Jan. 27, 1953 E. KLUG 2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

Filed June 17, 1948 5 Sheets-Sheet 1

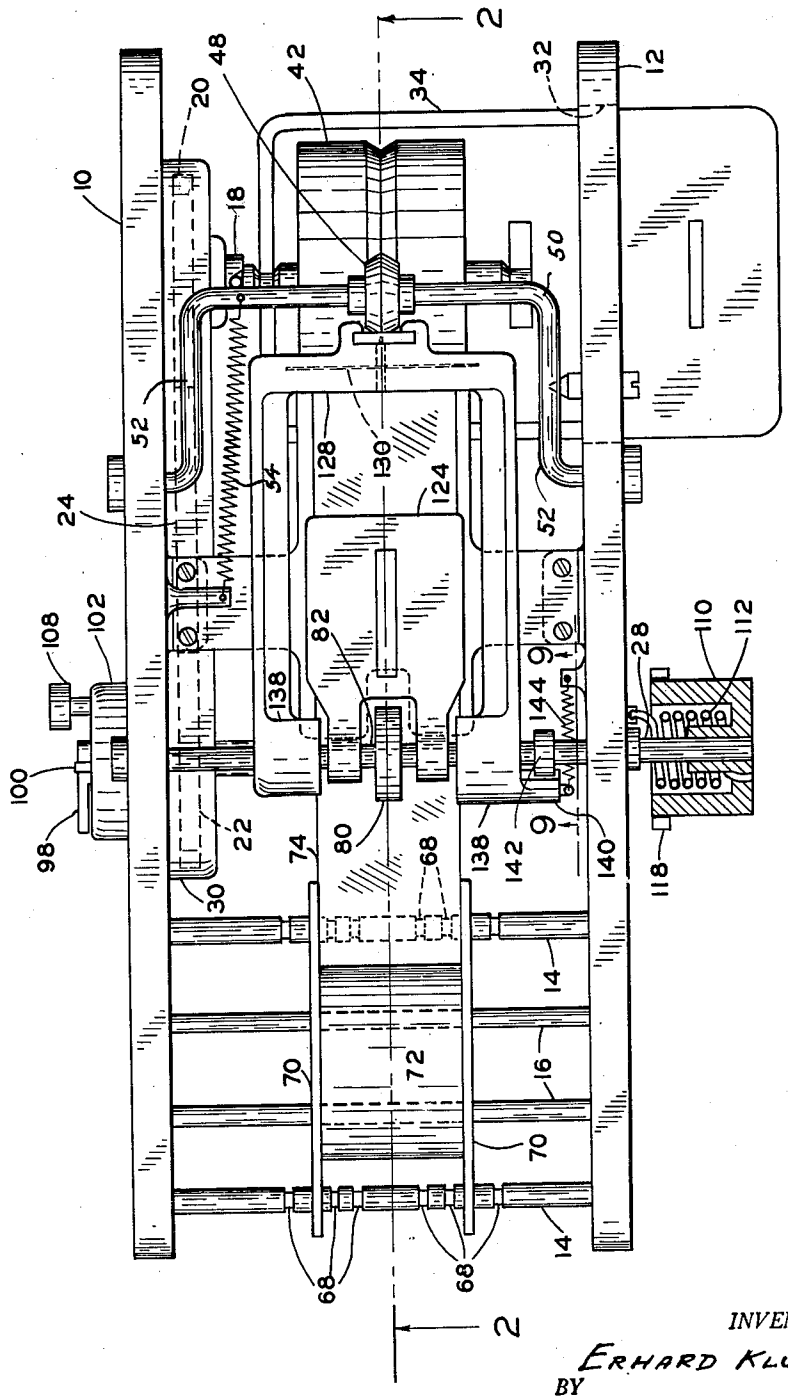


FIG. 1

INVENTOR.
ERHARD KLUG
BY
Joseph Montgomery
ATTORNEY

Jan. 27, 1953 E. KLUG 2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

