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[54] APPARATUS FOR WRAPPING FILLER RODS OF TOBACCO OR THE LIKE

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[57] ABSTRACT

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The web draping device, the filler-condensing finger and the device which advances the filler lengthwise at the wrapping station of a cigarette rod making machine are mounted on a common holder which is pivotable between operative and inoperative positions about an axis which is normal to the direction of lengthwise movement of the filler at the wrapping station. In the operative position of the holder, the finger engages and compacts the filler downstream of the advancing device which moves the filler toward and onto the web while the draping device converts the web into a tubular wrapper which surrounds the filler downstream of the finger. In the inoperative position of the holder, the draping device, the finger and the discharge end of the advancing device are lifted above and away from the path of the filler so that an attendant can rapidly detect and correct eventual causes of malfunction in the region where the filler reaches the web and the latter is being converted into a tubular wrapper.

[51] Int. Cl.²..... A24C 5/10; A24C 5/18

[58] Field of Search..... 131/21 R, 21 B, 60, 67, 131/68, 69, 84 R, 66, 84 A, 84 B

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11 Claims, 6 Drawing Figures

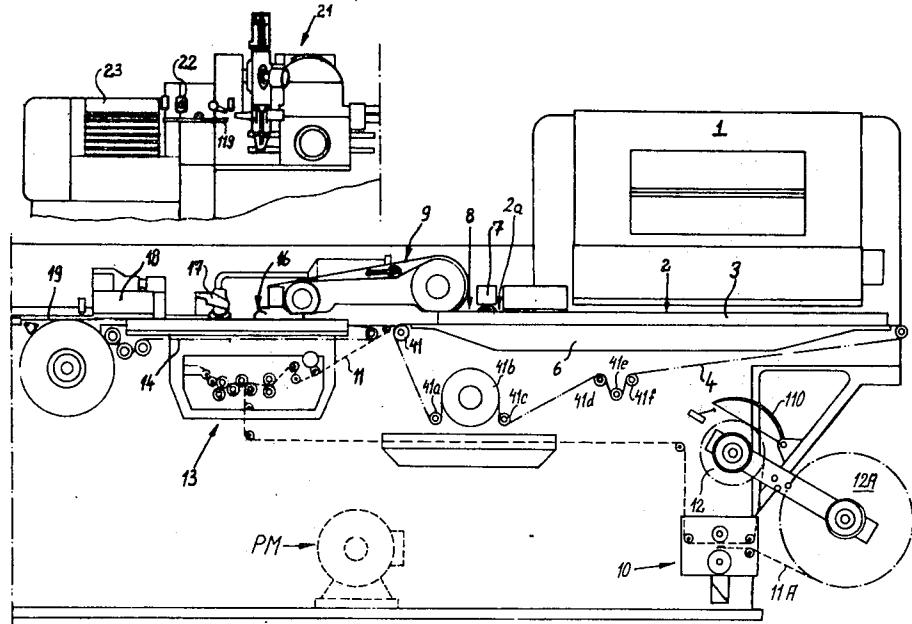


Fig. 1

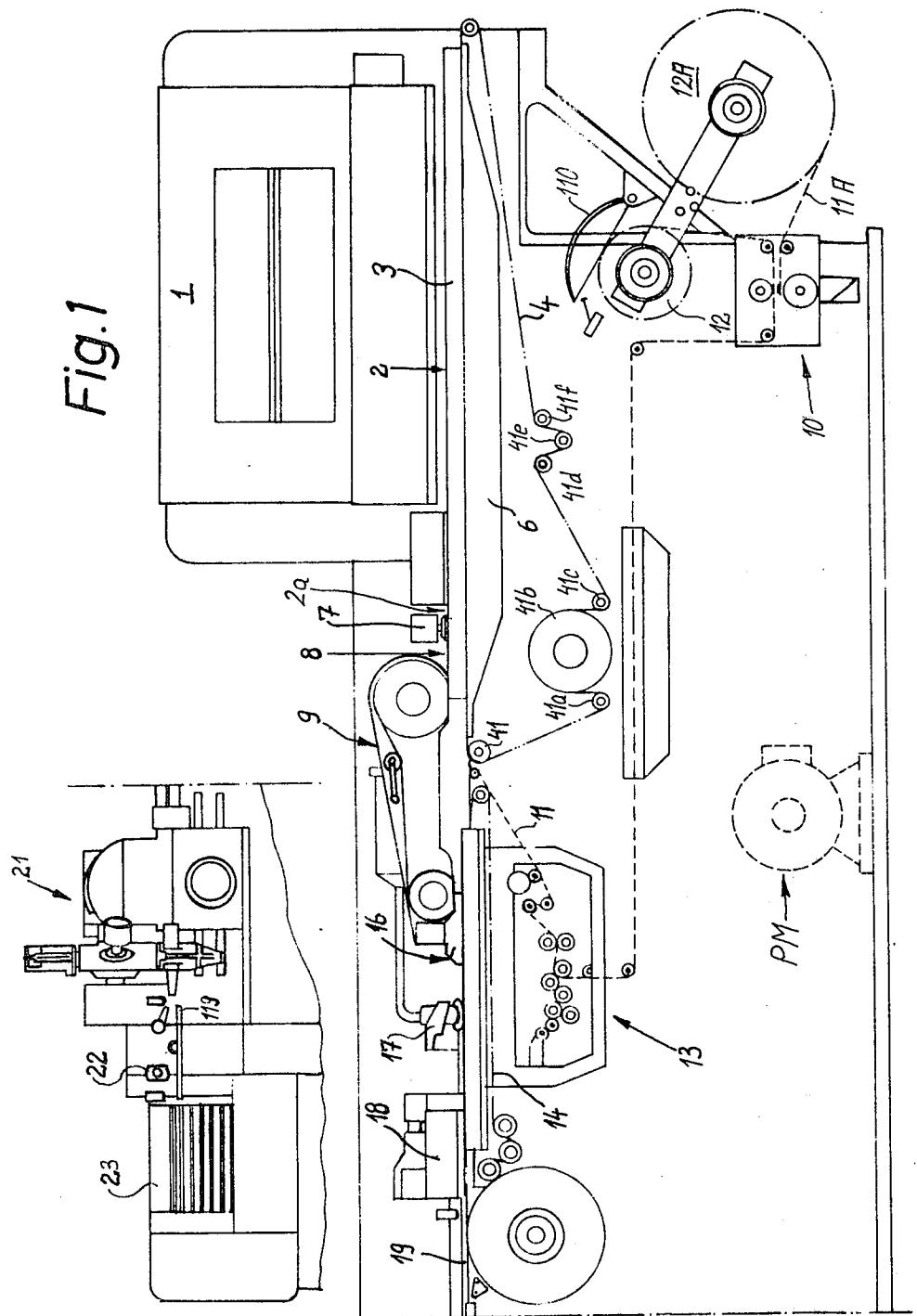
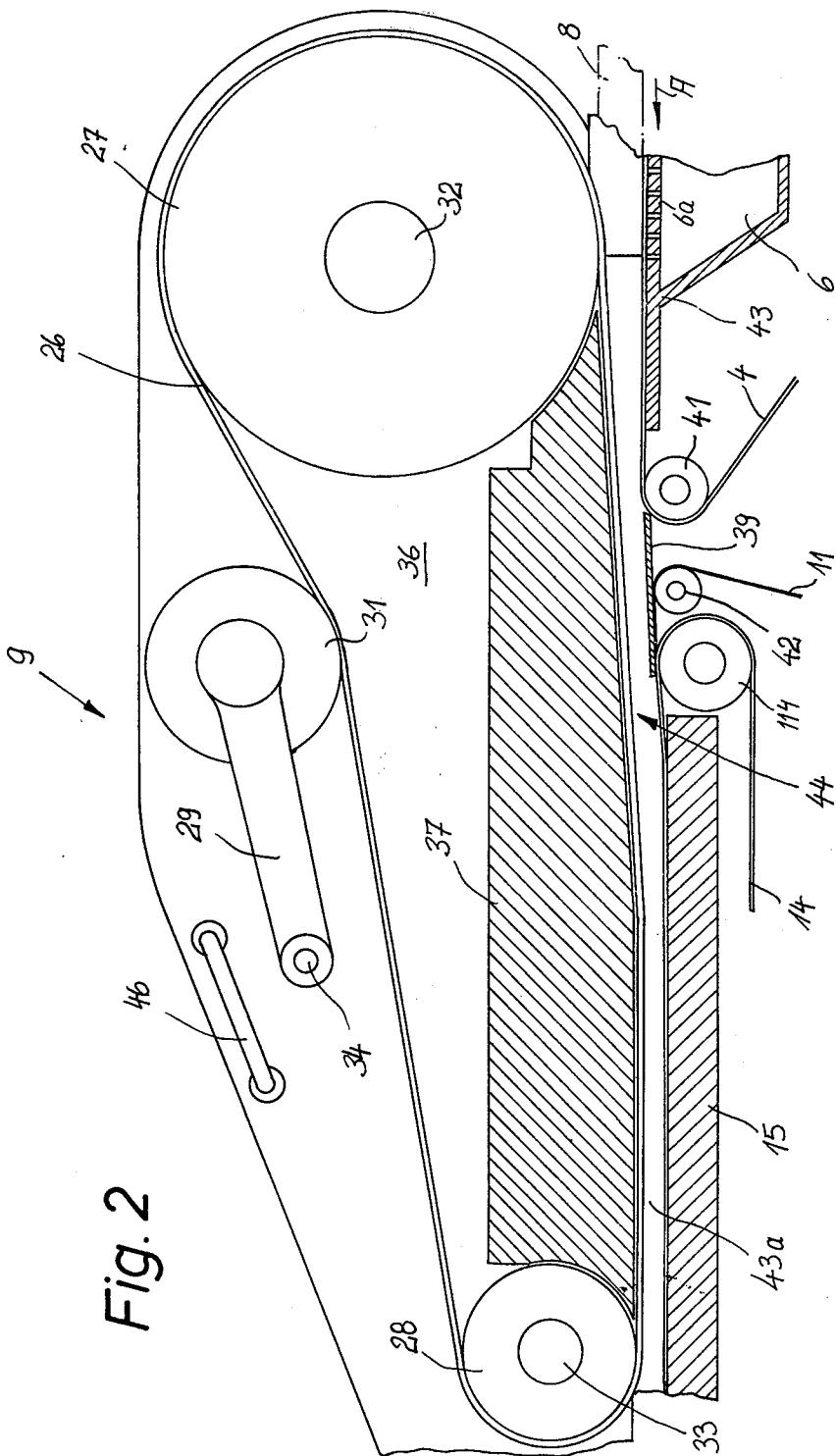
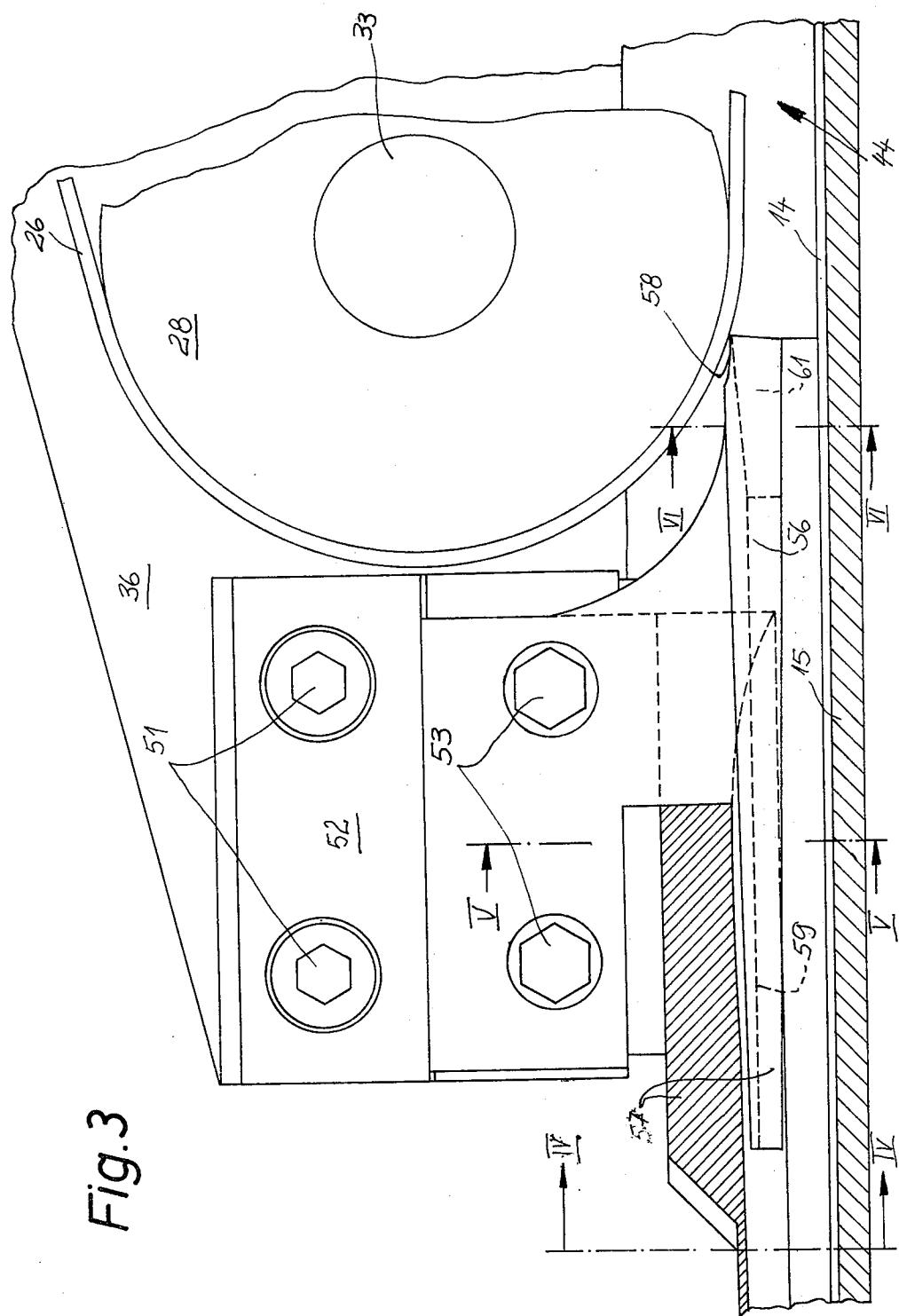


