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3,204,949

DISPENSER FOR ADHESIVE-COATED TAPE

Filed July 15, 1963

4 Sheets-Sheet 1

FIG. 1

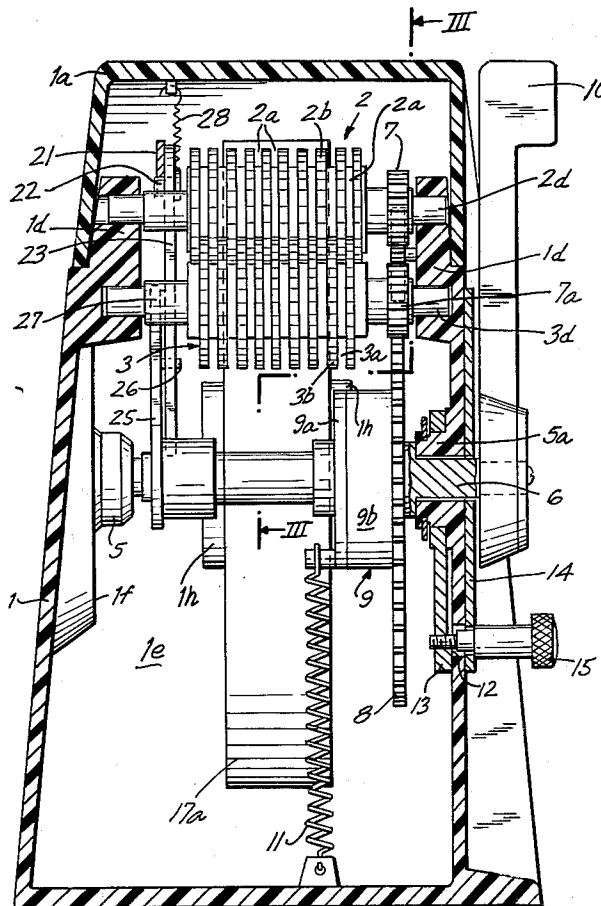
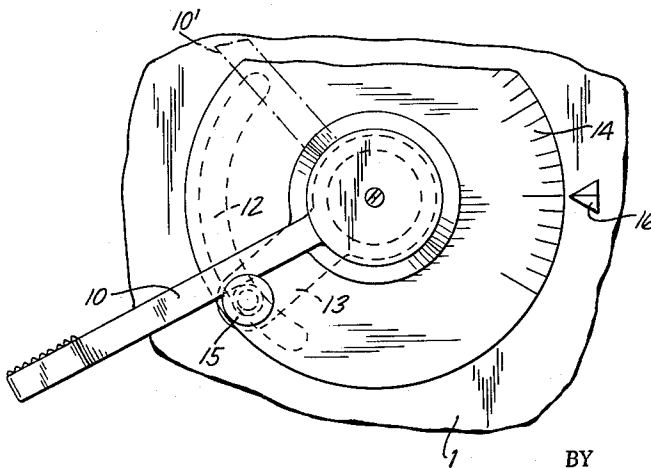


FIG. 2

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FIG. 3

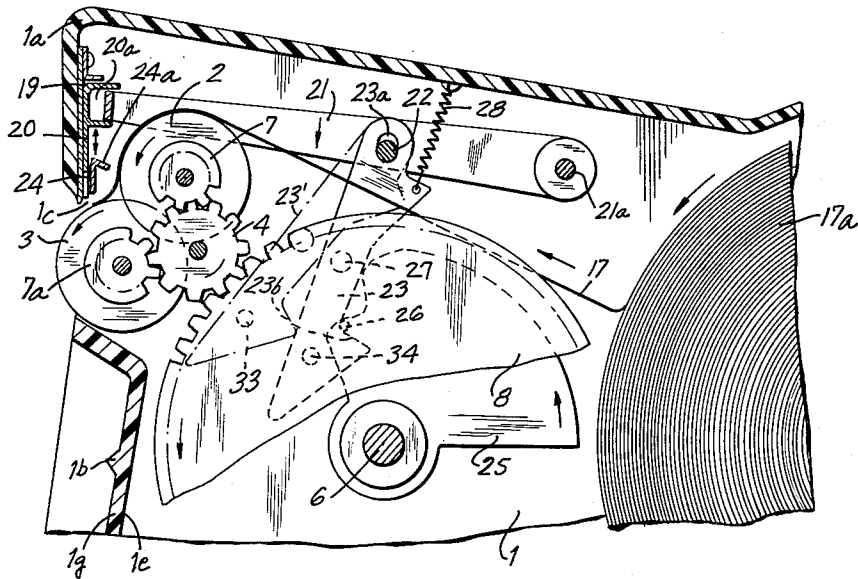
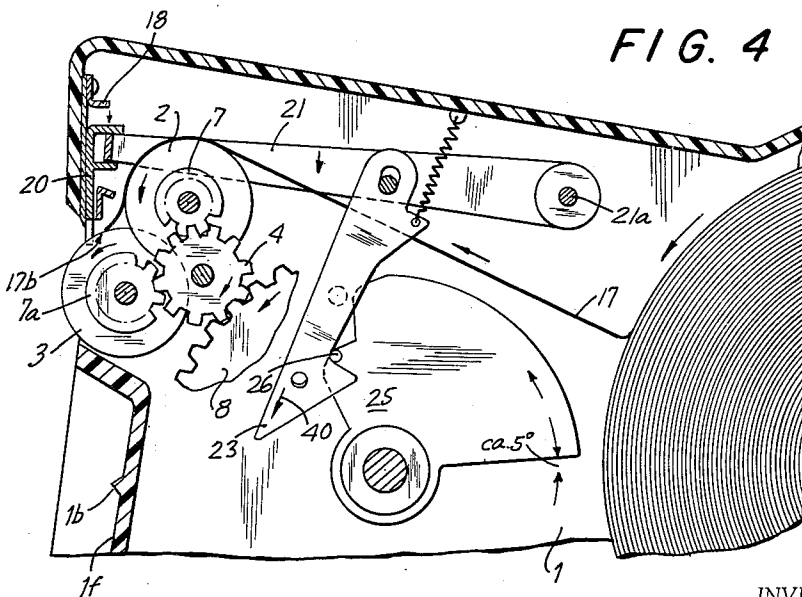


