

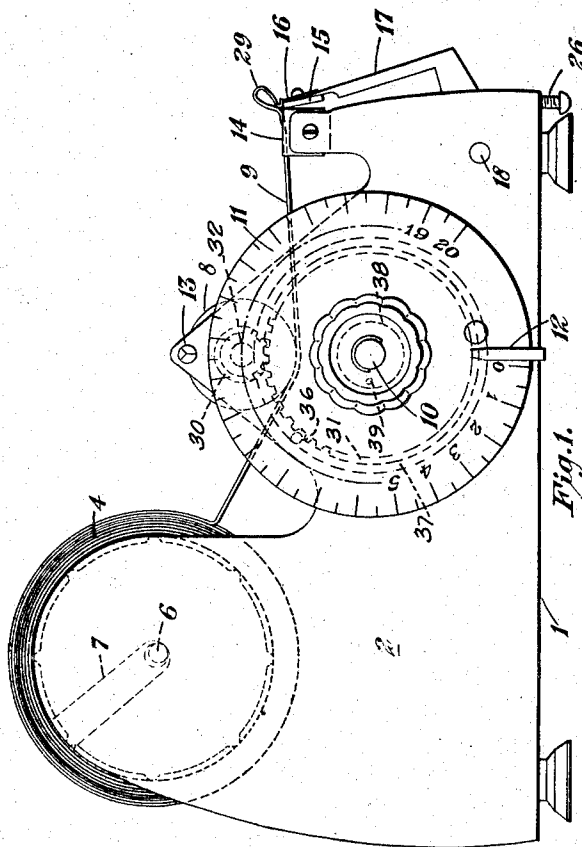
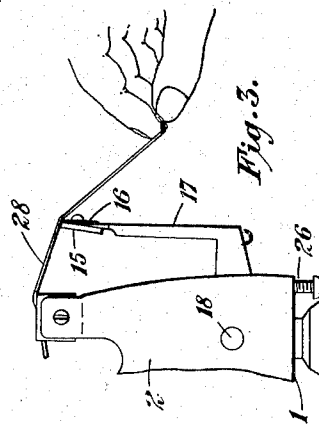
Aug. 25, 1959