Fig. 2





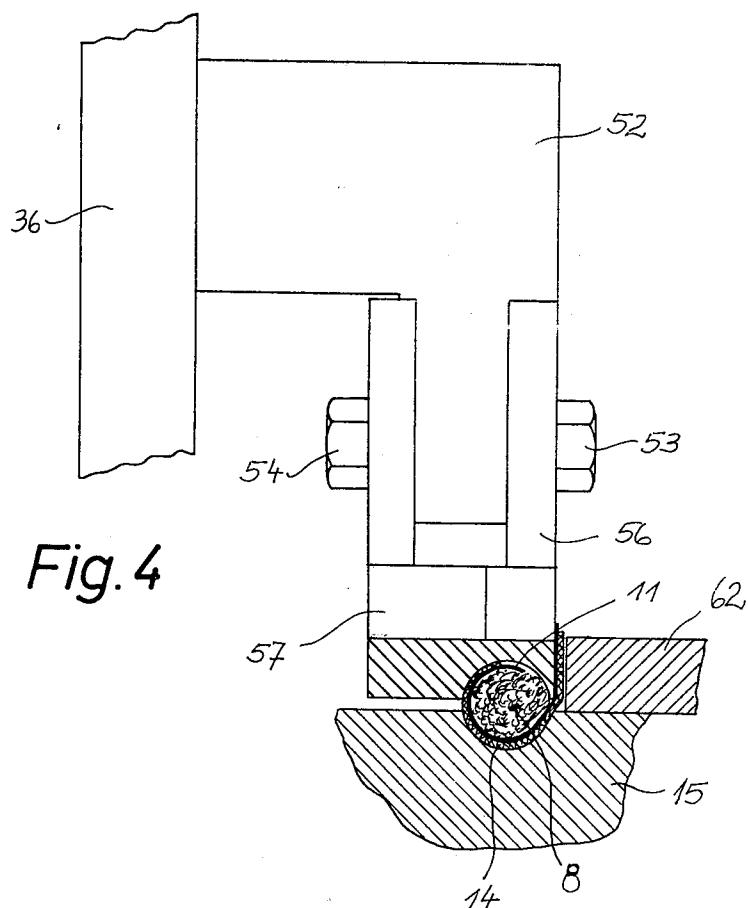


Fig. 4

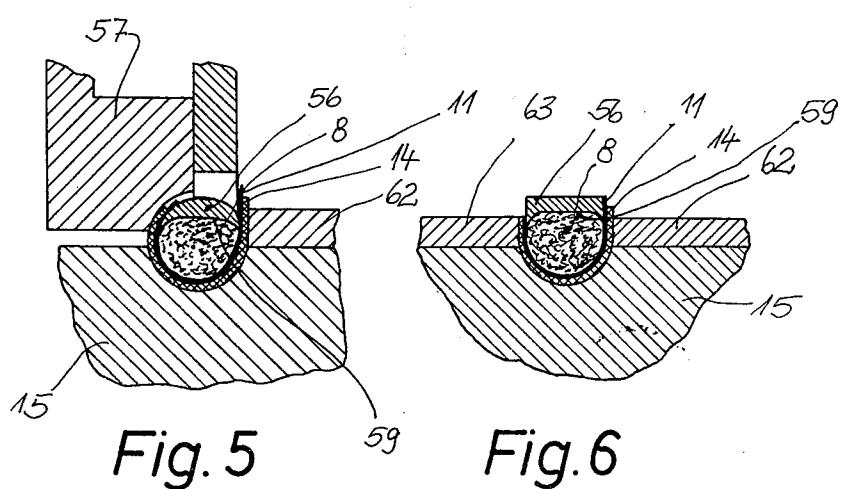


Fig. 5

Fig. 6

**APPARATUS FOR WRAPPING FILLER RODS OF
TOBACCO OR THE LIKE**

BACKGROUND OF THE INVENTION

The present invention relates to machines for the making of rods wherein a tubular wrapper surrounds a filler of fibrous material, such as tobacco. More particularly, the invention relates to improvements in apparatus which can be used in machines for the making of wrapped rod-like fillers to transport a filler toward and through a wrapping station and to provide the filler with a tubular wrapper of cigarette paper, reconstituted tobacco or other suitable flexible wrapping material.

The wrapping station of a cigarette rod making or analogous machine is provided with means for converting a web of cigarette paper or the like into a tubular wrapper which surrounds a rod-like filler of comminuted tobacco. During wrapping, the filler travels lengthwise and is normally subjected to the action of a compacting or condensing device which can cooperate with the web draping device or devices and serves primarily to subject the filler to a mechanical compacting force during and/or immediately prior to wrapping. The means for moving the filler lengthwise comprises one or more suitable advancing devices in the form of suction wheels, belt conveyors or the like. The wrapped filler is thereupon subdivided into sections of unit length or multiple unit length which may constitute plain cigarettes, cigarillos, cigars or filter plugs.

In many instances, the compacting or condensing device for the filler resembles an elongated finger which engages the filler opposite the conveyor for the web and can serve exclusively as a means for subjecting the filler to a requisite compacting force or as a combined compacting and guide means for the filler. The draping device comprises one or more draping elements which serve to convert the originally flat or substantially flat web into a tube, preferably in such a way that one marginal portion of the web contacts the travelling filler whereas the other marginal portion of the web extends tangentially of the filler in order to be movable past the applicator of a suitable paster which coats it with a film of adhesive. The thus coated marginal portion is thereupon folded over the one marginal portion to form therewith a seal which extends lengthwise of the resulting wrapped rod and advances along a suitable sealer which heats the adhesive to promote its setting so that the tubular wrapper exhibits a satisfactory resistance to a tendency of the confined filler to expand.

In presently known cigarette rod making and like machines, the draping device, the advancing device for the filler and the compacting device for the filler are three discrete parts each of which is separably or movably secured to the machine frame so as to be movable to an inoperative position in which the filler and/or the web is accessible at the wrapping station. This facilitates convenient detection of eventual causes of malfunction, such as jamming of tobacco particles in the region of the draping and/or compacting device. However, the steps of moving all three devices to their inoperative positions consume much time so that the cleaning of the wrapping station is normally a lengthy operation with attendant losses in output. Such losses can amount to 4,000 and more cigarettes per minute. It has been found that the period of time which is required to move all three devices first to their inoperative positions and thereupon back to operative positions is much too long

for rational utilization of a modern high-speed cigarette rod making or like machine, even if each device is secured to the frame by quick-release couplings or the like.

SUMMARY OF THE INVENTION

An object of the invention is to provide a novel and improved apparatus which can be used at the wrapping station of a cigarette rod making or like machine and is constructed and assembled in such a way that the devices which normally engage the web and/or the filler can be moved between operative and inoperative positions within shorter intervals of time than in heretofore known machines.

