Nov. 17, 1959 F. W. SHOWALTER 2,912,959

ADHESIVE APPLYING DEVICE

Filed June 9, 1955

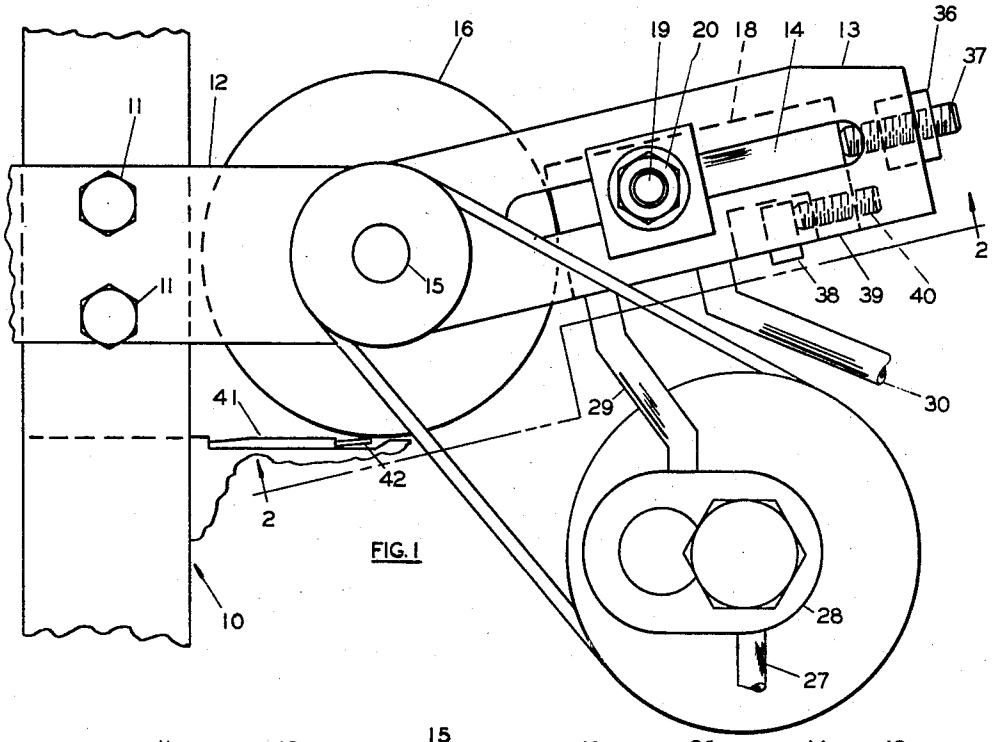


FIG. 1

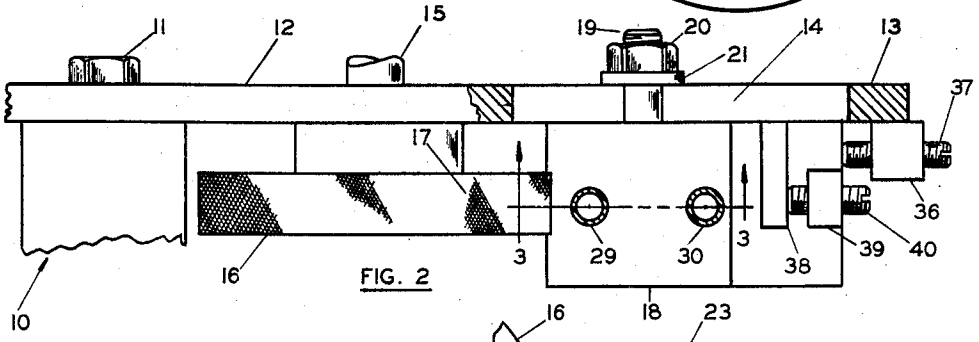


FIG. 2

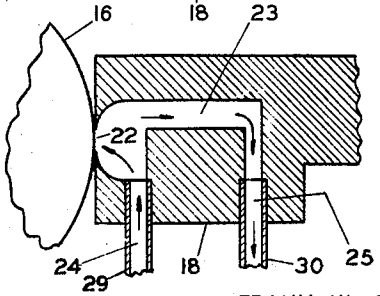


FIG. 3

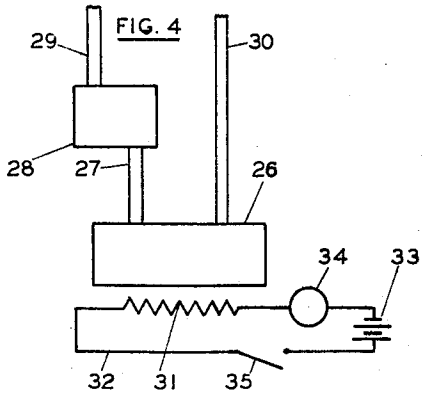


FIG. 4

INVENTOR
FRANK W. SHOWALTER

BY James V. Klein

ATTORNEY

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ADHESIVE APPLYING DEVICE

Frank W. Showalter, Dayton, Ohio, assignor to The American Envelope Company, West Carrollton, Ohio, a corporation of Ohio

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2 Claims. (Cl. 118—5)

The present invention relates to an adhesive applying device and it consists in the combinations, constructions and arrangements of parts herein described and claimed.

Generally there is provided an adhesive applying device which may be easily attached to a conventional rotary type envelope making machine and which essentially consists of a bracket arm upon which is adjustably mounted a block having a groove in one end thereof in which groove an applicator wheel is adapted to have its peripheral portion pass when the machine is in operation. The applicator wheel is knurled and is adapted to transfer adhesive from the block to selected portions of envelopes passing through the envelope making machine. The block is provided with a novel interior passageway which connects with the groove for the knurled wheel and is provided with an inlet opening and an outlet opening. The invention additionally provides for an adhesive containing reservoir having a pipe or hose line extending to a pump, a pipe or hose line extending from the pump to the inlet opening in the block and a return pipe or hose line to the reservoir. The device is such that a uniform amount and distribution of adhesive is applied to selected portions of the envelopes passing through the machine without sporadic excess of adhesive which may be pressed or squeezed outwardly, as for example, from the center seam or end flap, and thereby cause the completed envelopes to objectionally adhere to one another.

It is accordingly an object of the invention to provide a novel adhesive applying device for use with an envelope making machine or the like.

Another object of the invention is to provide, in a device of the character set forth, novel means for applying adhesive at a selected temperature.

Still another object of the invention is to provide, in a device of the character set forth, a novel applicator wheel forming a part of the invention.

