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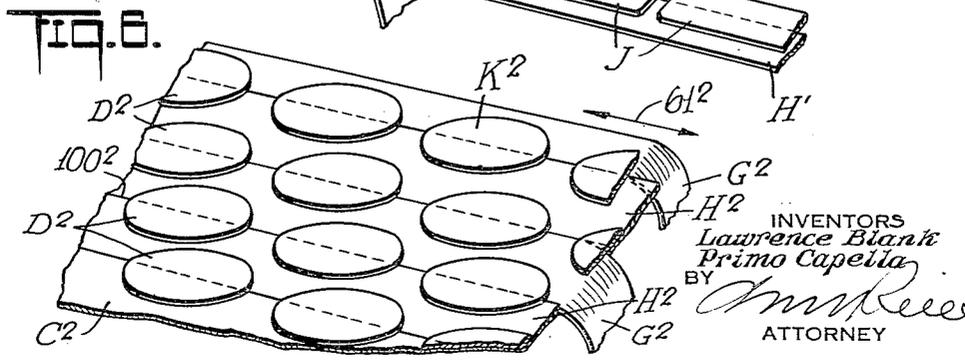
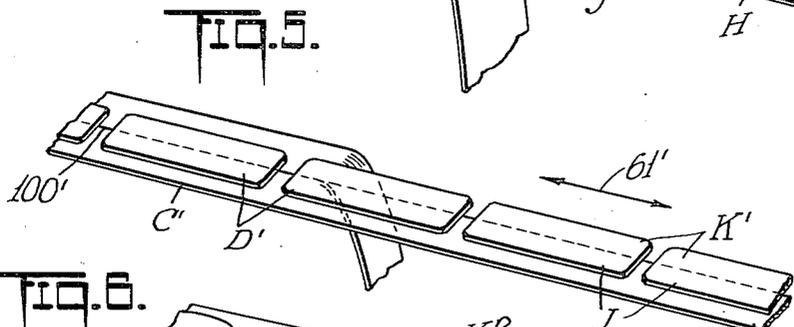
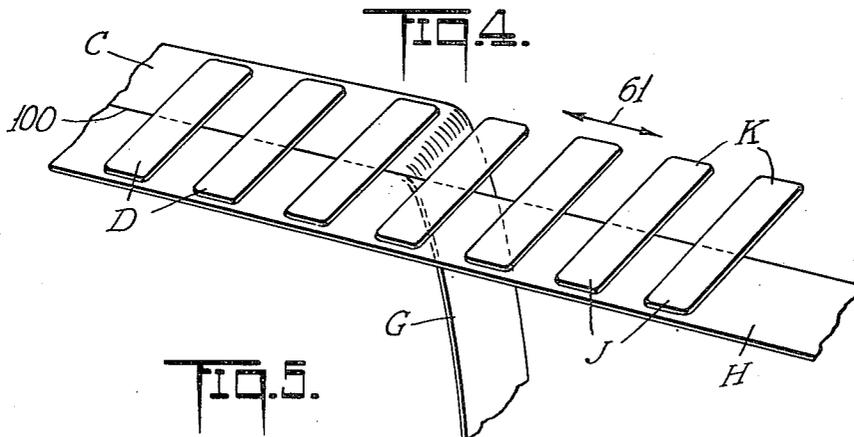
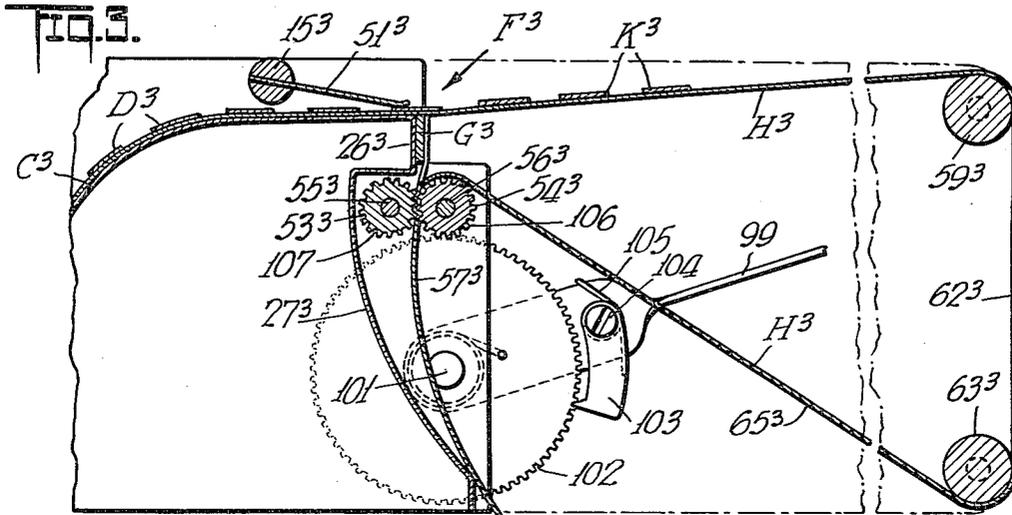
P. J. CAPELLA ET AL

