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A. P. KRUEGER

2,321,398

TAPE SERVING MECHANISMS

Original Filed Aug. 4, 1939

Fig. 1

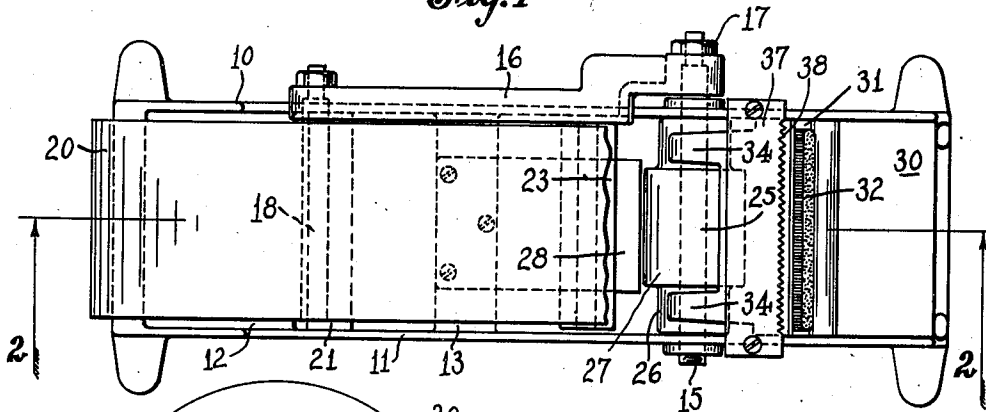


Fig. 2.

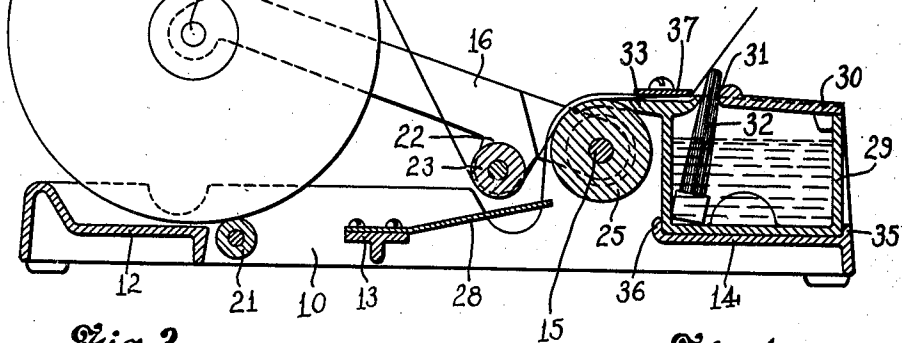


Fig. 3.

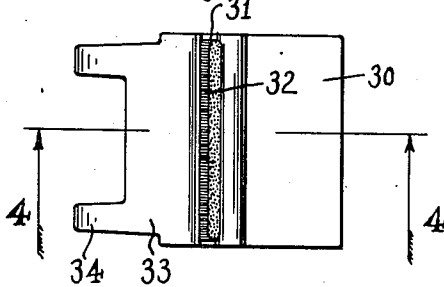
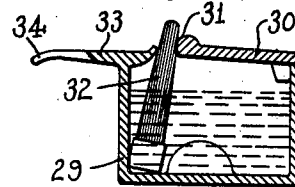


Fig. 4.



Inventor

Alfred P. Krueger

By *Rockwell Bartholomew*
Attorneys

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TAPE SERVING MECHANISM

Alfred P. Krueger, Stratford, Conn., assignor to
Derby Sealers, Incorporated, Derby, Conn., a
corporation of Connecticut

Original application August 4, 1939, Serial No.
288,286. Divided and this application July 21,
1942, Serial No. 451,777

5 Claims. (Cl. 91—14.5)

This invention relates to tape-serving machines, and more particularly to a device for delivering a gummed tape or paper strip from a source of supply such as a roll or the like, in moistened condition ready for application to a parcel or package. The present application is a division of my copending application Serial No. 288,286, filed August 4, 1939, now Patent Number 2,294,670, of September 1, 1942.

Devices of this character consist, generally speaking, of means for mounting and supporting the tape supply, which is usually in the form of a roll, a moistening element designed to be kept in a moistened condition from a source of liquid supply, and guiding means for guiding the strip of tape from the roll to the moistening element. Also there is provided in the present instance a knife edge or severing device by means of which the tape may be conveniently severed when a predetermined length has been drawn from the machine.