A further object of the invention is to provide a novel adjustable feed block for an applicator wheel, said feed block forming a part of the invention.

Another object of the invention is to provide, in a device of the character set forth, novel means for applying an even amount of adhesive on the center seam and end flap of an envelope so that a substantially complete edge seal is effected without hitherto objectionable excess flow of adhesive to adjoining areas of the envelope during pressing operations.

Still another object of the invention is to provide, in a device of the character set forth, novel means for circulating adhesive which substantially prevents exposure of the adhesive to the atmosphere, thereby substantially eliminating aeration, foaming and/or quick drying of the adhesive during operation of the device.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing, in which:

Figure 1 is a side elevational view of an embodiment

of the invention showing the same mounted upon a portion of an envelope making machine,

Figure 2 is a fragmentary sectional view taken substantially along line 2—2 of Figure 1,

Figure 3 is a fragmentary sectional view taken substantially along line 3—3 of Figure 2, and

Figure 4 is a fragmentary schematic view illustrating a means for supplying adhesive at a constant temperature.

Referring more particularly to the drawing, there is shown therein a portion of an envelope making machine generally indicated at **10** and to which is attached by means of bolts **11** an arm **12** having an upwardly extending outer portion **13** in which is centrally provided a longitudinally extending slot **14**.

An applicator wheel or roll **16**, having a knurled peripheral face **17**, is mounted for rotation as indicated on shaft **15**.

A block **18** which may be termed a "scraper block" is provided with a stud **19** which extends through the slot **14** and is provided with a nut **20** at its outer end. A washer **21** is interposed between the nut **20** and the extended portion **13** of the arm **12**.

The block **18** is provided with a transverse slot **22** for the reception therein of the peripheral portion of the applicator wheel **16**. Formed in the interior of the block **18** and communicating at one of its ends with the slot **22** is a passageway **23** which also communicates with an inlet opening **24** and an outlet opening **25**.