FIG. 4



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FIG. 5

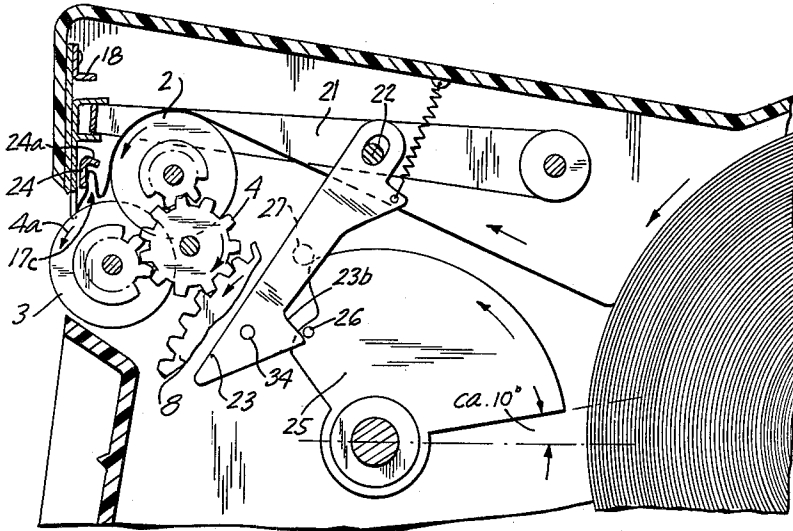
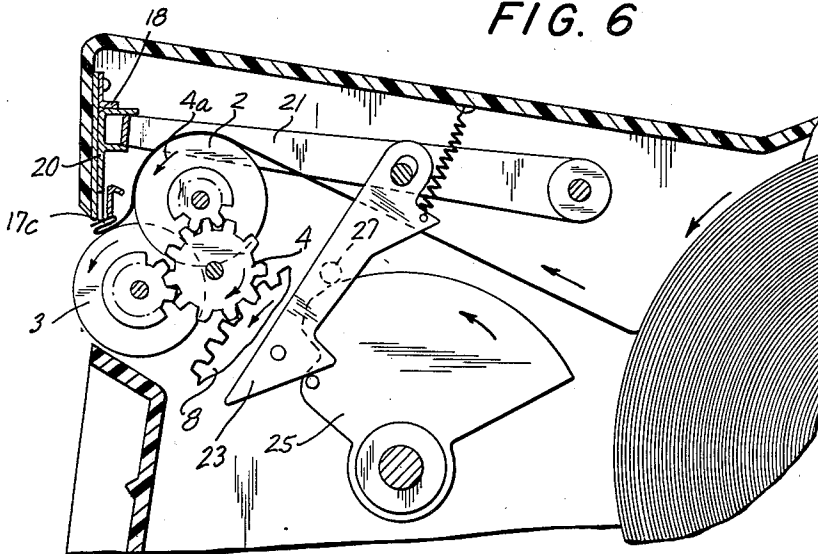