In the present instance a guide roller is positioned adjacent a liquid receptacle in which the moistening means is mounted, and the gummed tape passes over this roller in its travel to the moistening means. The operator, by applying his fingers to the upper surface of the tape upon the roller, starts the operation by pushing a short length of tape through the machine so that the exposed length of tape may be grasped by the fingers and thereafter drawn off until the desired length has been obtained.

In some instances the tape might have a tendency to pass downwardly into the space between this guide roller and the moistening receptacle, and hence it is desirable to provide a bridge member, which in the present case is in the form of a lip carried by the liquid receptacle itself to span the space between this receptacle and the roller so that the tape will be properly guided to the moistening element.

One object of the invention is the provision of an improved tape-serving machine having novel means for guiding the tape to the moistening element, such that the tape will always be caused to travel in the desired path.

A further object of the invention is the provision of a bridge member or lip spanning the space between the liquid receptacle and the guide roller adjacent thereto, which lip will be formed integrally with the receptacle so that it will at all times be retained in the proper position relative to the cooperating parts of the device.

A still further object of the invention is the provision of a guide roller and guide lip of novel construction such that the tape will always be propelled over the guide lip or bridge member, and thus all likelihood of the tape passing through any space which may exist between the roller and guide lip will be eliminated.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing:

Fig. 1 is a top plan view of a tape-serving mechanism embodying my invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the receptacle and associated parts removed from the machine; and

Fig. 4 is a sectional view on line 4—4 of Fig. 3.

To illustrate a preferred embodiment of my invention I have shown in the drawing a tape-serving mechanism comprising a supporting standard or frame having side plates 10 and 11 connected by transverse webs 12, 13 and 14. Rotatably mounted in the side plates 10 and 11 is a spindle 15 upon one end of which is mounted a tape-roll-carrying arm 16, which arm may be held in place by the nut 17.

At the free end of the roll-supporting arm 16 is secured a roll-supporting spindle 18 upon which the roll 20 of gummed tape or paper may be rotatably mounted so that it is free to rotate as the strip of tape is delivered therefrom. It will be understood that the arm 16 is freely movable about the axis of the spindle 15, so that the arm may be raised to a position where the spindle 18 will be freely accessible when it is desired to place a new roll of tape thereon.

Below the spindle 18 a roller 21 is rotatably mounted between the frame members 10 and 11, which roller is adapted to support the roll of tape 20 from below, the tape resting upon this roller under the force of gravity, and as the roll decreases in size, the arm 16 will, of course gradually descend about its pivot so that the roll 20 will normally always be in contact with the roller 21.

The arm 16 is provided with a downwardly extending portion 22 upon which is rotatably mounted a roller 23 designed to guide the strip of tape as it is delivered from the roll 20. From this roller the strip of tape passes to a second guide roller 25 rotatably mounted upon the spindle 15, and this roller 25 is provided with a portion or portions reduced in diameter, as shown more particularly in Fig. 1, where the ends of the roller are relatively small, as shown at 26, and the central portion relatively large, as at 27.

A spring-tensioning device 28 may be mounted upon the web 13, which, as will be seen from Fig. 2, extends to a position opposite the roller 23, so that when the roll of tape 20 becomes relatively small and the arm 16 has been permitted to move downwardly, friction will be applied to the tape by the roller 23 and spring member 28; the tension becoming greater as the roll 20 becomes smaller, and the spring 28 pressed with greater force upon the roller 23.

Supported upon the frame by the web 14,

forwardly of the roller 25, is a liquid receptacle 29 having a cover 30 so designed as to provide a slot 31 at the top of the receptacle, through which slot projects a brush or other moistening element 32 which may be supported upon the receptacle bottom.

