Feb. 28, 1933. W. E. MOLINS 1,899,628

CIGARETTE MAKING MACHINE

Filed Oct. 9, 1931

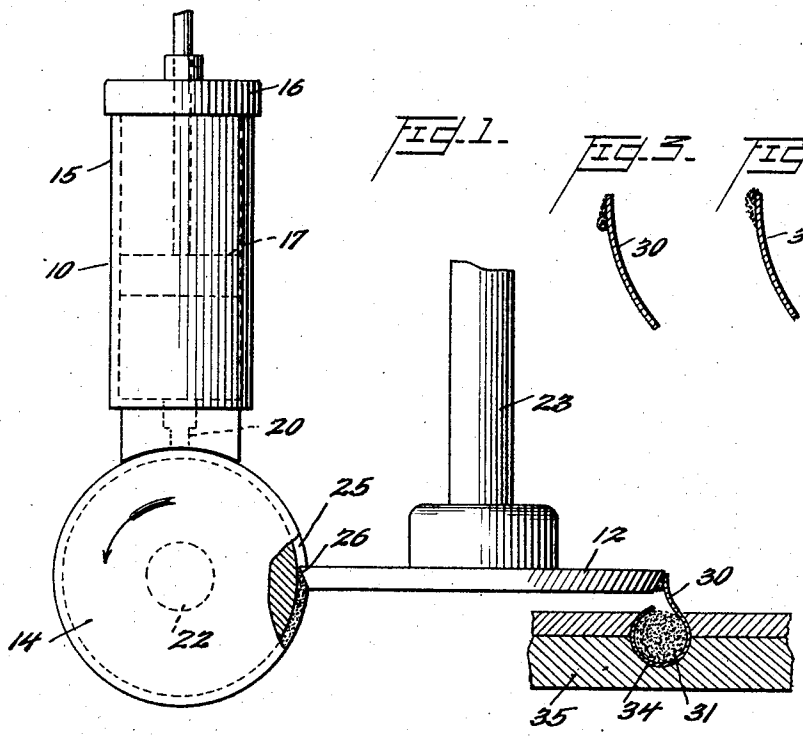


FIG. 1.

FIG. 3.

FIG. 4.

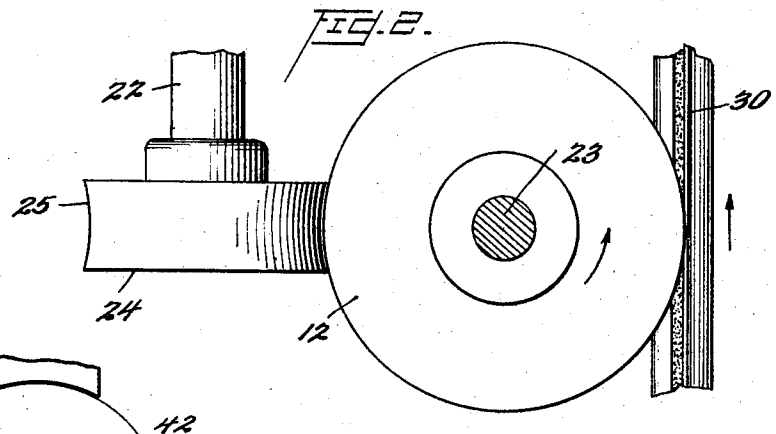


FIG. 2.

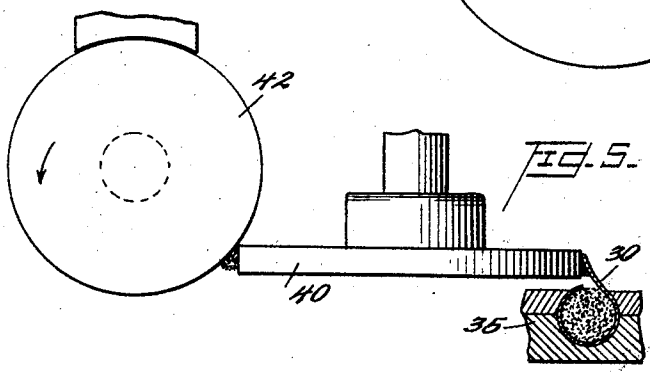


FIG. 5.

