Dec. 19, 1922. 1,439,464.

W. E. BOWERSOCK.

GLUE APPLICATOR.

FILED APR. 22, 1920.

Fig. I.

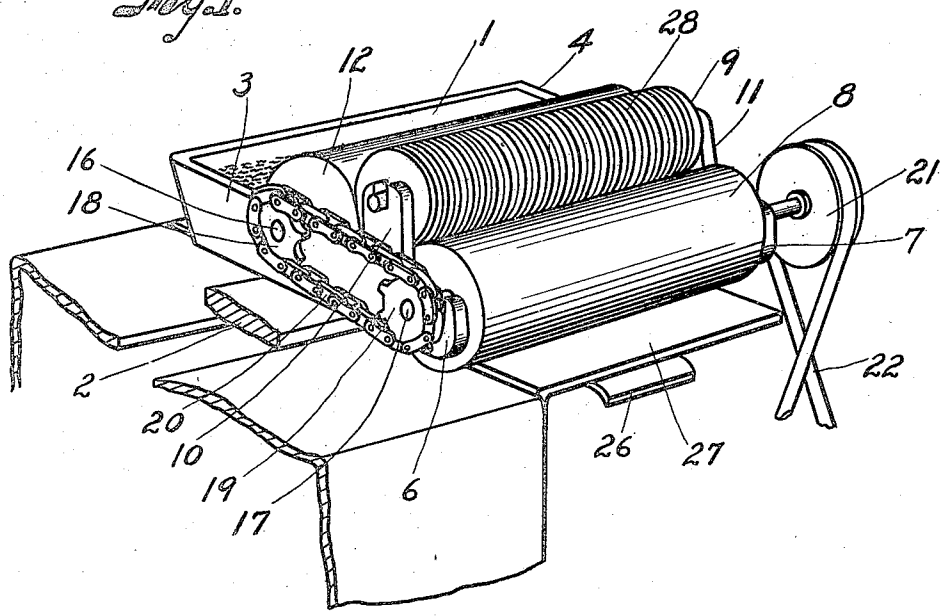


Fig. II.

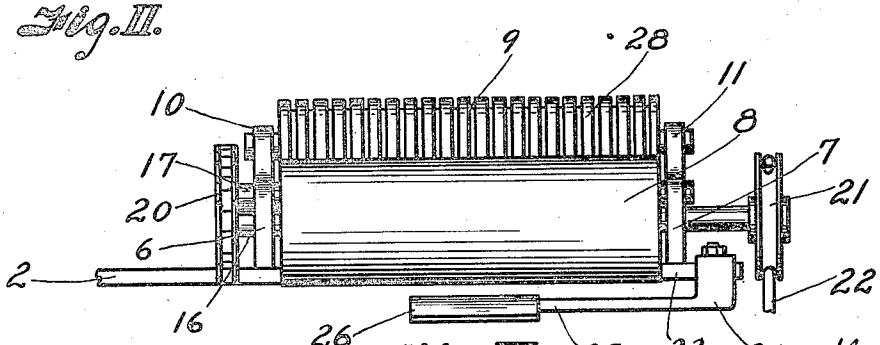


Fig. III

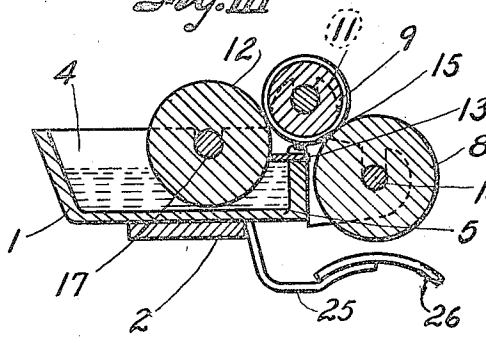
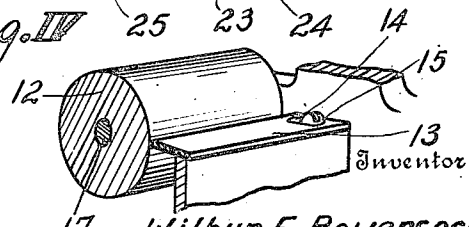


Fig. IV



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By Atwood & Adams

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Patented Dec. 19, 1922. 1,439,464

UNITED STATES PATENT OFFICE.

WILBUR E. BOWERSOCK, OF BUFFALO, NEW YORK, ASSIGNOR TO LAWRENCE PAPER MANUFACTURING COMPANY, OF LAWRENCE, KANSAS, A PARTNERSHIP COMPOSED OF M. G. BOWERSOCK, IRVING HILL, PAUL A. DINSMORE, HORTENSE B. HILL, MARY B. DINSMORE, JEAN B. BLACKWELDER, AND MARGERY B. DALTON.

GLUE APPLICATOR.

Application filed April 22, 1920. Serial No. 375,791.

To all whom it may concern:

Be it known that I, WILBUR E. BOWERSOCK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Glue Applicators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a glue applicator, particularly adapted to apply an adhesive to articles to be pasted, such as cartons, boxes and the like.

