June 22, 1948. T. H. KRUEGER 2,444,019

METHOD AND APPARATUS FOR SERVING TACKY TAPES

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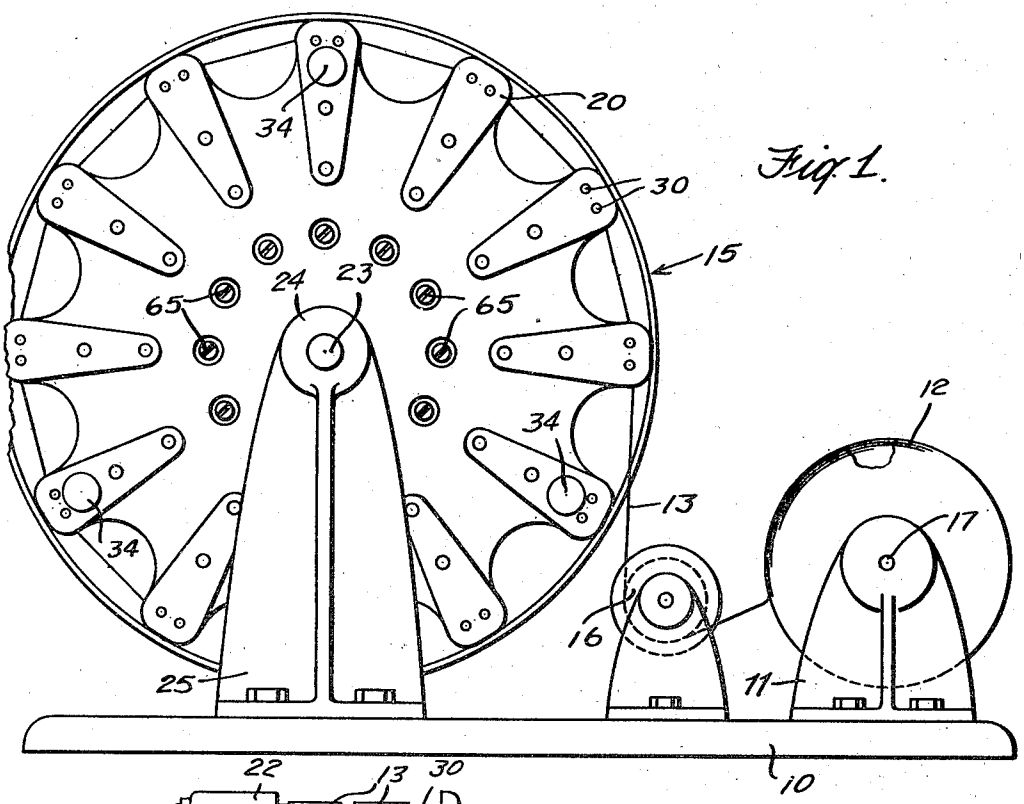


Fig. 1.

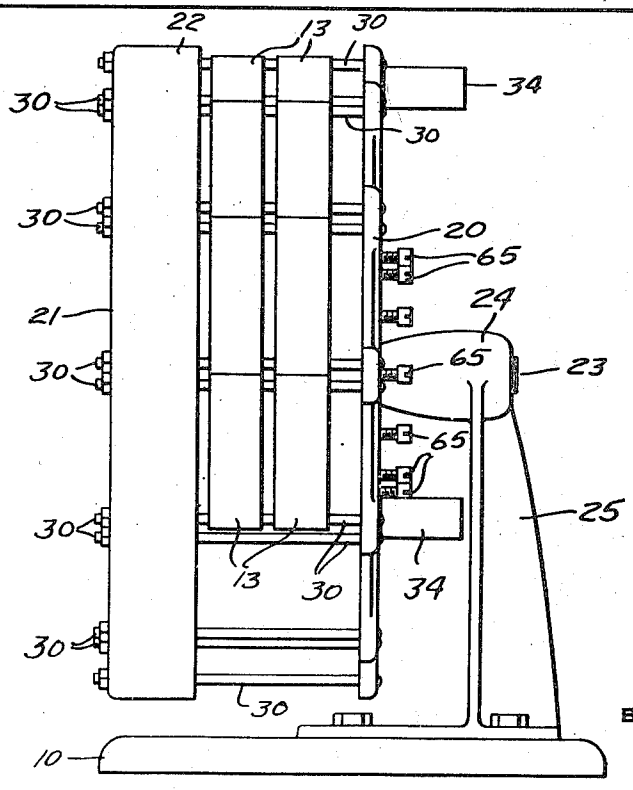


Fig. 2.

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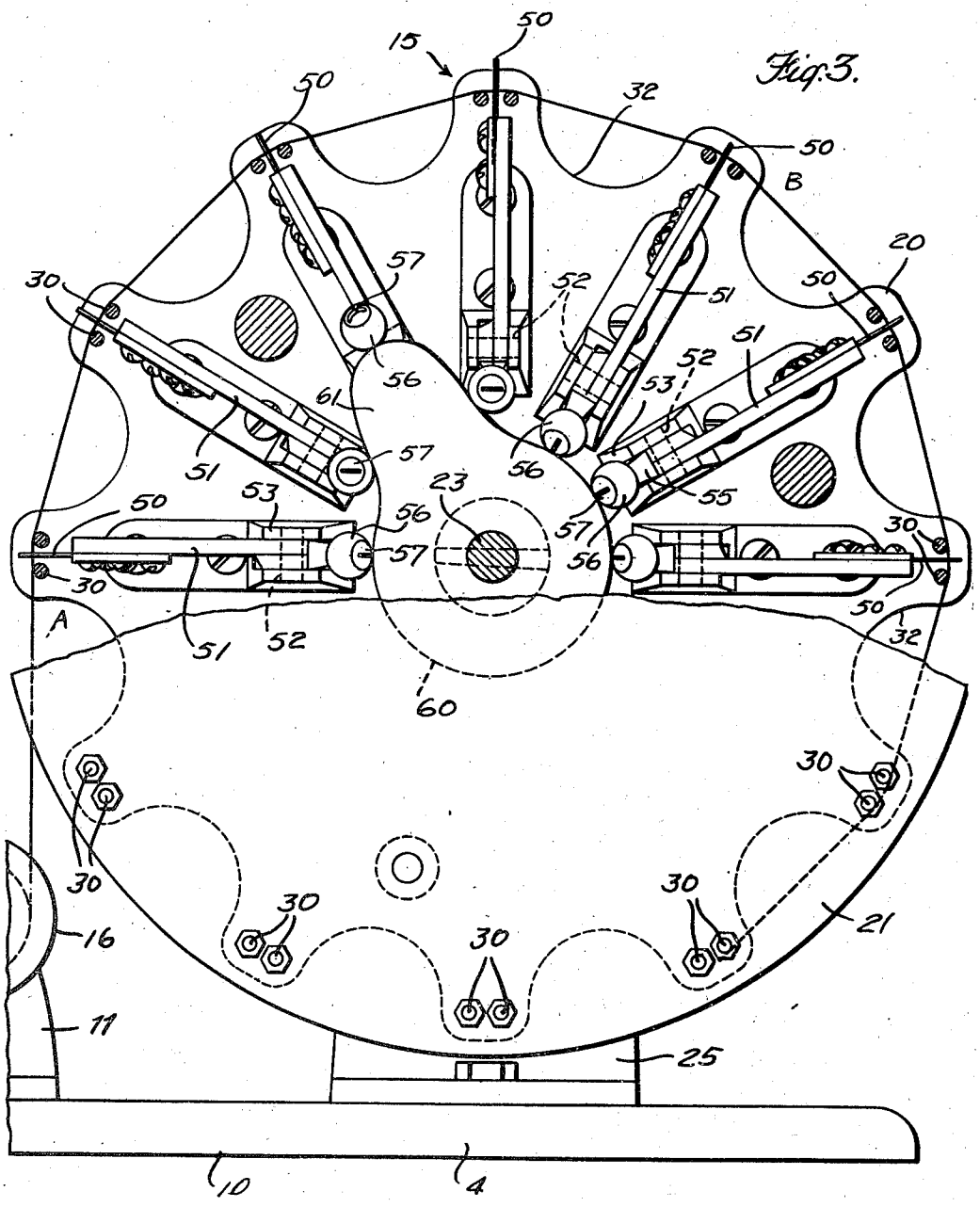