FIG. 6



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FIG. 7

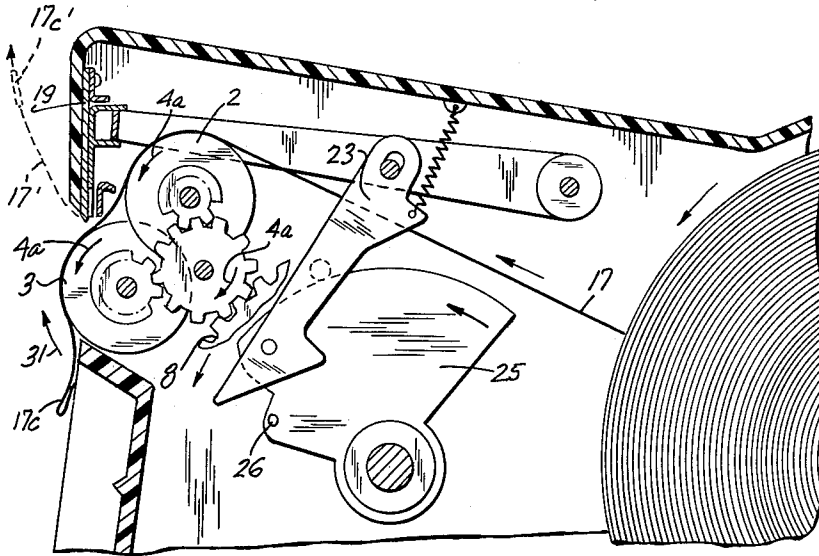


FIG. 8

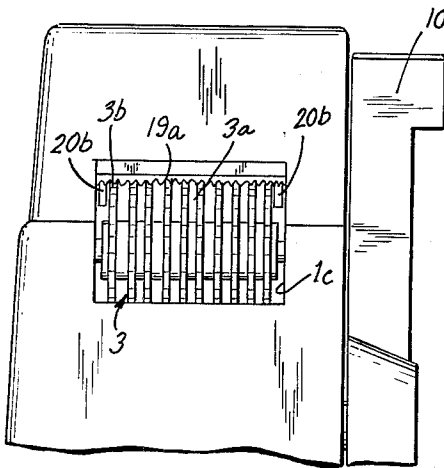
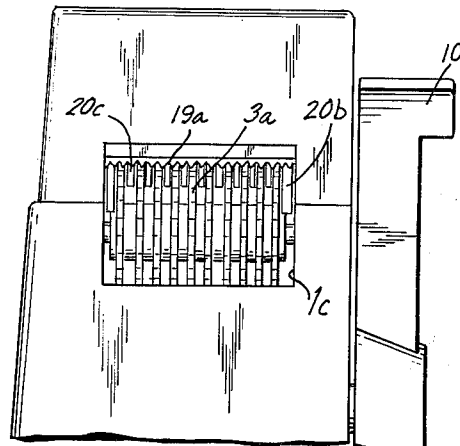


FIG. 9



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3,204,949 DISPENSER FOR ADHESIVE-COATED TAPE Horst Kieslich, Am Schmiedberg 3b, Hunfeld, Hesse, Germany

Filed July 15, 1963, Ser. No. 294,997
7 Claims. (Cl. 270—68)

The present invention relates to dispensers in general, and more particularly to a dispenser which is especially suited for dispensing adhesive-coated tape consisting of paper, textile or synthetic plastic material. Still more particularly, the invention relates to a dispenser which, simultaneously with expulsion of predetermined lengths of tape, loops and folds the foremost section of the tape over itself so that the tape is flattened and forms a tab which may be readily grasped by fingers without adhering thereto.

It is an important object of my invention to provide a dispenser which is constructed and assembled in such a way that the formation of a tab at the leading edge of the tape is brought about in a fully automatic way when the tape is being expelled from the housing of the dispenser, and wherein the formation of such tabs is independent of or depends only slightly on the adhesive strength of the substance which coats one side of the tape.

Another object of my invention is to provide a dispenser of the just outlined characteristics which will form a tab irrespective of the temperature and moisture content of the surrounding air such as will normally influence the characteristics of the adhesive substance, which may be readily converted for dispensing of tape without the formation of tabs, which can be adjusted to discharge selected lengths of adhesive-coated tape, and which may be reloaded and its parts exposed for inspection or cleaning with little loss in time.

A further object of the present invention is to provide a dispenser which may be manipulated by hand or by a motor, whose parts automatically return to starting position and are ready for the next dispensing operation as soon as a length of tape is discharged and/or severed from the supply of tape in the interior of the dispenser housing, and which occupies little space so that it may be readily set up on a small table or the like.

An additional object of the invention is to provide a dispenser of the above outlined characteristics which is constructed and assembled in such way that it may form comparatively small tabs so that very small quantities of tape are wasted in forming the tabs, which is not likely to jam, and which need not comprise a supply of liquid or viscous material in order to render the substance at one side of the tape more adhesive.

A concomitant object of the invention is to provide a dispenser which is constructed with a view to prevent the tape from adhering to the housing or to another component part under the influence of static electricity, wherein the tape may be readily separated from the housing in the event that the tape happens to come into contact with the housing, and which may be converted for dispensing of tape without the formation of tabs after the tab is formed at the leading edge of the tape so that the operator is free to dispense very long or comparatively short lengths of tape with or without tabs.

Still another object of the invention is to provide a novel method withdrawing selected lengths of tape from a reel of convoluted tape and of forming tabs at the leading edge of such tape.

