Oct. 31, 1950 E. I. STEPHENSON 2,528,455

SEVERING DEVICE

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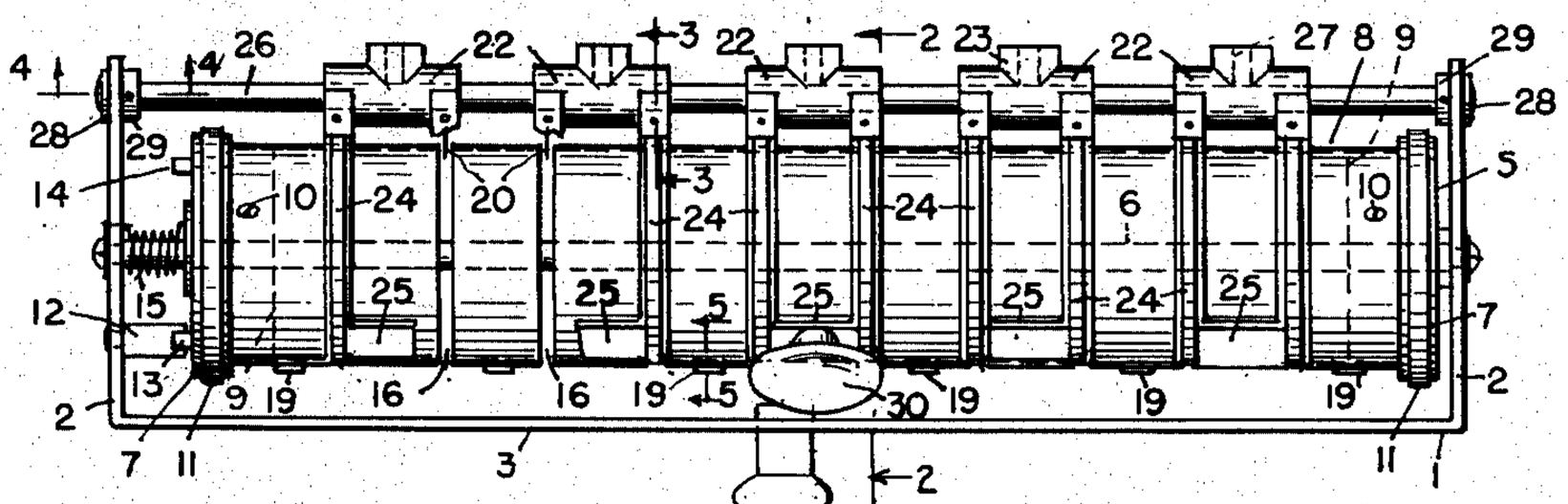