Fig. 3.

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METHOD AND APPARATUS FOR SERVING TACKY TAPES

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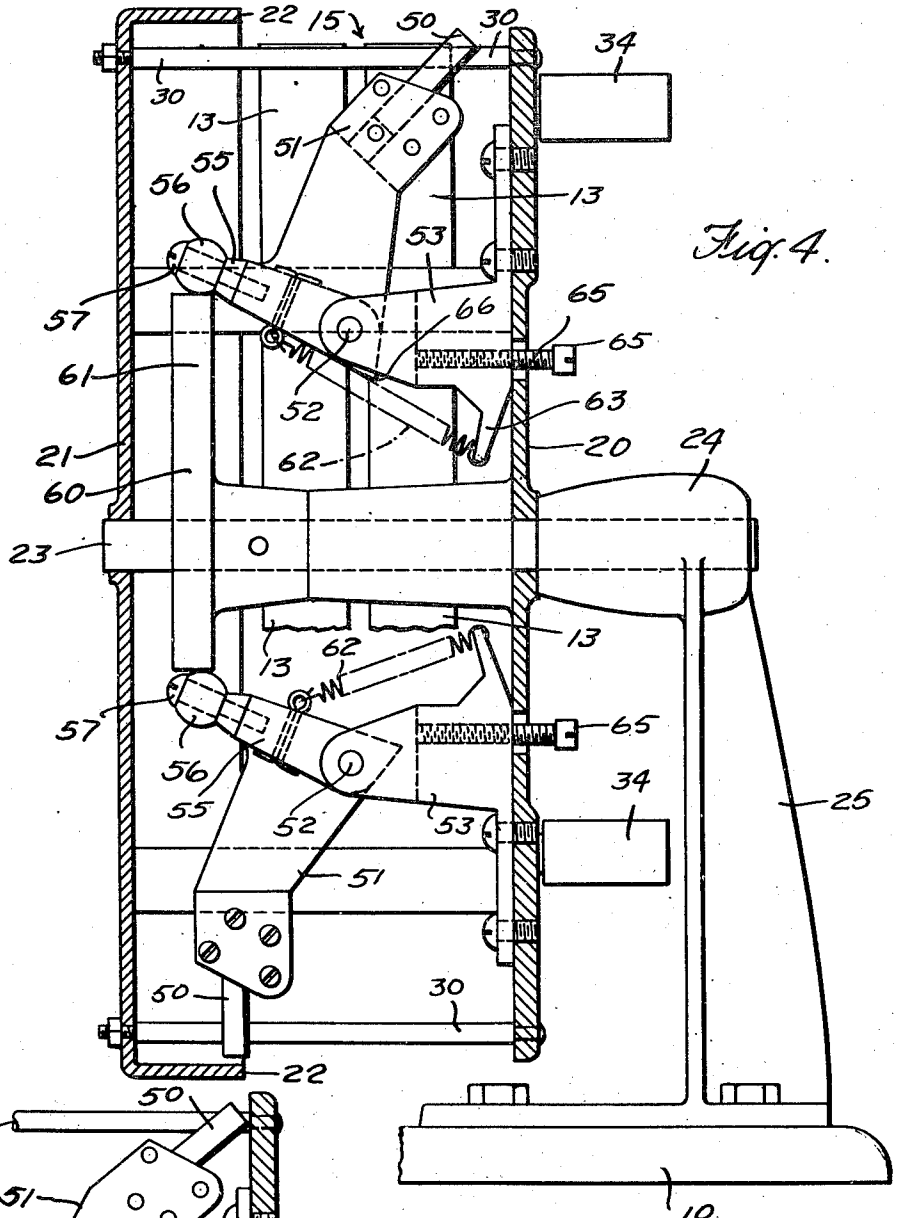


Fig. 4.

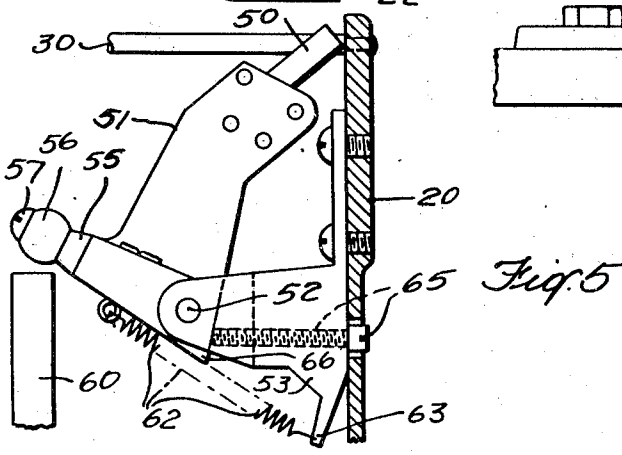


Fig. 5

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METHOD AND APPARATUS FOR SERVING TACKY TAPES

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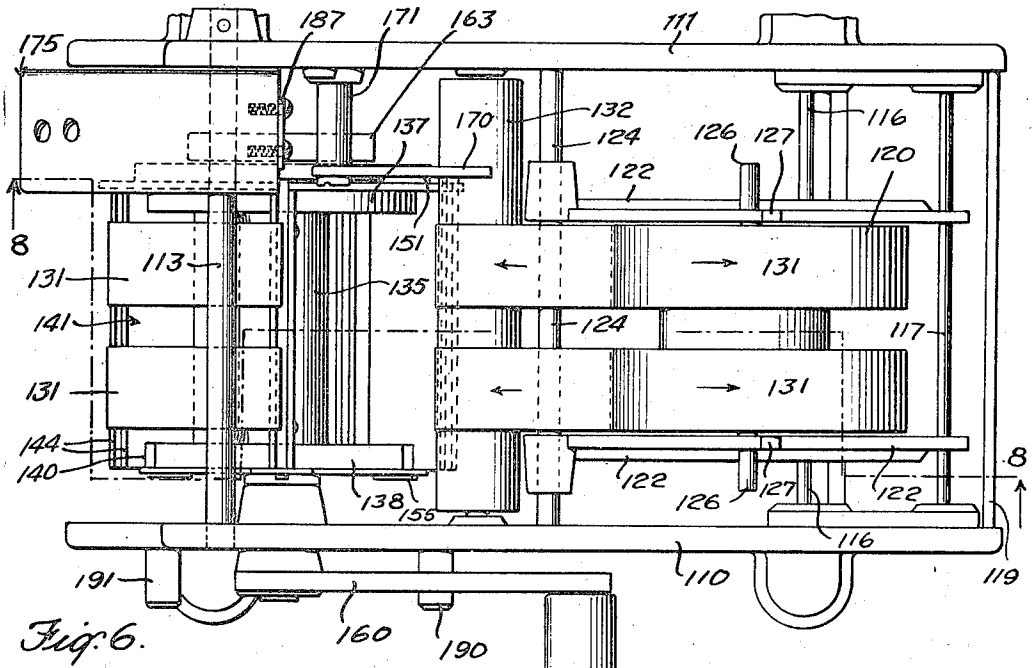


Fig. 6.

