Sept. 1, 1953 T. H. KRUEGER 2,650,774

GUMMED TAPE DISPENSER

Filed July 29, 1948

Fig. 2

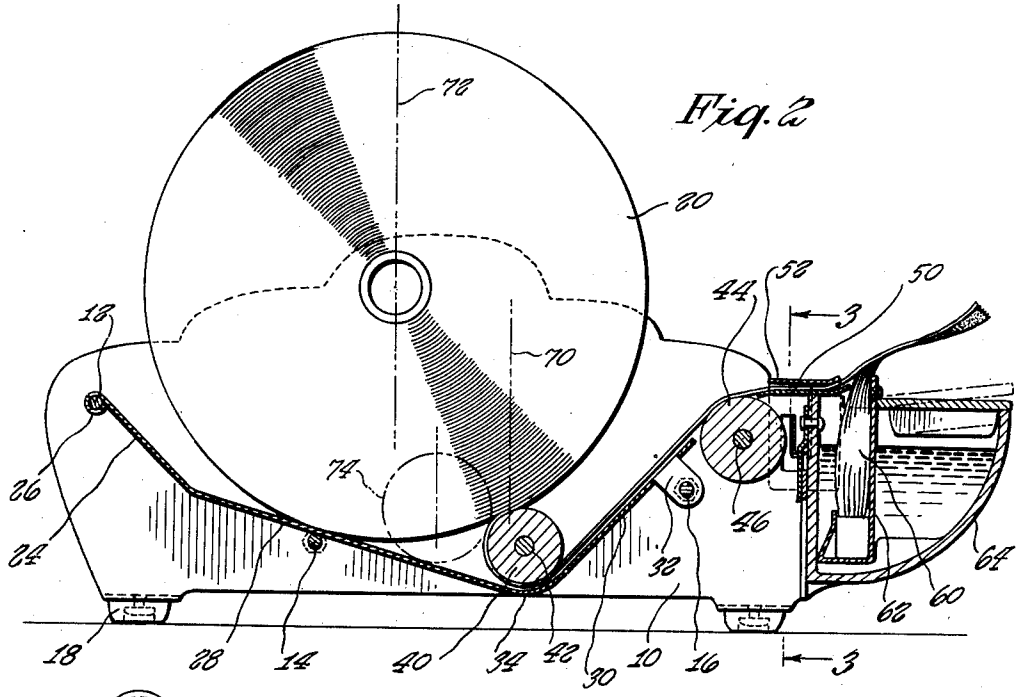


Fig. 1

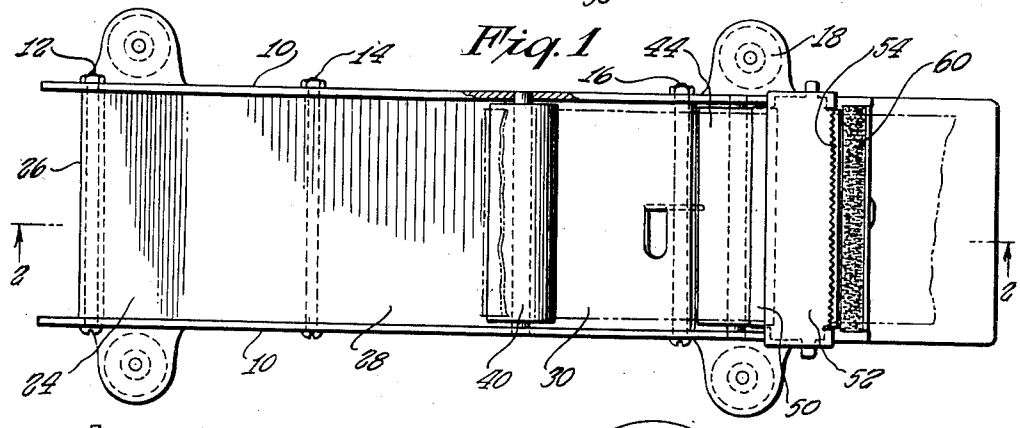


Fig. 3

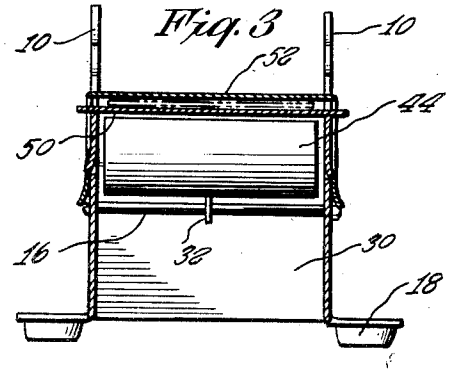
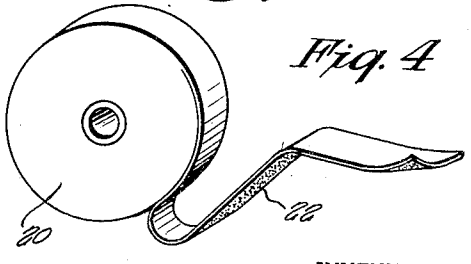


Fig. 4



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GUMMED TAPE DISPENSER

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1 Claim. (Cl. 242—55.5)

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This invention relates to devices for dispensing and moistening gummed tape, and it is particularly applicable to a dispenser for handling a roll of tape wound with the gummed side in, and in which the roll is held in a cradle or basket and requires no supporting spindle.

