

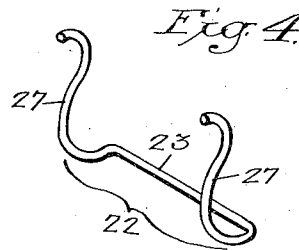
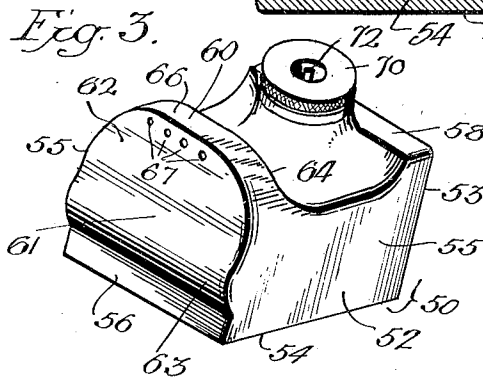
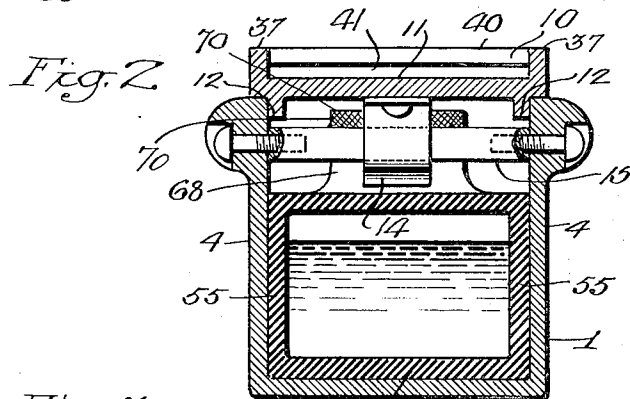
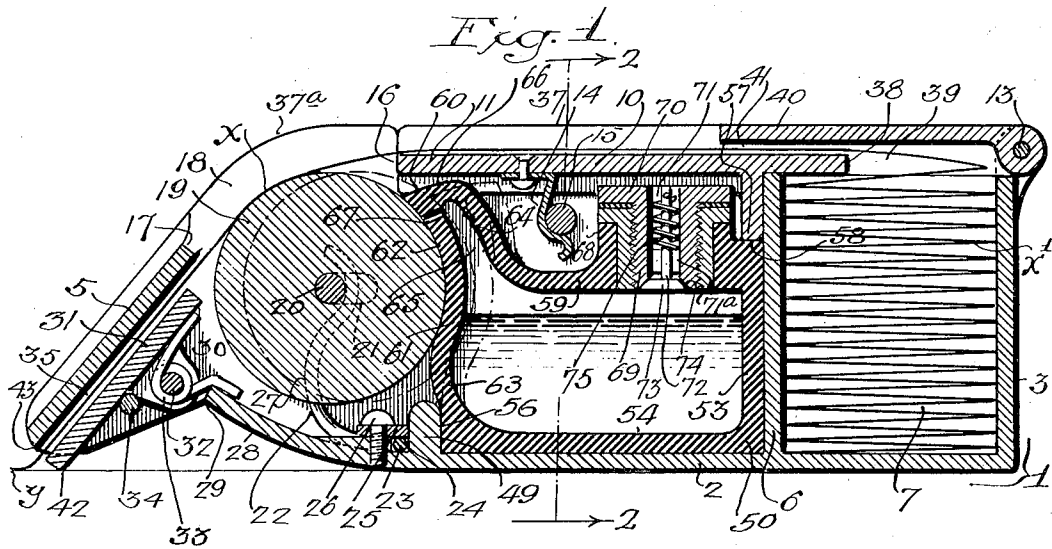
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LABEL, STAMP, OR STRIP APPLYING DEVICE

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LABEL, STAMP, OR STRIP APPLYING DEVICE

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9 Claims. (Cl. 91—62.5)

This invention relates to a device for use in applying gummed labels, tags, stamps, or other units of like character, or continuous adhesive strips, to various articles of merchandise, letters, papers, envelopes, parcel wrappings, etc. The present invention is adapted for use with short units provided in strip form, with the strip perforated transversely at the ends of the individual units for readily separating the units individually and successively from the strip. The device is arranged to accommodate a strip in the form of a roll or in the form of a pack wherein the units are arranged in accordion fashion, i. e., with the strip bent and folded back and forth at the lines of perforations.