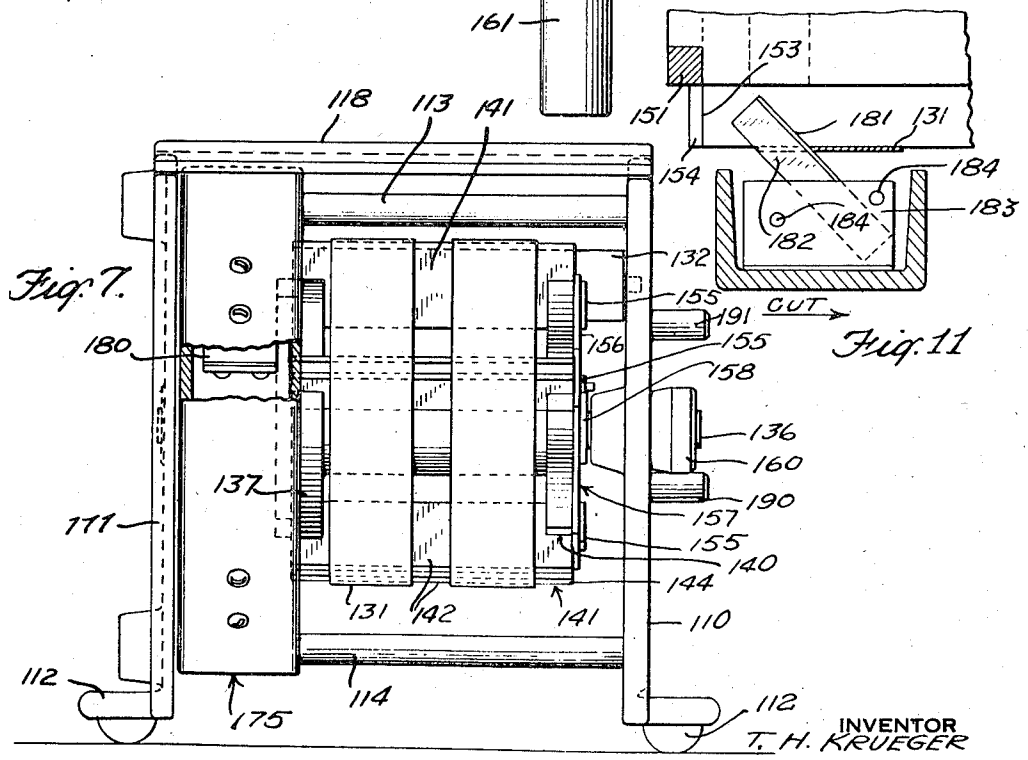


Fig. 7.

Fig. 11

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Fig. 8.

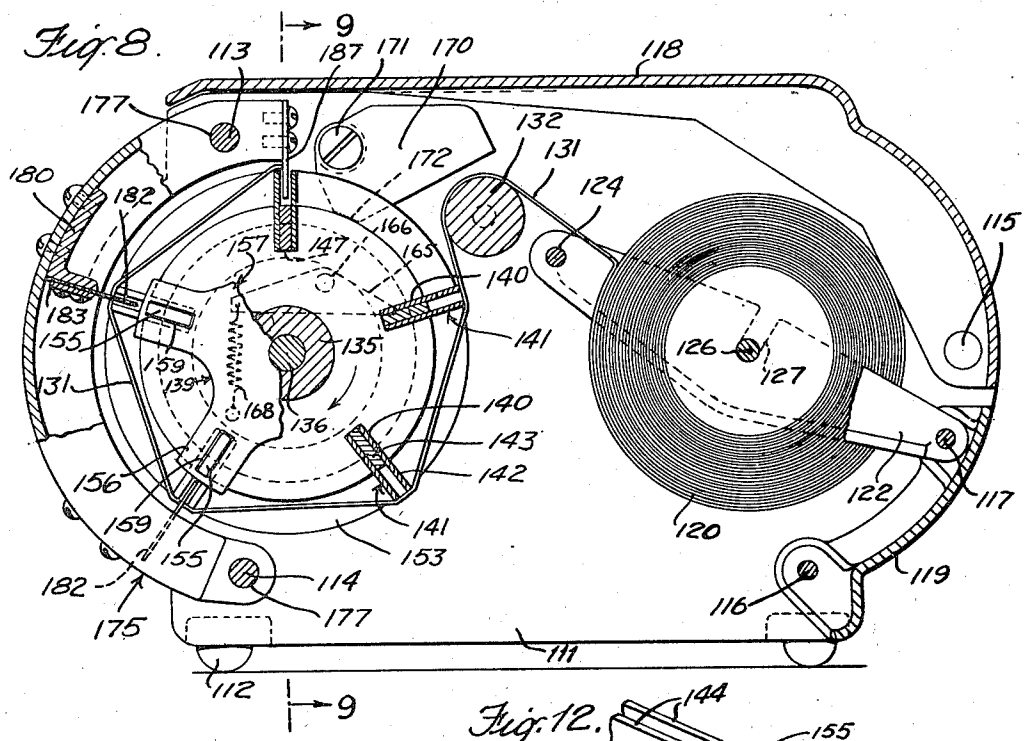


Fig. 12.

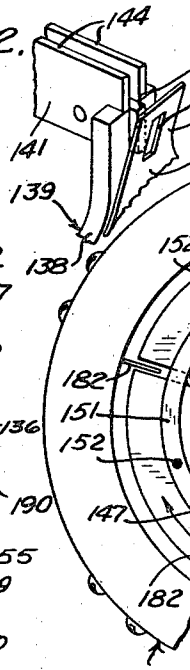


Fig. 10.

