



Sept. 22, 1964

E. WALTZ

3,149,764

PORTABLE TAPE DISPENSER

Filed Nov. 23, 1962

2 Sheets-Sheet 2

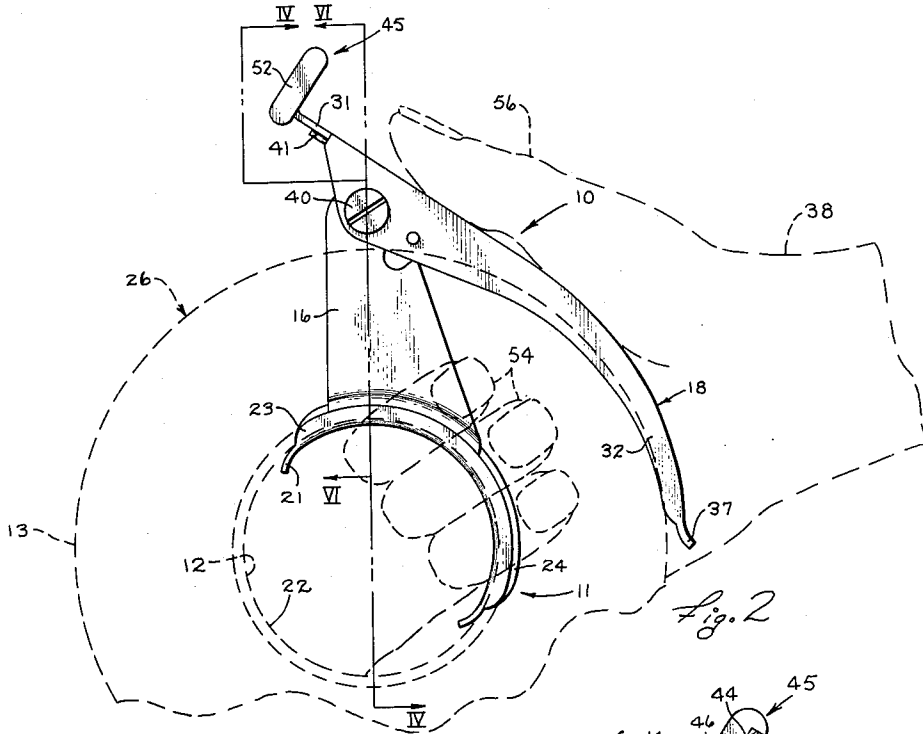


Fig. 2

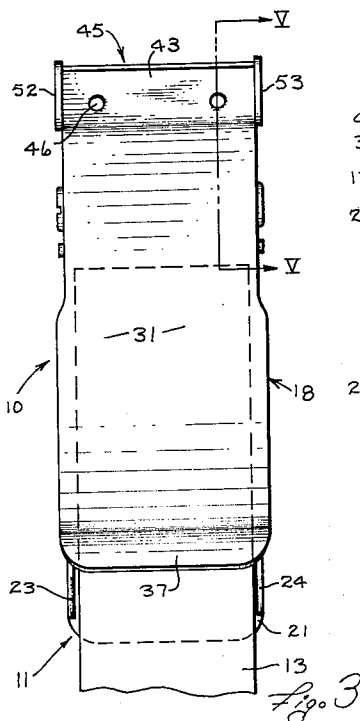


Fig. 3

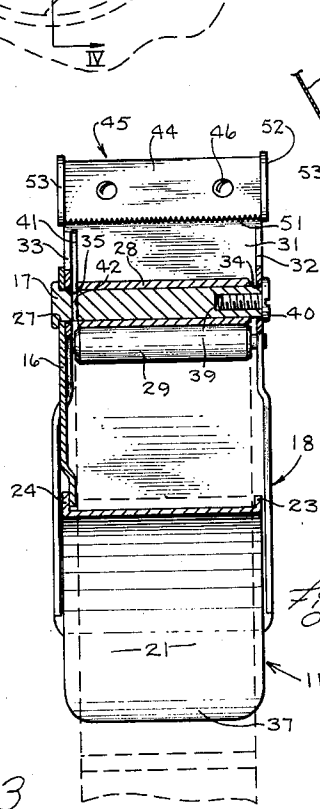


Fig. 4

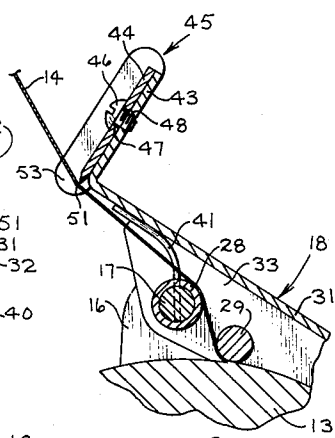


Fig. 5

INVENTOR.  
EDWARD WALTZ

BY  
*Woodhams, Blanchard & Flynn*  
ATTORNEYS

1

3,149,764

**PORTABLE TAPE DISPENSER**

Edward Waltz, Grand Rapids, Mich., assignor to E. O. Bulman Manufacturing Company, Inc., Grand Rapids, Mich., a corporation of Michigan  
 Filed Nov. 23, 1962, Ser. No. 239,599  
 5 Claims. (Cl. 225-57)

This invention relates in general to a portable device connectible to a roll of tape for dispensing said tape and, more particularly, relates to a type of such device which fits comfortably within the grasp of a normal adult hand and which can be operated effectively by said one hand to apply a piece of adhesive tape from a roll thereof to an object and thereafter sever said piece from said roll.

Many types of portable and manually operable devices have been developed for the purpose of supporting a roll of tape, such as adhesive tape, and for dispensing tape from the roll. One example of this type of tape dispenser is disclosed in my copending application Serial No. 48,746, filed August 10, 1960, and entitled "Tape Dispenser," now Patent No. 3,085,727. Manufacturers of adhesive tape have long recognized that they can increase the sale and use of adhesive tape by including a tape dispenser with the tape at no extra charge. However, the tape dispenser presently available for use with relatively large rolls of tape, such as those used commercially, are too costly and/or too bulky for free distribution on a widespread scale. Thus, due to the relatively high cost of existing, portable and hand-held tape dispensers for large rolls of tape, it has been necessary either to charge for the dispenser or to restrict the free distribution of such dispensers to purchasers of large quantities of tape.

Accordingly, there has long been an unfulfilled need for a small, but completely effective, portable and manually operable dispenser for large rolls of tape which is so simple in construction that it can either be sold separately at a very nominal price or be sold with the tape at a total price which is only slightly greater than the cost of the tape alone.