Inventor
W. E. Molins,
By Watson, Cole, Moore & Grindle
Attorneys

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WALTER EVERETT MOLINS, OF LONDON, ENGLAND

CIGARETTE MAKING MACHINE

Application filed October 9, 1931. Serial No. 567,937.

This invention relates to apparatus for applying adhesive to the cigarette rod produced on conventional cigarette machines of the continuous rod type and has for its object the provision of means of this character which will ensure faster and more efficient pasting of the cigarette paper.

The adhesive applying apparatus hitherto used has deposited the adhesive along one edge of the paper cigarette tube in such manner that the greater amount of adhesive is present at the extreme edge of the paper, the adhesive layer tapering off in thickness toward the central portion of the paper. Thus, when the overlapping edge of the paper is turned down on the opposite edge, a considerable portion of the adhesive is squeezed out from between the contacting edges and the folder which turns down the overlapping edge and the heater for drying the adhesive become soiled with paste and frequent stoppage of the machine and a defective cigarette rod result.

It is therefore an object of this invention so to apply the adhesive to the edge portion of the continuous paper blank that the greater thickness of the adhesive layer is removed from the outer edge of the paper, the thickness of this layer tapering off toward the extreme edge. By this expedient a greater margin of error in all pasting adjustments may be allowed and a surplus of paste may be employed, this surplus tending to spread over the inner surface of the paper, the amount exuding from the overlapping edges of the paper being very materially reduced.

Further objects and features of the invention will be apparent from the following specification taken in connection with the accompanying drawing, in which:

Figure 1 is an elevational view of adhesive applying apparatus embodying the principles of the present invention;

Figure 2 is a plan view of the apparatus shown in Figure 1;

Figure 3 is an enlarged sectional view of the edge of a paper tube to which adhesive has been applied in accordance with the principles of the present invention;

Figure 4 is a similar view illustrating the manner in which adhesive has been applied heretofore; and

Figure 5 is a view in elevation of a modification of the arrangement shown in Figure 1.

Referring now more specifically to the drawing, in which one type of adhesive applying mechanism is disclosed for the purpose of illustrating the invention, it will be observed that this mechanism consists primarily of a paste container indicated generally at 10, a main paste wheel 12 and a secondary paste wheel 14 for transferring the paste from the container to the main paste wheel.

The container 10 comprises a casing 15 preferably closed at its upper end by a cap 16 and provided with a plunger 17 reciprocable within the casing to force the paste downwardly through a discharge opening 20 at the lower end of the container in a manner which will be well understood. The secondary paste wheel 14 is mounted for rotation in the direction indicated by the arrow in Figure 1 on a shaft 22 and the main paste wheel 12 is mounted on a shaft 23 and is rotated in the direction of the arrow shown in Figure 2. These shafts may be driven in any conventional manner from the cigarette machine proper.

The paste delivered from the container 10 through the aperture 20 is deposited in an annular groove 25 in the periphery of the wheel 14, this groove being arcuate in cross-section as shown in Figure 2, the radius of curvature of the groove being substantially equal to that of the wheel 12. The paste is thus carried around by the wheel 14 to the beveled periphery 26 of the wheel 12 which acts as a scraper. The paste thus deposited on the periphery of the wheel 12 is then carried around into contact with the upstanding edge of the cigarette paper 30 which, together with the filler 31 of tobacco enclosed thereby, lies within and is carried along a recess 34, substantially circular in cross-section, in a guide 35.

Broadly speaking, this arrangement has been in common use, but it has been customary to rotate the wheel 14 in a clockwise direction as seen in Figure 1, the periphery

of the wheel 12 being beveled in the opposite direction so as to remove the paste from the wheel 14 and deposit the same on the edge of the cigarette paper 30 in substantially the manner shown in Figure 4 of the drawing, it being obvious that the greater portion of the paste will lie adjacent the extreme outer edge of the cigarette paper as shown in Figure 4. By reversing the direction of rotation of the wheel 14 and reversing the direction of the bevel 26 on the periphery of the wheel 12, I am enabled to apply the paste to the cigarette paper in such manner that the greater thickness of the layer of paste lies inwardly of the extreme edge of the paper as shown in Figure 3. It will thus be apparent that when the upstanding side of the paper blank is pressed down upon the other side, the paste will tend to flow inwardly toward the main body of the paper and will not exude appreciably from between the overlapping edges of the paper.