W. J. BRITTON
TAB-FORMING DEVICE

2,901,248

Filed Jan. 18, 1956

2 Sheets-Sheet 1



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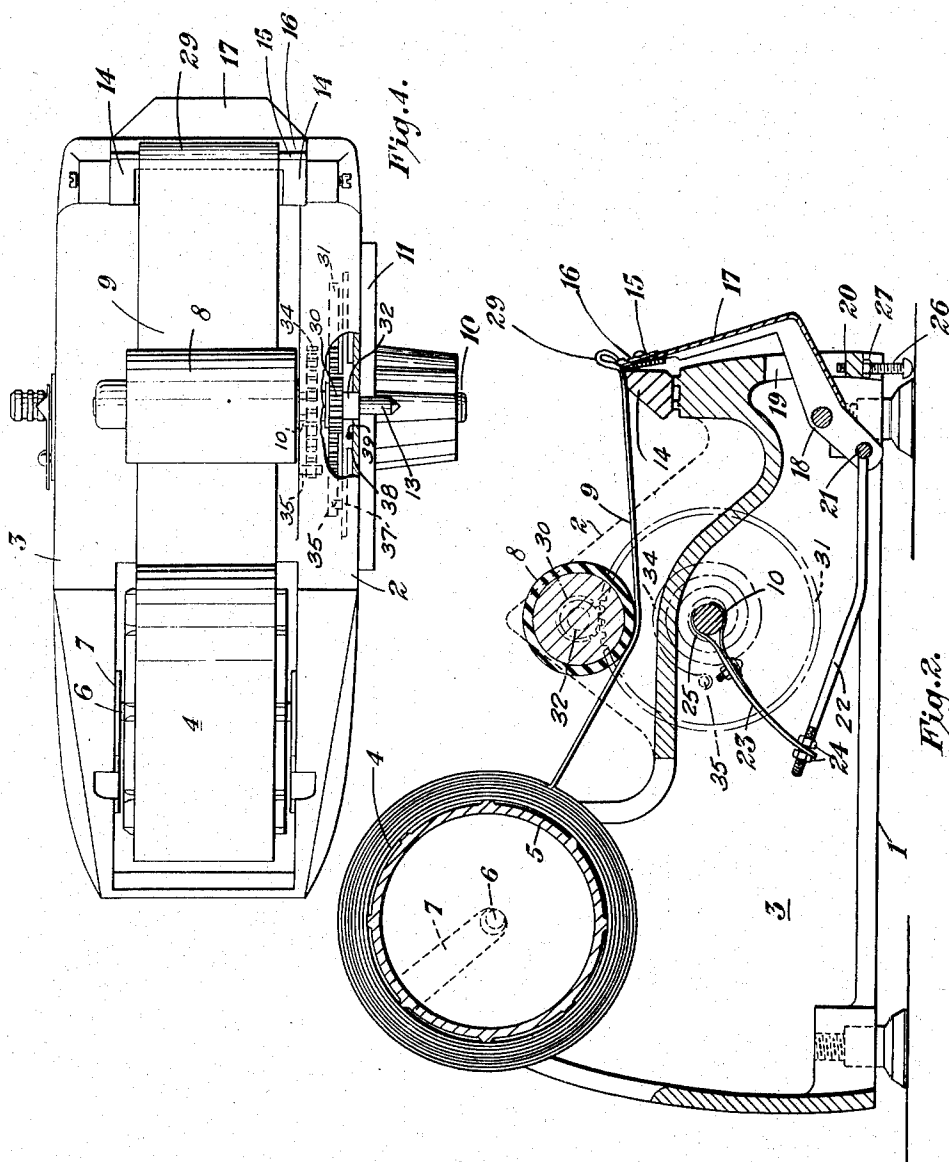
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TAB-FORMING DEVICE

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3 Claims. (Cl. 270—68)

This invention relates to means for forming tabs upon strips of adhesive tape.

It is the present practice to use adhesive tapes, more particularly, pressure-sensitive adhesive tapes for wrapping and sealing packages and many other uses. Often it is desirable to have a pull or tab portion serving to facilitate removal of the tape. It has been the custom to make these tabs by hand when the tape is in process of application. Hand manufacture of tabs on pressure-sensitive adhesive tape is difficult and there is a risk of spoiling the "stick" properties of the adhesive resulting in a most unsatisfactory tab.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the combinations and improvements pointed out in the appended claims.

The invention consists in the novel combinations and improvements herein shown and described.

It is a purpose of this invention to provide a device that will automatically form a tab at the end of the length of adhesive tape prior to the severance of that length of tape from the source of supply.

It is a further object of this invention to provide such a device that is in the form of an attachment which may be very easily mounted on a tape dispenser of known type and design.

According to the present invention an apparatus for folding pressure sensitive adhesive tape upon itself to form tabs comprises means for supporting a roll of pressure-sensitive adhesive tape, a pair of relatively movable platforms to which the said tape will adhere, means biasing said platforms to be normally adjacent to each other, a severing blade carried by one of said platforms, and means operable by the tape, as the latter is drawn from the roll serving to separate said platforms.

In a preferred form of this invention one of the platforms is fixed and the other platform, which carries the severing blade, is mounted on a pivoted arm, a stop being provided to limit movement of the arm. The movable platform is moved away from the other platform by automatic means which preferably are operable by the drawing off of the tape and comprise a spindle, means for biasing the spindle for rotation in one direction, a collar mounted on the spindle to be rotated thereby but having a capacity to slip, a linkage connecting the collar to the pivoted arm, and a roller, against which the back of the tape is adapted to bear as it is drawn off from the roll, in driving connection with the spindle and to rotate the spindle in the other direction and thereby the movable platform is moved away from the fixed platform.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

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Figure 1 is a side elevation of a pressure-sensitive adhesive tape dispenser having a tab-forming attachment mounted thereon;

Figure 2 is a sectional side elevation of the apparatus as shown in Figure 1;

Figure 3 is a side elevation showing the platforms separated just prior to severance of tape; and

Figure 4 is a plan view of the apparatus as shown in Figure 1.