There has also been a long-standing need for an inexpensive tape dispenser of this general character, which is arranged and constructed so that it can be used repeatedly with replacement rolls of adhesive tape. Moreover, this need extends to an inexpensive dispenser design which can be adapted by minor modifications to handle rolls of tape having various diameters and axial lengths.

Accordingly, a primary object of this invention has been the provision of a portable, manually operable tape dispenser capable of filling the aforementioned needs in an acceptable manner.

A further object of this invention has been the provision of a tape dispenser, as aforesaid, which is relatively simple in construction and operation, which occupies a minimum of space, particularly when it is mounted upon a roll of tape, which can be assembled upon or removed from a roll of tape quickly and easily by any person capable of operating even the simplest form of tape dispenser presently in use, and which can be adapted for use with a wide variety of types and sizes of rolls of tape, including adhesive tapes of all types.

A further object of this invention has been the provision of a tape dispenser, as aforesaid, which can be used to dispense nonadhesive tapes and gummed tapes which must be moistened before they are applied.

A further object of this invention has been the provision of a tape dispenser, as aforesaid, which is safe to operate, pleasing in appearance, sturdy in construction, and which is constructed so that it holds the free end of the adhesive tape away from the roll thereof whereby said end can be easily and quickly applied to an object with a minimum of time and difficulty and whereby a piece of said

2

tape applied to the object can be severed from the roll without manually engaging said tape.

Other objects and purposes of this invention will become apparent to persons familiar with this type of device upon reading the following descriptive material and examining the accompanying drawings, in which:

FIGURE 1 is a perspective view of a tape dispenser embodying the invention.

FIGURE 2 is a side elevational view of said tape dispenser in association with a broken line showing of a roll of tape and a user's hand engaging same.

FIGURE 3 is a substantially rear elevational view of the tape dispenser in association with a fragment of a roll of tape.

FIGURE 4 is a sectional view taken along the line IV-IV in FIGURE 2.

FIGURE 5 is a sectional view taken along the line V-V in FIGURE 3.

FIGURE 6 is a sectional view taken along the line VI-VI in FIGURE 2, and disclosing a modified structure including a belt clip.

FIGURE 7 is an exploded sectional view of a fragment of FIGURE 5 and disclosing a modified construction for the cutting head.