It is found in practice that the application of this principle results in the production of a cleaner cigarette rod and that pasting can be effected at much higher speeds with little or no sealing heat and without interruption of operation for cleaning the folding and heating mechanism such as has been required in the past.

Figure 5 illustrates a slight modification of the arrangement shown in Figure 1, in which the main paste wheel or roller 40 is provided with a substantially cylindrical paste receiving periphery as distinguished from the arrangement shown in Figure 1 in which the periphery of the main roller is beveled. In order to provide for the delivery of a substantially wedge shaped layer of adhesive to the periphery of this roller, the auxiliary roller 42 is mounted to rotate on an axis lying in a plane parallel to but spaced from the plane generally defined by the roller 40, the axes of the two rollers being substantially perpendicular, or more precisely, the axis of the roller 42 being disposed at substantially a right angle to a perpendicular from the axis of the roller 40. It will of course be understood that in this arrangement as in that previously described, the periphery of the roller 42 is grooved so as to appear substantially arcuate in cross-section to accommodate the periphery of the roller 40, the latter acting as a scraper when the roller 42 is rotated in the direction shown by the arrow to remove the adhesive and supply it to the cigarette paper 30 adjacent the edge thereof.

It will be noted that in this arrangement as in the arrangement shown in Figure 1, the adhesive is applied to the upstanding side of the cigarette paper in such manner that the thinner portion of the substantially wedge shaped layer of adhesive carried by the roller 40 is adjacent the extreme edge of the paper. Thus the application of adhesive to that portion of the paper adjacent the extreme edge is ensured and at the same time a sufficient surplus of adhesive is provided and the necessity of delicately adjusting the paste applying mechanism is thereby eliminated.

It will be understood that the invention is applicable to various types of adhesive applying apparatus and is not necessarily limited to that selected herein to illustrate the principles of the invention, such alterations and changes being contemplated as fall within the spirit and scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In paste applying apparatus for use in cigarette making machines of the continuous rod type, the combination with a paste container, of a secondary wheel for receiving paste from said container, a main paste wheel for receiving paste from said secondary wheel and depositing the same on the cigarette paper, said main paste wheel having a bevelled paste receiving periphery and being disposed with the face of smaller diameter adjacent the cigarette rod.

2. Means for applying adhesive to a continuous blank adjacent one edge thereof, comprising a roller having a peripheral surface adapted to receive adhesive and deposit the same on the blank, and means for supplying a substantially wedge-shaped layer of adhesive to the peripheral surface of said roller, said roller being so disposed with respect to the blank that the thinner portion of the wedge-shaped layer of adhesive thus deposited lies toward the extreme edge of the blank.

3. In apparatus for applying adhesive to one side of a blank adjacent the edge thereof, the combination with a main adhesive applying roller, an auxiliary supply roller, said rollers being positioned for rotation with the peripheral adhesive receiving portions thereof in proximity, the axis of said auxiliary roller lying in a plane parallel to but spaced from the plane of said main roller and extending at substantially a right angle to a perpendicular from the axis of rotation of the main roller, whereby said auxiliary roller may supply a substantially wedge-shaped layer of adhesive to said main roller, said main roller being so disposed with respect to said blank as to deposit the adhesive thereon with the thinner portion of the wedge-shaped layer and adjacent the extreme edge of the blank.

4. In apparatus for applying adhesive to cigarette paper, the combination with means disposed in close proximity to the cigarette paper for depositing adhesive thereon, of means for supplying said first named means

with a wedge shaped layer of adhesive, said first named means and said paper being so positioned that the thinner portion of the wedge shaped layer of adhesive will lie adjacent the edge of the paper.

In testimony whereof I hereunto affix my signature.

WALTER EVERETT MOLINS.