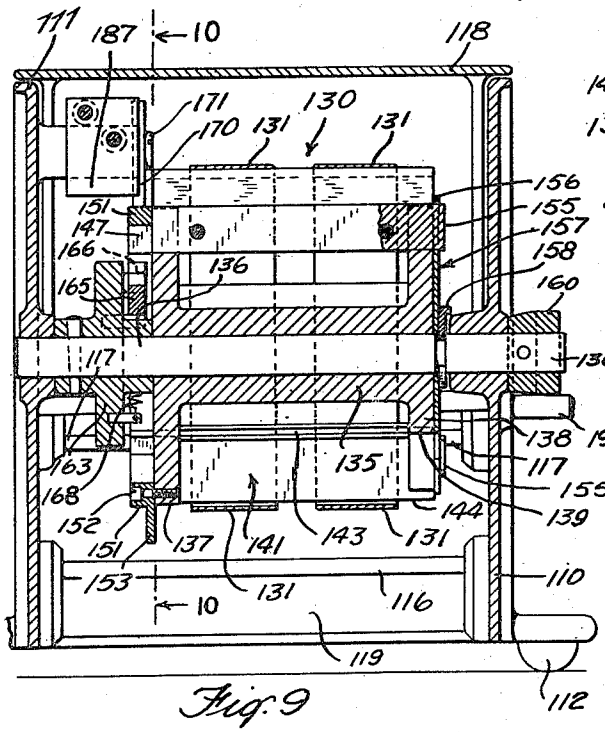


Fig. 9

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UNITED STATES PATENT OFFICE

2,444,019

METHOD AND APPARATUS FOR SERVING TACKY TAPE

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Application May 13, 1941, Serial No. 393,231

45 Claims. (Cl. 164—42)

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This invention relates to improved methods and apparatus for serving measured lengths of strips or tapes covered or impregnated with a pressure sensitive adhesive which is permanently tacky or non-drying. Strips or tapes of this character, which may be made of paper, Cellophane, cloth, foil or the like, treated or coated on one or both sides with an adhesive of the character referred to are difficult to handle because of their characteristic of adhering instantly to whatever object they come in contact with. Such strips or tapes are very different in their characteristics from strips or tape which are coated with adhesive which is dry and non-sticky until moistened. Many of the operations in the handling of such normally dry tapes, such as feeding and cutting, are performed on the tape before it is moistened, the moistening being usually the last operation performed on the tape before it is presented for removal by the operator. This greatly simplifies the feeding and cutting operations. Furthermore, even when the tape is moistened, particularly when the moisture is first applied, it has by no means the characteristics of normally tacky tape. When the moisture is first applied the adhesive coating on the tape does not at once become highly sticky and the body of the tape of paper or the like is still dry and retains its normal stiffness. The tape is therefore relatively easy to handle, as it passes over the moistening brush or roller and when it is removed from the machine. This is not true of the ordinary normally tacky tape which must at all times be handled with the greatest care to avoid getting it stuck in the machine, or to some other part of the tape from which it would be almost impossible to free it.

In accordance with the method of the present invention as practiced in the examples herein used to illustrate the same the normally adhesive or tacky characteristic of the tape is made use of for three distinct purposes. First, it is utilized as a means for affixing the tape to a movable feeding element which is moved to draw the tape from the roll; second, it is used to hold the tape firmly and usually tightly stretched between two supports while the portion of tape to be served is severed from the roll and third, it is utilized to hold the severed portion of the tape in a firm but accessible position, in which it is supported so that it cannot foul other portions of tape or any part of the tape serving device, but from which it may be readily and safely withdrawn by the operator without danger of such fouling.

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The taking advantage of the adhesive qualities of the tape to facilitate its serving makes the method of the present invention characteristically different from the methods utilized in serving tape which does not have the normally tacky quality.

The invention also includes the provision of improved apparatus for dispensing tacky tape, such apparatus being especially designed to function with such tape and to facilitate the dispensing thereof in accordance with the novel method.

Various forms of apparatus embodying the principle of the present invention may be utilized and for purposes of illustration I will now describe certain of the preferred constructions which I have devised.

In the accompanying drawings which illustrate machines embodying the invention,

Figure 1 is a side elevation of one form of the apparatus,

Figure 2 is a front elevation thereof,

Figure 3 is a view partly in side elevation and partly in vertical section of the reel shown in Fig. 1, looking at the same from the opposite side from which Fig. 1 is taken,

Figure 4 is a central transverse vertical section of the reel, showing part of its stand in elevation.

Figure 5 is a fragmentary transverse vertical section of the parts shown in Fig. 4, showing one of the knives held in inoperative position.

Figure 6 is a plan view with the cover removed of a modified form of machine embodying features of the invention and adapted to be used in practicing the novel process above described,

Figure 7 is a front view of the machine shown in Fig. 6.

Figure 8 is a longitudinal vertical section of the machine on line 8—8 of Fig. 6,

Figure 9 is a transverse vertical section on the line 9—9 of Fig. 8,

Figure 10 is a partial longitudinal section on line 10—10 of Fig. 9,

Figure 11 is a transverse section of the knife carrier showing one of the knives and a part of the reel adjacent thereto, and

Figure 12 is a detail in perspective of a part of the feeding reel of the modified form of machine shown in Figures 6 to 11,

Referring to the drawings in detail, 10 is a base upon which is mounted a standard 11 carrying one or more rolls 12 of pressure sensitive or tacky tape. This tape may be of paper, cloth or foil impregnated with or coated on one or both sides, with an adhesive which renders the tape normally tacky at the time of use. The tape may

be in the nature of ordinary adhesive plaster or rubberized friction tape, or it may be a strip of Cellophane, paper, foil, or the like coated with any of the well known pressure sensitive coatings. The strip of tape 13 passes from a roll 12 to a feeding, measuring and holding reel 15. The tape may pass directly to this reel, or it may pass over an idler 16, as shown in Fig. 1. The rolls of tape may be mounted in any suitable manner, as for instance on a spindle 17 mounted in the standard 11. One broad roll of tape may be utilized, or two or more narrow rolls of tape may be placed in the machine side by side on the spindle 17 and used one at a time, or simultaneously.

The reel 15 comprises side plates 20 and 21, the latter being preferably provided with a flange 22 to partly conceal the cutter actuating mechanism. These plates are mounted on a central axle 23 which may be supported in any suitable manner, as in a bearing 24 in the supporting bracket 25 mounted on the base 10. The plates 20 and 21 are also connected by a plurality of cross rods constituting tape supporting members 30. The end of the strip of tape is laid over these supporting members and when the reel is rotated through a part of a turn, the tape, through its adhesion to the supporting members, is drawn from the roll 12 and lies along and is supported by a succession of supporting members. It may then be severed from the strip coming from the roll, and will remain supported upon the supporting members until removed by the operator.

In the form of invention shown, the cross members 30 are in the form of rods and have smooth rounded tape engaging surfaces. These cross members may be of metal or of any relatively hard and smooth surfaced material such as glass or synthetic plastic or other material to which the tape will adhere but from which it may be detached by the fingers. They are placed in pairs arranged close together with a small space between the cross members of each pair, so as to support the tape firmly and permit it to be severed by a knife or cutter acting between them. The successive pairs of cross members are spaced about the circumference of the reel a sufficient distance apart to allow the finger of the operator to be inserted beneath the severed strip of tape to permit it to be readily picked off the reel for application to the object upon which it is to be used. In the construction shown, the plate 20 is provided with a succession of curved notches 32 between successive pairs of cross members to permit the ready insertion of the finger under the tape.