With the above objects in view, one feature of my invention resides in the provision of an apparatus for dispensing selected lengths of convoluted tape one side of which is coated with an adhesive substance and for form-

ing a loop adjacent to the leading edge of the tape. The apparatus comprises a housing arranged to receive a supply of convoluted tape and having a discharge opening through which the tape may be expelled from the housing, transfer means including a transfer roller arranged to withdraw tape from such supply and to advance the tape toward and through the discharge opening, drive means normally including a handle or a small motor for rotating the roller in a direction to expel the tape from the housing, and a shutter supported by the housing and arranged to move between a first and a second position in which it respectively exposes and closes the discharge opening so that, when the transfer roller rotates and the shutter assumes its second position, the leading edge of the tape abuts against the shutter and a section adjacent to the leading edge of the tape bulges to form a loop in such a way that the adhesive-coated side constitutes the inner side of the loop. This looped section of the tape is preferably flattened to form a tab and is free to pass through the discharge opening when the shutter thereupon assumes its first position.

The transfer roller preferably cooperates with a grooved feed roller which is adjacent to the discharge opening and whose grooves may receive a set of centrally located teeth on the shutter when the latter assumes its second position. This shutter is preferably formed with two spaced guiding projections which are slidable along the end faces of the feed roller.

The novel features which are considered as characteristic of the invention are set forth in the appended claims. The improved dispenser itself, however, both as to its construction and its method of operation, together with additional features and advantages thereof, will be best understood from the following detailed description of a specific embodiment with reference to the accompanying drawings, in which:

FIG. 1 is a front elevational view of a dispenser which embodies the invention and whose housing is shown in vertical section, certain parts of the mechanism which is accommodated in the housing being broken away;

FIG. 2 is an enlarged fragmentary side elevational view of the dispenser as seen in the direction of arrow II in FIG. 1, showing a control device which determines the length of that portion of the tape which may be expelled from the housing in response to a single angular displacement of the handle;

FIG. 3 is a fragmentary vertical section as seen in the direction of arrows from the line III—III of FIG. 1, showing the mechanism of the dispenser in a position it assumes when the dispenser is not in use;

FIG. 4 is a similar fragmentary vertical section and shows the mechanism in a position it assumes when the operator begins to rotate the handle in a direction to expel a predetermined length of tape through the discharge opening of the housing;

FIG. 5 illustrates the formation of a loop adjacent to the leading edge of the tape before this leading edge is expelled from the housing and while the discharge opening is still closed by the shutter;

FIG. 6 shows a further stage in the operation of my dispenser when the loop is being transformed into a tab and is about to pass through the discharge opening;

FIG. 7 illustrates the last stage when the tab is expelled through the discharge opening and advances along the front wall of the housing;

FIG. 8 is an enlarged fragmentary front elevational view of the dispenser and shows the discharge opening together with the feed roller and with two guiding projections of the shutter; and

FIG. 9 is a similar fragmentary front elevational view of the dispenser with the shutter in closing position in

which its set of centrally located teeth enters the circumferential grooves of the feed roller.

Referring to the drawings, the dispenser comprises a housing including a lower portion or base 1 and an upper portion or cover 1a which is detachably fitted onto the base. The latter supports a transfer roller 2 and a feed roller 3. As shown in FIG. 1, the side walls of the base 1 are formed with bearing sleeves 1d which receive the ends of roller shafts 2d, 3d. The rollers 2, 3 are provided with alternating annular grooves and disks 2a, 3a and 2b, 3b arranged in such a way that the disks 2b, 3b respectively extend into the grooves 3a, 2a. The peripheries of the disks 2b, 3b are provided with axially parallel ribs (see FIGS. 1, 8 and 9) in order to reduce the area of contact with the adhesive-coated surface of the tape 17, i.e., to prevent the tape from adhering to these rollers with excessive force. The shafts 2d, 3d carry mating pinions 7, 7a which are drive by a gear 4 (see FIGS. 3 to 7) so as to rotate in directions indicated by arrows 4a shown in FIGS. 5 to 7. The gear 4 is driven by a large driver gear 8 which may receive motion from a coaxial drive shaft 6 through a suitable one-way clutch 9. One end portion of the drive shaft 6 extends from the base 1 and is connected to a handle 10. A spring 11 which is secured to the base 1 and to a first clutch element 9a of the clutch 9 serves to return the handle 10 and the shaft 6 to the starting position of FIG. 1. The clutch element 9a is rigidly secured to the drive shaft 6 and co-operates with a second clutch element 9b which is secured to the driver gear 8 to rotate this gear only when the handle 10 is moved against the bias of the return spring 11. In other words, the driver gear 8 does not rotate when the shaft 6 rotates under the bias of the spring 11 so that the rollers 2, 3 will rotate only in the direction indicated by arrows 4a.