There are distinct advantages well known to the trade for winding rolls of dry gum sealing tape with the gummed side in. Certain problems, however, have to be overcome in using tape thus wound, resulting primarily from the fact that the tape has to be fed from a dispensing device with the gummed side down, so that it can be readily passed over the moistening roller or brush and conveniently handled for application to the box or package to be sealed. In a great many dispensers it is found necessary to mount the roll of tape on a central spindle, the tape being then brought down from the top of the roll to a guide and forwardly, gummed side down, over the moistening device. The use of a central supporting spindle, however, has certain objections in that it has to be removed to permit replacement of the rolls, and various accessories are necessary in order to hold the spindle in place, provide braking action, etc. Time is wasted in changing rolls and the accessories may become lost. In some machines the spindle has been dispensed with by employing a device for carrying the strip of tape from the rear of the roll over supporting guides mounted above the roll, the strip of tape being carried forwardly over the roll to the moistening device. Such devices have the disadvantage that they are of relatively great height thereby taking up space and lacking stability. The present invention provides a dispenser which overcomes the foregoing and other disadvantages by providing spaced supports upon which the tape roll is placed, one of said supports located lower than the center of the roll comprising a reversing roller about which the strip of tape is reversed as it leaves the roll thereby directing the tape towards the front of the machine with its gummed side down where it may be drawn over a suitable moistening device.

It is an object of the invention to provide a very simple construction of dispenser which will handle a large roll of tape and enable tape to be fed from such roll until it is entirely used up, the construction providing at all times for easy pull while at the same time providing proper resistance to the unwinding of the roll so that the feed is always under control, and the tape will not become loosened up in the roll before it is withdrawn.

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It is also an object of the invention to provide a dispenser having a low overall height, a low center of gravity, so that it is not easily upset, and one in which the roll of tape may be very easily replaced.

In my prior Patent No. 1,914,375 I have shown a dispenser overcoming many of the objections to prior dispensers, and disclosing some of the features of advantage which are secured by the dispenser of this application. The dispenser of this application, however, has both structural and operational advantages over the dispenser of said patent.

Additional objects and advantages of the invention will appear in the course of the following description.

In the drawings which show one preferred example of the invention:

Figure 1 is a plan view of a dispenser without a roll of tape in it;

Figure 2 is a longitudinal vertical section on line 2—2 of Fig. 1, a roll of tape being shown in the dispenser;

Figure 3 is a transverse vertical section on line 3—3 of Fig. 2; and

Figure 4 is a perspective view showing the roll of tape and the path which the tape takes as it is unwound and fed over the moistener.

Referring to the drawings in detail, the dispenser shown comprises two side plates 10, secured together in properly spaced relationship in any suitable manner, as by bolts 12, 14 and 16. The side plates are preferably provided with suitable feet 18 for supporting the device upon a counter or the like. Secured between the side plates is a shaped bottom plate, which, with the side plates, forms a receptacle or tape basket in which may be placed a roll of tape 20. The dispenser in the present form is intended to serve tape from a roll of tape wound with the gum on the inside, the gum being indicated at 22 in Fig. 4.

The bottom plate is bent to provide a plurality of surfaces of different inclinations. Near its rear the plate is bent at an angle of 45° more or less to the horizontal, as indicated at 24 in Fig. 2, the rear end of the plate being curled around the bolt 12 as indicated at 26. The exact inclination of the portion 24 is not important, this part of the bottom plate being merely a supporting means for the rear end of the plate, and serving to prevent the roll of tape from accidentally rolling out rearwardly of the basket. The middle section of the bottom plate, indicated at 28, is sloped upwardly and rearwardly at a moderate angle which is shown as

in the neighborhood of 15° to the horizontal. The tape roll rests upon this section of the plate and the slope causes the roll of tape to gravitate downwardly and forwardly as far as it is permitted to go. The front section **30** of the plate is upwardly and forwardly inclined at a suitable angle to guide the tape up to a forward roller to be described. Near the front of this section of the plate is a pair of ears **32** which engage the bolt **16** and support the front end of the plate. The plate sections **28** and **30** are connected by a short curved section **34**.

