April 16, 1957 E. E. SHARPE 2,788,852

PRESSURE SENSITIVE TAPE DISPENSER WITH SLITTER MEANS

Filed Jan. 13, 1953

Fig. 1

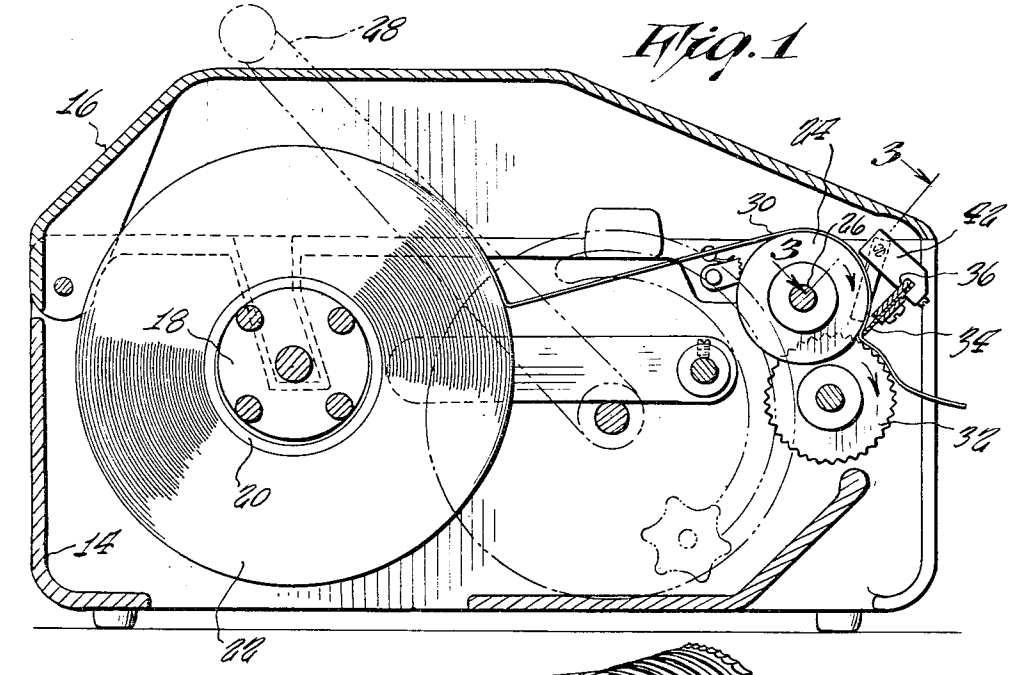


Fig. 2

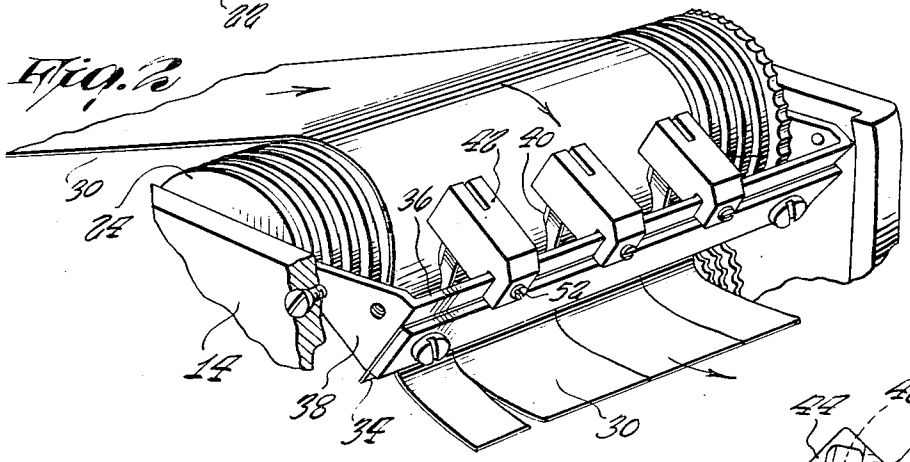


Fig. 3

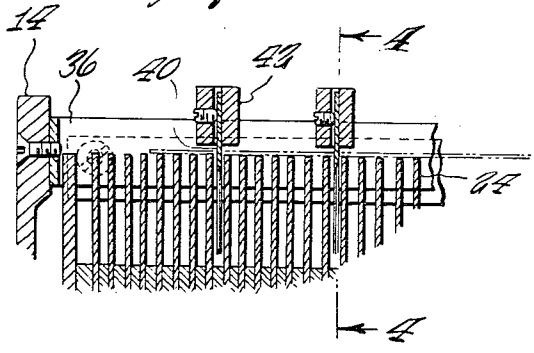
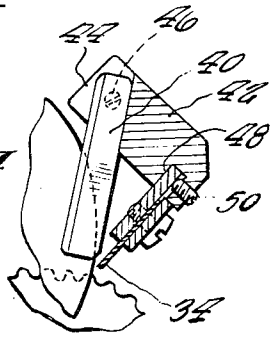