The internal chamber 1e of the base 1 accommodates a disk-shaped cam 25 which is fixed to the drive shaft 6 so that it participates in all movements of the handle 10 regardless of whether the handle is rotated in a clockwise or counterclockwise direction. This cam 25 carries a motion transmitting pin 26 which engages a pallet 23b provided at one end of a pawl 23. The other end portion of this pawl is formed with an elongated slot 23a which receives a pin 22 secured to the intermediate portion of an elongated lever 21. The median portion of the pawl carries a follower pin 27 which extends to the left, as viewed in FIG. 1, and which may track the periphery of the cam 25. The right-hand end portion of the lever 21 (as viewed in FIG. 3) is mounted on a horizontal pivot 21a which is parallel with the axes of the shafts 2d, 3d, 6 and which is secured to the cover 1a. The other end portion of the lever 21 extends toward the front wall of the cover 1a and is received in a suitable socket 20a forming part of a plate-like shutter 20. The shutter 20 is slidable in a folding or loop forming element 24 provided at the inner side of the cover 1a and is reciprocable in a substantially vertical plane to the extent determined by the feed roller 3 and by an upper stop 18 which is carried by the front wall of the cover 1b. The outer side of the shutter 20 is slidable along the inner side of a plate-like knife 19 whose serrated cutting edge 19a (see FIGS. 8 and 9) extends into a discharge opening 1c provided in the front wall of the composite housing 1, 1a. As shown in FIGS. 3 to 7, a portion of the feed roller 3 extends through this opening 1c, i.e., beyond the plane of the cut-off knife 19. When the rollers 2, 3 expel a predetermined length of tape 17, the operator may grasp the tape with two fingers and, by pulling upwardly, automatically severs a predetermined length from the remainder of the tape because the cutting edge 19a extends into the opening 1c.

The pawl 23 is biased by a helical spring 28 which is anchored in the cover 1a and which tends to pull the pawl upwardly so that the follower 27 may move away from the periphery of the cam 25 and that the pin 22 pivots the lever 21 in a clockwise direction, as viewed

in FIG. 3, whereby the shutter 20 assumes the position of FIG. 3 in which it remains spaced from the periphery of the feed roller 3 because the socket 20a abuts against the upper stop 18. The parts 4, 6, 7, 7a, 8, 9 and 10 together constitute a drive means for the rollers 2, 3 and the parts 21-28 together constitute a reciprocating means for the shutter 20.

The lower edge portion of the shutter 20 includes a set of centrally located shorter projections or teeth 20c and two comparatively long outer projections or teeth 20b, the latter serving as a means for guiding the shutter by engaging the end faces of the roller 3 when shutter descends in response to angular displacement of the lever 21 about the axis of the pivot 21a. The centrally located teeth 20c then enter the grooves 3a of the feed roller 3, see FIG. 9. The arrangement is preferably such that the longer teeth 20c remain in permanent engagement with the end faces of the roller 3 even when the shutter 20 assumes the position of FIG. 3. Such arrangement insures that the teeth 20c remain permanently in registry with the respective grooves 3a.

The length of that section of the tape 17 which is expelled through the opening 1c depends on the extent of angular displacement of the handle 10. Such angular displacement may be limited by an arresting screw 15 which is screwed through a disk-shaped graduated dial 14 and whose stem extends through an arcuate slot 12 provided in the adjacent side wall of the base 1. The tip of the screw 15 is screwed into the outer end of an arm 13 whose inner end forms an eye and is rotatable about the bearing 5a for the drive shaft 6. When the screw 15 is drawn tight, it presses the arm 13 and the inner side of the dial 14 against the base 1 so that the dial is held by friction and cannot rotate about the axis of the shaft 6. When the screw 15 is loose, the operator is free to change the angular position of the dial 14 and to move a selected graduation on the dial into registry with a fixed marker 16 on the side wall of the base 1. In other words, the parts 13-16 and the slot 12 together constitute a control means for determining the extent of angular displacement of the handle 10 and for thereby determining the length of that section of the tape which may be expelled through the opening 1c in response to rotation of the handle against the bias of the return spring 11 until the handle abuts against the arresting screw 15. The dial 14 and the arm 13 form a clamping device for the screw 15. The arm 13 and the dial 14 are free to rotate about the axis of the drive shaft 6 excepting when the screw 15 is drawn tight. In FIG. 2, the length of the slot 12 is about one-fourth of a full circle so that the handle 10 may be arrested in an infinite number of selected positions of adjustment. In the illustrated embodiment, the handle 10 is movable between a phantom-line starting position 10' and the full line operative position of FIG. 2.

It is well known that adhesive-coated tapes made of synthetic plastic material will be charged with static electricity, particularly when the air is dry, so that the tape extending through the discharge opening 1c may be attracted by the base 1 and may adhere thereto. To avoid such adherence of the tape, I provide one or more horizontal ribs 1b which are provided at the outer side of the base 1 below the opening 1c. These ribs insure that the adhesive-coated underside of the tape is in mere linear contact with the base and that the tape may be readily separated from the housing irrespective of the moisture content of the surrounding air. In addition, the front wall of the base 1 is formed with a depression 1f which preferably terminates immediately before the opening 1c so that the ribs 1b (only one shown in each of FIGS. 3 to 7) are actually received in this depression to further reduce the likelihood that the tape would adhere to the base. The depth of the depression 1f may be in the range of 2-3 cm. The bottom wall 1g of the depression 1f is preferably inclined with reference to a vertical

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plane so that it makes an angle of 5-10 degrees and that it extends outwardly and downwardly toward the bottom wall of the base 1. It is also possible to utilize a small stick or a similar implement and to place such stick between the adhesive-coated underside of the tape and the front wall of the base when the exposed section of the tape is not immediately severed from the remainder of the tape.