Another object of the invention is to provide a novel and improved mounting for the filler condensing, filler advancing and web draping devices at the wrapping station of a cigarette rod making or like machine.

A further object of the invention is to provide a cigarette rod making or like machine wherein the periods of time which are needed to eliminate a pileup of tobacco or other fibrous material at the wrapping station are much shorter than in conventional machines and which can be properly supervised and serviced by persons having little skill.

An additional object of the invention is to provide novel and improved means for confining the filler in a web of cigarette paper or the like at the wrapping station of a cigarette rod making or like machine.

Still another object of the invention is to provide a cigarette rod making or like machine which can employ a relatively simple, compact and readily accessible assembly of web and filler-contacting devices at the wrapping station.

The invention is embodied in an apparatus for wrapping an elongated web around a rod-like filler of fibrous material, particularly for wrapping cigarette paper or the like around a tobacco filler. The apparatus comprises an advancing device (such as a transfer conveyor having an endless flexible element trained over two or more rollers) for feeding a continuous rod-like filler lengthwise along a predetermined path, conveyor means adjacent to a portion of the path and arranged to move a web lengthwise so that one side of the web contacts the filler and the web moves with the filler, a draping device adjacent to the aforementioned portion of the path and arranged to convert the web into a tubular wrapper which surrounds the filler, a condensing device adjacent to the aforementioned portion of the path and arranged to exert pressure against the filler opposite the conveyor means for the web, and common holder means for at least two of the aforementioned devices. The holder means is movable with the respective devices relative to the path for the filler between an operative position and an inoperative position in which latter position the respective devices are spaced apart from the aforementioned portion of the path for the filler. This enables an attendant to rapidly locate and eliminate eventual causes of malfunctioning in the region of the wrapping station for the filler.

The holder means is preferably pivotable about an axis which is normal to and crosses in space with the path for the filler.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved apparatus itself, however, both as to its construction and its mode of opera-

tion, together with additional features and advantages thereof, will be best understood upon perusal of the following detailed description of certain specific embodiments with reference to the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a schematic elevational view of a cigarette rod making machine including an apparatus which serves for the wrapping of a rod-like tobacco filler in cigarette paper and embodies the invention;

FIG. 2 is an enlarged fragmentary partly elevational and partly longitudinal vertical sectional view of the improved apparatus, with the holder means for the advancing, condensing and draping devices shown in the operative position;

FIG. 3 is an enlarged view of the left-hand portion of the holder means, as viewed in FIG. 2, with the draping device shown in longitudinal vertical section;

FIG. 4 is a transverse vertical sectional view as seen in the direction of arrows from the line IV—IV of FIG. 3;

FIG. 5 is a transverse vertical sectional view as seen in the direction of arrows from the line V—V of FIG. 3; and

FIG. 6 is a transverse vertical sectional view as seen in the direction of arrows from the line VI—VI of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates a cigarette rod making machine which comprises a distributor 1 including a magazine for a supply of shredded tobacco and means for supplying tobacco shreds into an elongated tobacco channel 3 wherein the shreds form a growing tobacco stream 2. The bottom wall of the channel 3 is formed by the U-shaped upper section or stretch of an endless air-permeable belt 4 (see also FIG. 2) which is trained over rollers 41, 41a, 41b, 41c, 41d, 41e, 41f, etc. At least one of these rollers is driven by the prime mover PM of the machine. The upper stretch of the endless belt 4 travels above the perforated top panel 6a of a stationary suction chamber 6 which forms a conveyor with the belt 4 and serves to attract tobacco shreds to the upper side of the upper stretch of the belt 4 during travel in the tobacco channel 3. The suction chamber 6 may but need not extend along the full length of the upper section or stretch of the belt 4.

The fully grown tobacco stream 2a which advances with the upper stretch of the belt 4 beyond the distributor 1 (in a direction to the left, as viewed in FIG. 1) is equalized by a suitable trimming device 7 which converts the stream 2a into a rod-like filler 8 ready to be wrapped into a web 11 of cigarette paper, reconstituted tobacco or other suitable wrapping material. The web 11 is stored in the form of an expiring roll 12 and advances through a conventional splicing device 10 having means for supporting a roll 12A of fresh web 11A. A detector 110 of the splicing device 10 monitors the diameter of the expiring roll 12 and causes the splicing device to attach the leader of the fresh web 11A to the trailing portion of the running web 11 when the supply of web 11 (roll 12) is nearly exhausted. The running web is advanced through an imprinting device 13 which applies thereto printed matter representing the manufacturer's name, brand name, trademark and/or other indicia.

The thus imprinted portions of the web 11 then reach the upper stretch of an endless conveyor band 14 which is driven by the prime mover PM in a manner not forming part of the present invention and serves to transport the web 11 as well as the filler 8 through an elongated wrapping station 16 where the web is draped around the filler and its overlapping marginal portions sealed to each other to form a seam which extends lengthwise of a wrapped filler rod or cigarette rod 19.