Any suitable means for rotating the reel may be provided. For instance it may carry one or more handles 34 (three being shown). It is simply rotated by pulling down on one of these handles and if three handles are provided it may be rotated in successive steps of approximately 120°. Owing to the fact that the cross members of each pair are arranged quite close together, there is only a very short span of tape exposed between such cross members. Such short span of tape is thus firmly held and may very easily be cut by the insertion of a knife between the closely placed members. At the same time the end of the tape on each side of the cut will be supported by the cross member at that side of the cut so that the tape, after cutting, will be firmly held at each end upon the cross member of each pair at each side of one of the finger receiving notches. It is thus supported in definite position until pulled off for use, and while so supported it cannot sway or blow or flap so as to come in contact with any other part of the apparatus or with any other part of the tape, or become doubled upon itself. This firm supporting of the tape out of contact with any extraneous object until it is desired to remove and use the same is of great value in an apparatus for successfully handling tape of the character under discussion.

The tape, when supported upon the reel in the manner described, may be cut with a hand knife. It is preferred, however, to provide cutting means in the apparatus itself, such cutting means being of any suitable type. In the construction illustrated in Figs. 1 to 5, a knife or cutter 50 is provided between each pair of supporting members. Each of the knives 50 is mounted on the arm 51 of a bell crank which is pivoted at 52 to a bracket 53 mounted on the plate 20 of the reel. The other arm 55 of the bell crank carries a cam follower 56 which is shown as a ball-shaped roller mounted on a pivot 57. The cam followers ride on the surface of a cam 60 which has a projecting portion 61. As the cam followers successively pass this projection, the bell cranks are rotated so as to move the knives from the position shown at the bottom of Fig. 4 to the position shown at the top of said figure. This motion stresses the spring 62 which connects the bell crank with the fixed abutment 63. As soon as the cam follower passes off of the cam projection 61 the spring will cause the bell crank to move back to the position shown at the lower part of Fig. 4. The cutting is done as the upper knife is moved by the cam from the left to right. The knife then is moved back by the spring into its initial position where it is out of the path of the tape being wound upon the supporting bars. The tape is firmly mounted upon the supporting bars and stretched tightly between them before the knife is caused to sever the tape.

It is to be observed that the knives or cutters move across the line of the tapes, cutting them cleanly from one edge to the other. The use of cutters in the form of thin, sharp blades attacking the edge of the firmly supported stretched tape and moving transversely across the same is found to be very effective, and such cutters do not become clogged by the tacky coating on the tape. The blades are preferably made removable from their holders so that they may be sharpened or replaced as soon as they tend to become dull.

When all of the knives are arranged to be successively operated by the cam, as shown in Fig. 3, the tape is severed at each pair of supporting members, so that a number of short pieces of tape will be supported on the reel at one time ready for removal. For instance, if the reel is moved through 120°, the tape coming from the supply roll, which may be assumed to be attached to the supporting members at the left hand side of the reel (Fig. 3), between the member which first contacts the strip of tape at the position indicated at A in Fig. 3 to the point where the knife is moved across the tape to sever the same, will be advanced to a position where it will extend across four pairs of supporting bars beyond the projection on the cam and will be cut between the bars of each of said pairs by the corresponding knife as the pairs pass such projection. The four severed pieces of tape at the right hand side of the reel in the region designated B, in Fig. 3 can then be readily lifted off and used. If two strips of tape are simultane-

ously applied, as illustrated, there will be eight short pieces of tape ready for removal, and this number may be increased by merely increasing the width of the reel, and the number of strips of tape used. The end of the unsevered part of the tape remains attached at the left hand side of the reel, Fig. 3. The operator then moves the reel through another 120° which will cut and prepare for removal another group of pieces of tape.

If it is desired to sever longer pieces of tape such as would be included between two or more successive pairs of supporting members, some of the knives may be thrown out of operation. For instance, if every other knife is rendered inoperative, strips will be severed of a length equal to twice the distance between two successive pairs of supporting members. Any knife may be readily thrown out of operation by use of its stop screw 65, as shown in Fig. 5. The stop screw engages a lug 66 on the bell crank and when screwed in it forces the lug to the left, thereby moving the knife to the extreme right where it is out of the path of the tape, and where it will remain throughout the operation of the machine. It can be immediately restored to operation by screwing the stop screw out of engaging position.

In Figures 6 to 12 a modified embodiment of the invention is shown which differs from the previous construction in utilizing a different form of cutting mechanism and in a number of details of construction. Referring to Figs. 6 to 12 in detail, the construction comprises a pair of side plates 110 and 111 which may be provided with suitable feet 112 and which are held in rigid spaced apart relationship by a pair of front guide rods 113 and 114 and by rear rods such as 116 and 117. A cover 118 is preferably provided which may be pivoted on the pins 115 and may be raised for the insertion of rolls of tape. The space between the side plates at the back of the machine and below the cover may be closed by a rear wall section 119. The front of the machine is preferably open so as to provide access for removal of the cut sections of strip or tape. Means are provided for supporting one or more rolls of tacky strip or tape 120 between the side plates. In the form of invention illustrated the tape supporting means comprise a pair of cradle bars 122 carried at their rear ends on the rod 117 and at their front ends on the transverse rod 124, extending between the side plates. The cradle bars are movable laterally on these rods so that they may be spaced near together or further apart, depending upon the width of the rolls of tape to be used. The tape rolls are mounted on an axle 126 supported at its ends in notches 127 in the cradle bars.

Mounted near the front of the machine is a feeding, measuring, and tape supporting reel 130 to which the tape strips 131 pass from the rolls 120. If desired a guide roller 132 may be journaled between the side plates for guiding the tape strips from the rolls to the reel. The reel 130 comprises a central spool or core 135 rotatably mounted upon an axle 136 journaled in the side plates, the spool being provided with side flanges 137 and 138. Side flange 138 at the right hand side of the spool (Fig. 9) is cut out at intervals as indicated at 139 to provide space for the introduction of the fingers for a purpose to be described. Fitted in recess 140 in the side flanges are a plurality of transverse tape supporting members 141. In the form of the invention shown, each of the tape supporting members comprises a pair of plates or bars 142 which are secured to and spaced apart by a spacer plate 143. The outer surfaces of the bars 142,

which are preferably of smooth metal, Bakelite or other relatively hard material, constitute tape engaging surfaces 144 upon which the tape is wound and to which it is adapted to adhere by reason of its own tackiness. The tape will adhere with sufficient firmness to these surfaces to enable the tape to be unwound by the rotation of the reel and the sections of tape when severed as hereinafter described will remain adhered to these surfaces, but can be readily detached by being grasped by the fingers of the operator and pulled free. The supporting members may be secured in the recesses 140 in the spool flanges in any suitable manner, for instance their left hand ends (Fig. 9) are formed with portions 147 projecting beyond the flange 137 which are engaged by a ring 151 held in place by screws 152. At their right hand ends the supporting members have projecting ends 155 held in place by the arms 156 of a spring plate 157 which may be mounted on the axle 136 in any suitable manner as by the forked piece 158 fitting in a groove in the axle. The ends of the spring arms 156 are provided with slots 159 which receive the ends 155 of the cross members. This method of attachment permits the supporting members to be removed or replaced as desired by springing out the arms 156 ,as shown in Fig. 12, and removing the ring 151. The ring 151 is provided with a flange 153 in which are slots 154 which register with the spaces between the plates 142 for a purpose to be described.