Fig. 4



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United States Patent Office 2,788,852 Patented Apr. 16, 1957

2,788,852

PRESSURE SENSITIVE TAPE DISPENSER WITH SLITTER MEANS

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Application January 13, 1953, Serial No. 331,010

2 Claims. (Cl. 164—39)

This invention relates to dispensers for tape or the like in which means are provided for slitting the tape into two or more narrow strips as it is dispensed. This invention has particular utility in dispensers for handling pressure sensitive adhesive tape.

There are a number of advantages to be obtained by dispensing adhesive tape from wide rolls, the tape being slit into narrow strips as it is dispensed, as compared with the dispensing of the tape from a plurality of narrower rolls. In the first place for the same area of tape, wide rolls of tape are less expensive than several narrow rolls. Furthermore, when loading the dispenser it is easier to handle one wide roll than several narrow rolls. More tape can also be placed in a machine of a given size in the case of the single wide roll because there is no waste space between separate rolls. Another very practical advantage is that where a machine is loaded with a number of narrow rolls which are all fed by a single feeding device, one of the rolls, which may for example be a little short, may become used up before the tape is exhausted from the other rolls. If the used up roll is at once replaced, then the other rolls will give out before the replaced roll is used up. Thus, it is a matter of repeatedly loading the machine with one or more narrow rolls at a time. As a matter of fact it is a very common practice, when the first narrow roll is used up, for the operator to completely reload the machine, throwing away the remnants of the rolls which have not been completely used up with the resulting waste of tape. All of these objections are avoided by providing a machine in which a single wide roll of tape can be placed and then utilizing slitting knives which cut the tape into the desired narrower widths as the tape is dispensed.

One of the chief objections to the use of slitting knives is the danger of the cutting of the operator's fingers by the sharp knife edges during the operation of threading an end of a new roll of tape into the machine. It is the primary objective of the present invention to provide a slitting knife construction in which the danger of finger-cutting is entirely eliminated and the operation of threading a new roll of tape is rendered exceedingly simple and perfectly safe.

Other objects and advantages of the invention will appear in connection with the description of one preferred embodiment thereof chosen to illustrate the same.

In the accompanying drawings,

Figure 1 is a longitudinal vertical section of the illustrative machine embodying the invention;

Figure 2 is a perspective view showing the feed device, slitters and tear-off blade;

Figure 3 is a fragmentary transverse section taken on line 3—3 of Fig. 1;

Figure 4 is a fragmentary longitudinal section taken on line 4—4 of Fig. 3.

Referring to the drawings in detail, the machine illustrated comprises a casing 14 having a hinged cover 16. Mounted in the casing is a spool or reel 18 upon which is mounted the core 20 of a roll 22 of pressure sensitive

adhesive tape. Suitable means are provided for drawing the tape from the roll and advancing it to dispensing position. Various forms of feeding means may be utilized, that shown comprising a series of feed discs 24 mounted on a shaft 26 which is driven through suitable gearing (not shown) by means of a ratchet hand lever 28. The gummed side of the tape adheres to the discs so that when they are rotated by the lever the tape will be pulled from the roll and fed forwardly. Alternating with the discs 24 are toothed peeler discs 32 which are rotated at a higher rate of speed than the discs 24 so as to push the tape off of the discs 24 and project it out of the machine. A tear-off blade 34 is preferably employed, the edge of the tear-off blade being located in the bight between the feed and peeler discs so that the end of the tape which has been pushed out of the open end of the machine may be grasped and the tape torn off against the tear-off blade. The blade 34 is shown as mounted upon a bracket plate 36 having bent ends 38 by which it is mounted on the side walls of the casing. The construction of the machine so far described is a conventional dispenser with means for feeding pressure sensitive adhesive tape. The present invention may however be utilized in connection with other appropriate types of dispensers.