Filed June 17, 1948 5 Sheets-Sheet 2

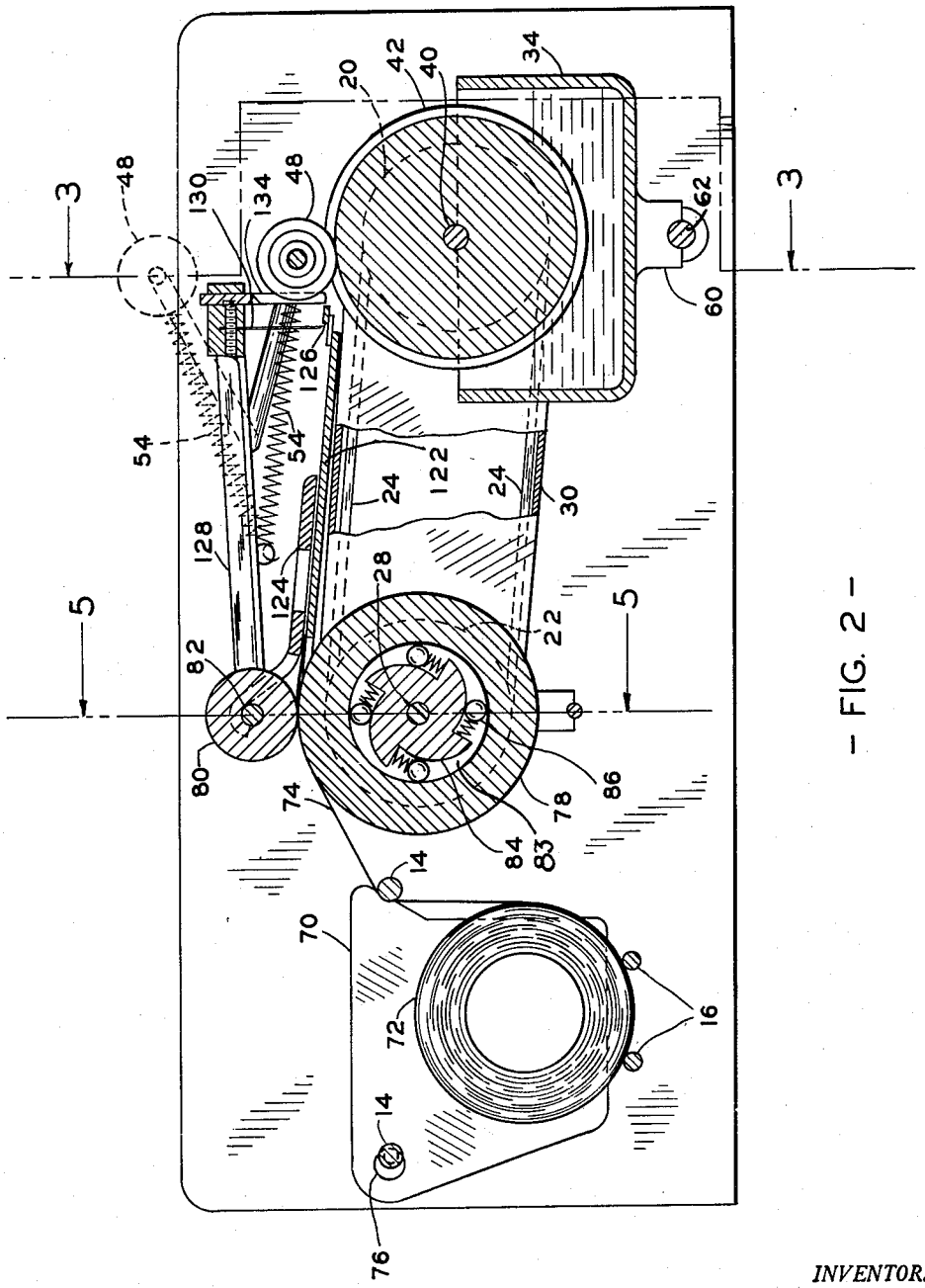


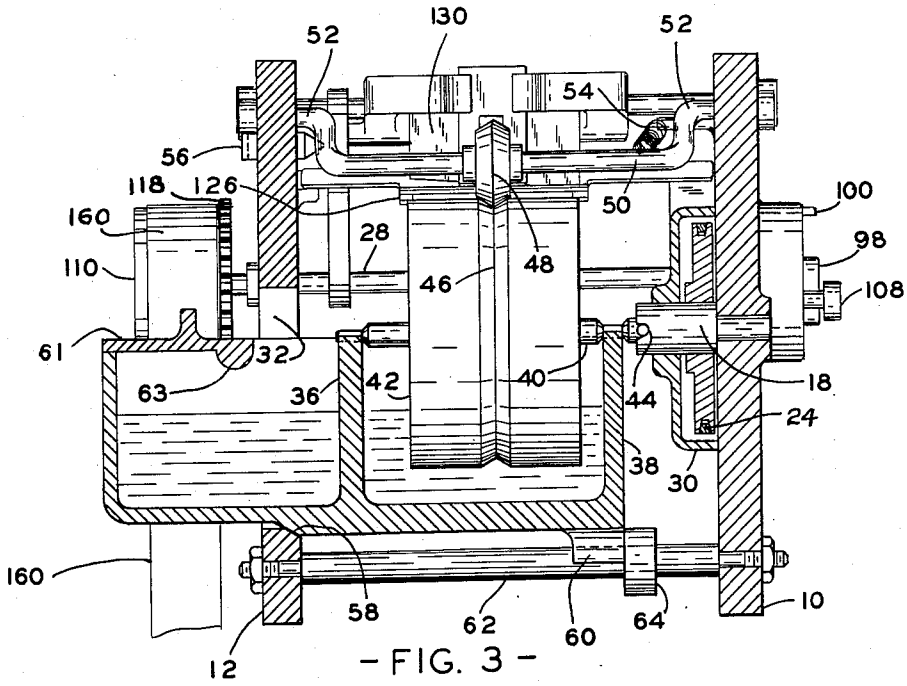
FIG. 2

INVENTOR.
ERHARD KLUG
BY
Joseph Montgomery
ATTORNEY

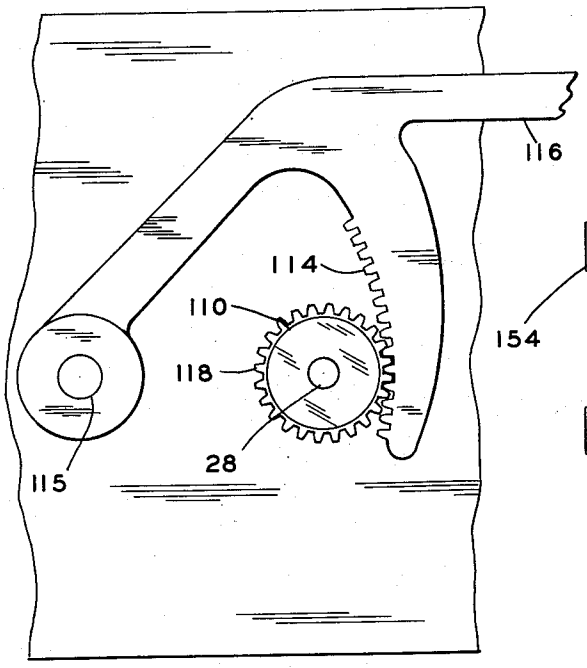
Jan. 27, 1953 E. KLUG 2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