The tape 17 is being paid out from a supply here shown as a reel 17a which is accommodated in the rear portion of the internal space 1e and which is rotatable in bearing brackets 1h provided on the rear wall of the base 1. The brackets permit withdrawal of an empty reel upon detachment of the cover 1a so that the operator may rapidly reload the dispenser.

The dispenser operates as follows:

FIG. 3 illustrates the mechanism in the housing 1, 1a in a position its parts assume when the dispenser is not in use, i.e., subsequent to separation of a length of tape, whereby the leading edge 17b of the tape 17 rests on or is located above the disks 3b. The adhesive-coated surface is then underside of the tape 17 so that the tape adheres to the ribs on the peripheries of the disks 2b. The spring 28 biases the pawl 23 in upward direction whereby the pawl acts upon the pin 22 and compels the lever 21 to retract the shutter 20 so that the socket 20a abuts against the stop 18 and that the opening 1c remains exposed.

If the operator then decides to rotate the handle 10 in a counterclockwise direction, as viewed in FIG. 2, so that the handle leaves the starting position 10' and advances toward the arresting screw 15, through a distance of about 5 degrees (compare FIGS. 3 and 4) the cam 25 is compelled to share such angular movement because it is rigidly fixed to the shaft 6. There is some lost motion in the clutch 9 so that the rollers 2, 3 do not rotate during such first phase of movement of the handle 10. The pin 26 which engages the pallet 23b moves with the cam 25 and causes the pawl 23 to move in the direction indicated by an arrow 40, see FIG. 4. Consequently, the lever 21 is caused to pivot in a counterclockwise direction and entrains the shutter 20 so that the teeth 20c enter the grooves 3a (see FIG. 4 or 9) whereby the discharge opening 1c is closed and the leading edge 17b cannot leave the housing.

As the handle 10 continues to move toward the arresting screw 15 and completes an angle of about 10 degrees (see FIG. 5), the clutch 9 causes the driver gear 8 to rotate the gear 4 and pinions 7, 7a so that the rollers 2, 3 are driven in a sense (arrows 4a) to withdraw tape from the reel 17a and to feed the tape against the surface of the shutter 20. The transfer roller 2 actually serves to withdraw tape from the reel 17a and delivers the tape onto the disks 3b. The leading edge 17b abuts against the shutter 20 whereby the tape section immediately behind this leading edge begins to bulge and forms a loop 17c (see FIG. 5) which travels along the inner side of the folding element 24 and finally reaches a barrier in the form of a projection or stop 24a which constitutes the upper end portion of and which extends inwardly from the element 24.

Of course, the cam 25 is compelled to share rotary movements of the shaft 6 and its periphery engages the follower 27 (FIG. 5) which begins to pivot the pawl 23 about the pin 22 whereby the pin 26 slides along and finally releases the pallet 23b. The spring 28 is now free to contact and to move the lever 21 to the position of FIG. 6 so that the socket 20a abuts against the upper stop 18 and the teeth 20c move to the position of FIG. 8 in which the opening 1c is exposed. The rollers 2 and 3 continue to rotate and entrain the tape through the opening 1c in the manner illustrated in FIG. 6 whereby the loop 17c slides along the folding element 24 and its halves become flattened so that they form a twin-walled tab which is ready to be grasped by two fingers without ad-

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hering thereto since the adhesive-coated sides of its halves adhere to each other. FIG. 7 illustrates the tape 17 with the tab 17c in a position it assumes just before the operator grasps the tab and severs the tape by pulling in the direction indicated by an arrow 31 so that the tape is severed by contact with the serrated edge 19a of the knife 19. During severing, the tape and the tab respectively assume the phantom-line positions 17', 17c' which are shown in FIG. 7. There is no danger that the user would withdraw additional lengths of tape from the housing because the adhesive-coated surface of the tape adheres to the disks 2b, 3b with a force which is sufficient to withstand the severing step.

As soon as the user releases the handle 10, the spring 11 is free to contact and returns the handle to the position 10' of FIG. 2. The shaft 6, the clutch element 9a and the cam 25 share such rotary movement but the clutch element 9b remains idle so that the rollers 2 and 3 remain in the position of FIG. 7 which corresponds to that of FIG. 3. The dispenser is now ready for the next operation. The spring 28 tends to pivot the pawl 23 in a counterclockwise direction, as viewed in FIG. 7, so that the pin 26 reengages the pallet 23b in a fully automatic way as soon as the cam returns to the position of FIG. 3.