A pressure-sensitive adhesive tape dispenser of known type including a measuring device is shown having a tab-forming device mounted thereon. The dispenser comprises a heavy base 1 having two side walls 2 and 3 between which is mounted a roll 4 of pressure-sensitive adhesive tape. The roll 4 is carried by a reel 5 having trunnions 6 journaled in inclined slots 7 formed in the inner surface of the side walls 2 and 3. Mounted on the side wall 2 is a measuring device of known type which comprises a resilient roller 8 against which the back of the tape 9 bears, and a spindle 10. The roller 8 is coupled to the spindle 10 by meshing gears 30 and 31. The roller 8 and the gear 30 are fixed to a common shaft 32 which, in turn, is journaled in the side wall 2, while the gear 31 is fixed to the spindle 10. Thus, the spindle 10 is driven by rotation of the roller 8 through the gears 30 and 31. A dial 11, carried by the spindle, is scaled and provided with a stop 12 which cooperates with an abutment 13 on the side wall 2. The spindle 10 is biased for rotation in one direction by means of a coil spring 34 mounted thereon. One end of the spring 34 is fixed to the spindle 10 and the other to a pin 35 extending outwardly from the lower inside wall portion of the side wall 2.

The dial 11 is held for unison rotation with the spindle 10 by a pin 36 extending inwardly from a disk 37 which is rotatably mounted on the spindle. The disk 37 is integral with a cylindrical boss 38 which also rotates on the spindle 10 and extends through the side wall 2 to butt against one side of the dial 11. The dial, in turn, is fixed to the boss 38 for rotation therewith by the set screw 39. The pin 36, which is located adjacent the periphery of the disk 37, normally engages teeth of the gear 31 carried by the spindle 10 to connect the dial 11 to the spindle through the disk and the boss 38. The pin 36 may be disengaged from the gear 31, by moving the dial 11 with the disk 37 attached along the spindle 10 away from the gear.

To set the measuring device, the pin is disengaged from the gear and the dial is rotated in an anti-clockwise direction to bring the scale reading corresponding to the length of tape required, beneath the abutment 13. The pin is then re-engaged with the gear locking the dial 11 for unison rotation with the gear and spindle 10. It will be appreciated that the dial, together with the spindle 10, is free to be rotated in a clockwise direction, against the bias of the coil spring, until the stop 12 meets the abutment 13.

The arrangement of this measuring device is such that when the dial has been set to the length of tape required and the tape is drawn off, the roller 8 is rotated by the tape thus causing rotation of the spindle 10 and the dial 11, against the bias of the coil spring carried by the spindle 10, until the stop 12 meets the abutment 13 which prevents further rotation of the dial 11 and roller 8, thus indicating that the required length of tape has been drawn off. The tape is then severed thereby releasing the roller 8 which together with the spindle 10 and dial 11 is rotated to its normal rest position by the action of the coil spring mounted on a spindle 10.