Fig. 1

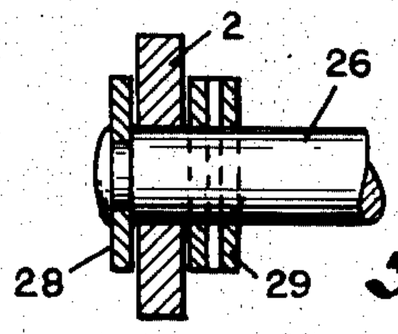

Fig. 4

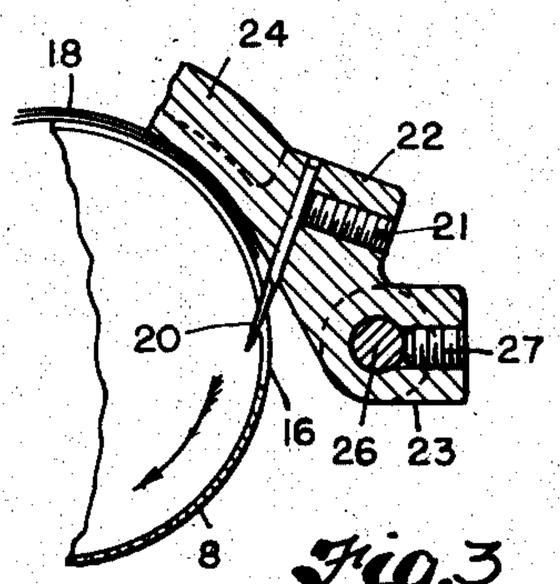

Fig. 3

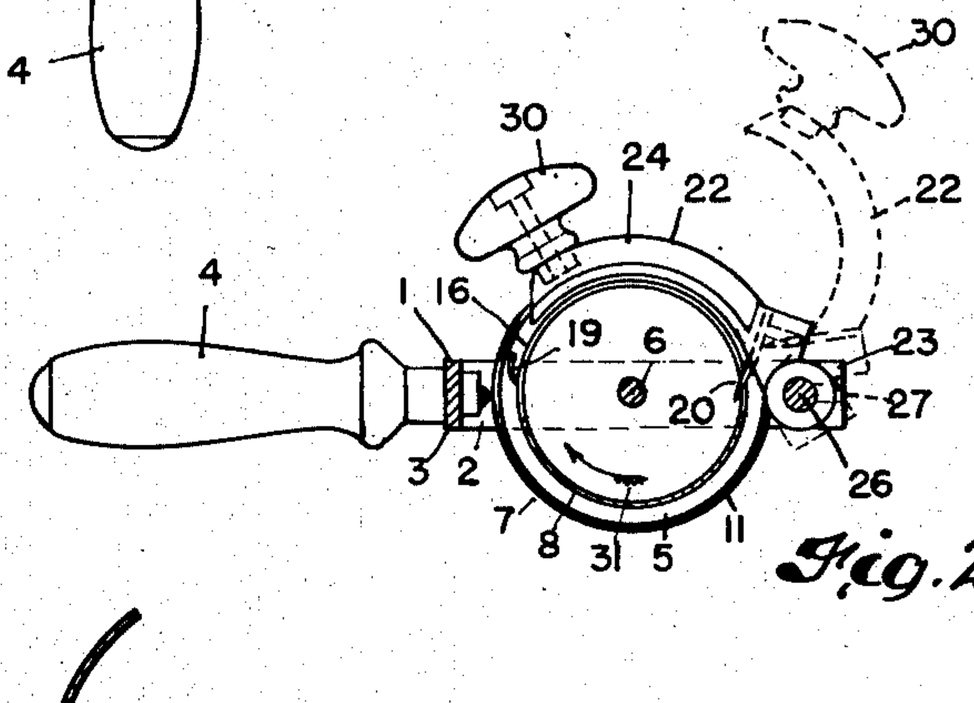

Fig. 2

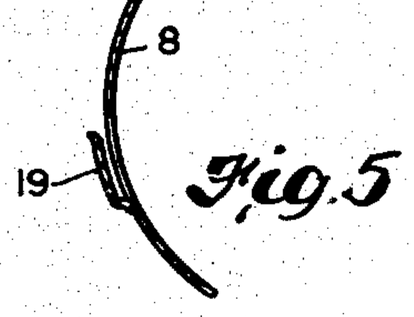

Fig. 5

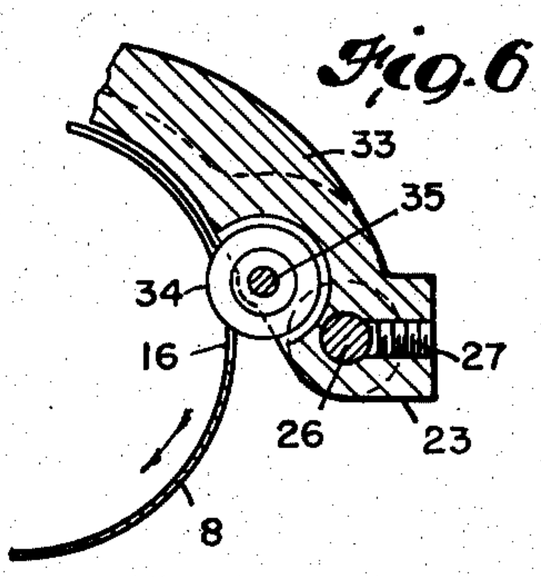

Fig. 6

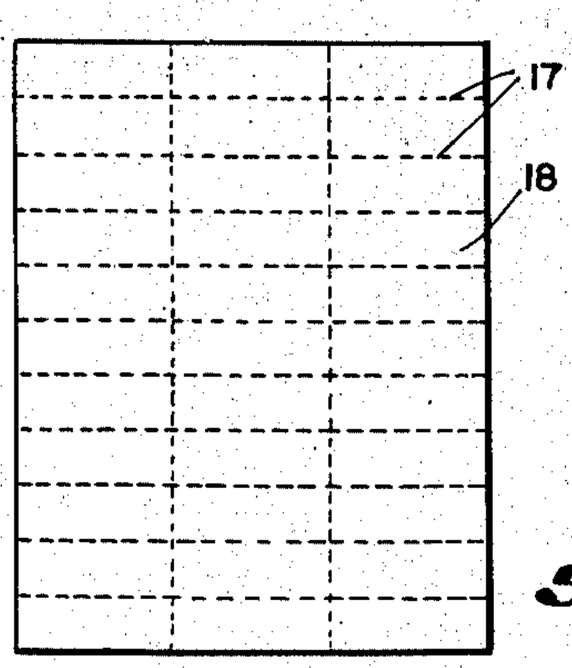

Fig. 7

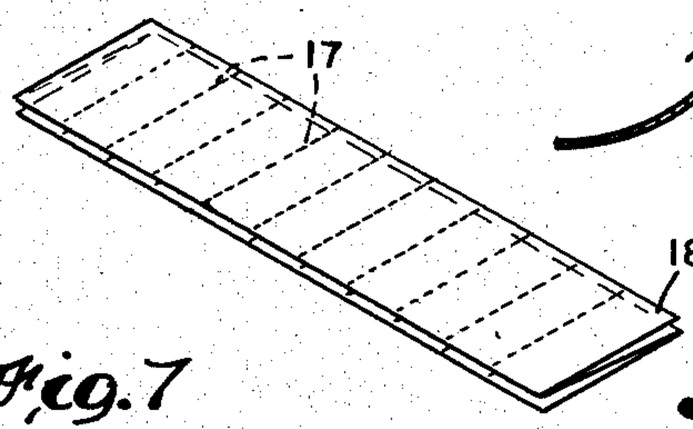

Fig. 8

Fig. 9

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SEVERING DEVICE

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5 Claims. (Cl. 164—38)

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The present invention while relating generally as indicated to a severing device is more particularly concerned with a device adapted for tearing perforated sheets of mailing labels, stamps, and the like.

Hitherto, perforated sheets of mailing labels, for example, after desirably imprinted have been manually torn into individual labels sometimes with the assistance of a straight edge which not only is a time-consuming operation but often results in uneven tearing and consequent spoilage, and furthermore the wetting of the gummed side of individual labels for sticking the same on packages or the like and without smearing the other side involves a degree of inconvenience.

Accordingly, it is one primary object of this invention to provide a severing device of a unique and simple construction enabling rapid and accurate tearing of such perforated sheets by one simple operation into strips, which strips may be then conveniently handled for wetting and sticking.

Other objects and advantages will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is a top plan view of a preferred embodiment of the invention;

Figs. 2, 3, 4, and 5 are cross-section views taken substantially along the planes indicated by the lines 2—2, 3—3, 4—4, 5—5, respectively, Fig. 1;

Fig. 6 is a cross-section view similar to Fig. 3 of a modification;

Fig. 7 is a plan view of a typical perforated sheet of gummed labels;

Fig. 8 illustrates the manner of folding the sheet preparatory to tearing the same into strips; and

Fig. 9 is a plan view of one of the strips into which the sheet is adapted to be torn by the device constituting the present invention.

