

[54] **GLUE APPLICATOR, ESPECIALLY FOR ENDPAPER GLUING MACHINES**

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[58] Field of Search 118/259, 261, 220, 258, 118/221

[56]

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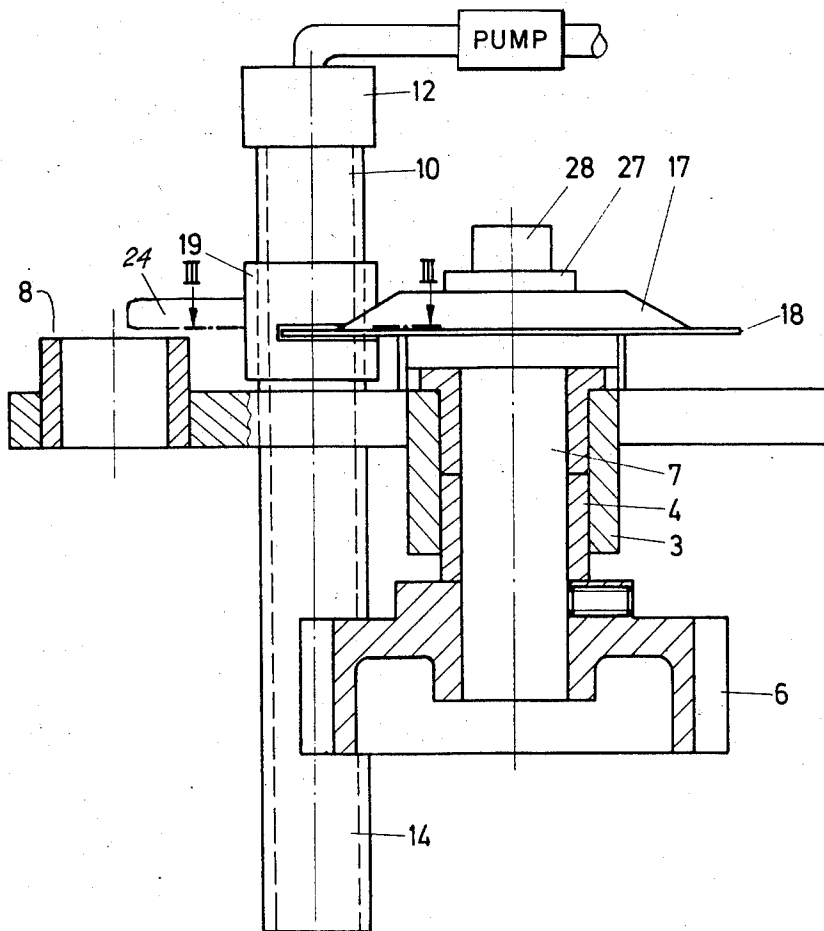
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ABSTRACT

A glue applicator, including a generally inclined flow-through glue reservoir in the form of a tube, and rotating glue wheel partially extending into the tube with an adjustable sized slit in the tube to admit the glue wheel thereby controlling the amount of feed.