An upstanding platform 14 is mounted at one end of the base 1 between the side walls 2 and 3 on the side of

the roller 8 remote from the roll 4 of tape. A movable platform 15, together with a severing blade 16, is secured to one end of an angle arm 17 pivoted on a pin 18. The pin 18 is mounted within the base 1 between the side walls 2 and 3 at a point well below the fixed platform 14. The arm 17 projects through an aperture 19 in the end wall 20 of the base 1 and it positions the platform 15 adjacent the platform 14. Pivotaly connected at 21 to the other end of the arm 17 to that carrying the platform 15 and the blade 16 is a connecting link 22. The other end of the link 22 is pivotaly connected to an arm 23. The effective length of the link 22 may be adjusted by two nuts 24 connecting the link 22 to the arm 23. The arm 23 has a collar 25 embracing the spindle 10. The collar 25 is so adjusted that it will move with the spindle 10 provided the arm 23 is free to move but if movement of the arm 23 is prevented, thereby holding the collar stationary, the spindle 10 is free to slip, within the collar 25. An adjustable stop which comprises screw 26 and a lock nut 27 is provided to limit the outward movement of the arm 17. The screw 26 extends vertically through the wall 20 into the aperture 19.

When a length of tape is drawn off from the roll 4 it rotates the roller 8 which through the gears 30 and 31 rotates the spindle 10. As the spindle 10 rotates it carries with it the collar 25, which through the arm 23 and link 22 pivots the angled arm 17 thus separating the platform 15 from the platform 14. The movement of the arm 17 is limited by the screw 26 and, at which occurrence, should tape continue to be drawn off from the roll the spindle 10 is free to rotate slipping within the collar 25. When the desired length of tape has been drawn off from the roll 4 it is severed by bringing it down to bear against the blade 16 as shown in Figure 3 and at the same time the tape is brought into contact with, and adheres to, the platforms 14 and 15. When the tape has been severed, the pull of the tape against the roller 8 is released and it rotates, together with the spindle 10, back to its normal rest position under influence of the coil spring carried by the spindle 10. This reverse rotation of the spindle 10, through the arm 23 and link 22, pivots the angled arm 17 back to its normal rest position with the platform 15 adjacent to platform 14; should the arm 17 be back in its normal position before the roller 8 is in its normal position, the roller 8 and spindle 10 continue rotating until in their normal rest position as the spindle 10 is free to slip within the collar 25. It will be appreciated that as the platform 15 moves back to a position adjacent platform 14, the length of tape 28 spanning the gap between the two platforms when apart, will be buckled upwards to form a loop 29 (see Figures 1 and 2) with those two portions of the tape, forming the loop, adjacent to the platforms, in adherence with each

other. When a further length of tape is required the operator takes hold of the loop formed when the previous length of tape was severed from the dispenser, between his thumb and forefinger, thus flattening the loop to form a tab.

The invention in its broader aspects is not limited to the specific combinations and improvements described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. A tab-forming device comprising means for supporting a roll of pressure-sensitive adhesive tape, a fixed surface on the supporting means to which the tape will adhere, a second surface to which said tape will adhere pivotaly mounted for movement toward or away from the fixed surface, a cutter on the second pivotal surface, means constantly urging the pivotal surface toward the fixed surface, means adapted to contact the back of the tape and actuated by the withdrawal of tape for driving the pivotal surface away from the fixed surface, and means driven by said tape actuated means and connected to said pivotal surface for effecting pivotal movement of said pivotal surface.

2. A tab-forming device comprising a base, means on the base for supporting pressure-sensitive tape, a fixed surface on the base to which the tape will adhere, a pivoted lever having a second surface thereon to which the tape will adhere, for movement toward and away from the fixed surface, said second surface being provided with a cutter, means constantly urging the lever in a direction to pivot the second surface toward the fixed surface, rotatable means in engagement with the tape for actuating the lever in a direction to pivot the second surface away from the fixed surface as the tape is withdrawn, and means connecting said rotatable means and said lever for effecting pivotal movement of said second surface.

3. A tab-forming device as set forth in claim 2 having a roller in contact with the tape, a rotary shaft mounted in the base, means connecting the shaft to the lever, a spring biasing the shaft in a direction to pivot the lever and second surface toward the first surface, and means connecting the roller with said rotary shaft so that withdrawal of the tape moves the shaft in a direction to pivot the lever and second surface away from the fixed surface.

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