Sept. 10, 1957 H. POLICANSKY 2,805,857

TIPPING MECHANISM FOR FILTER TIP ASSEMBLING MACHINES AND THE LIKE

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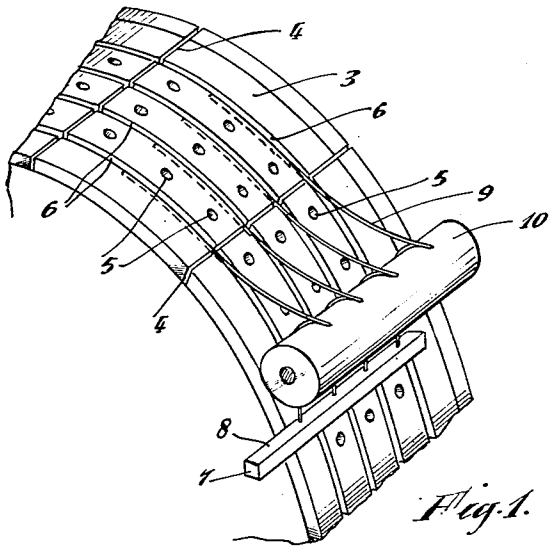


Fig. 1.

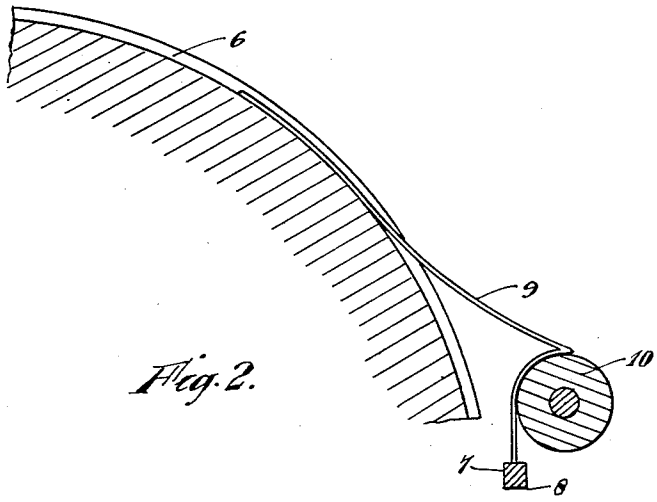


Fig. 2.

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TIPPING MECHANISM FOR FILTER TIP ASSEMBLING MACHINES AND THE LIKE

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1 Claim. (Cl. 271—51)

This invention relates to tipping mechanism for filter tip assembling machines and the like.

Tipping mechanism is employed in filter tip assembling machinnes of the kind comprising strip gumming mechanism, cutting mechanism and wrapping mechanism wherein one or more cigarettes and a filter tip plug are assembled end to end and bonded together by wrapping a severed gummed length of a thin strip of material such as cork around the filter tip plug and the adjacent cigarette end or ends. Tipping mechanism is also embodied in cigarette making machines. All such tipping mechanism will be hereinafter referred to as "tipping mechanism of the kind described."