It is to be noted that the slot 23a may be replaced by a circular hole if the parts of the mechanism shown in FIGS. 1 and 3-7 are finished with a high degree of precision. The slot 23a insures satisfactory operation even if the parts are mass produced and are not machined with a high degree of precision. I also provide a retaining or locking device, such as a pin 33 which is guided in one side wall of the base 1 and which may enter a hole 34 in the pawl 23 when the latter assumes the broken-line position 23' of FIG. 3 so that, if desired, the dispenser may be used for discharging unlimited lengths of tape without the formation of tabs. This will be readily understood because, when the pawl is held in the position 23', the opening 1c remains exposed so that the leading edge 17b of the tape 17 may pass beneath the teeth 20c and is not compelled to bend and to form a loop along the folding element 24. In such instances, the feed roller 3 merely serves to transport the tape which is being fed by the transfer roller 2 in response to each depression of the handle 10.

The element 24 constitutes a highly advantageous optional feature of my invention because, if desired, the tape can be looped directly along the inner side of the shutter 20. However, the formation of the loops and tabs is more satisfactory if the element 24 is present. The upper end portion or stop 24a of this element determines the extent to which the tape may bulge when the rollers 2, 3 rotate and when the shutter 20 assumes the position of FIG. 5.

Referring again to FIGS. 3 to 5, it will be noted that the tape 17 need not come into contact with the feed roller 3 at the time the loop 17c is being formed along the inner side of the folding element 24. Thus, the cutting edge 19a may be positioned in such a way that the leading edge 17b (FIGS. 3 and 4) need not even reach the disks 3b when the tape section 17' is severed. Therefore, and when the shutter 20 assume the position of FIG. 4 or 5, the tape will not tend to adhere to the feed roller 3 and will be free to bend or bulge by traveling along the inner side of the folding element 24 when the transfer roller 2 continues to withdraw tape from the reel 17a. In other words, and since the feed roller 3 need not participate in the formation of a tab 17c, the formation of the tab is not dependent on the adhesiveness of the substance at the underside of the tape. However, and as soon as the shutter 20 moves to the exposing or open position of FIG. 6, the roller 3 takes over and compels the tab to move through the opening 1c by engaging that section of the tape which is immediately adjacent to the tab. The roller 3 cooperates with the front wall of the cover 1a to transform the discharge opening

1c into a narrow horizontal slot so that, while passing through such narrow slot, the two halves of the tab 17c are compelled to adhere to each other and remain connected at least until the operator grasps the tab with two fingers in order to sever the tape from the reel. Of course, the fingers compress the tab and thereby insure that the two halves of the tab remain in contact in order to facilitate further manipulation of the detached strip. If the user is careful not to touch the detached strip excepting along the surfaces of the tab 17c, the fingers will not come into contact with adhesive at any time.

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

What is claimed as new and desired to be secured by Letters Patent is:

1. An apparatus for dispensing selected lengths of convoluted tape one side of which is coated with an adhesive substance and for forming a loop adjacent to the leading edge of the tape, comprising a housing arranged to receive a supply of convoluted tape and having an opening through which the tape may be expelled from the housing; a transfer roller arranged to withdraw tape from such supply and to advance the tape toward said opening; a feed roller adjacent to said opening and arranged to receive the tape from said transfer roller, said feed roller including axially spaced disks which define between themselves annular grooves; means for rotating said rollers in a direction to expel the tape from said housing; and shutter means supported by said housing and arranged to move between a first and a second position in which it respectively exposes and closes said opening, said shutter means having a set of teeth extending into the grooves of said feed roller in the second position of said shutter means so that, when said roller rotates and the shutter means assumes said second position, the leading edge of the tape abuts against the shutter means and a section adjacent to the leading edge of the tape bulges to form a loop in such a way that the adhesive-coated side constitutes the inner side of the loop, such looped section of the tape being free to pass through said opening when the shutter means thereupon assumes said first position.

2. An apparatus as set forth in claim 1, wherein said feed roller is provided with a pair of spaced end faces and wherein said shutter means comprises a pair of spaced projections each of which abuts against and is guided by one of said end faces when the shutter means moves between said positions.

3. An apparatus for dispensing selected lengths of convoluted tape one side of which is coated with an adhesive substance and for forming a loop adjacent to the leading edge of the tape comprising a housing arranged to receive a supply of convoluted tape and having an opening through which the tape may be expelled from said housing; transfer means including a roller arranged to withdraw tape from such supply and to advance the tape toward and through said opening; shutter means supported by said housing and arranged to move between a first and a second position in which it respectively exposes and closes said opening; drive means for rotating said transfer roller in a direction to expel the tape from said housing, said drive means comprising a shaft rotatably mounted in said housing and a handle connected with said shaft and located externally of said housing; and reciprocating means for moving said shutter means in response to rotation of said transfer roller so that the shutter means automatically assumes said second position in the first stage of rotation of said transfer roller and that the shutter means automatically assumes said first position in the next stage of rotation of said transfer

roller, the leading edge of the tape coming into abutment with said shutter means and a section adjacent to such leading edge of the tape forming a loop in such a way that the adhesive-coated side constitutes the inner side of the loop when the shutter means assumes said second position, and such looped section of the tape being free to pass through said opening when the shutter means thereupon assumes said first position, said reciprocating means comprising a cam secured to said shaft, a lever pivotally mounted in said housing and articulately connected with said shutter means, resilient means for normally biasing said lever in a direction to move said shutter means to said first position, and a pawl cooperating with said cam and articulately connected with said lever for pivoting the lever against the bias of said resilient means in the first stage of rotation of said transfer roller.

