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ADHESIVE APPLYING MECHANISM FOR PAPER BOX MAKING MACHINES

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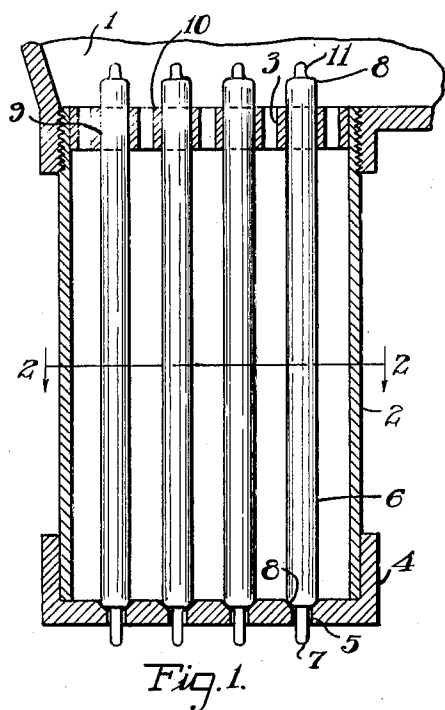
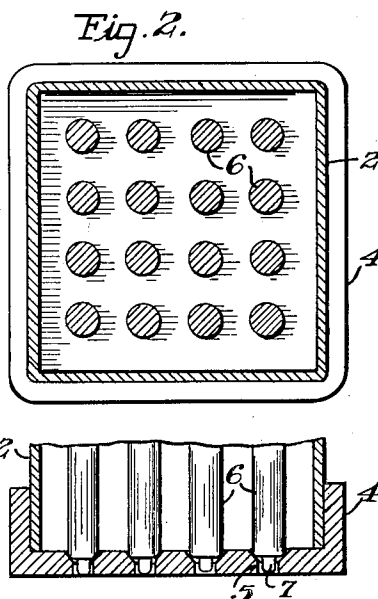
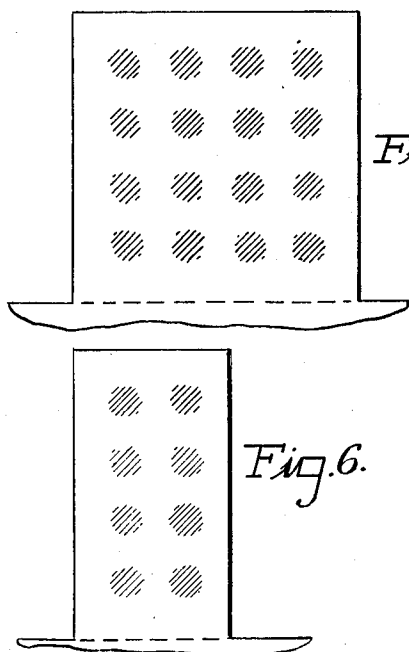
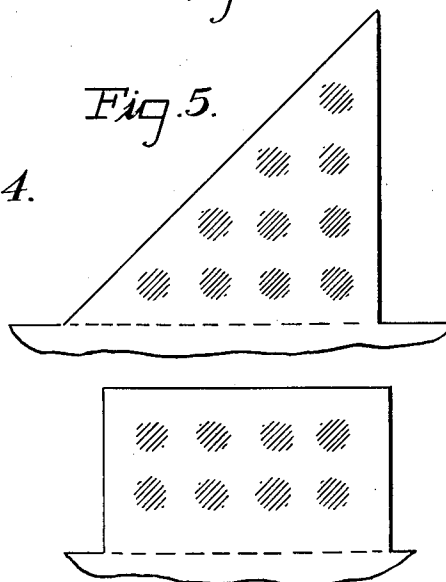


Fig. 7.

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ADHESIVE-APPLYING MECHANISM FOR PAPER-BOX-MAKING MACHINES.

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This invention relates to improvements in adhesive mechanism for paper box making machines, having particular reference to improved means for applying paste or glue to the paper blanks, from which the boxes are made, for forming adhesive junctures between foldable portions thereof.

A difficulty experienced in box making machines of this character is in connection with the means for applying the adhesive substance in right proportions and equally distributed. Too much or an insufficient quantity of adhesive applied to the paper, as well as unequal distribution of it over the surfaces which are to be joined together, all tend, more or less, to slowing down production and to inferior quality in the finished product.

To overcome these difficulties the present invention provides an improved mechanism for applying the adhesive to the paper blanks in regulated proportions and evenly distributed, thus tending to facilitate production and to minimize the loss in culls, or boxes that are not properly formed.