FIGURE 8 is a broken, side elevational view of a modified tape dispenser embodying the invention.

FIGURE 9 is a sectional view taken along the line IX-IX of FIGURE 8.

For convenience in description, the terms "upper," "lower" and words of similar import will have reference to the dispenser of the invention as appearing in FIGURES 2 and 3. The terms "front," "rear" and words of similar import will have reference to the left and right sides of the dispenser as appearing in FIGURE 2. The terms "inner," "outer" and derivatives thereof will have reference to the geometric center of the tape dispenser of the invention and parts thereof.

*General Description*

The objects and purposes of the invention, including those set forth above, have been met by providing a tape dispensing device comprised of a positioning member, a support member rigidly secured to the positioning member and a control lever pivotally mounted upon the support member so that a roll of tape having a central opening can be easily mounted upon said positioning member and will thereafter be gripped by and between the positioning member and the lever of the dispensing device. Resilient means on the support member urges one end of the lever against the periphery of the roll of tape mounted on the positioning member. A cutting head is mounted upon the other end of the lever for severing a piece of the tape from the roll supported upon the dispensing device.

In a modified construction, the support member has an integral belt-engaging clip. In a further modification, a brace bar is mounted upon the positioning member and is releasably connectible to the support member to provide additional support for the lever. This latter modification is particularly useful where the roll of tape has a relatively large axial dimension.

*Detailed Construction*

The tape dispenser 10 (FIGURES 1 and 2), which has been selected to illustrate one embodiment of the invention, is comprised of an arcuate positioning member 11, which is slidably receivable through the central opening 12 of a roll 13 of tape 14, which usually has a pressure-sensitive adhesive on one side thereof. The dispenser 10 also includes a support member 16 which is rigidly secured to the positioning member 11 and extends radially outwardly therefrom along one axial edge thereof. A

pivot post 17 is rigidly secured to the support member 16 so that said post extends therefrom in the same direction as said positioning member 11. A lever 18 is pivotally supported upon the post 17.

The positioning member 11, support member 16, pivot post 17 and lever 18 preferably are fabricated from metal of sufficient strength and rigidity to minimize deflection of these parts with respect to each other, other than the pivotal movement of the lever 18 during normal operation of the tape dispenser.

The positioning member 11 includes an arcuate wall 21 which defines a portion of a cylinder preferably having substantially the same radius of curvature as the wall defining the central opening 12 in the tape roll 13. The positioning member 11 includes a pair of preferably integral and parallel side rails 23 and 24 which extend along the opposite arcuate edges of the arcuate wall 21 and project radially outwardly therefrom a relatively short distance. As shown in FIGURES 3 and 6, side rails 23 and 24 are adjacent to the opposite axial ends of the roll 13 for the purpose of preventing accidental displacement of the positioning member 11 from within the central opening 12 of the tape roll 13. The side rail 23, as well as the adjacent portion of the arcuate wall 21, are particularly designed so that they can be slidably received through the central opening 12 in the tape roll 13 for the purpose of mounting the tape roll 13 upon the tape dispenser 10.

The support member 16 (FIGURE 1) is rigidly secured to, or may be integral with, the side rail 24 and/or the adjacent portion of the positioning member 11 so that said support member 16 extends radially outwardly from the arcuate wall 21 adjacent one edge thereof. The support member 16 extends to a point substantially beyond the peripheral surface 26 (FIGURE 2) of a full roll 13 of tape with which the dispenser is intended to be used. The upper end of the support member 16 has a post opening 27 (FIGURE 4) through which the pivot post 17 is received and in which said post is rigidly held by means such as a press fit and/or welding. The pivot post 17 is parallel with the axis of curvature of said positioning member 11 and is spaced radially therefrom a distance greater than the radius of said roll 13 of tape. An elongated roller 28 having a knurled outer surface is rotatably supported upon the pivot post 17.

The lever 18 (FIGURES 1, 2 and 3) has an elongated and partially arcuate, central wall 31. A pair of substantially parallel and preferably integral side flanges 32 and 33 extend along substantially the full length of the opposite lengthwise edges of the central wall 31, so that they project toward the positioning member 11. A pair of coaxial pivot openings 34 and 35 are provided through the side flanges 32 and 33 near their frontward ends where said flanges preferably extend the greatest distance from the central wall 31. The pivot post 17 is received through the pivot openings 34 and 35, and the roller 28 is snugly disposed between the side flanges 32 and 33.

