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2,424,486

PRESSURE-SENSITIVE ADHESIVE TAPE DISPENSER

Filed Sept. 29, 1944

2 Sheets-Sheet 1

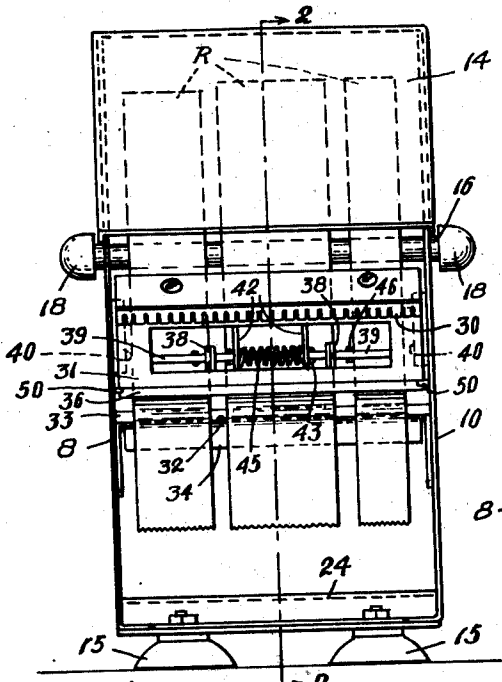


Fig. 1.

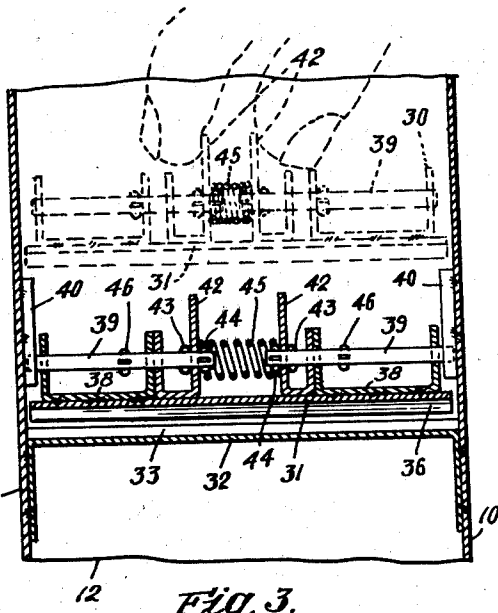


Fig. 3.

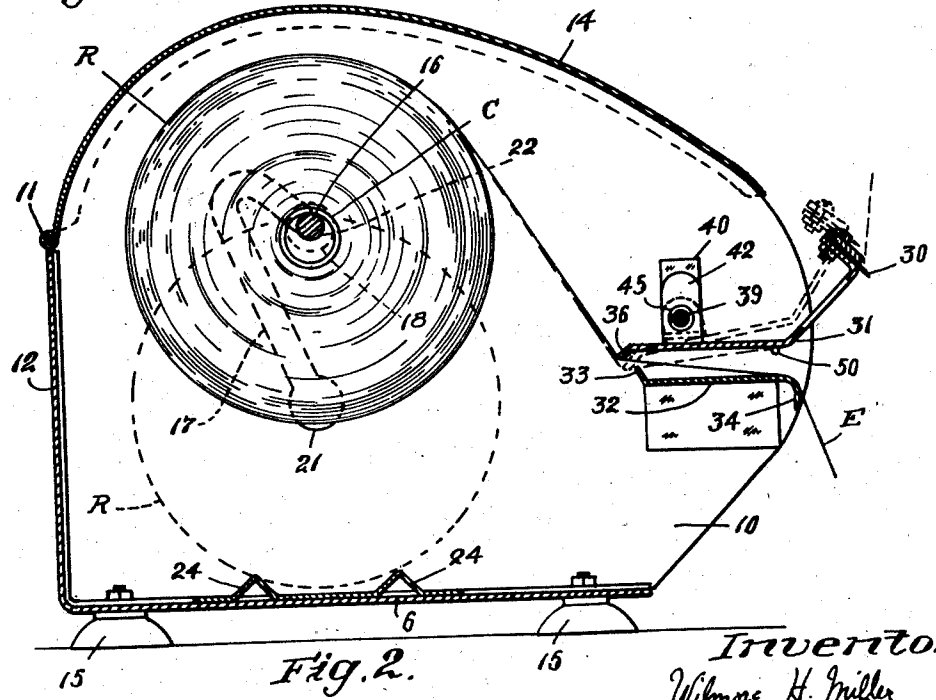


Fig. 2.