Referring now to Figure 4 of the drawing, it will be seen that there is provided an adhesive or glue reservoir **26** having a pipe **27** communicating with a pump **28** which is, in turn, connected to the inlet opening **24** by means of a pipe **29**. The reservoir **26** is connected with the outlet opening **25** by a return pipe **30**. An electric heating element **31** is mounted in any suitable manner with respect to the reservoir **26** to provide a means for heating the contents thereof and is connected by suitable wiring **32** to a source of electrical energy indicated at **33**. A thermostat **34** and switch **35** are also indicated in the schematic showing and may be placed in any conventional manner with respect to the reservoir **26** whereby to maintain the contents thereof at a given selected temperature.

Affixed to the outer end portion of the arm **13** is a block **36** and a screw **37** extends threadably through the block **36** and bears against the outer end of the scraper block **18**. A dog **38** is affixed to one side of the arm **13** and a bearing block **39** is affixed to one side of the scraper block **18** and has extending threadably therethrough a screw **40** which is adapted to bear against the dog **38**.

Referring again to Figure 1, numeral **41** designates a finger holder which may be suitably secured to arm **12**. To holder **41**, a plurality of fingers **42** are affixed by any suitable means, such as welding or soldering, the number of fingers utilized depending on the width of the adhesive or glue line desired. Fingers **42** are preferably formed from a flexible yielding type wire and primarily function to support the portion of the envelope blank to which the adhesive is being applied. In contrast with a flexible blade structure, it has been found that fingers **42** do not gather adhesive from roll **16** during adhesive operations.

In operation, it will be apparent that the adhesive is circulated in a substantially closed system as it is pumped, by means of the pump **28**, through the pipe **29** from the pipe **27** and reservoir **26** to the passageway **23** and thence to the groove **22** where it is applied constantly to the outer peripheral knurled face **17** of the applicator wheel **16** and thereafter applied to selected portions of envelopes or the like passing through the machine **10**.

It will also be seen that the adhesive in the reservoir is maintained at a constant temperature by means of the heating element **31** regulated by the thermostat **34** in conventional manner and that excessive glue or other adhesive is returned from the passageway **23** through the return pipe **30** to the reservoir **26**.

It will also be apparent that the position of the scraper block **18** with respect to the applicator wheel **16** may be changed by loosening the nut **20** and the screws **37** and **40** at which time the block **18** will be allowed to pivot upon its stud **19** with respect to the arm **13** and the wheel **16**. It will also be apparent that by selectively moving inwardly the screws **37** and **40** that the angular relation of the block **18** with respect to the arm **13** may be varied, and that the block may then be locked in such selected position by means of the nut **20**. Thus the coating of adhesive or the like which is applied by means of the scraper block may be varied in thickness as desired and hence the application of such adhesive from the wheel **17** to the envelopes or the like going through the machine **10** may be varied to secure the utmost desirable thickness thereon.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. A device of the character described comprising a mounting arm, an applicator wheel revolubly mounted on said arm, work supporting fingers secured to said arm, a scraper block mounted on said arm exteriorly of said wheel and having a transverse groove for the reception of the peripheral portion of said applicator wheel, and means for supplying fluid adhesive at constant temperature to said groove, said means comprising a closed passageway formed in said block and communicating with said groove, said scraper block having an inlet and an outlet opening communicating with said passageway, an adhesive reservoir, a supply pipe extending from said reservoir to said inlet opening, a return pipe extending from said outlet opening to said reservoir, a pump in said supply line, said passageway in said block interconnecting the inlet and outlet openings whereby a wholly confined and unimpeded flow of fluid adhesive is provided, an electrical heating element associated with said reservoir, and a thermostat for controlling said heating element.

2. A device of the character described comprising a mounting arm, an applicator wheel revolubly mounted on said arm, work supporting fingers secured to said arm and tangential to said applicator wheel, a scraper block mounted on said arm exteriorly of said wheel and having a transverse groove for the reception of the peripheral portion of said applicator wheel, means for supplying fluid adhesive to said groove, and means for varying the angular relation between said scraper block and said applicator wheel, said last-mentioned means including a stud affixed to said scraper block, said arm having a longitudinal slot and said stud extending therethrough, a nut threaded on the outer end of said stud, a bearing block affixed to the outer end portion of said arm, a screw extending through said bearing block and bearing against the outer end of said scraper block, a dog affixed to one side of said scraper block, a second bearing block affixed to one side of said scraper block, and a screw extending through said second bearing block and bearing against said dog.

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