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ADHESIVE APPLICATOR FOR CORRUGATING MACHINES

Gabriel Nicholas Rullo, New York, N. Y., assignor to S & S Corrugated Paper Machinery Co., Inc., Brooklyn, N. Y., a corporation of New York

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1 Claim. (Cl. 118—249)

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My invention relates to an adhesive applicator for corrugating machines and more particularly to adhesive applicators so arranged that the container for the adhesive which is open at the top may be adjusted toward and away from the corrugating rolls while at all times maintaining the adhesive container in a level horizontal position.

Heretofore, many attempts have been made to obtain adjustable adhesive applicators; but owing to the complexity of the corrugating machine itself elements which have previously been proposed for adjusting the container laterally so as to avoid tilting thereof have been impractical since for the most part they entail the use of mechanisms and parts which interfere with other elements of the corrugating machine or could not be fitted in among such other elements.

Consequently, up to the present time industry has been required to use an adhesive container which either could be removed bodily from the side of the machine or could be lowered somewhat to provide some access to the corrugating roll during threading of paper through the machine.

An object of my invention is the provision of a mounting for an adhesive applicator so that the applicator and its container may be simultaneously adjusted downward and away horizontally from the corrugating rolls to provide ready access to the corrugating rolls for cleaning and threading paper through the same while, at the same time, maintaining the adhesive applicator container at all times in horizontal position.

The foregoing and many other objects of my invention will become apparent in the following description and drawings in which:

Figure 1 is a schematic side view of a single face corrugator showing the adhesive container in the adhesive applying position.

Figure 2 is a view corresponding to that of Figure 1 but showing the adhesive applicator adjusted away from the corrugating rolls in order to give free access thereto.

Referring now to the figures, the corrugating machine comprises essentially a pair of shafts 10 and 11 which are longitudinally grooved to intermesh as shown in the manner of gears.

The liner 12 which is to be corrugated passes over appropriate heating and moistening apparatus and then passes between rolls 10 and 11 where the paper is transversely crimped.

After the paper is transversely crimped at area 13, it passes at area 14 around the underside of roll 11 where the crowns of the crimps or flutes come in contact with the adhesive applicator

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roller 15 so that a coating of adhesive, preferably silicate of soda, is deposited thereon.

When the corrugated liner 12 reaches the area 16, the crowns to which adhesive has been applied come into contact with the outer liner 17 which is pressed against the crowns by the pressure roller 18.

The single face corrugated board 19 consisting of the corrugated liner 12 and the outer liner 17 then emerges.

The glue applicator roller 15 rotates in the direction indicated by the arrows contacting the crowns of the corrugated liner 12 at the area 14.

Glue applicator roller 15 rotates in the glue container 25 and dips into the body of liquid adhesive 26. Before the surface of the roller 15 which has dipped into the adhesive 26 reaches area 14 for application of glue, it passes the roller 27 which smooths the glue on the roller 15 and controls the thickness of the coating of glue.

The glue applicator roller 15 has annular grooves which match corresponding annular grooves in the corrugating roll 10 as is well known in the art.

Glue caught in these grooves of the roller 15 is scraped out by the fingers 30 carried by the bars 31 between the cross shafts 32 and 33.

The rollers 15 and 27 are mounted, respectively, on shafts 35 and 36 carried between the plates 40, 40 on opposite sides of the machine. Plates 40, 40 are pivotally mounted on the shaft 41 which extends between the side frame members 42 of the machine.

Likewise, the bars or shafts 32 and 33 are carried between the plates 40. The lower sides 43 of plates 40 are connected by the cross bracket 44 which carries the cross shaft 45 on which is mounted the roller 46. Roller 46 rests on the cam 50 carried by shaft 51.

Shaft 51 carries gear 52 which meshes with gear 53 on shaft 54. Spiral gear 55 on shaft 54 meshes with the worm 56 on shaft 57 which may be rotated by the handle 58.

When handle 58 is rotated it rotates shaft 57 and, therefore, rotate the worm 56. Spiral gear 55 is rotated to rotate shaft 54 and, therefore, rotate gear 53. Gear 53 meshes with and rotates gear 52, hence rotating shaft 51. Cam 50 on shaft 51 is thus rotated between the positions shown in Figures 1 and 2.

When the larger diameter of the cam engages the roller 46 as shown in Figure 1, the roller 46 and hence the plates 40 are rotated upwardly or clockwise around the pivot 41.

When cam 50 is rotated to a position where the

smaller diameter thereof engages the roller 46, then the weight of the elements carried by plates 40 permits the plates 40 to drop down or rotate counterclockwise around the pivot 41 to the position shown in Figure 2.

Since the glue applicator roller 15 on shaft 35 is carried between plates 40, this permits the glue applicator roller 15 to move down and toward the right with respect to the roller 11, thus providing a clear space shown in Figure 2 facilitating the cleaning of the roll 11 as well as roll 10 and also facilitating the threading of the paper through the machine.

The glue applicator container 25 is pivoted on the pivot 60 on the inside of each of the plates 40 so that the pivot 60 drops down whenever the left hand ends of plates 40 drop down.

The glue applicator container 25 is, however, at all times maintained in a horizontal position since it is also supported by the pivoted levers 70.

The right hand end of levers 70 on each side are pivoted on the stationary pivot 71 on the side frame members 42. The left hand ends of levers 70 on each side are connected to the pivot 73 on downwardly extending bracket 74 from the underside of the container 25.

Thus, when the pivotal mounting 60 of container 25 drops, the lever 71 also rotates in a corresponding direction to support the container 25.

Since the distance 41-71 is fixed and since the distance 41-60 is fixed and also since the distance of the lever 70 is fixed, thereby creating a parallelogram, the container 25 which is carried across the pivots 60 and 73 retains its horizontal position while it is moved from the position of Figure 1 to the position of Figure 2 and thus the container is moved downwardly and to the right while at the same time always remaining in a horizontal position.

The operation is extremely simple in that it is only necessary to rotate handle 58 in the appropriate direction to raise or lower the entire assembly, and the container 25 automatically retains its horizontal position at all points.

An adjustable member comprising the threaded bolt 80 is provided and is adjustable in a bracket 81 attached to plates 40 so that bracket 44 is movable thereby providing a means for setting applicator roll 15 parallel to roll 11.

In the foregoing, I have described my invention solely in connection with specific illustrative embodiments thereof. Since many variations and modifications of my invention will now be obvious to those skilled in the art, I prefer to be bound not by the specific disclosures herein contained but only by the appended claim.

I claim:

A glue applicator assembly for a corrugating machine including a corrugating roll; said applicator comprising an applying roll; an open top adhesive container; said applying roll rotating in said container; the upper portion of said applying roll being adapted to engage material on the surface of the corrugating roll to which adhesive is to be applied; a rotatable mounting for said applicator roll and a support for said rotatable mounting; said support being pivotally mounted at a point remote from the rotatable mounting of the applicator roll thereon; said container being pivotally mounted at one end of said support; another end of said container being pivotally connected to one end of a lever; the other end of the lever being connected to a stationary pivot; a rotatable cam, the other end of said support resting on said cam; apparatus for rotating said cam and moving said support about its pivot to bring the applicator roll radially toward and away from the corrugating roll at the will of the operator and independently of the position of the corrugating roll, the movement of the cam and the support moving the container simultaneously with the applicator roll, the container being maintained at the same angle to the remainder of the machine at all times.

GABRIEL NICHOLAS RULLO.

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