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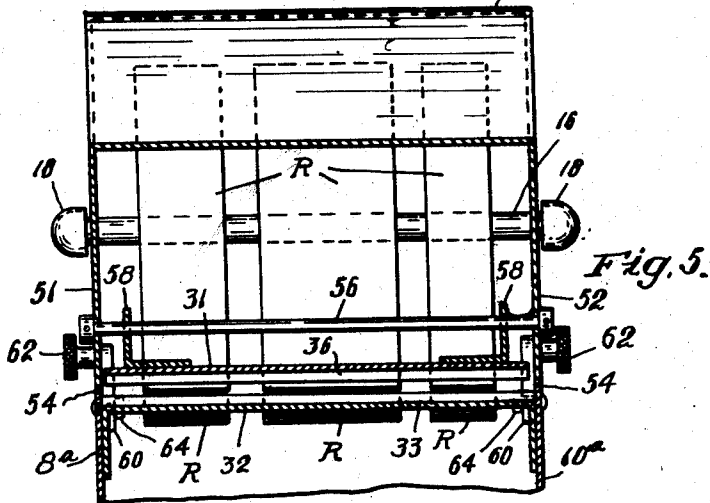
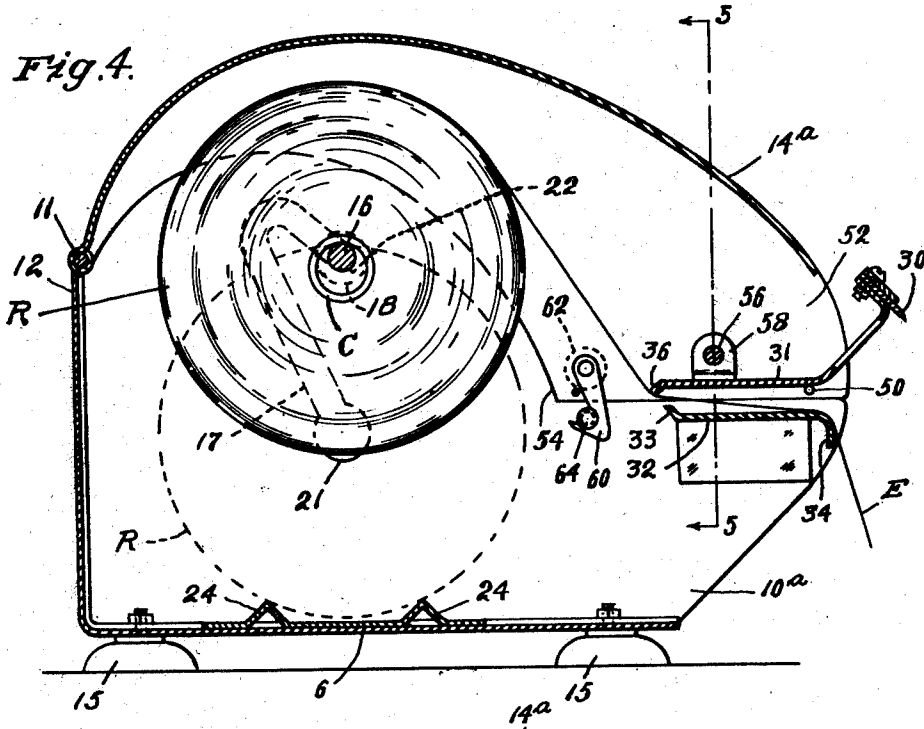
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2 Sheets-Sheet 2

Fig. 4.



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# UNITED STATES PATENT OFFICE

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## PRESSURE-SENSITIVE ADHESIVE TAPE DISPENSER

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1 Claim. (Cl. 242—55.4)

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This invention relates to dispensers for pressure-sensitive adhesive tape and has for an object the provision of a readily loaded and easily operated dispenser which can accommodate one or a series of rolls of a variety of sizes of pressure-sensitive adhesive tape, and from which tapes of all usual commercial constructions, textures, and strengths may be equally well dispensed.

One feature of the dispenser is that it can be readily loaded to provide simultaneous selective dispensing access to rolled supplies of, for instance, a half-inch cloth tape, a three-fourths inch Cellophane tape, and a one-inch paper tape, or of any other combination of widths and/or types of pressure-sensitive adhesive tape, which may be accommodated regardless of individual width up to the capacity for which the particular dispenser is designed.

Versatile width of roll capacity and ease of loading is provided by a novel roll-mounting structure, and ease of loading is further accomplished by the inclusion of means permitting, at the time of loading, positioning for ready individual access of tape ends drawn from the mounted rolls.

For purposes of description, reference will be made to a desk type of dispenser embodying the invention and illustrated in the drawings in which

Fig. 1 is an end elevation of the dispenser;

Fig. 2 is a longitudinal cross-sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a detail fragmentary view showing the details of one portion of the dispenser and indicating by dotted line showing the removability of certain parts of the dispenser;

Fig. 4 is a longitudinal cross-sectional view of a modified form of dispenser; and

Fig. 5 is a cross-sectional view taken along the lines 5—5 of Fig. 4.

