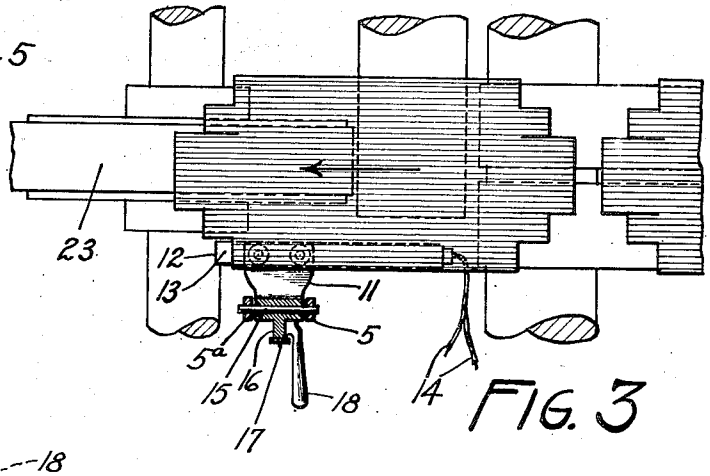


FIG. 3

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UNITED STATES PATENT OFFICE.

EDWIN G. STAUDE, OF MINNEAPOLIS, MINNESOTA.

MEANS FOR SOFTENING A CARTON-BLANK SURFACE.

Application filed November 9, 1922. Serial No. 599,882.

To all whom it may concern:

Be it known that I, EDWIN G. STAUDE, a citizen of the United States, resident of Minneapolis, county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Means for Softening a Carton-Blank Surface, of which the following is a specification.

In the manufacture of cartons or containers of different kinds where tinfoil or similar covered stock is used, great difficulty is experienced in making the gummed flap covered by the foil adhere at the sealing point when the carton is folded. Adhesive such as glue, dextrin, or gum arabic, ordinarily used for this purpose will not adhere on a foil covered surface. The only adhesive now used with some measure of success is asphalt, but the use of this material involves very careful handling, as it must be kept very hot, for when it cools, it immediately becomes hard and frequently necessitates shutting down the box-making machinery, and a long tedious cleaning operation before starting up again. Furthermore, asphalt when used as an adhesive on a foil surface has less than one-half the efficiency of ordinary hot glue applied to contacting paper surfaces.

The object, therefore, of this invention is to provide means for removing the thin coating of tinfoil by subjecting it to heat and exposing the paper beneath, or the asphalt by which the foil is held to the surface of the stock. I prefer to pass the stock over a hot surface and melt the foil requiring only about 600 degrees Fahrenheit and also melt the asphalt beneath, the foil disappearing when melted. The flap will stick to the opposite surface when the foil is melted without the addition of more adhesive as the asphalt originally used for sticking the foil to the stock will be sufficient when exposed to the heating element and softened thereby to hold the two paper surfaces together securely. I may, however, easily add more hot glue to the stock surface if desired, as with the foil removed, the stock will be handled the same as any ordinary carton stock; that is, it may be glued by any ordinary well-known adhesives used in standard gluing machines.

In the accompanying drawings, forming part of this specification,

Figure 1 is a sectional view illustrating the application of my invention to a gluing machine taken on section line 1—1 of Figure 2;

Figure 2 is a sectional view taken on section line 2—2 of Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

In the drawing, 2 represents the frame of the machine having the usual belt conveyor 3 on which the blanks are fed to the rolls 4. 5 is an arm secured by suitable means such as bolts 6 to the frame of the machine, and 7 is a bracket slidable on said arm by means of a bolt 8, and a slot 9 in said bracket.

The presser wheel 10 is carried by said bracket to rest upon the upper surface of the blank. Beneath the presser wheel, the bracket is provided with a horizontally extending arm 11 which supports a heating element 12 having a flattened upper surface 13 to bear on the under side of the blank and provided with a coil having electric conductors 14 leading to a suitable source of electrical energy for conducting a current to the coil to heat the surface 13 and melt the paraffine, wax, tinfoil or other agent with which the surface of the carton blank may be coated. The effect of this heating is to expose a raw porous surface of the stock which will immediately absorb the adhesive and hold it firmly. As the stock contacts with the heated surface of the device 12, a narrow path from which the finish or glue is removed will appear in the stock surface ready to receive and absorb the glue or other adhesive applied thereto.

The horizontal arm 11 is preferably pivotally mounted upon the bracket 5, by means or a pin 15 and lugs 5ª, preferably integral with the lower portion of the bracket. A notched quadrant 16, integrally formed with the arm 11, is provided and adapted to be engaged by a suitable spring hook 17 secured to the arm 5. A hand or finger grip 18 is secured to the quadrant 16 by which the operator may lower the heating element 12 to disengage it from the carton blank or stock, as shown by dotted lines in Figure 2. The object of this movement is to disengage the heating element from the carton stock when the machine is stopped, thus preventing said element from burning and destroying the carton blank, which otherwise would be held stationary against the heated sur-

face 13 of the heating element 12. When the operator desires to start the machine, he will raise the element 12 from the dotted to the full line position, by means of the grip 18, in which position the surface 13 will again contact with the under side of the carton blank.

A glue pot 19 is provided adjacent the heating element having wheels 20 and 21 between which the blanks pass; the wheel 20 being partially submerged in the adhesive, its periphery gathering it up and applying the adhesive to the surface of the stock as the wheel revolves.

As the blank leaves the heating agent, it will pass by the feed belts 22 and 23 and while so passing, the flaps or edges from which the glaze or finished surface has been removed will contact with the glue wheel for the application of the adhesive thereto.

It will be understood that this invention may be applied to any material used in making containers or cartons whether coated with paraffine, wax, foil, or made of waterproof board or any other suitable material, my purpose being to so heat and soften the surface of the stock that the finish or coating thereon will be dissipated and the unfinished or raw fiber beneath exposed to receive the coating of adhesive.

I claim as my invention:

I. In combination with means for feeding a flexible carton or container stock preparatory to applying an adhesive thereto, a bracket, a heating means supported by said bracket and over which the carton blank is fed, and means for pressing the carton against the surface of said heating means.

2. In combination with means for feeding a flexible carton or container stock, means for heating the surface of the stock to destroy the finish or coating thereon, said heating means being mounted for movement to a point comparatively remote from the path of the stock when the machine is stationary.

3. The combination with means for feeding a flexible carton or container stock, of an arm, a bracket slidable thereon, a presser wheel carried by said bracket and a heating element supported beneath said bracket in position to apply heat to the surface of the stock fed between said wheel and heating element.

4. The combination with means for feeding a flexible carton or container stock, of a bracket, an arm thereon, a heating element having a flattened upper surface to bear on the surface of the stock, and adapted for movement toward and from the stock, and means for pressing the stock against the surface of said element.

5. The combination with means for feeding a flexible carton or container stock, of a presser wheel and heating element between which the stock is fed, an adjustable support for said wheel and heating element, and means for moving the heating element toward and from the surface of the stock.

In witness whereof, I have hereunto set my hand this 6th day of November, 1922.

EDWIN G. STAUDE.