5 Claims, 3 Drawing Figures



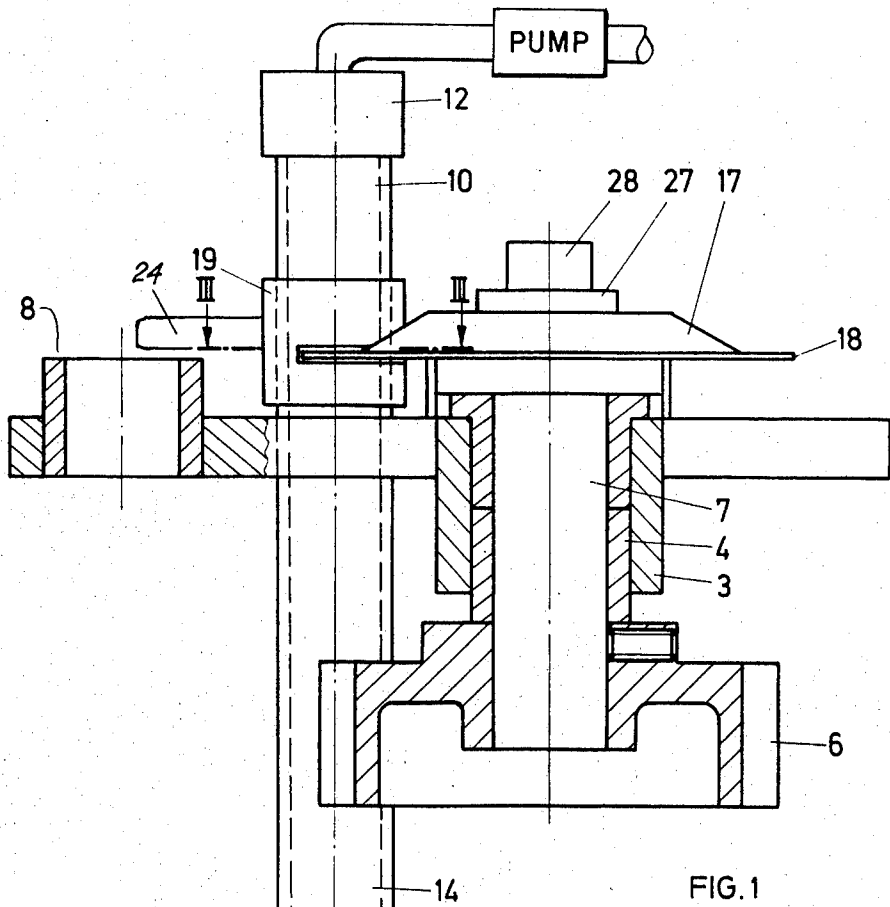


FIG. 1

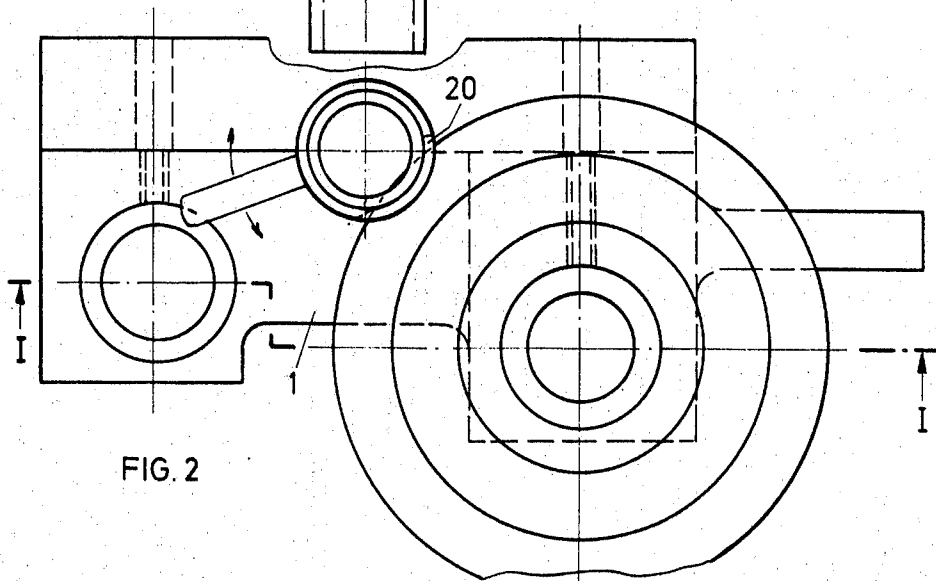


FIG. 2

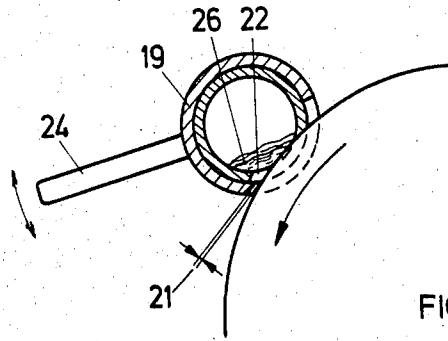


FIG. 3

GLUE APPLICATOR, ESPECIALLY FOR ENDPAPER GLUING MACHINES

The present invention concerns a glue applicator, especially for endpaper-gluing machines, with a glue reservoir and a rotating glue wheel partially submerged in the reservoir, the wheel removing glue from the reservoir on its peripheral area as it turns.

Previously known glue applicators of this kind have the disadvantage that they bring excessive amounts of glue to the gluing site and that they are very difficult to adjust.

It is known to use a so-called glue wheel to convey the glue to the gluing site, this wheel removing the extremely difficult to adjust quantity of glue from a glue reservoir. This glue reservoir is normally in the form of a tank into which the wheel dips. A special consistency of glue is required for these known devices, since the glue is under pressure in these devices and must be prevented from leaking out through open points in the system.

The present invention proposes the construction of an easily adjusted glue applicator. The glue applicator is characterized in that the glue reservoir is made in the form of a flow-through reservoir, through which glue flows constantly during the operation, and in that the glue wheel is located outside, with a segment of its edge inside the reservoir and in the glue system.

The invention will now be described with reference to the drawings in which:

FIG. 1 is a cross sectional view of a portion of a glue applicator taken along line I—I in FIG. 2.

FIG. 2 is a top plan view of a section through a glue applicator according to FIG. 1, and

FIG. 3 is a cross sectional view taken along the line II—II of FIG. 1.