The present invention constitutes an improvement to the device disclosed in my prior United States Letters Patent No. 2,095,894, dated October 12, 1937. The improvement primarily relates to the means for moistening the strip; and particularly to means for preventing the accidental escape of the moistening fluid from the device.

The construction and operation of the device forming the subject matter of the present invention will be fully disclosed hereinafter, reference being had to the accompanying drawing, of which:

Fig. 1 is a longitudinal sectional elevation of the device;

Fig. 2 is a transverse sectional elevation taken on the line 2—2, Fig. 1;

Fig. 3 is a perspective view of the moisture containing and expelling mechanism; and

Fig. 4 is a perspective view of a detail of the invention.

The device illustrated in the drawing may be composed, at least in part, of any desired kind of sheet material or of material capable of being molded into desired shape, preferably a non-corrosive light-weight metal suitable for die casting.

The device includes a main body or frame 1 comprising a base plate 2, a rear end plate 3, side plates 4, 4, a front plate 5, and a transverse partition 6 spaced from the rear end wall 3 and providing a compartment 7 for reception of the strip of gummed labels, etc., x , reduced to a roll or to a rectangular pack x' , as above noted.

The device also comprises a lid 10 consisting of a lower longitudinal plate 11 extending across the device from, and preferably resting on the upper edges of, the side walls 4, 4. The lid 10 is or may be provided with downwardly extending aligning flanges or lugs 12 arranged to engage the inner sides of the side walls 4, 4 respectively. The lid 10 is pivotally connected at 13 to the

rear wall 3 of the main body 1 and is held in a normally closed position, in the present instance, by a spring latch 14, secured to the underside of the cover plate 11 and engaging a fixed element 15 carried by the main body 1. In the present instance, the fixed element 15 is in the form of a rod or pin extending transversely of the device and secured in any suitable manner to one or both side walls 4, 4 thereof.

The front edge 16 of the cover plate 11 terminates rearwardly from and in spaced relation to the back edge 17 of the front plate 5, which latter is disposed at an angle with respect to the bottom wall 2 of the main body 1. Disposed in the opening 18, formed between the edges 16 and 17 of the plates 11 and 5 respectively and between the forward ends of the side walls 4, 4, is a moistening roller 19.

The moistening roller 19 is mounted on a shaft 20 which projects beyond the opposite sides of the roller 19 and is journaled at its opposite ends in longitudinally extending slots 21 formed in the side walls 4, 4 of the body frame 1.

The roller 19 is maintained in a normal forward position by means of a spring 22. The spring 22 is of a bent U shaped type having its central portion 23 seated in a transversely extending recess 24 formed on the bottom wall 2 and secured therein by a plate 25 and retaining screw 26. The ends 27, 27 of the spring 22 bear against the rear sides of the opposite ends respectively of the roller axle 20 and resiliently retain said axle in the forward ends of the slots 21, 21 in the side walls 4, 4 respectively.

The forward end of the bottom plate 2 and the lower edges of the side walls 4, 4 curve upwardly, at indicated at 28. The base or bottom plate 2 terminates rearwardly from the angular front wall 5, as indicated at 29 and provides an opening 30 therebetween.

Disposed substantially parallel to the front plate 5, is a gripper plate 31 which is mounted in the opening 30 between the side walls 4, 4. The gripper or clamp plate 31 is pivotally mounted on a transversely extending pin 32 which is secured at its opposite ends in the side walls 4, 4. A spring 33 tends to rock the clamp plate 31 in one direction on its pivot 32 and holds said clamp plate against a stop 34, whereby the fixed front plate 5 and the clamp plate 31 are normally in substantially parallel relation to each other and form a channel 35 therebetween for passage of the strip x therethrough.