4. An apparatus as set forth in claim 3, wherein said drive means further comprises clutch means including a first clutch element fixed to said shaft and a second clutch element cooperating with and driven by said first clutch element when the shaft rotates in a predetermined direction, and a driving connection between said second clutch element and said transfer roller, said first clutch element is rotatable through an angle of about 5 degrees relative to said second clutch element when said shaft rotates in said predetermined direction so that the cam begins to rotate ahead of said roller.

5. An apparatus for dispensing selected lengths of convoluted tape one side of which is coated with an adhesive substance and for forming a loop adjacent to the leading edge of the tape, comprising a housing arranged to receive a supply of convoluted tape and having an opening through which the tape may be expelled from said housing; a transfer roller arranged to withdraw tape from such supply and to advance the tape toward and through said opening so that the adhesive substance is located at the underside of the tape; drive means for rotating said roller in a direction to expel the tape from said housing; shutter means supported by said housing at a level above said opening and arranged to move upwardly and downwardly between a first and a second position in which it respectively exposes and closes said opening; and a folding element comprising an upper end portion which constitutes a stop for the tape and determines the extent to which the section adjacent to the leading edge of the tape may bulge in response to rotation of said roller when the shutter means assumes said second position, said folding element being arranged inwardly adjacent to said shutter means and secured to said housing at a level above said opening, the leading edge of the tape abutting against said shutter means and a section adjacent to such leading edge of the tape being compelled to bulge upwardly along said folding element when said roller rotates and said shutter means assumes said second position whereby such section of the tape forms a loop which is flattened to form a tab in response to further rotation of said roller, such tab being free to pass through said opening when said shutter means thereupon assumes said first position and said roller continues to expel tape from said housing.

6. An apparatus for dispensing selected lengths of tape one side of which is coated with an adhesive substance and for forming a loop adjacent to the leading edge of the tape, comprising a housing arranged to receive a supply of convoluted tape and having an opening through which the tape may be expelled from the housing; transfer means including a roller arranged to withdraw tape from such supply and to advance the tape toward and through said opening; means for rotating said roller in a direction to expel the tape from said housing; shutter means supported by said housing and arranged to move between a first and a second position in which it respectively exposes and closes said opening so that, when said roller rotates and the shutter means

assumes said second position, the leading edge of the tape abuts against the shutter means and a section adjacent to the leading edge of the tape bulges to form a loop in such a way that the adhesive-coated side constitutes the inner side of the loop, such looped section of the tape being free to pass through said opening when the shutter means thereupon assumes said first position; and retaining means for holding said shutter means in said first position when desired so that the tape may be expelled without looping.

7. An apparatus for dispensing selected lengths of convoluted tape one side of which is coated with an adhesive substance and for forming a loop adjacent to the leading edge of the tape, comprising a housing arranged to receive a supply of convoluted tape and having an opening through which the tape may be expelled from said housing, said housing comprising a wall having an arcuate slot; transfer means including a roller arranged to withdraw tape from such supply and to advance the tape toward and through said opening; shutter means supported by said housing and arranged to move between a first and a second position in which it respectively exposes and closes said opening; drive means for rotating said transfer roller in a direction to expel the tape from said housing, said drive means comprising a shaft rotatably mounted in and having a portion extending from said housing through said wall and concentric with said slot, a handle connected with said shaft portion and arranged to move between a starting position and a plurality of operative positions, return spring means for biasing said shaft in a direction to maintain the handle in said starting position, and control means for determining the extent to which the handle may be moved from said starting position into one of said operative positions, said control means comprising an arresting member slidably received in said slot and located in the path of said handle when the handle is moved from said starting position, and means for clamping said arresting member to said wall, said clamping means including a graduated dial

rotatable on said shaft portion and supportingly fixed to said arresting member and an arm located in said housing and rotatably mounted on said shaft adjacent to said wall, said arresting member comprising a screw extending through said dial, through said slot and into said arm so as to be clamped to said wall when tightened by the operator to such an extent that the arm and the dial engage the opposite sides of said wall; and reciprocating means for moving said shutter means in response to rotation of said transfer roller so that the shutter means automatically assumes said second position in the first stage of rotation of said transfer roller and that the shutter means automatically assumes said first position in the next stage of rotation of said transfer roller, the leading edge of the tape coming into abutment with said shutter means and a section adjacent to such leading edge of the tape forming a loop in such a way that the adhesive-coated side constitutes the inner side of the loop when the shutter means assumes said second position, and such looped section of the tape being free to pass through said opening when the shutter means thereupon assumes said first position.

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