The section through a glue applicator for an envelope-gluing machine, shown in the figures, has a bracket 1 with a bushing 3 and bearings 4. A drive gear 6 is mounted on a shaft 7 in bearing 4. The bearing for a drive pinion (not shown) for drive gear 6 is provided in another bearing 8 on bracket 1. Bracket 1 also contains a tube 10, preferably of plastic, carrying at its upper end a connecting sleeve 12 to accept a hose. This hose extends from a feed pump, especially a hose pump (not shown) to the tube 10. The hose pump draws glue from a central glue reservoir and feeds it via the feed hose to connecting sleeve 12 and into tube 10, whose outlet 14 runs back into the central reservoir.

Shaft 7 carries a glue wheel 17, whose perimeter 18 serves to pick up the glue and apply it to the product to be glued.

An adjustable sleeve 19 with a slit 20 is rotatably mounted on tube 10, the width and length of said slit 20 being greater than a slit 22 in tube 10. Slit 22 is made so that the glue wheel 17 touches the tube with its face, the tube preferably being made of plastic, so that the glue wheel 17 can turn unimpeded through slit 22, without glue wheel 17 actually picking up glue from tube 10 on both its faces. On the other hand, with the aid of adjustment sleeve 19, lever 24 can be turned to adjust the length of slit 22 in the tube, i.e., slit width 21, so that the rim 18 of glue wheel 17 picks up the desired amount of glue. Glue wheel 17 is connected to drive gear 6 by shaft 7, and is held on the shaft by a washer 27 and knurled head screw 28.

The glue applicator works as follows: the pump draws the appropriate amount of glue from the central reservoir and feeds it into tube 10 via the connecting hose and connecting sleeve 12. Here the glue 26 runs down through inclined tube 10 and leaves the latter through outlet 14, to flow back into the central reservoir.

The rotating glue wheel 17 rests inside tube 10 so that a portion of the wheel (as can be seen in FIG. 3) dips into the downward flowing mass of glue 26, and so that a portion of the glue remains suspended on glue wheel 17. Since the thickness of the glue wheel 17 and the slit width of tube 10 are adjusted to one another, the volume of glue carried away on the face of the glue wheel 17 as the wheel emerges from tube 10 is wiped off by the slit edges, except for the amount that adheres to the rim 18 of the glue wheel. By rotating the adjusting sleeve 19, the slit width 21 (and hence the amount of glue carried off on the rim 18) can be changed.

In this fashion, it is possible to convey the desired amount of glue, measured exactly, to the gluing site, without this measurement being effected by a pump or outlet nozzle, etc. In spite of the large entrance slit, which is located in slot 22 opposite the outlet slit with slit width 21, no glue escapes when glue wheel 17 stops, because the above-described glue applicator is not under pressure. Hence a normal, smoothflowing glue can be used.

This results in a simple regulation for extremely small amounts of glue, an advantage which could heretofore be gained only with very costly and complicated devices that are generally inefficient and prove to break down.

What is claimed is:

1. A glue applicator for applying glue to a workpiece comprising:

a reservoir comprising a generally inclined hollow elongated member having upper and lower ends through which glue may constantly flow having an inlet at the upper end of said member for the glue whereby the glue flows downwardly by gravity through the member along one side thereof; a first slot located in said one side of said member such that a portion of said slot extends below the surface of the glue when glue is flowing in said reservoir; and an outlet at the lower end of said member for that portion of the glue which is not removed out of said first slot;

means connected to said inlet of said reservoir for constantly flowing the glue therethrough in a shallow stream such that said stream of glue substantially covers said first slot while occupying only a small portion of the total inner volume of said reservoir, whereby approximately no static head is produced and substantially all the pressure exerted by the glue on said first slot is the dynamic pressure of the glue flowing past said first slot; and

applicator means comprising a glue wheel, having an outer periphery, rotatably mounted externally of said reservoir with a portion of said outer periphery partially extending into said slot to communicate with said reservoir and in contact with the glue when glue is flowing therethrough, for transferring the glue from said reservoir to the workpiece, wherein the portion of said slot below the surface of the glue, when glue is flowing through said reservoir, is sufficiently small to prevent the glue from being forced out of said reservoir by the pressure

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from said dynamic head when said glue wheel is not rotating.

2. The glue applicator of claim 1, wherein said means for constantly flowing the glue through said reservoir includes a pump.

3. The glue applicator of claim 1 wherein the width of said portion of said outer periphery of glue wheel is substantially equal to the width of said slot.

4. The glue applicator of claim 1 further comprising

control means for adjusting the size of said portion of said slot below the surface of the glue when glue is flowing through said reservoir, whereby the flow of the glue from said portion of said slot is controllable.

5. The glue applicator of claim 4 wherein said reservoir is tubular and said control means is a concentric sleeve, containing a second slot aligned with said first slot and rotatable about said tubular reservoir.

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