A smooth surfaced roller 29 is rotatably supported upon and between the flanges 32 and 33 rearwardly of the roller 28 so that said rollers are parallel and spaced a short distance radially from each other. Accordingly, and as shown in FIGURE 5, the tape 14 is fed from the roll 13 under the roller 29, over the roller 28 and thence between said roller 28 and the central wall 31 of the lever 18. The peripheral surface of the roller 28 is knurled to minimize its area of contact, hence its adhesion, and the adhesive side of the tape 14.

The radius of curvature of the curved, rearward portion of the lever 18 is preferably about equal to the radius of curvature of the peripheral surface 26 of a full roll 13 of tape. The rearward end 37 of the lever 18 is flared away from engagement with the peripheral surface 26 to prevent interference with movement thereof and to effect a small amount of gripping with the palm of a hand 38

(FIGURE 2) which grasps the tape dispenser 10 when the roll 13 is mounted thereon.

A resiliently flexible element (FIGURE 4), such as the wire spring 41, is snugly held near one end within a transverse opening 42 in the pivot post 17 adjacent the side flange 33. The outer end of the spring 41 (FIGURE 5) extends upwardly and frontwardly along the lower surface of the central wall 31 and, accordingly, urges the rearward end 37 of the lever 18 against the roll 13 of tape.

The free end of the pivot post 17 (FIGURE 4) has a coaxial, threaded opening 39 into which a cap screw 49 is threadedly received for the purpose of holding the lever 18 and the roller 28 upon said pivot post 17.

The lever 18 (FIGURE 5) has a cutting head 45 which is supported upon the front end of the central wall 31. Said cutting head 45 includes a flange 43 which is integral with and preferably extends upwardly and perpendicularly from said central wall 31 near its front end. A cutting blade 44, which is part of said head 45, is rigidly mounted upon the front side of the flange 43 by the screws 46, which are slidably received through openings 47 in the blade 44 and are threadedly received into openings 48 in the flange 43. The blade 44 has a downwardly facing cutting edge 51 which preferably projects slightly below the lower surface of the central wall 31 adjacent the flange 43. Said head 45 includes a pair of guard plates 52 and 53, which are secured to or integral with the opposite ends of the flange 43 on the lever 18. Thus, the blade 44 and particularly its cutting edge 51 are disposed completely between, and do not project beyond the edges of, said guard plates 52 and 53.

#### Operation

With the tape dispenser 10 assembled as appearing in FIGURES 1 and 2, a roll 13 of tape is mounted thereon by moving the rear end 37 of the lever 18 away from the positioning member 11 and then inserting said positioning member 11 through the central opening 12 in the roll 13 of tape until said roll engages the support member 16. The wall 22 of the central opening 12 in the roll 13 is held between the rails 23 and 24 and against the arcuate wall 21 of the positioning member 11. The lever 18 is then released and the spring 41 urges its rear end 37 against the peripheral surface 26 of the roll 13. As shown in FIGURE 3, the curved, rearward portion of the lever 18 is arranged so that the side flanges 32 and 33 are disposed upon opposite axial sides of the roll 13 of tape. Moreover, by widening the rearward end of the lever 18, the flanges 32 and 33 also overlap the rearward ends of the side rails 23 and 24. Thus, the roll 14 can be gripped between the lever 18 and the positioning member 11 when the tape is very nearly exhausted from the roll 13, even though the roll 13 has a core of small radial thickness. This insures positive clamping action of the roll 13, hence control of the dispensing of the tape, from a full roll down to a nearly exhausted roll.

The tape 14 is threaded upwardly between the rollers 28 and 29 (FIGURE 5), over the roller 28 and past the cutting edge 51. The tape dispenser 10 can then be manually grasped, as shown in FIGURE 2, so that at least some of the fingers 54 on the hand 38 extend through the central opening 12 in the roll 13 beneath the positioning member 11. The thumb 56 of the hand 38 extends forwardly along the lever 18 toward the flange 43 thereon, and the palm of said hand is closely adjacent the support member 16 and the corresponding side of the roll 13 of tape.