At the rear edge the receptacle is provided with an integrally formed lip 33 extending rearwardly from the receptacle as a bridge member to span the space between the latter and the guide roller 25. This guide lip is provided with rearwardly extending tongues 34, which may be conveniently formed by cutting away the lip at its central portion to provide for the enlarged portion 27 of the roller 25 to extend within the cut-out area. The rearwardly extending tongues 34 project over the reduced end portions 26 of the roller 25, and, as shown in Fig. 2, the upper surfaces of these tongues are in substantially the same horizontal plane as the upper surface of the enlarged central portion 27 of the roller. It will be apparent that with this arrangement of the lip 33 and guide roller 25, this lip effectively bridges the space between the receptacle and the upper portion of the roller so that the tape will be properly guided over the lip to the moistening element 32, and will have no tendency to pass around the roller 26 and between it and the receptacle. Moreover, as the lip is formed integrally with the receptacle, there will be no opportunity for the tape to pass between these two members.

As shown in the drawing, although not necessary to the present invention, the receptacle 29 is removable from the frame and rests upon the web 14, being confined transversely of the frame by the side plates 10 and 11, and longitudinally of the frame between shoulders 35 and 36 on the web 14. The receptacle, therefore, may be readily removed in order that it and the parts associated therewith may be conveniently cleaned, but at the same time it is held securely in position, and as the lip or bridge member 33 is formed integrally therewith, this member will likewise be held in proper position with respect to the roller 25, so that the tongues 34 extend over the reduced end portions of this roller.

Resting upon and secured to the side plates 10 and 11, is a plate 37 having a forward severing edge or knife edge 38 by means of which the strip of tape may be severed when a sufficient length has been drawn in moistened condition from the device. This plate is positioned above the lip 33, and is spaced slightly therefrom, as shown in Fig. 2, so that the strip of tape passes between these members after it has passed over the roller 25 in its travel toward the moistening element 31.

It will be apparent that there is abundant room for the operator to place the fingers of one hand upon the upper surface of the tape above the roller 25, so as to move the tape forwardly in order that the end may protrude beyond the edge of the cut-off plate 37, so that it can be grasped by the fingers and be drawn from the device. It will, in its passage over the brush or moistening element 31, be suitably moistened for application to a package or parcel. As the rearwardly projecting tongue 34 of the bridge member 33 lies in a depressed position relatively to the enlarged portion 27 of the roller 25, the tape after passing over the roller 25 will always lie above the lip 33, and therefore be properly guided to the moistening element.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and the scope of the claims.

What I claim is.

1. A tape-moistening device comprising a frame, means thereon for supporting a roll of tape, a water receptacle carried by the frame, a moistening element projecting from the receptacle, means to guide a strip of tape from the roll to the moistening element comprising a roller positioned adjacent said receptacle, a guide lip formed integrally with the receptacle, said roller having reduced end portions, and said guide lip extending over said end portions to span the space between the receptacle and the upper portion of the roller.

2. A tape-serving device comprising, a frame, means thereon for supporting a roll of tape, a moistening element, means to guide a strip of tape from the roll to said element including a roller rotatably mounted on the frame, a liquid receptacle carried by the frame, said roller having reduced end portions, a guide lip projecting rearwardly from said receptacle toward said roller, said lip having its central portion cut away to provide end portions extending over the reduced ends of said roller.

3. In a tape-dispensing and moistening machine, means for supporting a roll of tape, moistening means over which the tape is adapted to be drawn including a liquid receptacle, a guide roller rotatably mounted adjacent the receptacle over which the tape passes, a bridge member spanning the space between the receptacle and the roller to guide the tape from the latter over the former, said roller having reduced end portions and said bridge member having rearwardly projecting tongues extending over the reduced portions of the roller.

4. In a tape-dispensing and moistening machine, means for supporting a roll of tape, moistening means over which the tape is adapted to be drawn including a receptacle, a guide roller rotatably mounted adjacent the receptacle over which the tape passes, a bridge member spanning the space between the receptacle and the roller to guide the tape from the latter over the former, said roller having a portion thereof reduced in diameter, and said bridge member having a rearwardly projecting tongue extending over the reduced portion of the roller.

5. In a tape-dispensing and moistening machine, means for supporting a roll of tape, moistening means over which the tape is adapted to be drawn including a receptacle, a guide roller rotatably mounted adjacent the receptacle over which the tape passes, a bridge member spanning the space between the receptacle and the roller to guide the tape from the latter over the former, said roller having reduced end portions, and said bridge member having rearwardly projecting tongues adjacent the end portions thereof extending over the reduced end portions of the roller, said tongues being spaced apart to admit between them the unreduced intermediate portion of the roller.

ALFRED P. KRUEGER.