One of the problems encountered in designing a tipping mechanism of the kind described is the delivery of the severed and gummed strip of tipping material. In such machines the tipping material is drawn in a continuous length from a roll and fed to the severing mechanism after being coated with adhesive on one face. The adhesive coated strip has then to be cut into lengths and delivered to wrapping mechanism. It must be appreciated that the strip material is extremely thin and even in the dry state has very little stiffness. As soon as it has been moistened with the adhesive most of the stiffness disappears and the material becomes very difficult to handle which difficulty is greatly increased by the presence of the adhesive. In one known tipping mechanism on a cigarette making machine the severing of the strip is effected by a cutter wheel carrying on its periphery a number of blades which are pressed onto the strip of material whilst it is supported on a wheel (hereinafter referred to as the support means) to the surface of which it is held by suction, the surface of the wheel being perforated for this purpose. The strip is of course positioned on the support means with the adhesive coated side facing the cutters. Since the strip is severed against the surface of the support means that part of the surface where severance is effected must be continuous which makes it difficult to remove the strip from the support means if the leading edge is clinging to the surface. I have found that in pressing the cutting blade through the strip the cut edge receives adhesive and a small quantity of adhesive may even be transferred to the support means. From either cause the edge of the strip may adhere to the support means when it should be quite free so that each portion of the strip as it is severed can pass on to the wrapping mechanism. I have found that a knife edged scraper blade is insufficient to overcome this difficulty and ensure the removal of the severed portion of the strip from the support means and that even if it succeeded in lifting the strip off the support means I have found that the slightly gummed edge will adhere to the scraper blade which should guide the strip to the wrapping mechanism. It must be obvious that any check in the flow of strip can have serious consequences since tipping mechanisms of the kind described operate at high speed.

According to the present invention, in tipping mechanism of the kind described, I provide support means with narrow grooves or channels arranged parallel to the direction of movement of the strip, comb means having one or more teeth or fingers associated with said grooves and extending thereinto so that their extremities are beneath the advancing edge of the strip.

In order that the invention may be clearly understood reference is directed to the accompanying drawings wherein:

Figure 1 is a perspective view of tipping apparatus according to the invention and

Figure 2 is a sectional side elevation of Figure 1.

According to one form of the invention as applied to a filter tip assembling machine and with reference to the attached drawings, the support means is formed as a roller **3** slotted transversely as at **4** to receive knife or wafer blade holding members adapted to be traversed by spring means to cause the blade to pass rapidly across the wheel to sever the strip whilst pneumatically held onto the surface of the wheel **3** by suction orifices **5**. The severing mechanism and suction means form no part of the present invention and other forms of severing arrangements may be used. The surface of the roller is formed with four annular grooves **6** and a comb **7** the back **8** of which is suitably supported in a stationary position in relation to the roller **3** and has four fingers which enter the grooves **6** nearly tangentially of the surface. It will be understood of course that more than four grooves may be used with a corresponding number of fingers.

The comb **7** is used in conjunction with a feed roller **10** which serves to direct the severed portions of the strip to tipping mechanism of the kind referred to, the fingers **9** being shaped to curve back over the feed roller **10** and then to sweep in curvilinear form towards the roller **3** where the front part of the fingers rest in the grooves **6**.

I have found that with a machine constructed as above the nearly tangentially arranged fingers or teeth of the comb ensure the safe lifting of the leading edge of the cut portion of the strip from the roller **3** and the fingers which are comparatively narrow and whilst sufficient to support the strip present a very limited area and reduce the risk of adhesion thereto enabling a steady and reliable stripping of the gummed tipping material from the support roller on to any suitable feeding means, for example, the feed roller **10**.

In another form of the invention as applied to the tipping mechanism of cigarette making machines, I provide a similar form of support means and severing means but instead of being passed to wrapping mechanism the gummed severed strip is applied to the paper.

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

In a high-speed continuously operating machine for providing filter-tips for cigarettes wherein tipping material in the form of extremely thin strip is drawn in a continuous length from a roll, coated with adhesive on one side, fed to severing mechanism by which it is cut into lengths, and delivered to wrapping mechanism while the adhesive coating is still wet and sticky, tipping mechanism comprising support means for the wet and sticky gummed strip of tipping material, said support means having narrow grooves arranged parallel to the direction of movement of the strip thereover, a feed roller mounted to receive severed strip from said support means and to feed the same forwardly for cigarette-tipping purposes and comb means mounted forwardly of said support means with respect to the direction of strip movement, said comb means having fingers which are narrower than said grooves and which are bent forwardly to pass partially around the feed roller in engagement therewith and are then bent rearwardly substantially tangentially of the feed

roller to sweep backwardly in curvilinear form from their contact with the feed roller into the grooves of the support means.

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