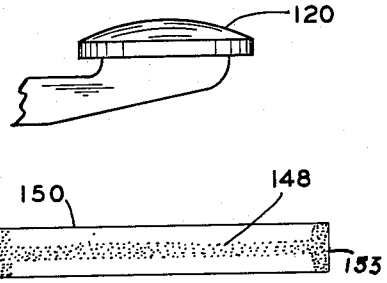
Filed June 17, 1948 5 Sheets-Sheet 3



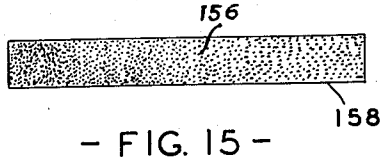
- FIG. 3 -



- FIG. 4 -



- FIG. 14 -



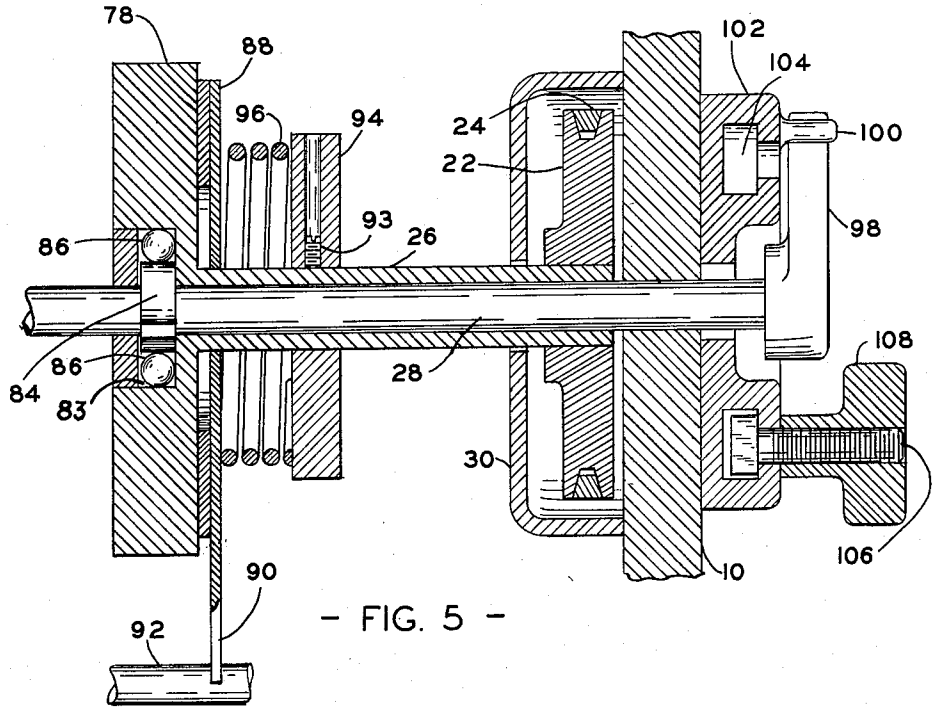
- FIG. 15 -

INVENTOR.
ERHARD KLUG
BY
Joseph Montgomery
ATTORNEY

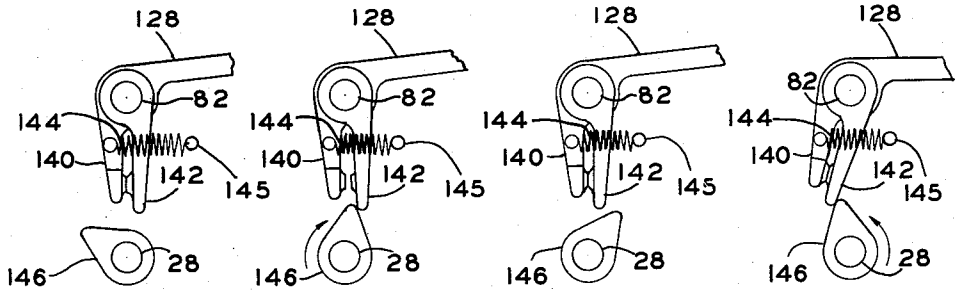
Jan. 27, 1953 E. KLUG 2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

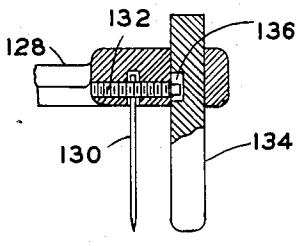
Filed June 17, 1948 5 Sheets-Sheet 4



- FIG. 5 -



- FIG. 9 - - FIG. 10 - - FIG. 11 - - FIG. 12 -



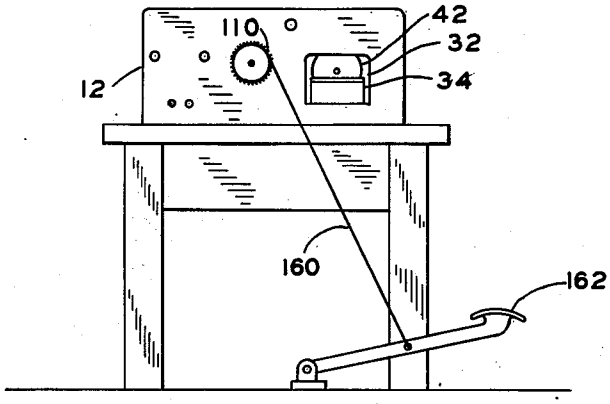
- FIG. 13 -

INVENTOR.
ERHARD KLUG
BY
Joseph Montgomery
ATTORNEY

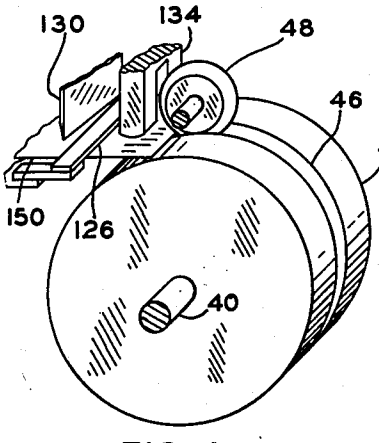
Jan. 27, 1953 E. KLUG 2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

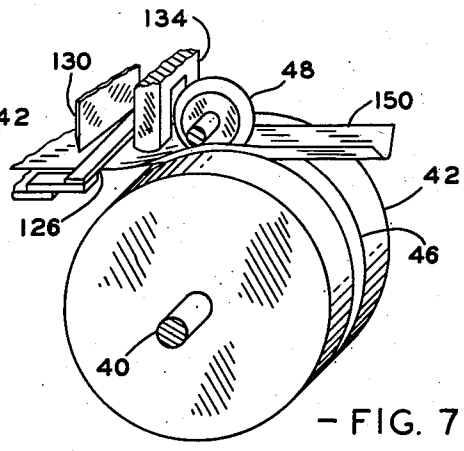
Filed June 17, 1948 5 Sheets-Sheet 5



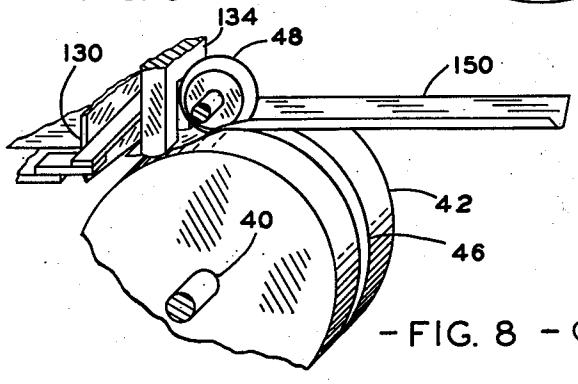
- FIG. 16 -



- FIG. 6 -



- FIG. 7 -



- FIG. 8 -

INVENTOR.
ERHARD KLUG
BY
Joseph Montgomery
ATTORNEY

Patented Jan. 27, 1953 2,626,588

UNITED STATES PATENT OFFICE

2,626,588

APPARATUS FOR COATING AND DISPENSING TAPE

Erhard Klug, Montvale, N. J.

