Jan. 12, 1943. T. R. GAUTIER 2,308,464

TAPE FEEDING MEANS

Original Filed Oct. 31, 1939

Fig. 1.

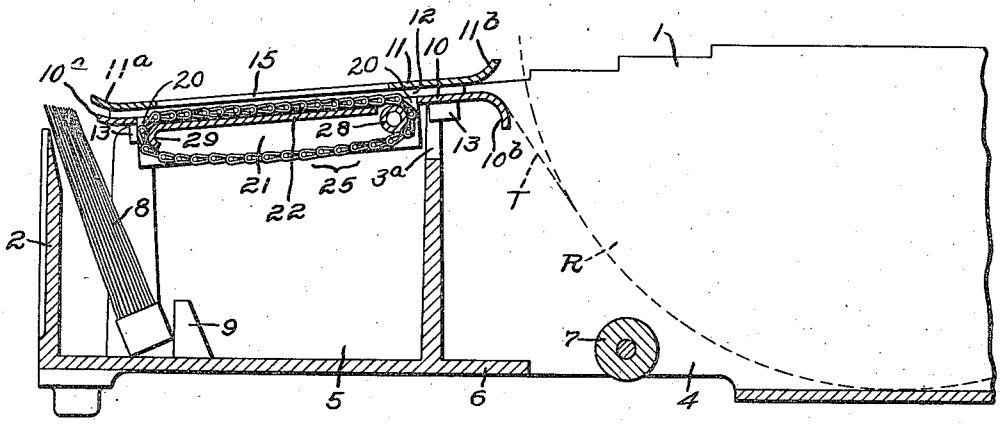


Fig. 2.

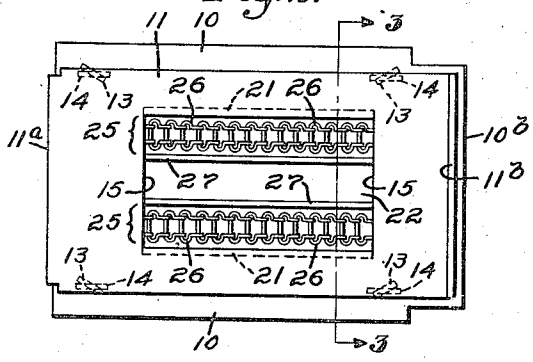
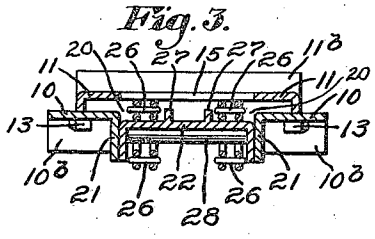


Fig. 3.



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TAPE FEEDING MEANS

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Original application October 31, 1939, Serial No. 302,199. Divided and this application October 4, 1941, Serial No. 413,641

3 Claims. (Cl. 271—2.1)

My present invention relates to serving or dispensing strip material such as adhesive tape, labels and the like, especially dry gummed tape. More particularly, it aims to provide improved feeding means for such material in association with machines or devices for serving or delivering moistened lengths of the material from a supply thereof, for sealing, packaging, labeling and kindred purposes.

This application is a division of my copending application Serial No. 302,199, filed October 31, 1939, as a continuation in part as to all common subject matter, of my therewith copending application Serial No. 142,668, filed May 14, 1937, said applications now being respectively Patent No. 2,261,359, dated November 4, 1941, and Patent No. 2,224,100, dated December 3, 1940.

In the drawing illustrating by way of example one embodiment of the invention:

Fig. 1 shows in vertical longitudinal section a feed assembly or unit in accordance with the invention and as installed on a strip server or tape dispenser, the rear portion of the latter being broken away;

Fig. 2 is a top plan of said unit of Fig. 1; and

Fig. 3 is a cross section on the line 3—3 of Fig. 2.

Referring to the drawing in more detail, Fig. 1 illustrates the invention in connection with a strip server or tape dispenser of the hand type suitable for use on store counters, at package wrapping stations, in shipping rooms and such locations. In various respects, however, the invention is adapted for use with other than manual dispensers, including the semi-automatic and automatic types of such machines.

The illustrative machine of Fig. 1 comprises a frame or housing including side walls, one of which is indicated at 1, a front wall 2, a rear wall (not shown) and an intermediate wall 3. The latter defines two main compartments for the machine, a rear compartment 4 providing a support, housing or well for the tape supply roll R, and a front compartment 5 forming a tank or reservoir for the moistening liquid. The frame further includes a bottom wall 6, the forward portion of which forms the bottom for said reservoir, and a rear portion thereof acting to support the tape supply R. One or more guide rollers, such as indicated at 7, may be disposed transversely in the tape well 4, to assist in positioning the roll of tape for feeding.