10 The advancing device for effecting the transfer of successive increments of the filler 8 from the upper stretch of the air-permeable belt 4 onto the web 11 on the upper stretch of the endless band 14 comprises a transfer conveyor 9 which cooperates with a plate-like bridge 39 shown in FIG. 2. During the initial stage of movement through the wrapping station, the web 11 is draped in a manner shown in FIG. 4, i.e., so that one marginal portion of the web contacts the adjacent portion of the filler 8 while the other marginal portion extends substantially tangentially of the filler and upwardly, as viewed in the drawing, so as to enable a suitable paster 17 to apply to the upwardly extending marginal portion a film of adhesive before the wrapping mechanism at the station 16 causes the thus coated marginal portion to overlie and contact the one marginal portion. The thus obtained seam is thereupon heated by a sealer 18 which completes the conversion of the filler 8 and web 11 into the cigarette rod 19. The latter then passes through a cutoff or an analogous severing mechanism 21 which subdivides it into wrapped tobacco rod sections 119 of unit length or multiple unit length. The sections 119 (each of which may constitute a plain cigarette) are accelerated by a rotary cam or kicker 22 which propels them into successive axially parallel flutes of a drum 23 serving to convert the single file of sections 119 which move lengthwise into one or more rows of sections which travel sideways and can be introduced into a filter cigarette making machine, a tray filling machine, a pneumatic conveyor for transport into a filter cigarette making machine, or directly into storage.

The construction of the advancing device or transfer conveyor 9 is shown in greater detail in FIGS. 2 and 3. This device comprises an endless flexible element 26 in the form of a band or belt which need not be permeable to air and is trained over a first roller 27 located above the discharge end of the air-permeable belt 4 and a smaller second roller 28 located above a stationary frame member or support 15 at the wrapping station 16. The roller 27 is normally driven by the prime mover PM so as to advance the lower stretch of the flexible element 26 in a direction toward the web 11 on the upper stretch of the band 14 (see the arrow A). The upper stretch of the flexible element 26 is engaged by a tensioning roll 31 is mounted on a lever 29 which is fulcrumed at 34. The roll 31 can rest on the upper stretch of the flexible element 26 by gravity or is biased thereagainst by a suitable resilient element, not shown. The roller 28 is preferably an idler roller. The shaft 32 for the driven roller 27 of the advancing device 9 is mounted in the frame of the cigarette rod making machine and serves as a fulcrum for a plate-like holder 36 which carries the shaft 33 for the idler roller 28. The shaft 34 for the aforementioned lever 29 which carries the tensioning roll 31 is mounted on the holder 36, and the latter is further provided with a suitable handle or handgrip portion 46 which can be grasped by an atten-

dant in order to pivot the holder 36 between the operative position shown in FIG. 2 and an inoperative position which the holder 36 reaches by turning clockwise, as viewed in FIG. 2. The lower stretch of the endless flexible element 26 of the advancing device 9 travels below a plate-like back support 37 which is mounted on or is made integral with the holder 36 and insures that the lower stretch of the element 26 cannot yield when its underside is engaged by the filler 8.

FIG. 2 further shows that the right-hand end of the upper stretch of the endless conveyor band 14 is trained over a roller 114 which is spaced apart from the roller 41 for the endless air-permeable belt 4 so as to provide room for an idler roller 42 over which the web 11 of cigarette paper or reconstituted tobacco passes before it reaches the upper stretch of the conveyor band 14. The bridge 39 is connected with the plate 37 by way of the channel side walls 43a so that it overlies with clearance, the idler roller 42 for the web 11. The left-hand end portion of the bridge 39 overlies the right-hand end turn of the band 14 above the roller 114 so that the filler 8 which advances with the lower stretch of the endless flexible element 26 of the advancing device 9 is free to undergo some expansion when it moves beyond the bridge 39 and comes into contact with the web 11. The right-hand end portion of the bridge 39 is preferably located at a level slightly below the end turn of the belt 4 in the region of the roller 41 so as to insure that the filler 8 can expand slightly as it leaves the belt 4 and begins to travel between the upper side of the bridge 39 and the underside of the lower stretch of the flexible element 26. Such positioning of the two end portions of the bridge 39 reduces the likelihood of jamming of tobacco shreds in the filler 8 during travel between the belt 4 and web 11.

When the holder 36 assumes the operative position of FIG. 2, the lower stretch of the flexible element 26 of the advancing device 9 constitutes the top wall of an elongated passage or filler channel 44 whose height decreases in the region of the left-hand end of the suction chamber 6 and is substantially constant in the region above the bridge 39 and web 11. As shown in FIG. 2, the height of the passage or channel 44 can decrease gradually all the way to a point located above the conveyor band 14 downstream of the roller 114.

FIGS. 3, 4, 5 and 6 illustrate the details of those parts which guide and treat the tobacco filler 8 and web 11 downstream of the idler roller 28 of the advancing device 9. The left-hand end portion of the holder 36 (as viewed in FIG. 3) carries a supporting member or bracket 52 which is secured thereto by screws or analogous fasteners 51 having hexagonal sockets for reception of the working end of a suitable tool. The bracket 52 supports a combined condensing device and guide 56 and a web draping device 57. The devices 56 and 57 may form a one-piece member and are secured to the bracket 52 by means of screws 53, 54 or analogous fasteners. The rearmost portion 58 of the condensing device 56, as viewed in the direction of lengthwise travel of the filler 8 (arrow A), forms a scraper or blade which serves to separate the shreds of the filler 8 from the underside of the lower stretch of the flexible element 26 in the region below the idler roller 28 of the advancing device 9. As shown in FIGS. 5 and 6, the condensing device 56 has a concave lower surface 59 the major portion of which is located at a constant distance above the upper stretch of the conveyor band 14. The right-