The dispenser shown in Figs. 1 to 3 includes a sheet metal casing or support comprising a base formed of a bottom wall 6, side walls 8 and 10, back wall 12 and a curved cover plate 14 hinged at 11 to back plate 12 and terminating forwardly at a point to provide an open front for the dispenser, as indicated in Fig. 2.

The casing may be supported by four suction rubber cups 15 bolted to the housing floor 6.

Rolls of tape R wound on internal annular cores C are supported in the casing for dispensing rotation upon a rod 16 which extends across the dispenser through slots provided in each of the side walls 8 and 10. Ends of the rod 16

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are enlarged as by caps 18 and the rod 16 may not therefore be removed from either slot except when the rod is moved to a position extending through enlarged apertures 21 provided at the bottom ends of the slots 17. Upper ends of the slots have the curvature shown and terminate in dwells 22. With such construction, loading of a number of rolls R is readily accomplished by removing the rod from the slots 17 through the apertures 21 and placing the rolls of tape in side by side relation on the floor 6 of the casing supported between projections 24, 24 as indicated by the dotted line position of a roll R in Fig. 2. With one or a series of rolls thus supported on the floor of the casing, the rod 16 may be reinserted through aperture 21 of one of the walls 8 and 10 and may be passed loosely through the apertured core or cores C of rolls R and hence through the aperture 21 in the opposite side wall. The rod may then be passed upwardly along the slots 17 to the dwells 22 carrying with it the rolls R to side by side independently rotatable dispensing position, as shown in Fig. 1. No separators between the rolls are necessary and they hang loosely on rod 16.

The dispenser has incorporated therewith means for severing portions of tape unrolled from the rolls R. For this purpose, a cutting blade 30 is mounted on the forward end of a rocker plate 31 positioned across the dispenser over a dispenser bed 32 and between which plate and bed tape is drawn from rolls R, adhesive face down.

The dispenser bed 32 is mounted transversely of the dispenser on side walls 8 and 10 and is shaped to provide at its inner end an upstanding projection 33 and at its forward end a downwardly turned projection 34.

The rocker plate 31 is arranged to cooperate with the rear projection 33 of the bed 32 to lock tape extending therebetween during the operation of severing a portion of one of the tapes along the cutting blade 30. For this purpose, the rocker plate 31 terminates inwardly in a downwardly projecting portion 36 and the whole plate 31 is adapted for pivotal movement relative to the casing from the full line position shown in Fig. 2 to the dotted line position shown in Fig. 2 when a tape end E is lifted from normal position extending across the bed 32 against the cutter 30 for severing of a portion thereof.

Since, in normal tape dispensing position, the tape ends pass beneath the rocker plate 31 and must be threaded thereunder during loading, the rocker plate 31 is mounted for detachment from the casing. For this purpose, the rocker plate

mounting means may take the form shown in detail in Fig. 3. Fixed at each side and on top of plate 31 are U-shaped brackets 38. Bearing pins 39 pass horizontally through apertures in brackets 38 and are adapted to extend into journals provided by apertured plates 40 affixed as by welding to the casing sides 8 and 10.

In order to permit withdrawal of the bearing pins 39 from the journals, each of the pins 39 carries at its inner end a gripping member 42 in the form of another U-shaped member fixed relative to pins 39 by stops 43, 44. A spring 45 is inserted between the gripping members 42, 42 and is seated at either end around the inner ends of the bearing pins 39. The spring thus yieldingly urges the bearing pins 39, 39 and gripping members away from each other into positions extending beyond brackets 38. Stops 46 may also be provided to insure against loss of the pins. As indicated by the dotted line shown in Fig. 3, the construction just described permits the bearing pins to be moved towards each other through the medium of the gripping members 42, 42 and against the yielding action of the spring 45 to withdraw the bearing pins 39 from the casing journals thus permitting removal of the rocker arm 31 and attached cutting blade 30 as a unit from the casing.

The casing side walls carry suitable stops 50, 50 in order to limit the downward movement of the rocker plate to a normal inoperative position as shown in Fig. 2.

After the rolls R have been mounted on the rod 16 as hereinbefore explained, their outer ends may thus be passed across the bed 32 adhesive face down while the rocker plate is removed from the dispenser or at least lifted away from bed 32 to permit more ready threading of the tape ends. In loading, the outer free tape ends are carried somewhat beyond bed 32 so that loose unattached ends thereof fall to a position extending beyond bed 32 for grasping between the thumb and forefinger. The rocker plate may then be returned to operating position and the dispenser is then ready for dispensing operation.