Referring now more particularly to the drawing and first to Figs. 1–5 therein, there is shown a support member 1 preferably fabricated from strap iron or the like to provide laterally extending legs 2 and an intermediate connecting portion 3 to which latter portion a laterally extending operating handle 4 is connected as shown.

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Between said legs 2 is a cylindrical feed roller assembly 5 comprising a rod 6 therethrough journalled in said legs, end caps 7 non-rotatably fixed inwardly adjacent each end of said rod, and a feed tube member 8 having its opposite ends fitted over cylindrical projections 9 on said caps and retained thereon as by the screws 10.

Each of said caps 7 has a tire 11 preferably of rubber or rubber-like material therearound of larger diameter than said tube member 8 whereby movement of the support member 1 in a direction lengthwise of the handle 4 with said tires engaging the top of a table or desk or like surface effects rotation of said feed roller assembly 5 about the longitudinal axis of rod 6. The length of the tubular member 8 between said caps 7 preferably corresponds with the length of the perforated sheet to be severed as is hereinafter more fully explained. In addition, one leg 2 is provided with a stop lug 12 engaged by a pin 13 projecting axially from the adjacent cap 7 to thus preclude rotation of said roller assembly 5 in a counterclockwise direction as viewed in Fig. 2 and engaged by a pin 14 following predetermined clockwise rotation of said roller assembly, such latter rotation being about 180° in the present construction.

In order to yieldably restore and hold the roller 5 in the position shown in Fig. 1, a torsion spring 15 is disposed around one end of rod 6 and has its opposite ends fitted into apertures in the adjacent leg 2 and adjacent cap 7 as shown.

Said tubular member 8 is provided with a series of aligned transverse slots 16 spaced apart to correspond with the spacing of the perforated lines 17 on the sheet 18 which is to be severed and between such slots 16 are a series of drive clips or feed fingers 19 herein shown as being lanced from the tubular member 8 and each formed to provide a generally circumferentially extending portion and a radially extending portion for retaining a sheet of paper on said tubular member and for causing the sheet to move in unison with the roller 5. The aforesaid radially extending portions of said clips 19 lie in a straight line circumferentially adjacent one end of slots 16 so that the severing tools or members hereinafter referred to may cut through a sheet from one edge to the other.

Adjacent the other ends of such slots 16 and extending to a point within the periphery of the tubular member 8 are a series of needles 20 adjustably held as by screws 21 which are threaded in guide members 22, each said guide member being herein illustrated as comprising a hub portion 23 with a pair of curved arms 24 joined to-

gether by a cross bar 25, and such arms being adapted during the use of the device to encircle a portion of the periphery of said tubular member 8 and thus hold or guide the sheet being severed so that the sheet travels against the needles 20.

Said guide members 22 are fixedly connected to a rod 26, parallel to the rod 6, in desired axially spaced relation and in alignment with one another as by means of the set screws 27 having threaded engagement with said guide members. The opposite ends of said rod 26 are journalled in the legs 2 and are provided with collars 28 and 29 thereon for precluding axial shifting of said rod 26 and thus the guide members 22 thereon. In this way the needles 20 carried by said guide members 22 and in turn by the support member 1 are held in predetermined spaced relationship for extending into the slots 16 in tubular feed member 8.

For facilitating actuation of the afore-described guide assembly which comprises said guide members 22 and said rod 26 between the dotted and solid line positions as illustrated in Fig. 2, one guide member 22 is provided with a knob 30 thereon.

Having thus described one embodiment of the present invention, reference will now be made to the operation thereof. First a perforated sheet is folded as clearly shown in Fig. 8 and then with the guide members 22 disposed in the dotted position of Fig. 2 one longitudinally extending edge of such folded sheet is positioned in the clips 19 and the folded sheet wrapped around roller 5 preferably with the ungummed side facing outwardly whereupon the guide members 22 are shifted to the solid line position of Fig. 2 to hold the sheet around the roller 5 so as to overlie a portion of the circumferential extent of the slots 16. Then with the tires 11 engaged with a table or desk top, the whole device may be moved toward the right as viewed in Fig. 2 whereupon the roller assembly 5 with the folded sheet 18 thereon is caused to rotate clockwise as indicated by the arrow 31 with the needles 20 aligned with the perforations 17 of the sheet. Such rotation of the roller and sheet causes the sheet to traverse the needles 20 and thus be severed into strips 32 as shown in Fig. 9. Thereafter the lifting of the device from the table or desk causes the strips 32 (still folded) to remain on the table and the device is automatically restored to its initial position by the spring 15.