2,765,205

LABEL DISPENSING SYSTEM

Filed Oct. 12, 1954

3 Sheets-Sheet 2



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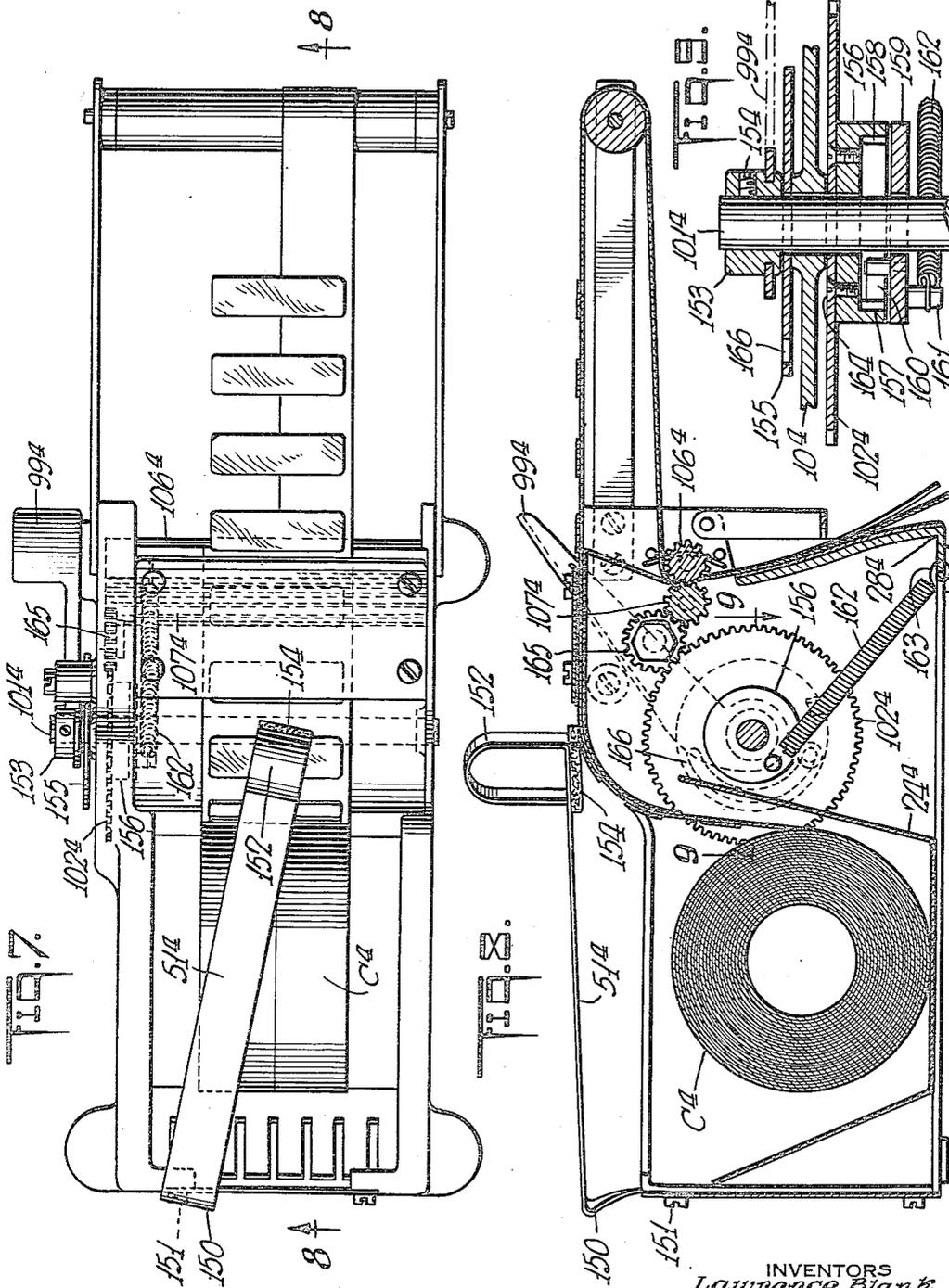
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LABEL DISPENSING SYSTEM