The improvement of the present invention consists in the provision of a slitting knife or knives which slit the tape at a point beyond its initial area of engagement with the feeding discs. As shown a plurality of slitter blades 40 are provided, each blade being mounted on a carrier in the form of a block 42 which has a slot 44 in one end in which the blade is fitted and secured by a set screw 46. The other end of the block 42 is provided with a transverse slot 48 adapted to fit over the edge of the tear-off blade supporting bracket 36 and to be secured thereto in any suitable manner by a set screw 50. With this arrangement it will be seen that any desired number of slitter blades may be mounted on the bracket and may be set at any desired positions to slit the tape into widths as may be desired. The blades slope downwardly and occupy a more or less tangential relationship to the feed discs, extending between the same, however, far enough to effectively slit the tape as it is fed forward by its adherence to the discs. This arrangement of the blades is very effective as the tape is drawn diagonally along the edge of the blade and the tape is also firmly supported at each side of the blade by the adjacent feed discs so that the best conditions for clean cutting are secured.

It will be observed that circumferentially the blades are located near to the position of the transverse tear-off blade and that the tape does not reach the slitter blades until it has passed around in contact with a substantial arc of the said discs. In the example shown the tape has been in contact with the feed discs for approximately 90° by the time the slitter knives are reached. The advantage of this construction is that when feeding or threading the end of a new roll of tape into the machine this can be done by simply pressing the leading end of the tape against the upper parts of the peripheries of the feeder discs to which discs the tape will firmly adhere so that upon a movement of the operating lever 28 the discs will be rotated and will advance the tape adhered thereto and carry it past the slitter blades and under the transverse tear-off blade. This can be done without requiring the operator to thread the tape past the sharp slitter blades as had been the practice heretofore in machines of this type in which the slitter blades were located at a location between the supply roll of tape and the feed means. The slitter blades, in accordance with the present invention, are located beyond the area where the tape

has to be threaded by hand and applied to the feed discs and in fact, with the construction shown, the slitter blades are so protected by the ends of blocks **42** that it is practically impossible for the operator to contact the sharp edges of the blades. The arrangement greatly facilitates the reloading of the machine and avoids a very troublesome source of injury.

While one preferred embodiment of the invention has been illustrated and described in detail, it is to be understood that changes may be made therein and the invention embodied in other structures. It is not, therefore, the intention to limit the patent to the specific constructions illustrated, but to cover the invention broadly in whatever form its principle may be utilized.

What I claim is:

1. In a dispenser for pressure sensitive adhesive tape, means for supporting a roll of tape, a plurality of feed discs to which the tape is adhered, means for rotating the discs to draw the tape from the roll and advance it to a dispensing point, a slitter knife, means for mounting the knife in a position between two adjacent discs at a location circumferentially of the discs substantially beyond the area of initial contact of the tape with the peripheries of the discs and in an area where the tape is in firm adhesive feeding engagement with the discs, and a plurality of peeler discs arranged alternately between the feed discs for peeling off the slit strips of the tape said peeler discs being located to engage the tape beyond the slitting point.

2. In a dispenser for pressure sensitive adhesive tape, means for supporting a roll of tape, a plurality of feed discs to which the tape is adhered, a plurality of peeler discs arranged alternately between the feed discs, means for rotating the feed discs to feed tape and for rotating the peeler discs at a faster rate than the feed discs so as to peel the tape from the feed discs, a bracket mounted transversely of the feed discs adjacent to and at a position substantially in advance in the direction of tape feed of the area where the tape first comes into adhesive contact with the peripheries of the feed discs, a tear off blade carried by said transverse bracket and having a tear edge extending into the bight between the peripheries of the feed discs and peeler discs adjacent to their zone of intersection, a blade carrying block adjustably mounted for transverse adjustment on said bracket, a slitter knife carried by said block and having its upper end shrouded therein so as to protect the same from engagement by the fingers of the operator applying the end of a new roll of tape into feeding engagement with the surfaces of the feeding discs, the cutting edge of the slitter knife extending in a generally tangential direction with respect to the peripheries of the feeder discs but projecting part way between them towards the bight between the feeder and peeler discs, the tear off blade being located beyond the area where the tape is slit whereby pieces of the slit tape may be separately torn off as needed.

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