Aug. 2, 1938. T. L. MURRAY 2,125,736

TAPE CUTTING DEVICE

Filed Oct. 1, 1936

Fig 1

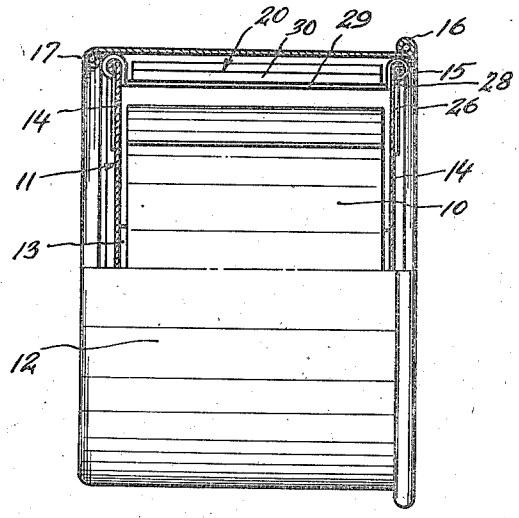


Fig 2

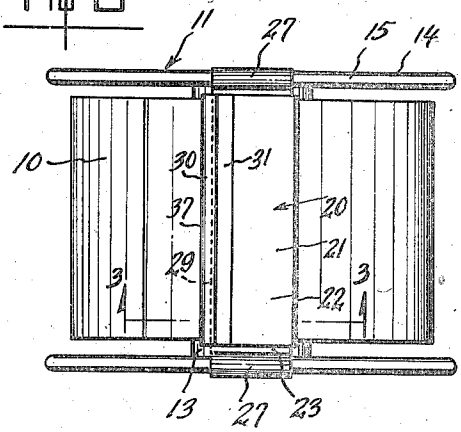


Fig 3

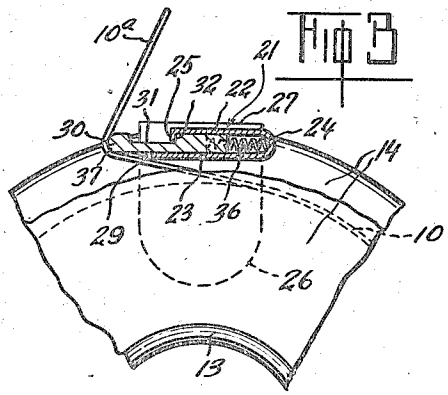
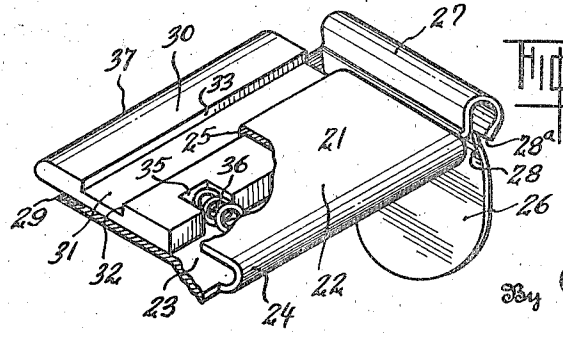


Fig 4



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TAPE CUTTING DEVICE

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8 Claims. (Cl. 206—59)

This invention relates to a tape cutting device and particularly to a cutting device for use with reels of adhesive tape.

The principal object of this invention relates to the design of said cutting device which is so constructed as to be adapted for removable clamping engagement to the sides of the reel in superposed relation to the roll of tape wound thereon and which device is of such form as not to interfere with the positioning of the reel within its container.

Other objects of the invention relate to the knife-edge construction of the device; to the sliding guard for said knife-edge; to the spring construction for maintaining said guard over said knife-edge; to the simple and cheap construction of the device as a whole; to the simple and automatic operation of the same and to the simple manner in which the device is applied to and removed from the reel.

Further objects of the invention will appear from the following description taken in connection with the drawing which forms a part of this specification, and in which:—

Figure 1 is a front elevational view partly in section of a reel of adhesive tape within its container and showing the cutting device mounted on said reel;

Figure 2 is a top view of the reel and cutting device;

Figure 3 is a detail sectional view of the reel and cutting device taken on line 3—3, Figure 2; and

Figure 4 is a perspective view with parts removed of the cutting device.

Referring to Figure 1, 10 denotes a roll of adhesive tape wound on a reel 11 which is placed within the cylindrical container 12. The reel 11 comprises a hub 13 and side walls 14 each having a circular peripheral bead 15. The reel 11, container 12 and adhesive tape 10 are of conventional standardized design. In order to permit of ease of applying the container 12 to the reel 11 one edge of the container is provided with an outwardly turned bead 16 while the other edge is provided with an inwardly turned bead 17 which acts as a stop for the reel 11 as the same is moved sideways into the container.

The cutting device 20 is arranged to extend between the side walls 14 of the reel 11 and comprises a body portion 21 having spaced apart upper and lower walls 22 and 23, respectively, integrally joined along one longitudinal edge by the end wall 24. The upper wall 22 is of less width than the lower wall 23 and is provided along its free longitudinal edge with a depending flange 25, for a purpose to be hereinafter described. Extending from each end of the lower wall 23 is a clamping leg 26 provided with an intermediate loop 27; the legs 26 being arranged parallel to each other and projecting downwardly in vertical relation to said lower wall 23. The loops 27 connect the legs 26 with the lower wall 23 and are so formed as to project outwardly beyond the plane of said legs, with the inside walls of said loops being spaced from the transverse edges of the upper wall 22, as clearly shown. Preferably the upper and lower walls 22, 23, end wall 24, clamping legs 26 and loops 27 are integrally formed from a single unitary blank of sheet metal with the parts thereof bent into shape in the manner readily apparent from an inspection of Figure 4. In order to insure the cutting device against falling from the reel while it is being turned, each of the clamping legs 26 at the juncture thereof with the loops 27, is provided at its side edges with inwardly directed lugs 28 formed by notching said clamping legs as at 28^a and bending the corners thus formed inwardly a slight distance as clearly shown in Figure 4. Thus, with the device assembled on the reel 11, the lugs 28 will resiliently and frictionally engage under the beads 15 of the reel fitted within the loops 27 to securely hold the cutting device in position.