The tape 14 can be manually engaged by the operator with his free hand and pulled outwardly beyond the cutting edge 51, after which the tape is severed by pulling the tape upwardly against the blade 44. Alternatively, the free end of the tape 14 can be applied to an article of any type after which the tape dispenser 10 is pulled along said article and the tape is thereafter applied to

the article in a conventional manner by manipulating the dispenser. It will be seen that by manually squeezing the roll 13 between the lever 18 and the positioning member 11, the ease with which the tape 14 is removed from the roll 13 can be varied substantially. When the tape has been appropriately applied to the article, the dispenser 10 and its roll 13 of tape are rotated in a counterclockwise direction, as appearing in FIGURE 2, until the cutting edge 51 (FIGURE 5) engages the tape and severs same from the roll thereof. The rollers 28 and 29 cooperate to ease the removal of the tape 14 from the roll 13 and they also hold the end of the tape away from the roll where said end is easily accessible for immediate use when desired. That is, the rollers 28 and 29 prevent the end of the tape from moving back onto the roll, which would be its natural inclination.

It will be apparent that, although the features of the tape dispenser 10 are more fully utilized with the type of tape having an adhesive on one side, said dispenser can also be advantageously used with other types of tape including gummed tape to which moisture must be applied in order to render it adhesive.

#### Modified Construction

The tape dispenser 10a, shown in FIGURE 6, is modified by providing an integral extension 60 on the upper end of its support member 16a. The extension 60 is folded downwardly along and near to the support member 16a to provide a belt or pocket engaging clip 61.

Under some circumstances, it may be desirable to provide the dispenser 10 (FIGURE 1) with a lever 18a (FIGURE 7) including a cutting head 45a having guard structure which is removable from the lever. That is, the lever 18a of FIGURE 7 has an integral flange 43a which may be identical in construction with flange 43 of FIGURE 1. However, the head 45a has a separable mounting plate 64 with a pair of parallel and similar guard plates, one of which is shown at 62. Said guard plates are secured to or integral with the opposite ends of the mounting plate 64. The flange 43a and blade 44a are provided with alignable openings 66 and 67, respectively, through which a screw 68 is slidably received for threaded engagement with a threaded opening 69 in the mounting plate 64. With this type of construction, the mounting plate 64 and its integral guard plates can be hardened, if desired, without hardening the remainder of the lever 18a.

The modified tape dispenser 72 (FIGURES 8 and 9) includes a positioning member 73, support member 74 and lever 76 which may be identical in construction and operation with the positioning member 11, support member 16 and lever 18 of the tape dispenser 10, shown in FIGURES 1 and 2. However, the outer end of the pivot post 77 differs from the outer end of the pivot post 17 for reasons appearing hereinafter. More specifically, and as shown in FIGURE 9, the free end of the pivot post 77 has a portion 78 of reduced diameter with an annular groove 79 in said reduced end portion between the axial ends thereof.

An elongated brace bar 82 is pivotally connected at one end by means of a hinge 83 to that edge of the positioning member 73 remote from the support member 74. Said brace bar is pivotally movable at least between the solid line position of FIGURE 9, which is substantially parallel with the support member 74, and the broken line position 82a, which is approximately perpendicular to the support member 74. The upper end of the brace bar 82 has an opening 84 through which the reduced end portion 78 of the pivot post 77 is slidably but snugly receivable. The outer end of the end portion 78 is preferably rounded to facilitate its entry into said opening 84. The distance from the annular groove 79 to the shoulder 80 at the inner end of the reduced portion 78 is preferably about equal to the thickness of the brace bar 82.

An elongated spring element 86 (FIGURE 8) is secured near one end upon the outer side of the brace bar 82 near the opening 84 therein so that the free end of the spring element 86 normally extends across an edge portion of the opening 84. The spring element 86 is of such size that it will be slidably received into the annular groove 79 (FIGURE 9) in the reduced portion 78 of the pivot post 77 when the brace bar 82 is in engagement with said shoulder 80. The free end of the spring element 86 extends sufficiently beyond the opening 84 that it can be manually engaged for the purpose of removing it from the annular groove 79 so that the brace bar 82 can be disengaged from the pivot post 77.

The brace bar 82 is easily engaged with the pivot post 77 merely by moving it from its broken line position toward its solid line position of FIGURE 9. That is, the spring element 86 is moved sidewardly, away from its position obstructing the opening 84, by the rounded end on the reduced portion 78 of the pivot post 77. The resilience of the spring element 86 causes it to snap into the annular groove 79 when said spring arrives at the position radially opposite said groove. The brace bar 82 provides added rigidity to the modified tape dispenser 72, particularly where the roll 13a of tape is relatively wide so that it would be especially difficult to support the pivot post 77 from only one end thereof.