Means are preferably provided for rotating the reel. In the construction shown such means comprise a crank 160 fixed to the end of the axle 136 and carrying a handle 161. Near the other end of the axle is fixed a disc 163 to which a pawl 165 is attached by means of a pivot 166. The pawl is placed under tension by spring 168. The active end of the pawl is adapted to contact with projections or teeth carried by the reel such as the projecting ends 147 of the tape supporting members so that when the handle is pushed or swung away from the front of the machine towards the back, the reel will be rotated through a part of a revolution. When it is desired to advance the reel for another part turn the handle is pulled forward and the pawl will snap by one or more of the tape supports, depending upon how far the handle is moved and then upon swinging the handle back an additional rotary movement will be imparted to the reel. The rotation of the reel acts to draw off a length of tape or strip from each tape roll and wind the same upon the tape supporting cross members. As it is not desired to wind the tape upon itself on the reel, the reel is never turned more than a part of a revolution or so far as to wind tape on a part of the reel until after the tape already thereon has been severed and removed. For preventing movement of the reel in a reverse direction a weighted dog 170 may be provided which is shown in the form of a plate pivoted eccentrically upon the stud 171. The active face 172 of the dog may be knurled or otherwise suitably formed to engage a roughened surface on the ring 151.

To regulate the throw of the crank handle 160 to the proper distance, stops 190 and 191 may be provided which are mounted in the side plate 110.

The tape on the reel may be severed in any suitable manner. In the construction shown a knife carrier 175 in the form of an arc shaped member of channel cross section is provided. This member has holes or sleeves 177 formed near its ends through which pass the guide rods 113 and 114,

the knife carrier being slidable freely on these rods transversely on the machine. Mounted in the channel of the member 175 are one or more brackets 180 carrying knife blades 182. The knife blades are preferably secured to the brackets in diagonal positions, as shown in Fig. 11, and they may be removably clamped in such position by means of clamp plates 183 and screws 184. The blades have their outer diagonal edges 181 sharpened so that when the knife carrier and knives are moved from left to right (Figs. 7 and 9) the knives will cut across the short lengths of tape which are firmly stretched between the adjacent plates 142. A smooth clean cut is thus assured. At the upper end of the member 175 a pilot plate 187 is preferably mounted. This pilot plate projects further to the right than the knives and prevents the knife carrier from being moved to the right except when the reel is turned into proper registry with the knives. When the reel is in such proper registry, one of the slots 154 in the flange 153 is in line with the pilot plate so that the knife carrier may be moved to the right. If the reel is not in proper registry the pilot plate will strike a portion of the flange 153 and not permit such movement. Thus the knives can only be moved when they are in proper registry with the slot 154 and will pass through the spaces between the plates 142. The tape will therefore only be cut at the proper points and there is not danger of moving the knives in such a way as to dull them by contact with metal parts. The stop piece 190 is so located that when the crank is pushed against it, the slots 154 in the flange 153 will register with the pilot plate and knives.

As in the form of the invention previously described, the sections of tape after severance remain with their ends adhered to the plates 142 so that they are firmly supported out of contact with each other or with any part of the machine except the tape supporting surfaces of the plates 142. Fouling of the machine is thus effectually prevented. The strips are however readily accessible to the operator who inserts his finger under the strip, places his thumb upon the strip over his finger, and lifts the strip from the supporting members. As the strips are cut by the knives which are set a fixed distance apart, the strips are of accurately measured and uniform length.

The length of strips severed will be determined by the distance apart of the knives, and by providing a number of knife brackets and a number of correspondingly placed notches in the core or spool of the reel it is possible to set up the machine so as to deliver strips of different lengths. If knives are mounted on all of the knife carriers, and tape supporting members are mounted in every notch in the reel, the shortest lengths within the capacity of the machine will be delivered. Longer lengths may be delivered by removing alternate knives, or alternate knives and tape supporting members in instances where the reel is provided with a sufficient number of properly spaced tape supporting members to permit the tape to be supported upon the supporting members retained after alternate members have been removed.

While I have described in detail certain preferred procedures to be followed in practicing my invention which I have found to be convenient and practicable, and while I have illustrated and described in detail certain forms of apparatus which I have found well adapted to carry out the required operation, I do not wish to be understood as limiting myself to the performance of the process in the precise manner set forth or the following of a particular sequence of operations where not essential to secure the intended result, or to the use of the particular apparatus as set forth in the specification, as I realize that changes both in procedure and in the apparatus are possible and I further intend each step or sequence of steps and each element or instrumentality appearing in any of the following claims to be understood to refer to all equivalent steps, sequences of steps, elements or instrumentalities for accomplishing substantially the same result in substantially the same or equivalent manner.

I claim:

1. The method of serving sections from a roll of tacky material which consists in sticking the end of the tacky material to a support by means of the adhesive quality of the material itself, moving the support to draw the material from the roll, sticking an intermediate portion of the strip of material to a second support, and severing the material adjacent to said second support.

2. The method of serving sections from a roll of tacky material which consists in sticking the end of the tacky material to a support by means of the adhesive quality of the material itself, moving the support to draw the material from the roll, sticking an intermediate portion of said material to a pair of spaced supporting members, severing the material between said supporting members leaving the end of the severed strip attached to one of said spaced supporting members and leaving the end of the strip coming from the roll adhering to the second of said spaced supporting members, removing the severed strip from its support and then advancing the supporting member to which the end of the strip coming from the roll is adhered to draw a second length of material from said roll.

3. In a method of serving sections from a strip of tacky material, the steps which consist in sticking the portion of material to be served by means of the adhesive quality of the material itself to two supports extending transversely of the strip and spaced apart longitudinally of the strip, severing the strip adjacent to one support while leaving the severed section suspended by the two supports and moving the supports to a position in which the material thereon may be grasped by the fingers of the operator and pulled off of the supports.

4. In a method of serving sections from a strip of tacky material, the steps which consist in sticking the portion of material to be served by means of its inherent tackiness alone to two supports spaced apart longitudinally of the strip, severing the strip adjacent to one support while leaving the severed section suspended by the two supports, and grasping the severed section while so supported and removing it from the supports.

5. In a method of serving sections of a strip of tacky material, the step which consists in presenting a severed section of the strip stuck by means of its inherent tackiness to two supports spaced longitudinally of the strip, in position to be grasped between said supports by the fingers of the operator and thus removed from the supports in condition for application by the operator to the article to which it is to be applied.

6. The method of serving sections of tacky tape from a supply roll which includes the steps of adhering the tape by its tacky side to a transverse support, moving said support to draw tape from the roll, sticking an intermediate portion of said

tape to a pair of transverse supports mounted at a fixed distance from each other, and severing said tape between said pair of supports.

7. The method of serving sections of tacky material from a roll which includes the steps of sticking the end of said material by its tacky side to a movable support, moving the support and the material so adhered thereto to draw the material from the roll, sticking an intermediate portion of the material to a second support and severing the material behind said second support while still holding the severed portion suspended between said supports.

8. The method of serving sections from a roll of tacky material which includes the steps of sticking the end of the material to a support by its tacky side, moving the support to draw the material from the roll, drawing the material so moved under tension against a second support, without application of pressure on the reverse side of the material, to cause it to adhere to said second support and severing the material adjacent said second support.