By the term "glue" I contemplate any adhesive material such as fish glue, mucilage, water glass and the like but the invention is particularly designed for delivering water glass as an adhesive from a fount to the flap of a box or carton to be pasted.

The glue applicator selected for illustration shows a fount to contain the glue, a supply roller partially emersed therein, an applicator roller on the outside of the fount and an intermedate transfer roller interposed between the first two rollers in intimate contact therewith. One of the important features of the invention is the intermediate or transfer roller, which is so designed that it is capable of accumulating a reserve supply of the adhesive or glue which may be evenly distributed over the applicator roller freely enough to insure an adequate quantity of glue upon the flap to be pasted, it being important, of course, to supply an adequate quantity of the adhesive without applying an excess amount.

The invention, therefore, contemplates a construction in which the glue will be equally and evenly distributed from the fount to a flap or surface to receive it and the invention consists in certain novel parts and combinations of parts to be referred to hereinafter, attention being directed to the accompanying drawings, in which:

Fig. I is a perspective view of a glue applicator constructed in accordance with my invention.

Fig. II is an end view of the same.

Fig. III is a vertical, cross sectional view through the applicator, and

Fig. IV is a fragmentary, perspective, sectional view of the supply roller and the wiper blade.

Referring now to the drawings by numerals of reference:

1 designates a fount which is shown as consisting of a substantially rectangular pan or trough which may be supported in a convenient manner as, for example, upon the cross bar 2, on which the fount 1 rests. The side walls 3 and 4 of the fount extend beyond the front wall 5 and are notched to form brackets 6 and 7, in which is mounted an applicator roller 8, adapted to contact with a transfer roller 9 in the standards or brackets 10 and 11, carried by the walls 3 and 4 and interposed between the roller 8 and a supply roller 12, which is mounted in bearings in the side walls 3 and 4 and which is partially emersed in the adhesive or glue, as clearly indicated in Fig. III.

On the front wall 5 of the fount is an adjustable blade or wiper 13, which may be laterally adjusted through the medium of the slot 14 and the fastening devices 15 so that its front edge will contact with the perimeter of the roller 12 and wipe off any surplus glue adhering thereto, it being understood that the roller 12 rotates contra-clockwise.

The shafts 16 and 17 for the rollers 12 and 8 carry sprockets 18 and 19 engaged by a sprocket chain 20 so that when the roller 8 rotates, rotative movement will be imparted to the roller 12. The shaft 17 of the roller 8 carries on its end opposite to that on which the sprocket is fastened a pulley 21, by means of which the shaft 17 may be rotated through the medium of a belt 22, connected to any suitable power source.

The fount carries a laterally projecting arm 23 on which is a bracket 24 provided with an arm 25, carrying a table or support 26. The flap 27 of the box or carton is to be fed over the top surface of the support or table 26 so that it will come into contact with the roller 8, which is the applicator roller, it being understood that the applicator roller receives the glue from the inter-

posed transfer roller, which, in turn, receives its supply of glue from the supply roller 12.

The supply roller 12 and applicator roller 8 are smooth surfaced, but the transfer roller is circumferentially grooved, the grooves 28 in the transfer roller being close together but shallow, and the three rollers being so arranged that the transfer roller has peripheral contact with the other two.

With this arrangement and construction of the rollers, when the device is in operation the supply roller, running in the glue bath, picks up the glue and transfers it to the transfer roller, the wiper blade 13 being set to limit the thickness of the film of glue on the supply roller to an amount just sufficient to fill the grooves in the transfer roller.

The transfer roller, receiving the glue in its grooves, carries it around to the applicator roller, upon which it is deposited, the glue emptying from the grooves of the transfer roller onto the surface of the applicator roller in thin lines corresponding to the grooves in the transfer roller. The applicator roller, rotating simultaneously with the outer two, carries the glue to and empties it onto the box flap or other object to which it is to be applied, in thin lines corresponding to the lines on the applicator roller.

By reason of the close contact of the transfer roller with the supply roller, no more glue than can be contained in the grooves can be carried by the transfer roller, the balance being squeezed back into the fount, and by reason of the close contact of the transfer roller with the applicator roller only the amount of glue contained within the grooves of the transfer roller can be delivered thereto. This amount is, however, sufficient, when applied to the box flap, to insure adhesion of the flap to other parts of the box or carton of which the glued flap forms a part.

From the foregoing it will be apparent that I have provided a simple, inexpensive and efficient glue applicator adapted for various purposes but especially designed in the illustrated embodiment thereof for use in connection with a box sealing machine.

What I claim and desire to secure by Letters Patent is:

A glue applicator comprising a fount, a smooth surfaced supply roller rotatable in the fount, a smooth surfaced applicator roller exteriorly of the fount and adapted for applying glue to an object, and a transfer roller rotatable and in contact with the supply roller to receive glue therefrom and in contact with the applicator roller to deliver glue thereto, the transfer roller having circumferential grooves parallel one to the other so that the glue will be transferred from the supply roller to the applicator roller in spaced films and squeezed over the applicator roller in a film of uniform thickness from end to end of the roller.

In testimony whereof I affix my signature.

WILBUR E. BOWERSOCK.