Although particular preferred embodiments of the invention have been described above in detail for illustrative purposes, it will be understood that variations or modifications of such disclosure, which come within the scope of the appended claims, are fully contemplated.

What is claimed is:

1. A portable device engageable with a roll of tape for dispensing the tape, said roll having a coaxial, cylindrical opening therethrough, comprising:
  - a substantially semicylindrical positioning member receivable into said cylindrical opening for engagement with the peripheral wall thereof;
  - a support member rigidly and permanently secured to one axial end of said positioning member and projecting outwardly therefrom beyond the periphery of a roll of tape mounted on the positioning member;
  - pivot means mounted on the projecting end of said support member and extending therefrom in substantially the same direction as said positioning member;
  - a lever of greater length than said support member pivotally supported between the ends thereof upon said pivot means;
  - resilient means urging one end of said lever toward said positioning member;
  - cutting means on the other end of said lever; and
  - guide means on said lever for guiding the end portion of the tape away from the roll thereof and toward said cutting means.
2. A manually engageable and portable device engageable with a roll of tape for dispensing said tape, said roll having a coaxial cylindrical opening therethrough and said tape having an adhesive coating on the inner side thereof, comprising:
  - a substantially hemicylindrical positioning member receivable through the cylindrical opening and engageable with the wall defining the cylindrical opening, said positioning member having a radius of curvature similar to the radius of said opening;
  - stop means rigidly affixed to said positioning member engageable with the opposite axial ends of said roll for restricting relative axial movement between said roll and said positioning member;
  - a support member rigidly and permanently secured to said positioning member and extending radially outwardly therefrom along one axial edge thereof a distance greater than the radial thickness of said roll;
  - pivot means secured to said support member near the outer end thereof and extending therefrom in a

7

direction substantially parallel with the axis of said radius of curvature;

a lever of greater length than said support member pivotally supported between the ends thereof upon said pivot means for movement around a pivot axis parallel with said axis of said radius of curvature;

resilient means urging one end of the lever toward the positioning member;

cutting means secured to the other end of the lever and having a cutting edge parallel with said axis of curvature and facing the positioning member; and

a guide roller rotatably and concentrically supported upon said pivot means for engaging said tape on the adhesive side thereof and holding same away from said roll thereof.

3. The structure of claim 2 including a second roller rotatably supported upon said lever parallel with the first-mentioned roller between said first roller and said one end of said lever; and

guard means secured to said lever at the opposite ends of the cutting edge.

4. The structure of claim 3 wherein said support member has an integral extension folded upon itself adjacent said pivot means to form a downwardly opening hook on the side of said support member away from said positioning member.

5. A manually engageable and portable device engageable with a roll of tape for dispensing said tape, said roll having a coaxial cylindrical opening therethrough and said tape having an adhesive coating on the inner side thereof, comprising:

an arcuate positioning member receivable through the cylindrical opening and engageable with the wall defining the cylindrical opening, said positioning member having a radius of curvature similar to the radius of said opening;

stop means on said positioning member engageable with the opposite axial ends of said roll for restrict-

8

ing relative axial movement between said roll and said positioning member;

a support member rigidly secured to said positioning member and extending radially outwardly therefrom along one axial edge thereof a distance greater than the radial thickness of said roll;

pivot means secured to said support member near the outer end thereof and extending therefrom in a direction substantially parallel with the axis of said radius of curvature;

a lever pivotally supported between the ends thereof upon said pivot means for movement around a pivot axis parallel with said axis of said radius of curvature;

resilient means urging one end of the lever toward the positioning member;

cutting means secured to the other end of the lever and having a cutting edge parallel with said axis of curvature and facing the positioning member;

a guide roller rotatably and concentrically supported upon said pivot means for engaging said tape on the adhesive side thereof and holding same away from said roll thereof; and

a brace bar hingedly connected to the positioning member along the edge thereof remote from the support member, said brace bar being movable between a first position substantially perpendicular to said support member and a second position substantially parallel with said support member, said brace bar having gripping means near the other end thereof releasably engageable with said pivot means remote from said support member.

## References Cited in the file of this patent

## UNITED STATES PATENTS

|           |                     |               |
|-----------|---------------------|---------------|
| 1,076,885 | Helman et al. ....  | Oct. 28, 1913 |
| 2,587,394 | Shallenberger ..... | Feb. 26, 1952 |
| 2,777,594 | Krueger .....       | Jan. 15, 1957 |
| 2,798,552 | Aldrich .....       | July 9, 1957  |