Application June 17, 1948, Serial No. 33,564

4 Claims. (Cl. 118—41)

1

This invention relates to improvements in tapes, the method of forming, treating and dispensing the same, and machine or apparatus for applying adhesive to tape or the like, and for dispersing tape in sections.

Machines or devices for applying adhesive to one face of a web, tape or the like, as at present known, employ means wherein an adhesive reservoir or tank is equipped with an adhesive applying roller for applying adhesive from the reservoir to the web or tape as the latter is fed over the surface of the roller, the tape being stripped from the roller by means of one or more strippers, and sections of the tape being removed from the machine by the fingers of an operator and subsequently applied to an article. The strippers also perform the undesirable function of removing appreciable quantities of the adhesive from the tape during the stripping operation and which tends to accumulate upon the strippers to form an objectionable mass of adhesive thereon. Feeding of the tape through the machine in this manner results not only in the side edges of the tape being coated with the adhesive, but also the margins of the opposite face of the tape by a spreading of the adhesive, which is very undesirable. When the operator grasps the tape, in removing the same from the machine and applying it to the article, the fingers, of a necessity, contact the adhesive with the result that the tape tends to adhere to the operator's fingers and require removal therefrom and frequent cleaning of the fingers. Furthermore, when the tape is applied to the article, the adhesive spreads beyond the confines of the tape and over adjacent areas of the article to provide an untidy appearance and undesirable result. Application of tape thus coated to an article involves a rather slow and tedious operation and large waste of adhesive. Dispensers for pre-gummed tape are also presently employed, but in spite of the disadvantages of devices which apply glue to the tape during the dispensing of the tape, the latter type of dispenser is preferred because of the great savings in the amount of glue applied to the tape by the latter devices, as compared with the pre-gumming of tapes.

The tape of the present invention has many uses among which is in the laminating of transformer coils, and the like, where it is not essential to use a tape having its entire article engaging face coated with adhesive in order to obtain satisfactory results.

In actual practice, the tape of the present invention, which is provided with a partially coated face, produces more satisfactory results for the reasons that it can be removed from the machine by an operator without adhesive being transferred to the operator's fingers; that it may be quickly applied to the article without a spreading of the adhesive beyond the confines of the tape and over adjacent areas of the article; that it effects a material saving of adhesive; and that it eliminates untidiness and often discoloration of the exposed tape and adjacent areas.

2

One of the objects of the present invention resides in the provision of a tape and method of treating the same wherein one face of the tape is partially coated with adhesive in a manner whereby to overcome the undesirable features and disadvantages of tape having its article engaging face entirely coated with adhesive.

Another object of the present invention resides in the provision of an apparatus which is so constructed and arranged as to apply adhesive to a predetermined area on one face of the tape.

Another object is the provision of an apparatus for automatically applying adhesive to the tape over transverse zones and a longitudinally extending zone and materially within the marginal confines of one face of the tape to preclude transfer of adhesive to an operator's fingers and spreading of the adhesive beyond the confines of the margins.

Another object is the provision of an apparatus for applying adhesive to one face of the tape in a predetermined pattern and wherein the tape is fed substantially tangentially from the adhesive applying roller, thus eliminating strippers or scrapers.

A further object of the present invention resides in the provision of an apparatus of the character indicated which is so constructed and arranged as to be loaded with various transverse sizes of tape and wherein the tape will assume a proper feeding position with respect to the adhesive applying roller.

A further object resides in the provision of an apparatus of the character indicated which is equipped with a readily removable and replaceable self-adjusting adhesive reservoir and adhesive applying roller, and which can be readily dismantled, without the use of tools, for cleaning, repairing and replacement of parts.

A further object is to provide an apparatus of the character indicated wherein the tape is intermittently fed in desired lengths from the adhesive applying roller and tangentially therefrom, whereby the tape is released from the roller

in a relatively "stiff" strip and "presented" to the operator, without curling.

A still further object resides in the provision of an apparatus capable of use as a dispenser for pre-gummed tape and/or pressure sensitized tape, as well as tape to which adhesive is applied during the dispensing operation; and wherein the tape, whether of the pre-gummed or pressure sensitized type will be dispensed by "presenting" a strip to the operator in the manner just mentioned.

A still further object is to provide an apparatus of the character indicated which is simple in construction, durable in use, economical in manufacture and efficient in operation.

Other and further objects of the present invention will be manifest from the following description and the accompanying drawings, in which drawings:

Fig. 1 is a top plan view of an adhesive applying machine constructed in accordance with the present invention;

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary side elevation of the machine and illustrating the operating means thereof;

Fig. 5 is a sectional view taken substantially on the line 5—5 of Fig. 2;

Figs. 6, 7 and 8 are detailed perspective views of the adhesive applying roller and correlated components for treating the tape;

Fig. 9 is a detailed sectional view taken on the line 9—9 of Fig. 1 and illustrating the relative relationship of the components for operating the tape severing means during one phase of the operation;

Figs. 10 to 12, inclusive, are views similar to Fig. 9 but illustrating other phases of the operation;

Fig. 13 is a detailed sectional view of the tape severing means and applicator;

Fig. 14 is a plan view of a section of the tape after having adhesive applied thereto;

Fig. 15 is a view similar to Fig. 14 but illustrating, in enlargement, a modified form of tape; and

Fig. 16 is a side elevation of the machine and illustrating a modified form of means for operating the machine, a portion of which means is also shown in Fig. 3.