9. An apparatus for serving sections of a strip of tacky material including a support for a roll of the material, a feeding and delivering element having a plurality of spaced supports for said strip movable in an orbital path, tape engaging surfaces on said spaced supports, said tape engaging surfaces having the property of adhering to the tacky surface of tacky tape but being incapable of adhering to the non-tacky surface of said tape, said tape being adapted to adhere by means of its tackiness alone to the said tape engaging surfaces, said element being movable in a direction to withdraw strip material from the roll, and cutting means for severing the strip while in motion movable in synchrony with the advance of the tape supports during the cutting operation.

10. An apparatus for serving strips of tacky tape from a supply roll including a support for the roll, a feeding and delivery element having a hub, support members extending therefrom at fixed distances from each other and having smooth transverse tape engaging surfaces to which the tacky surface of tape will adhere, and a cutter to sever said strip when mounted on said support members.

11. In an apparatus for serving strips of tacky material, a support for a supply of material, a feeding and measuring device mounted adjacent thereto provided with a plurality of spaced transverse members having elements capable of contacting the tacky side of said strip, and being free of any element contacting the non-tacky side of said strip, and strip severing means for cutting the strip adjacent said spaced transverse members, while leaving the strip adhered to said members in position to be grasped by the fingers of the operator.

12. An apparatus for severing sections of a strip of tacky material, a support for a roll of the material, a feeding and delivering member having at least two spaced supports for said strip, said supports having smooth tape-engaging surfaces capable, when the strip is contacted thereto under tension, of holding said strip by contact with the tacky side alone, said tape being free from pressing contact on the non-tacky side thereof, said member being movable in a direction to withdraw the strip material from the roll, and present it in position to be grasped, and a severing device for severing the strip adjacent to a strip support in rear of the front strip support.

13. In apparatus for serving strips of tacky tape from a supply roll, including a support for the roll, a feeding and delivery element providing a tape path, said tape path including on one side thereof spaced transverse members to which the tacky side of the tape adheres by its own tackiness, the other side of said tape path being free from pressure contact with said tape and a severing device to sever said strips in said tape path.

14. In apparatus for serving sections of a strip of tacky material, a support for a roll of the material, a feeding and delivering member having at least two spaced supports for said strip, said supports having smooth tape engaging surfaces to which the strip is adapted to adhere by its own tackiness, said member being movable in a direction to withdraw the strip material from the roll and present it in position to be grasped and a severing device for severing the strip adjacent to a strip support in rear of the front strip support.

15. In apparatus for serving sections of a strip of tacky material, a supporting for a roll of the material, a movable supporting and feeding member for said strip to which the end of the strip is adapted to adhere by its own tackiness, said movable supporting member being movable in a direction to draw the strip from the roll, a second strip support in rear of said first supporting member to which an intermediate portion of the strip is adapted to adhere by its own tackiness and cooperating with said first supporting member to support the section of strip to be served in position to be grasped by the operator, and a severing device for severing the strip adjacent to said second strip support.

16. In apparatus for serving cut sections of a strip of tacky material, a feeding and delivering member having at least two spaced supports to which the material is adapted to adhere by its own tackiness, said member being movable in a direction to advance the strip of material and present the end portion of the strip in position to be grasped, and a cutter for cutting the strip comprising a thin sharp blade mounted for movement transversely of the strip from edge to edge thereof adjacent to a strip support in rear of the front strip support.

17. In an apparatus for serving strips of tacky material, means for holding a supply of the material, a rotatable element mounted adjacent thereto provided with a plurality of spaced transverse members having strip engaging surfaces to which the strip is adapted to adhere by its own adhesiveness, and strip severing means for cutting the strip adjacent to said spaced transverse members, while leaving the strip adhered to said members at each side of the line of severance.

18. In apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, and a cutter arranged to sever the strip between the members of at least one pair of said spaced transverse members without detaching the strip from its engagement with said members.

19. In an apparatus for delivering sections of tacky strip material a rotatable feeding and holding element having pairs of transverse members spaced about the periphery thereof, said members having smoooth hard surfaces to which the tacky strip is adapted to adhere by its own adhesion.

20. In a machine for serving tacky strips a rotatable feeding and holding element comprising side members and spaced transverse strip supporting members carried by said side members, at least one of said side members being open to permit the insertion of the operator's finger under the strip adhering to said strip supporting members.

21. In apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, a plurality of cutters mounted on said element, one cutter being mounted adjacent to each pair of supporting members and movable between said members to sever the strip supported on said members, and cutter operating mechanism for operating said cutters in sequence as the element is rotated.

22. In apparatus for delivering sections of tacky strip material, a feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, a plurality of knives, and movable carrying means for said knives actuatable to move a knife between a pair of supporting members to sever the strip supported on said members without detachment of the strip from either member of said pair.

23. In apparatus for delivering sections of tacky strip material, a rotatable feeding and measuring member having pairs of spaced strip supports carried thereby and spaced at intervals circumferentially about its axis, said strip supports having surfaces to which the tacky strip is adapted to adhere, and a plurality of movable knife carriers mounted on said rotatable member, one of said knife carriers being mounted adjacent to each pair of strip supporting members and knives mounted on said knife carriers and movable between said strip supports to sever a strip supported on said supports.

24. In apparatus for delivering sections of tacky strip material, a feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, a plurality of knives mounted on said element, one knife being mounted adjacent to each pair of supporting members and movable between said members to sever the tape supported on said members, means for operating said knives in sequence as the element is rotated, and means for rendering any particular knife or knives inoperative.

25. In an apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, bell cranks mounted on said element, knives carried by said bell cranks and movable between the members of each pair of transverse supporting members, and a cam for actuating said bell cranks when the element is rotated.

26. In an apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, bell cranks mounted on said element, knives carried by said bell cranks and movable between the members of each pair of transverse supporting members, and a stationary cam having a projection thereon, said bell cranks having cam followers movable in engagement with the surface of said cam.

27. In an apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having pairs of transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, knife carriers mounted on said element and knives carried by said knife carriers movable transversely across the path of the strip between the supporting members of said pairs of transverse supporting members.

28. In apparatus for delivering sections of tacky strip material, a rotatable feeding, measuring and holding element having transverse strip supporting members spaced about the circumference thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier mounted exteriorly of the element for movement parallel to the axis of the element and a cutter carried by said cutter carrier adapted to sever the strip adjacent to a transverse tape supporting member when the cutter carrier is moved.

29. In apparatus for delivering sections of tacky strip material, a feeding, measuring and holding element having removable transverse members spaced about the periphery thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier movable parallel to the axis of the element and a plurality of cutters removably mounted on said cutter carrier.

30. In an apparatus for delivering sections of tacky strip material, a support, a feeding, measuring and holding element rotatably mounted on said support, said element including pairs of transverse members spaced about the circumference thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier mounted on said support and movable thereon parallel to the axis of the element and a cutter carried by said cutter carrier and movable between the adjacent members of a pair of said transverse members to sever the strip supported on said members.

31. In an apparatus for delivering sections of tacky strip material, a support, a feeding, measuring and holding element rotatably mounted on said support, said element including pairs of transverse members spaced about the circumference thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier mounted on said support and movable thereon parallel to the axis of the element, and a plurality of cutters carried by said cutter carrier and spaced to correspond with the spacing of said pairs of transverse members on the element and adapted to be moved between the members of a plurality of said pairs of transverse members when the cutter carrier is moved parallel to the axis of the element.