The cover plate 11 is provided with upwardly extending side flanges 37, 37 which function as

guides for the strip x in its passage from the storage compartment 7 to and across the cover plate or strip supporting platform 11 as it passes to the moistening roll 19 and from the moistening roll into the passageway 35 between the fixed and relatively movable plates 5 and 31. The side walls 4, 4 extend upwardly at the opening 13 and form continuations of the guide flanges 37, 37 as indicated at 37a, 37a whereby the strip is guided from the cover plate 11 to the passage 35 across the moistening roller 19.

The cover plate 11 extends but part-way across the otherwise open top of the storage compartment 7 and terminates intermediate the partition 6 and the rear wall 3, as indicated at 38, to provide an opening 39 for passage of the strip x from the storage compartment 7 onto the top of the cover plate 11.

A top plate 40 extends from the rear wall 3 forwardly across the opening 39 and beyond the partition 6 and together with the rear portion of the cover plate 11 forms a passage 41 for the strip x as it passes from the storage compartment 7 onto the cover plate 11 and between the guide flanges 37, 37 which latter prevent lateral displacement of the strip as it is being fed to and across the opening 13 in which the moistening roller 19 is mounted.

The lower edge 42 of the clamp plate 31 is normally arranged to engage the surface y to which the strip x is to be applied. Downward pressure applied to the front portion of the frame 1 will cause the clamp plate 31 to rock about its pivot 32 and clamp the strip x between lower edge 42 of the clamp plate and the relatively sharply beveled lower edge 43 of the plate 5, after which a slight twist of the device will cause the edge 43 to sever a projected portion of the strip from that portion which is disposed within the channel 35.

Moisture is applied to the peripheral surface of the moistening roll 19 by means generally indicated at 50. The moistening means 50 is mounted in a compartment 51 formed within the body of the device, between the rear of the moistening roll 19 and a transversely extending rib 49 on the base plate 2 adjacent and substantially parallel to the rear of the moistening roll 19, the front side of the transverse partition 6, the side walls 4, 4, and the cover plate 11.

The moisture applying means includes a container which is adapted to remain normally sealed, to prevent the escape of the moistening liquid therefrom. The moistening means also includes mechanism which is adapted to eject but a relatively small amount of moisture onto the peripheral face of the moistening roll 19, during operation of the device, by a pumping action created within the container and which will expell moisture from the container and subsequently draw air into the container to replace the volume of expelled moisture and whatever air was discharged with the moisture, to prevent the formation of a partial vacuum within the container and to maintain a static atmospheric pressure therein.

In the present instance the moisture containing and expelling means 50 is in the form of a flexible resilient rubber bulb 51, having substantially the shape shown in Figs. 1, 2 and 3. The bulb 51 consists of a substantially rectangular hollow body 52, which includes a rear wall 53 arranged to seat against and be restrained against outward bulging by the front side of the transverse partition 6. The hollow bulb 51 also

includes a bottom wall 54 arranged to seat on and be restrained against outward bulging by the upper surface of the bottom plate 2. The side walls 55 of the bulb 52 rest against the inner faces of the side walls 4, 4, of the body 1 which also prevent outward bulging of the bulb walls 55, 55.

Forward movement of the bulb in the frame 1 is prevented by the transverse rib 49 engaging the lower portion 56 of the front wall of the bulb 52. Vertical movement of the bulb 52 is prevented by a rib 57 formed on the underside of the cover plate 11 and engaging a shoulder 58 formed along the rear upper edge of the bulb 52.

The top wall 59 of the bulb 52 and the front wall 61 of said bulb merge into an upwardly and forwardly projecting neck or protuberance 60. The protuberance 60 includes a front wall 62 curved to the arc, or substantially to the arc, of the peripheral surface of the moistening roll 19 and forms a continuation of a similarly shaped portion of the front wall 61 of the bulb. Between the concaved upper portion of the front wall of the bulb and the substantially flat lower portion 56 of said front wall, said front wall is bulged outwardly or convexed as indicated at 63. The upper wall 59 of the bulb merges into the back wall 64 of the protuberance or neck 60, leaving a hollow passage 65 between the front and back walls of said neck.