The machine is equipped with means associated with the liquid reservoir 5 for moistening the gummed underface of the tape T coming from the roll supply. In the illustrated example such means comprises a capillary moistening element or brush 8 set in the reservoir and projecting upwardly at the front or delivery portion of the machine into the path of the tape so as to have moistening engagement with its underface. One or more positioning lugs 9 in the reservoir retain the moistener 8 in proper operative position. The rear wall 3 of the reservoir may be apertured at its upper part as at 3a to limit the liquid to a level below the tape feeding and guiding means now to be described.

Such means, through the medium of which the tape T from the supply R is adapted to be advanced for delivery in moistened condition at the front end of the machine, comprises a feed and guide assembly or unit, sometimes herein referred to as the feed-guide plate or tape chute. Said assembly is disposed, preferably removably, at the top of the front compartment or reservoir 5, providing in effect a cover for the latter as well as a tape-guiding floor bridging across between the tape roll compartment 4 and the delivery station adjacent the moistener 8.

The illustrated feed-guide assembly comprises a bottom floor plate or under guide element 10 and an overlying top plate or upper guide element 11. The latter is spaced from the bottom plate as by side flanges, one of which is seen at 12 in Fig. 1. This under element 10 and the upper element 11—12 together define a feed throat or chute for the tape T. They may be separably related and suitably connected and held in place on the machine frame. As here shown, they are attached to each other as by interlocking formations such as the down projections 13 of the upper means received in corresponding openings 14 of the bottom plate, with respect to which they may be turned or bent to avoid unintentional withdrawal. This feed-guide assembly as a whole may be operatively disposed on the machine, as upon the frame side walls 1, in which connection the latter may be recessed along their inner top edges to provide shoulders for receiving the opposite side edges of the assembly unit bottom plate 10.

The fore end of the bottom plate 10 may be upturned as at 10a to assist in directing the tape accurately up to and across the moistener 8. The front edge 11a of the upper plate 11, adjacent the moistening end and delivery station may be similarly directed and also as shown is constructed and arranged to form a severing element or cutter for the tape. At its rear end the bottom plate 10 desirably has a downturned lip

10b adapted to receive the tape T from the roll R, and herein also otherwise functioning in a manner later to be referred to. The upper plate 11 desirably has its rear end turned up as indicated at 11b to assist in guiding the tape into the feed chute, particularly in instances where the tape is overfed, that is, it comes from the top of a tape roll supply wound gummed side in. The tape T as indicated in dotted line in Fig. 1 is underfed, that is, from the bottom of the roll supply R which is assumed to be wound with the gummed face out. It is also to be noted that the oppositely deflected rear end portions or lips 10b and 11b of the bottom and top plate elements 10 and 11 form in effect a receiving throat into which the leading end of the tape is easily threaded, in initially setting up the machine or when installing a fresh roll of tape.

Thus the feed-guide assembly or tape chute comprises a flooring or floor element including the bottom plate 10 underlying and defining a path for the tape, together with suitable guide means at the sides of and above the tape path and confining the advancing tape to the latter, such guide means being herein afforded by the top plate guide 11. The latter is longitudinally apertured or open for a substantial portion of its length, as indicated at 15, to expose the tape path. This top opening 15 permits the upper face of the tape T to be engaged, either by one or more of the operator's fingers or by an appropriate presser device, to move the tape forwardly along its path as defined by the underlying floor.

The bottom plate 10 of the flooring also has a longitudinal slot formation 20, rearwardly of its front or tape delivery end and extending back toward the roll supply. The term "slot" is here meant to include a formation in the nature of a depression or recess with closed or partly closed bottom, and also a cut-out, aperture or through-opening formation. At least a portion of this slot formation 20 in the lower guide 10 lies vertically opposite the top opening 15 of the upper guide means.

In the space thus afforded in connection with the bottom plate 10 I provide a supplemental movable flooring or tape-supporting floor means adapted to have supporting engagement with the underface of the tape and to move in synchrony with the latter as the tape is advanced or fed forwardly for delivery. It will be understood that the tape is advanced by the operator, in the case of the manual machines such as herein shown, by placing his finger, or a number of fingers, on the exposed top face of the tape, over the movable flooring means, and moving his finger toward the front of the machine while pressing downwardly sufficiently to cause the tape and the underlying movable feeding and guiding or flooring elements to be moved with and by his fingers.