Referring to the drawings in detail the machine of the present invention is equipped with a pair of spaced side frame members 10 and 12 which are connected together, at their rear end sections, by pairs of upper and lower rods 14 and 16 respectively. The front end section of the member 10, that is, the right end section as viewed in Fig. 1, has journaled therein a driven shaft 18 having fixed thereto a driven pulley 20 connected to a driving pulley 22 by means of a belt 24. The driving pulley 22 is fixed on a driving sleeve 26 rotatably mounted on a driving shaft 28 journaled in the side members 10 and 12 adjacent the rear end sections thereof, that is, the left end section as viewed in Fig. 1, a guard 30 being provided about the pulleys 20 and 22 and the belt 24 and which guard is secured to the member 10 in any convenient manner.

Substantially oppositely disposed in confronting relation with the shaft 18, the side member 12 is formed with an opening 32 (Figs. 1 and 16), through which extends a reservoir or adhesive

tank 34, the latter being provided with a central bearing standard 36 (Fig. 3). The side wall of the reservoir, adjacent the side member 10, constitutes a bearing standard 38 which coacts with the standard 36 to rotatably support, in slots formed in their upper faces, diametrically reduced end portion of a roller shaft 40 on which is fixed a transfer or adhesive applying roller 42. The end of the shaft 40, adjacent the standard 38 is provided with a transversely extending pin 44 having detachable seating engagement with a transverse slot formed in the confronting face of the shaft 18 whereby rotary movement of the shaft 18 is imparted to the roller by the shaft 40.

The periphery of the adhesive applying roller 42 is formed with a central circumferentially extending substantially V-shaped slot or groove 46 for cooperation with a V-shaped former roller 48 rotatably mounted on the central section of a substantially U-shaped yoke 50 having lateral extending end sections 52 journaled in bearings carried by the members 10 and 12 to permit raising and lowering of the former roller 48 relative to the adhesive applying roller 42. A spring 54 is connected between the central portion of the yoke 50 and the member 10 for urging the former roller 48 towards the roller 42 when in lowered position and to maintain the former in spaced relation with the roller 42 when in raised position as illustrated respectively in full and dotted lines in Fig. 2. An adjustable screw 56 is carried by the member 12 and has a tapered end for engaging the yoke 50 to limit the lower position of the former 48. It is to be understood that while I have illustrated and described a V-shaped slot 46 and a V-shaped former roller 48, the cooperating surfaces of the rollers 42 and 48 may be curved, whereby similar results will be accomplished.

In order to support the reservoir 34 between the members 10 and 12 and maintain the same in a position to insure alignment of the shafts 18 and 40, the underface of the reservoir is formed with an angularly related surface which engages, as at 58, a similar surface defining the opening 32, and with a boss 60, adjacent the standard 38, which seats on a tie-rod 62 connecting the side members 10 and 12 together. The tie rod 62 is provided with a collar 64 which engages the boss 60 to facilitate positioning of the reservoir 34 and preclude lateral and inward shifting thereof after seating, as illustrated in Figs. 2 and 3 of the drawings.

The reservoir 34 is readily removable from the machine, and by reason of the angularly related surfaces on the bottom of the reservoir and the frame member 12, the reservoir when replaced will automatically move into position with the boss 60 engaging the collar 64 and the pin 44 engaging the transverse slot in the face of the driven shaft 18, as shown in Fig. 3. When the reservoir is in that position its cover 61 may be raised about its pivot 63 on the walls of the reservoir, whereby the reservoir may be filled with adhesive without removing the reservoir from the machine for that purpose.

The upper rods 14 are provided with spaced circumferentially disposed slots 68 for supporting and accommodating therein the upper front and rear corner sections of a pair of spaced tape centralizing guide or holder plates 70 for receiving therebetween a roll 72 of tape supported on the lower rods 16 with the feeding or leading run 74 of the tape being trained over the front rod 14 as clearly illustrated in Figs. 1 and 2 of the

drawings. The rear corner sections of the plates 70 are provided with openings 76 through which the rear rod 14 extends, the openings 76 being of an appreciable greater diameter than the rods 14 to permit shifting of the plates on the rods and seating thereof within the confines of selected slots 68 in accordance with the width of the roll, thus, enabling the plates 70 to embrace the sides of the roll 72 and maintain centralization thereof with respect to a feed roller 78 of a tape feeding mechanism. The front faces of the front corner sections of the plates are inclined downwardly and rearwardly for seating within the complementary slots 68 of the front rod 14, the inclination of the front faces, by engagement with the front rod 14 and the weight of the plates, serve to maintain the rear corner sections within the confines of the slots of the rear rod 14.

The tape feeding mechanism functions to intermittently feed tape to the roller 42 and comprises the feed roller 78 and a cooperating pressure roller 80 mounted on a shaft 82 journaled in the members 10 and 12, the roller 80 serving to maintain the tape in engagement with the roller 78 to effect feeding of the tape upon rotation of the roller 78. The roller 78 constitutes a component of a uni-directional clutch mechanism and is fixed to the sleeve 26 and formed with a closed cylindrical chamber 83 in which is disposed a toothed member 84. The member 84 functions to cause binding engagement of a plurality of spring-pressed balls 86, carried within a chamber 83, with the circumferential face of the chamber to effect rotation of the feed roller 78 for feeding the tape towards the roller upon clockwise rotation of the shaft 28, and for permitting idling of the feed roller 78 upon counterclockwise rotation of the shaft 28 to preclude feeding of the tape, as viewed in Fig. 2.

In order to obtain uniform feeding of the tape and idling of the roller 78 upon clockwise and counterclockwise rotation of the shaft 28, one radial face of the roller 78 has mounted in engagement therewith a pair of tensioning plates 88 with the outermost plate provided with an extension having a lower end section 90 embracing a tie-rod 92 connected between the members 10 and 12, the lower end section 90 being slidable axially on the rod 92. The sleeve 26 has adjustably mounted thereon, by means of a set screw 93, a spring tensioning collar 94 engaging one end of a coil spring 96 coiled about the sleeve 26, the other end of the spring 96 engaging the outermost plate 88. The tension of the spring 96 may be varied by adjusting the collar 94 relative to the sleeve 26 and thus control the rotation of the feed roller 78 at a predetermined rate and insure idling of the roller 78 when the shaft 28 is rotated counterclockwise.