Adjacent the upper top wall 66 of the neck 60 the concaved front wall 62 of said neck is provided with one or more minute openings 67, which communicate with the concaved surface of the front wall 62 and with the passage 65, whereby moisture may pass from the passage 65 onto the peripheral surface of the moistening roll 19.

The top wall 59 of the bulb 52 is provided with a hollow boss 68 in which is rigidly mounted a ferrule 69. The ferrule is provided with a screw threaded bore adapted to receive a threaded filling or closure plug 70. The closure plug 70 is provided with an axial bore 71 having radial fins 71a adjacent its lower end for engagement with the stem 72 of a valve 73 which is adapted to engage a seat 74 formed at the lower end of the bore 71, for closing said bore against passage of moisture outwardly from the interior of the bulb 51 through said bore. A spring 75, having one end resting on the upper ends of the fins 71a and its opposite end secured to the upper end of the valve stem 72, holds the valve 73 normally in sealing contact with the seat 74.

In operation of the device, the lid 10 is adapted to be swung about its pivot 13 to expose the filling cap 70 and the strip compartment 7. The filling cap may be readily unscrewed from the ferrule 69 and the interior of the bulb 52 filled with water. With the moistening roll 19 in its forward position and the concaved face 62 of the neck 60 resting on the peripheral face of the moistening roll, the openings 67 are normally closed against escape of the moisture from the bulb through the openings 67. After filling of the bulb 52, replacement of the plug 70 prevents escape of moisture through the filling opening 71.

The roll or pack x of label strip x is then placed in the compartment 7 and threaded through the passage 41 in the lid 10 whereupon the lid is swung in an opposite direction about the pivot 13 until the spring latch 14 snaps behind the locking pin 15. The strip x is then extended over the top plate 11 and across the moistening roll 19 into the passage 35 in the beak of the device formed by the fixed plate 5 and relatively movable clamp plate 31.

The device is then ready for operation and, as clearly indicated in the above noted prior patent, can be readily held and operated in and by one hand of the operator. With the fore-finger of the hand in which the device is contained bearing against the portion of the strip which rests over the moistening roll pressure of the finger will force the moistening roll rearwardly, during which the axle 28 thereof is guided by the slots 21. Such movement flexes or displaces the front walls of the container and neck of the bulb inwardly. This reduces the interior capacity of the bulb. With the bulb filled with air and water reduction in the capacity of the bulb produces an increase in the internal pressure therein, which forces the moisture, either in a liquid or more or less vaporized state, out through the openings 67 onto the peripheral face of the moistening roll 19. With the same finger, the moistening roll may be rotated and the strip *x* simultaneously advanced thereby. Turning of the roller 19 and the advancement of the strip *x* transfers the moisture from the peripheral face of the roll 19 onto the adhesive face of the strip *x*.

Intermittent rearward movement of the moistening roll in the manner noted maintains a light film of moisture on the peripheral face of the moistening roll without providing excessive moisture which would destroy the quick setting of the adhesive when the strip is applied to the surface *y*.

Each time the roll 19 is moved rearwardly to eject moisture from the neck 60 of the bulb and is released to be returned to its normal position by the spring 22, the valve 73 will open to permit air to enter the interior of the bulb to replace the volume of moisture and any air which may have been expelled from the interior of the bulb therewith by the previous reduction of the capacity of the bulb as effected by the previous rearward movement of the moistening roll 19.

The valve 73 closes automatically after each operation of the roller 19 and holds the pressure within the bulb on the next operation of the roller 19, which, by reduction of the capacity of the bulb, again and each time forces moisture out through the openings 67 onto the peripheral face of the moistening roll 19.

The resiliency of the neck 60 of the bulb maintains the concaved face of said neck in such close contact with the peripheral face of the roll 19 at all times that moisture is prevented from accidentally or unintentionally being expelled from the openings 67; and the automatic closing of the breather valve 73 in a like manner prevents escape of moisture through the breather opening 71. Thus, the device is automatically sealed against the escape of moisture which, in devices of the general type to which the device of the present invention belongs heretofore has been responsible for spotting of the articles to which the labels are being applied or upon which the device has been carelessly laid when not in use.