32. In an apparatus for delivering sections of tacky strip material, a support, a feeding, measuring and holding element rotatably mounted on said support, said element including pairs of transverse members spaced about the circumference thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier mounted on said support, and movable thereon parallel to the axis of the element,

said cutter carrier comprising a member extending part way around the periphery of the element and carrying a pilot plate and a plurality of cutters spaced to correspond to the spacing of the pairs of transverse members on the element, said pilot plate and said cutters being movable between the transverse members of successive pairs of said members on the element when the cutter carrier is moved parallel to the axis of the element, and a stop cooperating with said pilot plate for preventing movement of the cutter carrying member except when the cutters are in registry with the spaces between the members of pairs of said transverse members.

33. In apparatus for delivering sections of tacky strip material, a support, a feeding, measuring and holding element rotatably mounted on said support, said element comprising a core and a plurality of pairs of transverse members spaced about the circumference of and mounted on said core, said members having surfaces to which the tacky tape is adapted to adhere, a ring mounted on said core and overlying portions of the ends of said transverse members, said ring having slots therein registering with the spaces between the members of each pair of transverse members, a cutter carrier mounted on the support and movable parallel to the axis of the element, and cutters carried by said cutter carrier and movable through said slots in said ring, and between the transverse members of respective pairs of said transverse members, so as to sever the strip carried by said transverse members.

34. In apparatus for delivering sections of tacky strip material, a feeding, measuring and holding element having pairs of transverse strip supporting members spaced about the periphery thereof, a cutter adapted to pass between said members, and pawl and ratchet mechanism for intermittently rotating said element to bring said pairs of strip supporting members successively into alignment with said cutter.

35. In an apparatus for delivering sections of tacky strip material, a support, a feeding, measuring and holding element rotatably mounted on said support, said element including pairs of transverse members spaced about the circumference thereof, said members having surfaces to which the tacky strip is adapted to adhere, a cutter carrier mounted on said support and movable thereon parallel to the axis of the element, a plurality of cutters carried by said cutter carrier and spaced to correspond with the spacing of said pairs of transverse members on the element and adapted to be moved between the members of a plurality of said pairs of transverse members when the cutter carrier is moved parallel to the axis of the element, an operating handle, a pawl and ratchet connection between said operating handle and said element, and stops arranged to stop the movement of the element in a position in which spaces between pairs of transverse members on the element register with the cutters.

36. In a machine for dispensing lengths of pressure sensitive adhesive tape, in combination, a feed device for withdrawing the tape from a source of supply, said device including a plurality of spaced surfaces of sufficient area to provide effective adhesion for a length of tape, means for supporting said adhesion surfaces for movement in an orbital path, and means for severing the leading end of the tape in rear of a surface to which the leading end is adhered, whereby the severed length will be retained by adhesion to such surface for delivery to the operator.

37. An apparatus for serving sections of a strip of tacky material including a support for a roll of the material, a feeding and delivering element having at least two spaced supports for said strip, tape engaging surfaces on said spaced supports, said tape engaging surfaces having the property of adhering to the tacky surface of tacky tape but being incapable of adhering to the non-tacky surface of said tape, said tape being adapted to adhere by means of its tackiness alone to the said tape engaging surfaces, said element being movable in a direction to withdraw strip material from the roll, and a severing device for severing the strip adjacent one of said supports.

38. In apparatus for serving sections of a strip of tacky material, a support for a roll of the material, a feeding and delivering element having at least two supports for said strip spaced from one another in the direction of travel of the strip and adapted to contact the tacky surface of said strip, said supports having tape engaging surfaces to which the strip is adapted to adhere by its own tackiness, said surfaces being of sufficient contact area to retain a severed section of tape by adhesion to assure the controlled delivery of such severed section to a desired serving position, but of such limited area that such section can be readily detached, said element being movable in a direction to withdraw the strip material from the roll and present it in position for removal, and a severing device for severing the strip at a point further from the leading end of the tape than a strip support to which it is adhered whereby the severed section will be supported by adherence to at least one strip support.

39. In an adhesive tape dispensing device, a rotary tape dispensing wheel mounted for peripheral engagement with the adhesive side of a continuous length of tape extending from a supply thereof, whereby a portion of the tape is fed from the supply and applied to said wheel upon rotation of said wheel, said wheel having a plurality of angularly spaced peripheral spaces for permitting the insertion of the operator's finger underneath a fed portion of the tape to permit removal of the tape from the wheel, means for severing the fed portion of the tape from said continuous length thereof, and indexing means for rotating the wheel to feed said tape step by step, and constructed and arranged to present said finger spaces successively in position for the insertion of the operator's finger.

40. In an adhesive tape dispensing device, a rotary tape dispensing wheel having spaced tape engaging surfaces mounted for engagement with the adhesive side of a continuous length of tape extending from a supply thereof, whereby portions of said tape are fed from said supply and applied to said surfaces upon rotation of said wheel, said surfaces being spaced circumferentially so as to leave openings therebetween, a tape severing knife disposed adjacent to said wheel for severing the tape at a point opposite an opening between said spaced supporting surfaces, and indexing means for rotating said wheel constructed and arranged to present one of said openings opposite said knife after each indexing operation.

41. In an adhesive tape dispensing device, a rotary tape dispensing wheel mounted for peripheral engagement with the adhesive side of a continuous length of adhesive tape extending from a supply thereof, whereby a portion of said tape is fed from said supply and applied to said wheel upon rotation of said wheel, said wheel having a plurality of angularly spaced peripheral

notches, a tape severing knife disposed adjacent the peripheral surface of said wheel, and indexing means for rotating said wheel constructed and arranged to present one of the notches opposite said knife after each indexing operation.

42. In an apparatus for dispensing tacky tape, means for holding a supply of the tape, a rotatable reel for withdrawing tape from the supply and supporting said tape pending removal therefrom, said reel including tape engaging supports spaced circumferentially of the reel from each other at their outer extremities a distance necessary to permit the insertion of the fingers of the operator between each pair of supports and extending transversely across the path of the tape, and a cutter adjacent to the periphery of the reel for cutting the tape so as to sever the same into lengths corresponding to the spacing of said supports.

43. In a machine for dispensing lengths of pressure sensitive adhesive tape from a roll of such tape in which each layer adheres to the underlying layer so that substantial force is required to peel the tape from the roll, in combination, means for supporting a roll of such tape, a feed device for drawing the tape from the roll, said device including a series of spaced surfaces of sufficient area to provide effective adhesion for a length of tape, means for supporting said surfaces for movement in an orbital path so related to the tape roll supporting means as to cause the said surfaces to contact the tape one after another, and a plurality of the surfaces to adhere to the tape simultaneously, and means for severing a length of tape at the leading end thereof, while leaving an unsevered portion of the tape adhered to a sufficient number of surfaces to assure effective feeding engagement of the tape with said device.

44. A machine as set forth in claim 43, in which the severing means is mounted for advancement in the direction of tape feeding during the severing operation and includes mechanism for actuating the severing means to sever the tape while the severing means are advancing synchronously with the tape.

45. A machine as set forth in claim 43 in which the severing means comprises a cutter and a carrier therefor mounted for advancement in the direction of tape feed during the severing operation and a fixed cam for actuating the cutter carrier to cause the cutter to sever the tape while the cutter and cutter carrier are advancing synchronously with the tape.

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