To limit clockwise rotation of the sleeve 26 and the shaft 28 and thus control the amount of tape fed to the adhesive applying roller 42, one end of the shaft 28 has fixed thereto an arm 98 which engages a pin 100 disposed in its path and which pin is carried on the outer face of a ring 102 mounted on the member 10 and about the shaft 28. The outer face of the ring 102 is formed with a T-shaped slot 104 in which is mounted the head of a bolt 106 having its shank extending outwardly through the slot. The shank has threaded thereon a binding or thumb-nut 108 formed with a sleeve for engaging the arm 98, whereby clockwise rotation of the sleeve 26, the shaft 28 and the feed roller 78, is limited. By adjusting the bolt within and about the slot 104, the thumb-nut 108 may be positioned to increase or decrease the amount of rotation of the shaft 28, and consequently the feed roller 78 whereby to vary the feed and consequently the length of the tape accordingly when the shaft is rotated in a clockwise direction.

The opposite end of the shaft 28 has fixed thereon a sleeve or drum 110 (Fig. 1) in which is mounted a coil spring 112 having one end connected to the drum and its opposite end connected to the side member 12 whereby clockwise rotation of the drum by the shaft 28 effects winding of the spring 112. As illustrated in Figs. 1 and 4, the peripheral face of the drum 110, adjacent its inner side, is provided with gear teeth whereby the drum constitutes a gear or pinion 118 which meshes with an arcuate gear rack 114 depending from an operating arm 116, at one end of the latter and adjacent the pinion 118. The latter end of the arm 116 is pivoted to the member 12 at 115 and its opposite end terminates in a finger-piece 120, whereby by applying pressure to the finger-piece 120, the arm 116 is pivoted downwardly and causes the rack 114 to rotate the drum or gear 118 in a clockwise direction, which in turn causes feeding of the tape to the roller 42. When the arm 116 is released, the spring 112 rotates the drum 110 in the opposite direction and which raises the arm 116 and effects idling of the feeding roller, by reason of the uni-directional clutch mechanism, as heretofore described.

Supported by the members 10 and 12 and disposed between the rollers 42 and 78 is a platen 122 over which the run 74 is fed, a platen guide 124 being loosely pivoted to the shaft 82 and disposed over the platen adjacent the roller 78. The guide 124 engages the run 74 and serves to maintain the run in pressed relation with the platen and to tension the run thereon. The front end of the platen 122 is provided with a transverse guide member 126 under which the run is fed from the platen to between the feed roller 42 and the former roller 48.

Tape severing means are employed for severing the tape into predetermined lengths, and which comprises a U-shaped frame 128 having its transverse portion equipped with a detachable knife or cutter 130 secured thereto by a screw 132, which knife cooperates with the guide member 126 for severing the tape, as hereinafter more fully described. The transverse portion of the frame 128 has slidably secured thereto a transversely disposed applicator 134 formed with a slot 136 receiving the end of the screw 132 to permit shifting of the applicator 134 relative to the frame when engaging the tape and disposing the severed end thereof into engagement with the peripheral face of the roller 42. The longitudinally extending side portions or arms of the frame 128, which are connected together at their front ends by the transverse portion, are provided, at their rear ends, with the bearings 138 which accommodate the ends of the shaft 82 in fixed relation therewith. One of the bearings 138, adjacent the side member 12, is formed with a downwardly and rearwardly extending laterally offset finger 140 for engagement with a trigger 142 loosely mounted on the shaft 82. The finger 140 has connected thereto one end of a coil spring 144 which has its opposite end connected to the side member 12 at 145, the spring 144 functioning to pivot the frame upwardly with respect to the roller 42, it being understood that suitable means may be employed to limit the upward movement

of the frame to a desired position. Adjacent the trigger 142, the shaft 28 has fixed thereto a cam arm 146 for operating the trigger into engagement with the finger to effect lowering of the frame, against the tension of the spring 144, for severing the tape as hereinafter more fully described.

In operation of the machine, assuming that the leading end of the run of the tape is disposed adjacent the knife and that the frame 128 is in raised position, the operating arm 116 is pivoted downwardly and causes clockwise rotation of the driving shaft 28, movement of the arm 98 and winding of the spring 112 within the drum 110, with the result that the clutch mechanism is rendered effective and thus rotates the sleeve 26 in a clockwise direction, whereby similar movements are imparted to the feed roller 78, and the adhesive applying roller 42 through the pulleys 20 and 22, the belt 24 and the shaft 18 as heretofore described. Clockwise rotation of the feed roller 78, in cooperation with the pressure roller 80, serves to effect feeding of the tape run 74 over the platen 122 and causes the leading end of the run 74 to be fed towards and between the adhesive applying roller 42 and the former roller 48, as illustrated in Figs. 6 to 8 inclusive.

As the leading edge of the tape reaches the adhesive applying roller 42 and before it is engaged by the former roller 48, it will be substantially in the position illustrated in Fig. 6, with the entire width of the tape in contact with the roller 42, whereby a transverse zone or stripe of adhesive 153 (Fig. 14) will be applied to the leading edge of the tape.

As the tape is fed between the roller 42 and the former roller 48, the former roller 48 functions to force the tape centrally within the V-shaped groove 46 of the roller 42 whereupon the tape assumes a shape in conformity with the shape of the slot 46, i. e., V-shaped, and is fed substantially tangentially away from the roller 42 due to the tendency of the tape when thus formed to resist arching and resist adhering to the roller 42, as illustrated in Fig. 7, which tangential feeding in effect presents the tape to the operator. Inasmuch as the tape is of an appreciable greater width than the combined depth of the roller faces defining the slot 46 considerably wide margins of the tape will extend upwardly beyond the peripheral face of the roller 42 and thus adhesive carried by the peripheral face of the roller within the slot 46 will be applied to a central zone 148 on one face of the tape and within the confines of the margins thereof, as illustrated in Fig. 14. As the shaft 28 continues to rotate, the arm 98 will engage the pin 100 and thus preclude further clockwise rotation.