Mounted in the lower part of the tape basket above the curved portion **34** is a combined guide and supporting roller **40** which is rotatably mounted upon a shaft **42**. A wooden roller is usually used, although any suitable material, such as plastic, may be employed if desired. The roller **40** is of small diameter compared to the initial size of the roll of tape. The tape passes from the roll under the roller **40** and forwardly and upwardly over a roller **44** mounted to turn on shaft **46**. The roller **40** is spaced far enough away from the bottom plate to permit the tape to pass freely through such space. The curved portion **34** assists in guiding the tape through this space when threading the tape from a new roll into the dispenser. The roll of tape being wound with the gummed side of the tape in, it will be seen that when it passes under the roller **40** it will be reversed, as shown in Fig. 4, so that the gummed side of the tape is facing outward and downward. This side of the tape passes over the roller **44** to which it does not adhere, as it is dry at this time, and then over a guide plate **50** and under a guide plate **52**. The guide plate **52** is serrated at its front edge, as indicated at **54**, so that the piece of tape which has passed this serrated edge may be torn off thereagainst.

The tape is passed between the plates **50** and **52** over a moistening device which may be of any suitable type. As illustrated, the moistening device comprises a brush **60** mounted in a brush holder **62**, and at its lower end submerged in water in a reservoir **63**, carried by the plates **10**.

It will be seen that there is sufficient space over the roller **44** to permit the finger to be placed on the back of the tape adjacent to this roller, so that the tape may be pushed along between the plates **50** and **52** and fed out over the moistener sufficiently far to enable the free end of the tape to be grasped. When the operator has pulled out the desired length of tape, and moistened the same in so doing, he tears off the piece of tape against the tearoff edge **54** and applies the moistened severed piece to a box or whatever object he wishes to use the tape upon.

The roller **40** is so positioned with respect to the inclined section **28** of the bottom plate, and is of such size that the roll of tape is supported at two points; one directly upon the inclined bottom section, and the other at the point of tangency between the roll of tape and the roller **40**. It is important that the position of this point of tangency, indicated by the broken line **70**, lies at all times substantially in front of the vertical line **72** through the center of gravity of the roll of tape. This insures that the roll shall be supported at the two points indicated and shall at all times rest upon the inclined section **28** of the bottom plate. This condition will obtain whether a full size roll of tape is used, as shown in full lines in Fig. 2, or whether the roll has been reduced to small dimensions, as indicated by the dotted circle **74**. It is seen that the roller **40**, being much smaller than the diameter of the full roll of tape, can be placed near the bottom of the apparatus, and supports a good part of the weight of the tape roll, and thereby makes the unwinding of the tape easy. At the same time a sufficient part of the weight of the roll of tape is borne by its contact with the inclined surface **28** which thereby acts as a brake to prevent the uncontrolled unwinding of the tape when it is pulled out by the operator. This is important both to prevent overfeed, due to the momentum of the tape roll, and to insure that there shall be sufficient resistance to the withdrawal of the tape to produce a tension for causing the tape to press downwardly upon the brush or moistening device, when the end of the tape is grasped and pulled upon by the operator. The combined action of supporting of the tape roll by the rotatable roller **40** and the stationary section **28** thus produces an extremely simple and effective means for bringing about the controlled feeding of the tape.

While I have illustrated and described in detail one preferred form of my invention, it is to be understood that changes may be made therein and the invention embodied in other structures. I do not, therefore, desire to limit myself to the specific construction illustrated, but intend to cover my invention broadly in whatever form its principle may be embodied.

I claim:

In a strip serving device of the "pull-out" type in which a roll of gummed tape wound with the gummed side in is to be dispensed, a tape basket for receiving the roll of tape, said basket comprising vertical side plates and a sheet metal bottom comprising a forwardly and downwardly inclined section towards the rear of the basket, a forwardly and upwardly inclined section towards the front of the basket and a concave curved portion smoothly connected to, and uniting said sections, a supporting and guide roller mounted transversely across the basket immediately above the curved section of the bottom thereof, but spaced above said curved section sufficiently to permit the end of the tape to be passed around said roller and to be guided by said curved bottom section and forwardly and upwardly along said inclined forward section, the downwardly and forwardly inclined rear part of the basket bottom and said guide roller constituting spaced supports for supporting the roll of tape to be dispensed, a guide roller mounted transversely of the tape basket near the forward end thereof having its upper surface substantially tangent with the forwardly and upwardly inclined front part of the tape basket bottom over which the tape passes as it is guided upwardly and forwardly by said bottom section so that the tape, when drawn forwardly over said second guide roller will be presented for delivery gummed side down.

THEODORE H. KRUEGER.

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