The free longitudinal edge of the lower wall 23 is sharpened to define a knife-edge 29 which as shown is located forwardly of the corresponding edge of the upper wall 22. Arranged for sliding movement between the walls 22 and 23 is a guard 30 of the same length as the upper wall 22. The guard 30 is provided with a central longitudinal channel 31 having spaced vertical walls 32 and 33, the depth of said channel being such as to accommodate the end flange 25 of the upper wall 22. Formed on the inside edge portion of the guard 30 are spaced pockets 35 in each of which is placed one end of a coil spring 36 with the other end abutting the end wall 24, each spring being adapted to react between the end wall 24 and bottom of said pocket to constantly urge the guard 30 in an outwardly direction. Outward movement of the guard 30 is limited by the engagement of the end flange 25 with the inside channel wall 32. The outside edge portion of the guard 30 in the normal position of the same projects over the knife-edge 29, said outside edge-portion being preferably rounded as at 37.

The cutting device is applied to the reel 11 by snapping the same across the side walls 14,

the legs 26 frictionally contacting the outside surfaces of said side walls, and said device being so positioned that the beads 15 are fitted within the loops 27 as clearly shown in Figure 1.

Figure 3 shows the operation of the cutting device. The free end 10a of the adhesive tape 10 is pulled off of the reel for a selected length. With the reel held in one hand and the length of tape in the other the same is pulled backwardly against the guard 30 to move the same inwardly against the action of the coil springs 36 to uncover the knife-edge 29. The transverse pull of the tape on said knife-edge will cut the same smoothly and quickly. Upon the completion of the cut the guard 30 will move outwardly to cover the knife-edge. Another method of cutting the tape when the tape has been unwound to a desired length while bandaging is to impart a quick twist of the wrist of the hand holding the reel. This movement will result in a quick and smooth severing of the tape.

While the cutting device as above described has been shown used with a reel of adhesive tape it is to be understood that the same may readily be applied for use with any type of tape or ribbon. The principles involved in this invention are susceptible of numerous other applications which will readily occur to persons skilled in the art. The invention is therefore to be limited as indicated by the scope of the appended claims.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A cutting device comprising spaced upper and lower walls joined along one longitudinal edge by an end wall, said lower wall being of greater width than said upper wall, a knife-edge formed on the free longitudinal edge of said lower wall, a guard element for said knife-edge arranged for bodily transverse sliding movement between said upper and lower walls, spring means acting on said guard element to move the same outwardly, stop means carried by said upper wall and coacting with a portion of said guard element to limit said outward movement, and means associated with at least one of said walls for mounting said cutting device on a supporting structure.

2. A cutting device comprising spaced upper and lower walls, an end wall joining the same along one side edge thereof, said lower wall being of greater width than said upper wall and provided with a knife-edge along its free edge, a guard element for said knife-edge arranged for bodily transverse sliding movement between said upper and lower walls, a central longitudinal channel formed in the upper surface of said guard element, a depending flange on the free edge of said upper wall projecting into said channel, spring means arranged between said upper and lower walls reacting on said guard element to move the same outwardly, said depending flange coacting with a wall of said channel to limit said outward movement, and attaching means formed at the transverse ends of said lower wall for mounting said cutting device on a supporting structure.

3. In the cutting device as set forth in claim 2; said guard element including pockets formed on its inside edge portion in opposed relation to said end wall, and said spring means comprising coil springs seated within said pockets and in engagement with said end wall, said coil springs being under initial compression.

4. In the cutting device as set forth in claim 2; wherein said attaching means comprises depending parallel legs, and spring loop means connecting said legs with said lower wall.

5. In the cutting device as set forth in claim 2; said guard element having a length equal to that of said knife-edge and normally maintained under the action of said spring means in over-lapping relation to said knife-edge and adapted to uncover the same by the action thereon of a member to be cut by said knife-edge.

6. In combination with a roll of tape wound on a reel, a cutting device comprising a body portion, means on said body portion for clamping the same to said reel, a knife-edge formed on said body portion, a sliding guard mounted on said body portion normally covering said knife-edge and adapted to be moved to a position uncovering the knife-edge by a pulling action on a length of said tape to be cut from said roll acting against said guard.

7. In combination with a roll of tape wound on a reel, a cutting device comprising a body portion defined by spaced upper and lower walls and an end wall joining the same, a knife-edge carried by said lower wall, a sliding guard for said knife-edge positioned in said body portion, spring means within said body portion acting on said guard to move the same outwardly, stop means on said body portion engaged by said guard to limit both outward and inward movement thereof, leg means on said body portion for clamping said device to said reel with said knife-edge parallel to the axis thereof; said guard normally covering said knife-edge and adapted to uncover the same by a pulling action on a length of said tape to be cut from said roll acting against said guard.

8. In combination with a tape carrying spool, a cutting device attached to the spool and having a cutting edge, a guard member oscillatably mounted upon the cutting device and having a portion adapted to cover said cutting edge to guard the same, and resilient means normally urging the guard member into guarding position, said guard member when in guarding position extending beyond the cutting edge and adapted to be retracted by the tape as the latter is drawn toward and across the cutting edge.

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