most or rearmost portion of the concave surface 59 (in the region of the scraper 58) is inclined relative to the adjacent portion of the conveyor band 14 to form therewith an inlet 61 which forms the rearmost part of the channel 44 and whose height decreases in the direction of transport of the filler 8. The distance between the major portion of the concave surface 59 and the upper stretch of the conveyor band 14 equals or approximates the distance between the leftmost end of the lower stretch of the flexible element 26 and the web 11 therebelow. The curvature of the concave surface 59 of the condensing device 56 increases in the direction of filler transport (arrow A) so that the condensing device subjects the filler to a compacting or condensing action. The device 56 is flanked by two upstanding side walls or rails 62 and 63 (see FIGS. 4 to 6) which guide the marginal portions of the conveyor band 14 and web 11. The rails 62, 63 are mounted on the aforementioned support 15 which is located below the wrapping station 16 and serves as a back support for the upper stretch of the conveyor band 14.

The operation of the apparatus including the advancing device 9, condensing device 56 and draping device 57 is as follows:

The growing tobacco stream 2 on the upper stretch of the air-permeable belt 4 contains a surplus of tobacco shreds not later than when it reaches the trimming device 7 (see the stream 2a) and is converted into a filler 8 in response to removal of surplus tobacco by the cutter or cutters of the trimming device. The upper side of the filler 8 is engaged by the lower stretch of the flexible element 26 which cooperates with the conveyor belt 4 and bridge 39 to subject the filler to a gradually increasing compacting or condensing action during transport onto the web 11, i.e., onto the upper stretch of the conveyor band 14. During travel above the bridge 39, the filler 8 is moved lengthwise exclusively by the lower stretch of the flexible element 26. Prior to reaching the right-hand end of the bridge 39, as viewed in FIG. 2, successive increments of the filler 8 undergo a desirable compression between the flexible element 26 and belt 4; such compression preferably equals or closely approximates that at the discharge end of the advancing device 9. As mentioned above, the filler 8 is free to expand slightly during transfer from the belt 4 onto the adjacent right-hand end portion of the bridge 39 and to expand again during transfer from the left-hand end portion of the bridge 39 onto the web 11. Thus, the material of the filler 8 undergoes a certain amount of loosening or expansion during movement onto and again during movement beyond the bridge 39 which is desirable because such mode of transport reduces the likelihood of jamming of tobacco above the bridge 39, i.e., in the region where the filler is positively moved from above (lower stretch of the flexible element 26) but not from below.

The filler 8 is thereupon condensed or compacted again during travel in the channel or passage 44 so that its cross section at the discharge end of the advancing device 9 is the same as or substantially identical with the cross section at the discharge end of the belt 4. In the region where the height of the channel or passage 44 is constant, the filler 8 is compacted laterally by two fixed side walls 43a which converge toward each other as considered in the direction of tobacco transport with the conveyor band 14. In other words, the filler 8 can undergo lateral compression or compacting while ad-

vancing in that portion of the channel or passage 44 whose height is constant or substantially constant.

The scraper 58 separates the particles of the filler 8 from the flexible element 26 in the region of the idler roller 28 so that successive increments of the filler 8 enter the inlet 61 below the rear portion of the condensing device 56. The rails 62 and 63 cooperate with other parts at the wrapping station 16 to gradually drape the web 11 and the band 14 about the filler 8. The draping device 57 then takes over to continue with the draping of web 11 around the filler 8 in a manner as shown in FIGS. 4 and 5 so that one marginal portion of the web 11 contacts the filler but the other marginal portion extends upwardly and substantially tangentially of the filler in order to advance along the paster 17 which applies thereto a film of adhesive paste. The other marginal portion of the web 11 is folded over the one marginal portion not later than in the region of the sealer 18 which heats the resulting seam so as to enable the thus obtained tubular wrapper of the rod 19 to resist the expansion force of the confined filler 8. The rod 19 is subdivided by the cutoff 21 to yield sections 119 which are propelled into the flutes of the drum 23 by the kicker 22.

If the attendant or a suitable monitoring means (not shown) detects a malfunction in the region of the advancing device 9, i.e., in and downstream of the passage or channel 44, the handle 46 is grasped by hand and the holder 36 is pivoted clockwise, as viewed in FIG. 2, so as to assume its inoperative position in which the passage or channel 44 is exposed from above so that the attendant can readily detect and eliminate the cause of malfunction. The holder 36 pivots about the axis of the shaft 32 for the driven roller 27 (i.e., about an axis which is normal to the elongated path for the filler 8) and lifts the discharge end of the advancing device 9 (i.e., the idler roller 28), the condensing device 56 and the draping device 57 above and away from the discharge end of the belt 4, and the web 11 on the conveyor band 14. The holder 36 is thereupon returned to the operative position of FIG. 2 and the machine is ready to continue with production of the rod 19.

The holder 36 can also be moved to its inoperative position in order to allow for convenient threading of the web 11 into the wrapping mechanism. Thus, the leader of the web 11 is advanced along the upper stretch of the conveyor band 14 all the way to the condensing device 56. The holder 36 is thereupon returned to the operative position of FIG. 2 and the prime mover PM can be started to advance the web 11 lengthwise and to cause the belt 4 and advancing device 9 to feed the filler 8 into the passage or channel 44.