In the present embodiment the movable flooring means includes one or more endless members or conveyer and supporting elements each adapted for rectilinear movement along the tape path, with the upper run of such endless member in feeding engagement with the underface of the tape T coming from the roll R.

Accordingly the bottom plate 10 of the flooring is formed with depending flanges 21 along the sides of its longitudinal slot formation 20, said flanges serving to support between them a depressed bottom-forming element or plate 22 making the above-mentioned slot formation in this instance in the nature of a depression or recess along a major portion of its length. For manufacturing convenience and purposes of interchangeability this auxiliary depressed plate 22 is illustrated as formed separately from the main bottom plate 10, but it will be understood that such separate construction is not essential in all instances.

Said depressed floor portion or plate 22 serves in part as a supporting guide for one or more of the flexible endless traveling bands or belt-like elements referred to. In the illustrated example two such elements are represented, each indicated as a whole by the numeral 25, one to each side of the longitudinal center line of the tape path. These elements individually may be variously constructed being here typically shown as formed of a multiplicity of hingedly interconnected links 26. The upper run of each such element 25 is guided along and upon the depressed flooring portion 22, the latter preferably having integral or other longitudinal ribs or the like 27, Figs. 2 and 3, to assist in guiding the endless feeder elements 25 in their feeding movement.

The described longitudinally movable feeders 25 are herein supported and guided at their rear portions around a rotary guide illustrated as a roller or the like 28, Fig. 1, journaled in the side flanges 21. At their front portions said feeders 25 are similarly guided as by the arcuate flange 29 extending downwardly at the forward edge of the depressed or auxiliary plate 22. It will be understood that the latter has the appropriate lengthwise extent, somewhat less than that of the slot or depression 20 in the main bottom plate 10, to allow for free movement of the endless feeders 25 between their upper and lower run positions in passing about the described guide means 28 and 29, such provision in the instance of a construction for the depressed flooring element 22 integral with the bottom plate 10 being achieved by appropriate transverse slotting of the latter.

In the operation of the feed means it will be understood that the desired length of tape is advanced by the operator by depressing the tape against the endless feeder device, at any appropriate point lengthwise the feed-guide as a whole, and thereupon moving the tape forwardly along with the underlying one or more movable chains or other endless traveling elements such as described.

My invention is not limited to the particular embodiment herein illustrated or described, and I set out its scope in my following claims.

I claim:

1. In a manual tape dispenser, in combination, a frame providing a tape roll support and a tape delivery station, a tape feed assembly comprising a tape chute removably supported on the frame to extend between the tape support and the delivery station, said chute including a floor and a top portion having a longitudinally extensive opening at which the top face of the tape may be pressed upon by an operator's finger, a track along the floor in exposed position vertically opposite said finger opening, vertical passages in the floor at the ends of the track, a flexible endless belt having an upper run supported and guided on the track with its remaining portion beneath the track and having its turns respectively entering and leaving the latter at said passages, and supporting guide means for the belt turns on the chute floor adjacent said vertical passages, the upper run of the belt adapted to have sup-

porting and feeding engagement with the underface of a tape area at the chute finger opening thereby to facilitate feeding movement of the tape along the chute by simultaneous down pressure and forward draft of the operator's finger.

2. A feeding and guiding assembly for manual tape dispensing machines of the type having a frame providing a support for a tape supply and a tape delivery station, said assembly adapted for removable reception on the machine frame between its supply support and the delivery station and comprising a base defining a path for the tape, top and side guides to confine the tape to such path, a longitudinally extensive slot formation in the base, depending flanges on the base along the respective sides of its slot formation, the top guide having a longitudinal opening at which an operator's finger may be pressed upon the tape, a depressed floor supported between the base flanges and providing a longitudinal track directly vertically opposite the top guide opening, a pivoted-link endless chain having its upper run supported on the track, and chain guide means extending transversely between said flanges at the respective ends of the track, said chain adapted to have the tape engaged against it by directly opposed pressure of an operator's finger and to be moved along with and below the tape by forward draft of such pressure-applying finger thereby to advance the tape from the supply to the delivery station.

3. A feeding and guiding assembly for manual tape dispensing machines in accordance with claim 2 wherein a plurality of the endless chains are disposed along the track in spaced parallel relation for cooperation with a plurality of fingers of the operator's hand, the track including longitudinal guide formations between the individual chains.

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