To dispense tape, a loose-hanging end thereof is grasped, lifted clear of attachment to the bed 32, and pulled away from the dispenser to feed it out between plate 31 and bed 32. When a sufficient length has been withdrawn, the tape is lifted against the cutter blade 30. The resistance offered by the tape to cutting pivots the rocker plate 31 about the bearing pins 39 lowering the inner end of the rocker plate 31 to the dotted line position of Fig. 2, thus locking the tape being dispensed between the portion 33 of the bed 32 and the portion 36 of the rocker plate 31 to hold the tape against slippage while severing action is performed. This feature is especially desirable in the case of strong, difficulty severed tape such as cloth tape. Immediately upon severance of a length of tape the plate 31 drops back to the full line position shown in Fig. 2 due to the unbalanced weight of the rocker arm 31 relative to the pivot axis. Simultaneously, by reason of the proportioning of the dispensing parts, particularly the relation of the cutter blade 30 to the forward edge of bed 32, the remaining attached end of the tape will fall under the influence of gravity from contact with the blade 30 to a position such as indicated in full lines in Fig. 2, draped over bed 32 and extending below and beyond the bed. The remaining loose end is thus readily accessible for a renewed grasping between the thumb and finger for withdrawal of a further length of tape.

It will be understood that for loading, the cover is hinged upwardly to permit insertion of rolls R and provide access to the gripping members 42.

Fig. 4 and Fig. 5 illustrate a modified form of dispenser wherein the rocker plate 31 and cutting blade 30, instead of being mounted, as in Figs. 1 to 3, between side walls 8 and 10 of the base of the casing, are mounted between side walls 51 and 52 of a modified form of hinged cover 14a. In such construction, the side walls 8a and 10a of the casing terminate at upper edges indicated at 54 and lower edges of cover side walls 51 and 52 are shaped to abut against edges 54 when the cover 14a is in the closed position shown in Fig. 4.

The mounting of the rocker blade 31 is then simplified and may comprise merely a pivot rod 56 extending transversely of the dispenser and supported in side walls 51 and 52 of cover 14a with the rocker arm 31 suspended from this pivot bar 56 by apertured brackets 58. In this modified form of device the stops 50 may also be mounted on the cover side walls 51 and 52 instead of being mounted on the base side walls 8 and 10 of the construction shown in Figs. 1 to 3.

With this modified form of construction, the operation of the dispenser when the cover is in closed position is identical with that of the construction shown in Figs. 1 to 3, if the cover 14a is provided with some suitable means for retaining it in closed position so that it will not hinge upwardly when a tape end E is lifted against the cutting blade 30. While any suitable retaining means may be utilized, I have illustrated in the drawing latches 60 mounted on side walls 51 and 52 of the cover 14a and supplied with exterior knurled thumb knobs 62 for convenient operation in latching the cover at each side to the bottom portion of the casing by passing the latches under pins 64 extending inwardly from the side walls 8a and 10a of the lower portion of the casing.

It will be understood that when it is necessary to load or reload the dispenser, the latches 60 are pivoted so that the cover 14a may be hinged upwardly to open position carrying with it the rocker plate 31 and cutter 30 and exposing the interior of the casing so that new rolls R of tape may be loaded therein and their free ends brought across transverse bed 32. The rocker arm is then returned to the position shown in Fig. 4 by closing and latching the cover of the dispenser. As will be seen, this construction permits a dispensing operation as efficient as that of the dispenser shown in Figs. 1 to 3; it also provides similarly convenient loading and threading of tape therein.

The constructions shown permit one-handed dispensing of tapes, especially when the housing is weighted or bolted to a support, without having the dispenser near the edge of its support, as is required when downward pull severing is utilized for considerable tape lengths, and provides in either form a simple efficient relatively cheap and successful dispenser especially for strong tapes such as cloth backed tapes.

I claim:

A pressure-sensitive adhesive tape dispenser comprising a support having side walls defining slots terminating at their upper ends in dwells, at least one of said slots terminating at its lower end in an enlarged aperture, an adhesive tape roll-supporting rod having enlarged ends of greater maximum cross-sectional dimension than the width of said slots but of less maximum cross-sectional dimension than the maximum width of said aperture, removably supported in said dwells

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and adapted to extend through annular cores of adhesive tape rolls to be mounted in said dispenser, whereby said rod may be lowered along said slots and withdrawn from said aperture to load rolls into said dispenser, for independent rotation about said rod, a transverse bed over which tape may be drawn from said rolls, a cutter blade mounted transversely of said dispenser, and a rocker plate pivotally mounted on said support over said bed between said cutter and said roll 10 supporting rod, said plate spanning portions of the ends of tape led from said rolls and being movable from normal inoperative position to a tape cutting position locking said tape portions against said bed when a tape end is moved against said blade, said plate being mounted for movement as a unit away from said bed to permit threading of said tape ends between said bed and said plate during loading of said dispenser.

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