An important advantage of the improved apparatus is that the devices 9, 56 and 57 (or at least two of these devices) can be moved above and away from and back to their normal positions in a simple and time-saving operation. This is attributed to the provision of the holder 36 which can be pivoted by one hand and need not even be locked in its operative or inoperative position. However, it is within the purview of the invention to provide the shaft 32 and/or the holder 36 with suitable quick-release means which is capable of yieldably or releasably maintaining the holder in the operative and/or inoperative position. Since the output of a modern cigarette rod making machine is very high (up to and in excess of 70 cigarettes per second), even short-lasting interruptions in operation can entail huge losses

in output. The provision of a common holder for the devices 9, 56 or 9, 57 or 56, 57 or 9, 56 57 and the mounting of the holder in such a way that it can be rapidly moved between operative and inoperative positions greatly reduces the losses in output due to malfunctioning of the machine in the region of the advancing device and further enables the attendant to clearly see the eventual cause of malfunctioning so that such cause can be eliminated without delay with additional increase in output of the machine.

Another advantage of the improved apparatus is that its devices 9, 56, 57 are closely adjacent to each other so that the overall length of the space for these devices (as considered in the direction of filler transport) is much less than in conventional machines. This reduces mechanical friction between the filler and the relatively short condensing device 56 which is desirable for obvious reasons such as savings in space and reduced likelihood of misalignment of shreds in the frictionally engaged portion of the filler.

It is also within the purview of the invention to mount only two of the devices 9, 56 and 57 on the holder 36, for example, the devices 56 and 57. However, the mounting of the discharge end of the advancing device 9 on the holder 36 is preferred at this time (together with the devices 56 and 57) because this enables an attendant to fully expose the filler 8 in the path between the belt 4 and the conveyor band 14 and to thus allow for immediate detection of eventual causes of malfunction at the wrapping station. As a rule, the holder 36 will be moved to its inoperative position in response to a pileup of tobacco shreds in the region below or immediately downstream of the lower stretch of the endless flexible element 26.

The provision of a compacting or condensing device 56 which is provided with a scraper or blade 58 constitutes an optional but highly advantageous feature of the invention. The aforesaid mounting of the bridge 39 between the conveyors including the belt 4 and band 14 has been found to be particularly advantageous in high-speed cigarette rod making or like machines because an expansion of the filler in the region of each end portion of the bridge 39 reduces the likelihood of jamming. The transport of a tobacco filler over a stationary bridge is a highly sensitive operation because the underside of the filler is contacted by a stationary surface while the lower stretch of the endless flexible element 26 engages and moves the upper side of the filler.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features which fairly constitute essential characteristics of the generic and specific aspects of our contribution to the art and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the claims.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims:

1. Apparatus for wrapping an elongated web around a rod-like filler of fibrous material, particularly for wrapping cigarette paper or the like around a tobacco filler, comprising an advancing device for feeding a continuous filler lengthwise along a predetermined path and for condensing the filler in said path; conveyor means adjacent to a portion of said path and ar-

ranged to move a web lengthwise so that one side of the web contacts the filler and the web moves with the filler; a draping device adjacent to said portion of said path downstream of said advancing device and arranged to at least partially convert the web into a tubular wrapper which surrounds the filler; a guide device adjacent to said portion of said path downstream of said advancing device and disposed opposite said conveyor means; and common holder means for at least one of said devices, said holder means being movable between an operative position and an inoperative position in which said two devices are spaced apart from said portion of said path.

2. Apparatus as defined in claim 1, wherein said two devices include said draping device and said guide device.

3. Apparatus as defined in claim 2, wherein said advancing device has a forward end, as considered in the direction of lengthwise movement of the filler along said path, said forward end being mounted on said holder means and being spaced apart from said portion of said path in said inoperative position of said holder means.

4. Apparatus as defined in claim 1, wherein said holder means is pivotable between said positions thereof about an axis which is substantially normal to said path.

5. Apparatus as defined in claim 1, wherein said guide device includes means for separating the filler from said advancing device in said operative position of said holder means.

6. Apparatus as defined in claim 1, wherein said advancing device comprises an endless flexible element having an elongated filler-engaging stretch.

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7. Apparatus as defined in claim 6, wherein said stretch defines with said conveyor means a first portion of an elongated channel wherein the filler moves lengthwise, and further comprising second conveyor means for feeding the filler lengthwise to said stretch of said flexible element, said second conveyor means defining with said elongated stretch a second portion of said channel.

8. Apparatus as defined in claim 7, wherein said second conveyor means comprises an endless air-permeable belt having an elongated filler-engaging section and a suction chamber adjacent to said section opposite the filler to attract the filler to said section.

9. Apparatus as defined in claim 7, further comprising a bridge located opposite said stretch of said flexible element intermediate said conveyor means to cooperate with said stretch in advancing the filler from said second into said first portion of said channel.

10. Apparatus as defined in claim 9, wherein said bridge comprises a first end portion adjacent to said first mentioned conveyor means and a second end portion adjacent to said second conveyor means, said first and second end portions respectively defining with said stretch third and fourth portions of said channel in each of which the filler is allowed to expand on its way toward the web on said first mentioned conveyor means.

11. Apparatus as defined in claim 7, wherein the cross-sectional area of said channel decreases in the direction of lengthwise movement of the web substantially to the region of initial contact of the filler with the web.

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