In the modification illustrated in Fig. 6 the guide members 33 are provided with a series of sharp edged thin wheels 34 journalled as on pins 35 in said guide member. Said wheels 34 are in some instances preferred over the needles 20 especially when unperforated sheets are to be severed into strips. In lieu of either the wheels 34 or needles 20, the severing members may comprise wires or threads disposed chordwise of the slots 16, or non-rotary blades of any desired shape.

Although in the forms of the invention illustrated, the roller assembly 5 is of a diameter requiring folding of the perforated sheet to be severed, it will be apparent that the diameter of said roller may be appropriately increased to accommodate the full width of a sheet in which case several sheets may be severed at one time.

In any case, with the sheet or sheets severed into strips 32 in one simple operation as aforesaid, it is now convenient to wet the gummed side and apply one label at a time, each time tearing the strip along the short perforation between successive labels.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a severing device, the combination of a support member, a roller journalled in said support member provided with a transverse slot and with a clip for engagement with an edge of material adapted to be placed on said roller, a circumferentially extending guide member on said support member for holding such material in curved form around said roller and over such slot, a severing member on one of said members extending inwardly through such slot adjacent the other edge of such material whereupon relative rotation of said support member and roller in one direction severs the material thus moved past said severing member, said guide member being connected to said support member for swinging movement toward and away from said roller.

2. In a severing device, the combination of a support member, a roller member journalled in said support member, means to hold material to be severed in a curved form around said roller member, and a transversely disposed severing member on one of said members operative to sever such material upon relative rotation of said support member and roller member, said support and roller members being provided with interengageable stop members limiting the degree of relative rotation in opposite directions, and a spring member operatively interposed between said support and roller members for yieldably holding said members in a predetermined rotative position.

3. In a severing device, the combination of a U-shaped support member provided with an operating handle extending transversely therefrom and with opposed parallel legs, a roller between such legs having its ends journalled therein, a guide member mounted adjacent the free ends of such legs for swinging about an axis parallel with the axis of said roller, said guide member being curved conformably to said roller so as to encircle a portion of said roller, the portion of said roller encircled by said guide member being formed with a transverse slot, a severing member on said guide member extending into such slot, a clip on said roller circumferentially spaced from said severing member and adapted to engage an edge of material to be severed disposed between said guide member and roller, said roller when rotated in one direction causing material thereon engaged with said clip to move with said roller past said severing member.

4. In a severing device, the combination of a U-shaped support member provided with an operating handle extending transversely therefrom and with opposed parallel legs, a roller between such legs having its ends journalled therein, a guide member mounted adjacent the free ends of such legs for swinging about an axis parallel with the axis of said roller, said guide member being curved conformably to said roller so as to encircle a portion of said roller, the portion of said roller encircled by said guide member being formed with a transverse slot, a severing member on said guide member extending into such slot, a clip on said roller circumferentially spaced from said severing member and adapted to engage an edge of material to be severed disposed

between said guide member and roller, said roller when rotated in one direction causing material thereon engaged with said clip to move with said roller past said severing member, and a spring between said support member and roller yieldably opposing such rotation of said roller and operative to return said roller to an initial rotative position relative to said support.

5. In a severing device, the combination of a support member, a roller member journalled in said support member, means to hold material to be severed in a curved form around said roller member, and a transversely disposed severing member on one of said members operative to sever such material upon relative rotation of said support member and roller member, said support and roller members being provided with interengageable stop members limiting the degree of relative rotation in opposite directions.

ERNEST I. STEPHENSON.

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