During rotation of the shaft 28, the cam arm 146 will move from the neutral position illustrated in Fig. 9 and engage the trigger 142, as illustrated in Fig. 10, and cause the trigger to pivot away from the finger 140 until the trigger is released from engagement with the cam arm 146 by continued rotation of the cam arm. Release of the trigger permits the latter to assume its initial neutral position as illustrated in Fig. 11. The cam arm 146, upon disengagement with the trigger 142, terminates its clockwise rotation due to engagement of the arm 98 with the pin 100, as illustrated in Fig. 5, whereupon, counterclockwise rotation is imparted to the cam arm 146 by a reverse movement of the shaft 28 obtained by the unwinding of the spring 112. When the cam arm 146 is thus rotated in a counterclockwise direction, it engages the opposite side of the trigger 142 and actuates the latter into engagement with the finger 140, as illustrated in Fig. 12. It will be understood that up to this point in the operation, that is, up to the end of the tape feeding operation, the frame 128 carrying the knife 130 remains in raised position. Continued counterclockwise rotation of the cam arm 146, under the action of the spring 112, serves to effect downward pivoting of the frame 128 against the tension of the spring 144. As the frame 128 is pivoted downwardly, the knife 130 cooperates with the guide member 126 to transversely sever the tape to provide a removable section 150 thereof of a predetermined length, the lower face of which is provided with the central longitudinal adhesive zone 148, as previously described. As the frame 128 is lowered, the applicator 134 engages the upper face of the tape to dispose a transverse portion of the lower face thereof, immediately forward of the line of severance, against the peripheral face of the roller 42, as illustrated in Fig. 8, to provide the lower face at the trailing end of the strip with a transverse zone 154 having adhesive applied thereto and which, like the zone 153 at the leading end of the tape, extends the entire width of the section and coacts with the longitudinal zone and the transverse zone 154 to provide a substantially H-shaped adhesive area as illustrated in Fig. 14. As the cam arm 146 continues to operate, the applicator 134 maintains the tape in engagement with the roller, the applicator shifting relative to the frame 128, by reason of the slot 136, upon continued downward movement of the frame. At substantially this phase in the operation, the cam arm 146 in its counterclockwise rotation disengages from the trigger 142 and thus permits return of the trigger and the finger 140 to the neutral position, by the action of the spring 144, as illustrated in Fig. 9, thereby effecting return of the frame to the raised position for another cycle of operation. During the foregoing described operation of the knife or cutter 130 and applicator 134, the feed roller 78 and pulley 22 remain idle and counterclockwise movement of the shaft 28 continues until the finger 98 engages the thumb-nut 108 whereupon the machine is then ready to again treat the tape in the manner hereinbefore described, it being understood that the operating arm 116 has been operated to raised position by the reverse movement of the drum 110 or gear 118, and that the severed section 150 of the tape is manually removed from the machine without the fingers of the operator coming into contact with the adhesive thereon.

As will be seen from Fig. 8, the tape is held rigid and prevented from curling by reason of the engagement thereof between the former roller 48 and the V-shaped groove 46 in the adhesive applying roller 42, whereby the operator may readily grasp the free end of the treated tape section, which after severance will remain substantially stiff and will not curl, as does sections dispensed by conventional apparatus.

If desired, a web or tape equal in width to the total of the combined faces of the V-shaped groove may be employed, instead of the tape illustrated in Fig. 14, whereby to provide a tape section 156 having one face completely covered by adhesive 158, as illustrated in the enlarged view in Fig. 15 of the drawings. Furthermore,

by variation of the slot 46 and former roller 48, the width of the zone may also be varied to conform to a predetermined pattern. Likewise, the width of the applicator may be modified to vary the width of the transverse area 154.

As illustrated in Fig. 16 of the drawings, the drum 110 may be actuated by the foot of the operator in lieu of the manually operated arm 116. In this instance, the drum 110 has attached thereto the upper end of the flexible member 160, for instance, a fabric web having its lower end connected to a foot treadle 162 whereby, upon downward movement of the treadle the drum is rotated clockwise to operate the machine and wind the spring 112, in the same manner as accomplished upon depressing the arm 116. Release of the foot treadle 162 permits counterclockwise rotation of the drum 110 by the spring and winding of the upper end of the member 160 about the drum to raise the treadle 162 to initial operating position. It is to be understood that the drum 110 may be provided with the teeth 118 at one end thereof leaving space for attaching the flexible member 160, or if desired separated drums may be provided to be utilized with their respective operating mechanisms.

From the foregoing it will be seen that I have provided a novel adhesive tape, a novel method of forming the same, novel mechanism for applying adhesive to one face of the tape, as well as a novel tape dispensing device. It will also be seen that the method and apparatus of my invention produces a tape wherein objections to and disadvantages of prior adhesive tapes, and machines for forming the same is entirely eliminated.

It will also be seen that conventional stripners for removing the tape from the adhesive applying roller are rendered unnecessary, and that the tape is automatically dispensed while being removed from the roller and is presented to the operator, in such a manner that the same remains relatively stiff during and after severance of a strip thereof, and wherein unglued portions of the faces may be readily gripped.

While I have illustrated and described a preferred embodiment of my invention, it is to be understood that I do not wish to be limited to the precise construction and arrangement of parts illustrated and described, as obviously various modifications and changes may be made therein without departing from the spirit and scope of my invention.

What I claim is:

1. A machine for applying stripes of adhesive to a strip of material comprising in combination, a support for a roll of the strip material, means for advancing the strip material from said support, means for guiding the advancing strip along a substantially straight path, an adhesive transfer roller positioned to project into the path of the advancing strip and formed with an outer cylindrical surface at least as wide as the strip and having a central relatively narrow peripheral groove therein, a former roller adjacent said transfer roller and having an axial width substantially equal to the width of said groove, an adhesive tank below said transfer roller in which the transfer roller is partly immersed, said former roller having a peripheral rib adapted to press the strip into the groove on the transfer roller to effect the transfer of a longitudinal stripe of adhesive from the transfer roller to the strip and to flex the side edge portions of the strip in a direction away from the transfer roller to prevent the transfer of adhesive to said side edge portions, intermittently operative cutting means located adjacent the path of the strip between said support and said transfer roller for severing the strip into lengths, and a transversely extending applicating member connected to said cutting means for operation with the latter and mounted between said cutting means and said former roller to move normal to said path of the strip into pressing engagement with the strip across substantially the entire width of the latter for pressing the trailing ends of the side edge portions of a severed length of the strip against the surface of said transfer roller so that a transverse stripe of adhesive is transferred by the latter to the trailing end of each severed length of the strip.