I claim:

1. In an adhesive strip moistening device, the combination of a normally closed moisture container provided with a normally closed moisture ejecting opening and comprising a relatively movable wall, a moisture applying element engageable with said strip and said wall and adapted to displace said wall to create a pumping action in said container to expel moisture therefrom onto said applying element.

2. In an adhesive strip moistening device, the combination of a normally closed moisture container provided with a normally closed moisture ejecting opening and comprising a relatively movable wall, and a relatively movable moisture applying element engageable with said strip and operably associated with said wall for displacing said wall and thereby creating a pumping action in said container to expel moisture therefrom onto said applying element.

3. In an adhesive strip moistening device, the combination of a normally closed flexible moisture container of predetermined normal shape provided with a normally closed moisture ejecting opening, and a moisture applying element engageable with said strip and operable against a portion of said flexible container for distorting said flexible container from its normal shape to force said moisture from said container onto said applying element.

4. In an adhesive strip moistening device, the combination of a normally closed flexible moisture container of predetermined normal shape provided with a normally closed moisture ejecting opening, a moisture applying element engageable with said strip and operable against the portion of said flexible container for distorting said flexible container from its normal shape to force said moisture from said container onto said applying element, and breather means providing for admission of air to the interior of the container between said distortions thereof.

5. In an adhesive strip moistening device, the combination of a normally closed resilient moisture container, a relatively movable moisture applying element engageable with said strip, a hollow flexible protuberance on said container bearing against the strip engaging surface of said applying element and provided with a moisture outlet normally closed by said surface, and a flexible displaceable wall of said container engageable with said element and operable by movement of said element for forcing said moisture from said container onto said applying element.

6. In an adhesive strip moistening device, the combination of a normally closed resilient moisture container, a relatively movable moisture applying element engageable with said strip, a hollow flexible protuberance on said container bearing against the strip engaging surface of said applying element and provided with a moisture outlet normally closed by said surface, a flexible displaceable wall of said container engageable with said element and operable by movement of said element for forcing said moisture from said container onto said applying element, said container having a breather opening, and a check valve normally closing said opening and arranged to admit air to the interior of the container between operations of said wall.

7. In an adhesive strip moistening device, the combination of a normally closed flexible moisture container of predetermined normal shape, a moisture applying roller contactable with said strip, a hollow flexible resilient protuberance on said container having one wall thereof normally engaging the strip contacting surface of said roller and having a moisture outlet normally closed by said surface, a resilient readily displaceable wall on said container forming a continuation in part of the roller engaging wall of said protuberance, and means affording to and fro movement of said roller relative to said container as a whole for displacing said engaged surfaces for reducing

the internal capacity of said container to force moisture therefrom through the opening in said protuberance onto said surface of said roller.

8. In an adhesive strip moistening device, the combination of a normally closed flexible moisture container of predetermined normal shape, a moisture applying roller contactable with said strip, a hollow flexible resilient protuberance on said container having one wall thereof normally engaging the strip contacting surface of said roller and having a moisture outlet normally closed by said surface, a resilient readily displaceable wall on said container forming a continuation in part of the roller engaging wall of said protuberance, means affording to and fro movement of said roller relative to said container as a whole for displacing said engaged surfaces for reducing the internal capacity of said container to force moisture therefrom through the opening in said protuberance onto said surface

of said roller, said container having a filling opening, a plug normally closing said filling opening and having a breather opening extending through said plug, and a breather valve carried by said plug and normally closing said breather opening. 5

9. In an adhesive strip moistening device, the combination of a normally closed resilient moisture container provided with a normally closed moisture ejecting opening and comprising a relatively movable wall, a rigid frame encasing said resilient container and preventing bulging of adjacent walls of said container, a relatively movable moisture applying roller slidably mounted in said frame and engageable with said strip and said wall and adapted to displace said wall to create a pumping action in said container to expel moisture therefrom onto said applying element. 10 15

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