The improved mechanism makes the deposits of the adhesive on the paper blanks in spots, or in relatively small areas, and is thus adaptable for using adhesive at a temperature that will cause it to be effective as applied to paraffin coated paper, the hot adhesive acting to melt the paraffine, thus causing the adhesive to act more effectively on the underlying surface of the paper.

In the accompanying drawings the invention is shown in a form applicable to a box making machine of a given type. This is for the purpose of illustration only, and it will be understood that the principle of the invention applies to box making machines generally in connection with which adhesives are used for forming the boxes.

Fig. 1 is a detail view in elevation, partly in section of a preferred form of the adhesive applying mechanism;

Fig. 2 is a cross sectional view taken on line 2-2 of Fig. 1;

Fig. 3 is a detail longitudinal sectional view of Fig. 1, showing the port closing stems reversed;

Figs. 4, 5, 6, and 7, are views illustrating various shapes of sealing flaps of common types of paper boxes.

As here shown the adhesive applying de-

vice consists of a common receptacle 1, adapted to be supplied with liquid adhesive and to be reciprocated to effect a deposit of the adhesive on the paper. Attached to the bottom of the receptacle 1 are one or more depending tubes 2, as here shown, which are open at their upper ends by means of ports 3, to the receptacle 1, and are thus adapted to be filled with adhesive therefrom.

As here shown the lower ends of the tubes are closed by end caps 4, each of which is provided with a plurality of apertures 5, which serve as ports for the discharge of adhesive from the tubes, each of the ports being normally closed by an elongated stem 6, larger in diameter than the diameter of the port, the stem being reduced at its lower end and extending through ports 5, beyond the end of the tube, as indicated at 7, a tapered shoulder 8, of the reduced portion of the stem acting to close the port.

The upper ends of stems 6 are freely supported in apertures 9, in a frame or spider 10, secured in the upper ends of the tube. Upon the downward movement of the device the protruding ends 7 of stems 6 are brought into engagement with the paper blank, the downward movement of the stems being thus arrested, the discharge ports 5 are opened and filled with adhesive, a deposit of adhesive being made on the paper blank from the end of each stem, thus confining the deposit to a limited area on the paper. Upon the upward movement of the mechanism stems 6 are moved out of engagement with the blank and act to close the ports.

The opposite ends of the stems 6 are also reduced as indicated at 11, to adapt the stems to be turned end for end and to be used as plugs for closing the ports 5, the ends 11 being of required length to close the ports without projecting through the end cap 4. By this arrangement the glue depositing mechanism can be adapted to paper blanks for different types of boxes by reversing the stems 6, to close the ports that are out of register with the glue flaps of the paper blanks.

In Figs. 4, 5, 6 and 7 box sealing flaps of different shapes are shown to illustrate the variations that can be made in the number and arrangement of the glue deposits by suitable arrangements of the stems 6. The upper ends of the stems are supported in

the apertures 9, which act to keep the stems in vertical alignment with ports 5.

As here shown the tubes 2, are threaded into the container 1, as indicated at 12, to provide for adjusting the tubes vertically, thus to regulate the extent of opening of the ports 5, when stems 6 are raised and the amount of adhesive that will be deposited on the paper in each operation.

19 Having described my invention, I claim:

1. Adhesive applying mechanism comprising a container adapted to be actuated reciprocally, a plurality of ports in the container, a corresponding plurality of operable stems, one for each port, shaped at one end to project through and close the ports, and adapted to be actuated axially by external engagement of said ends to render the ports operative as the container is reciprocated, said stems being reversible and shaped at their opposite ends to close the ports to render the same inoperative as the container is reciprocated.

2. Adhesive applying mechanism comprising a container adapted to be actuated reciprocally, a plurality of ports in the container, a corresponding plurality of opera-

ble stems, one for each port, shaped at one end to project through and close the ports, and adapted to be actuated axially by external engagement of said ends to render the ports operative as the container is reciprocated, said stems being reversible and shaped at their opposite ends to close the ports to render the same inoperative as the container is reciprocated and adapted to be arranged selectively relative to the ports to be rendered operative.

3. Adhesive applying mechanism comprising a reciprocable container and a tube depending from the container, a port in the tube and an axially operable stem extending through and normally closing the port and adapted to contact externally and to be actuated to effect a discharge of adhesive through the port and from said stem, and means for adjusting said tube relative to said container to vary the extent of opening of said port and the amount of adhesive discharge therefrom as said stem is actuated.

In testimony whereof, I affix my signature.

SAMUEL BERGSTEIN.