2. In an adhesive applying machine; the combination comprising a support for a roll of strip material, strip advancing means for drawing the strip material from the roll, an adhesive transfer roller in the path of the advancing strip and having a cylindrical surface at least as wide as the strip and formed with a central, peripheral groove narrower than the width of said surface, means for applying adhesive to the surface of said transfer roller, a forming roller adjacent said transfer roller and having a width substantially equal to the width of said groove, said forming roller having a peripheral rib extending into said groove so that the advancing strip fed between said rollers will be pressed into said groove to flex the side edge portions of the strip away from the surface of said transfer roller thereby effecting transfer of adhesive from the latter to the strip in the form of a narrow central longitudinal stripe, a frame mounted adjacent the path of the advancing strip for movement in the direction normal to said path toward and away from the latter, a cutting blade mounted on said frame to move across the path of the advancing strip at a location between said rollers and said support when said frame is moved towards said path thereby severing the strip, an applicator member having a width substantially greater than that of said forming roller, means mounting said applicator member on said frame in a manner permitting limited movement of the applicator member relative to said frame, said applicator member being located between said cutting blade and said rollers to move into pressing engagement with the strip across substantially the entire width of the latter for pressing a laterally extending section of the flexed strip against said surface of the transfer roller when said frame is moved toward the path of the strip, and means operatively connected to said frame for intermittently moving the latter toward and away from the path of the strip.

3. A machine for applying stripes of adhesive to a strip of material comprising in combination a support for a source of supply of strip material, means for advancing the strip material from said support, means for guiding the advancing strip material along a predetermined path, an adhesive transfer roller positioned to project into said path of the advancing strip material and formed with an outer cylindrical surface at least as wide as the strip material and having a central relatively narrow peripheral groove therein, means depositing adhesive on said outer surface of the transfer roller, a former roller adjacent said transfer roller and having an axial width substantially equal to the width of said groove,

said former roller having a peripheral rib thereon adapted to press the strip material into said groove on the transfer roller to effect the transfer of a longitudinal stripe of adhesive from the transfer roller to the strip material and to flex the side edge portions of the strip material in the direction away from said outer surface of the transfer roller to prevent the transfer of adhesive to said side edge portions, a transversely extending applicating member located between said support and said former roller and mounted to move in the direction substantially normal to said path of the strip material into pressing engagement with the strip material across substantially the entire width of the latter for pressing a selected laterally extending section of the flexed strip material against said surface of the transfer roller so that the latter transfers a transverse stripe of adhesive to the strip material at the selected section thereof, and means operatively connected to said applicating member for moving the latter toward and away from said path of the strip material.

4. A machine for applying stripes of adhesive to a strip of material comprising in combination, a support for a roll of the strip material, means for advancing the strip material from said support, an adhesive transfer roller positioned adjacent the path of the advancing strip and formed with an outer cylindrical surface at least as wide as the strip and having a central relatively narrow peripheral groove, a former roller adjacent said transfer roller in parallel alignment with the latter and having an axial width substantially equal to that of said groove, said transfer roller and former roller cooperating to engage the advancing strip at the opposite surfaces of the latter, an adhesive tank below said transfer roller in which the transfer roller is partly immersed, said former roller having a peripheral rib extending into said groove and adapted to press the strip into the groove on the transfer roller to effect the transfer of a longitudinal stripe of adhesive from the transfer roller to the strip and to flex the side edge portions of the strip in a direction away from the transfer roller to prevent the transfer of adhesive to said side edge portions, a transversely extending applicating member located between said former roller and said support and intermittently movable normal to and across the path of the advancing strip toward the surface of said transfer roller into pressing engagement with the strip across substantially the entire width of the latter for pressing selected parts of the side edge portions of the strip against said transfer roller so that the latter transfers a transverse stripe of adhesive to the selected parts of the strip after the strip is advanced and said longitudinal stripe applied thereto, and cutting means located between said applicator means and said support and connected to said applicating member intermittently movable across the path of the strip and severing the strip after a predetermined length thereof has been advanced, and operating means for intermittently moving said applicating member and cutting means simultaneously across the path of the strip whereby respectively to provide transverse stripes of adhesive at spaced locations along the length of the strip and to sever the strip along spaced transverse lines in back of the aforementioned transverse stripes.

ERHARD KLUG.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
Re. 22,972	Fritzinger	Feb. 10, 1948
684,788	Burbank	Oct. 22, 1901
842,823	White	Jan. 29, 1907
896,751	Norton	Aug. 25, 1908
1,085,331	Glen	Jan. 27, 1914
1,140,450	Etheridge	May 25, 1915
1,191,537	Schall	July 18, 1916
1,287,140	Torrance	Dec. 10, 1918
1,431,575	Emmert	Oct. 10, 1922
1,503,164	Kudler	July 29, 1924
1,543,183	Mortimer	June 23, 1925
1,712,604	Cosgrove	May 14, 1929
1,766,239	Zuendorf	June 24, 1930
1,887,460	Nelson	Nov. 8, 1932
1,931,369	Arnold	Oct. 17, 1933
1,959,293	Phillips	May 15, 1934
2,043,110	McLaurin	June 2, 1936
2,082,733	Gautier	June 1, 1937
2,086,126	Gilchrist	July 6, 1937
2,148,026	Krueger	Feb. 21, 1939
2,158,790	Arthur	May 16, 1939
2,199,753	Ohntrup	May 7, 1940
2,204,977	Von Nessen	June 18, 1940
2,237,327	Bell	Apr. 8, 1941
2,382,406	Enberg	Aug. 14, 1945
2,397,774	Buckley	Apr. 2, 1946

FOREIGN PATENTS

Number	Country	Date
665,044	France	Apr. 30, 1929