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LABEL DISPENSING SYSTEM

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11 Claims. (Cl. 312—91)

The present invention relates to a label dispensing device and it particularly relates to a method and means for dispensing labels with a pressure sensitive adhesive coating, which labels are carried upon a strip or tape carrier.

In the dispensing of labels which are temporarily carried upon a strip or tape carrier, it has been necessary to limit the label to relatively stiff material and at the same time to provide a carrier of relatively flexible material so that the label with the pressure sensitive adhesive coating thereon could be readily separated from the flexible carrier incidental to dispensation and usage because of the relative difference in stiffness of the label and carrier.

Accordingly, the labels had to be made of relatively stiff paper materials while the carrier strip had to be made of a relatively flexible thin glassine paper. Due to these requirements, it was not readily possible to use flexible labels of the type of thin plastic sheet materials, such as cellulose acetate and other cast or extruded plastic materials, and there was great limitation as to the type of material which could be used as a carrier strip or tape.

Furthermore, there was considerable difficulty experienced in stripping the label from the carrier strip preliminarily to being attached for their intended purpose.

For example, where the labels were used as masks in connection with a painting or paint spraying operation, as for example to cover chrome spots, keyholes or other places in and about an automobile body, it required the services of one man just to detach the labels from the carrier strip and place them on another temporary carrier on bottom while another man had to be available to remove the labels or masks from an intermediate carrier to be applied to the automobile carrier itself before paint spraying.

Furthermore, in cases where large quantities of articles were to be marked with prices, such as shoes, cans or boxes in self-service department stores or markets, the labor of at least two and sometimes many persons were required first to detach the label with the pressure sensitive coating from the carrier strip and then subsequently to apply the label to the can, box or other article without destruction of the pressure sensitive coating or deterioration of the pressure sensitive coating.

Furthermore, in hand separation of the labels from a carrier strip, considerable difficulty was experienced by the operator in removing the labels, particularly when they were small, from the strip without bending or defacing the labels and without undesirably affecting the pressure sensitive adhesive coating.

It is among the objects of the present invention to provide a novel label dispensing system in which any type or material of adhesive backing or carrier tape or strip may be utilized without regard to the stiffness or body thereof, and in which the label may be made of any suitable pliable or stiff paper or plastic material, either plain or printed, and previously cut or die-cut after application to the carrier tape.

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Another object is to provide a label dispensing system in which the pressure sensitive coated labels may be readily detached from the carrier incidental to usage or consumption thereof without intermediate removal and carrier operations and with only one operator being required to remove the label from the tape and to apply such label immediately thereafter to the article being marked with a price, to the device being masked for painting or for any other purpose.

Another object is to provide a high speed, low labor label dispensing and application system which may be widely utilized for application of trademarks, product identification, guarantees, price labels, sales stickers, special feature labels, special promotion stickers, point of sale stickers, product information, warning labels, special instructions; address changes, package labels, contents labels, color coating maintenance instructions and advertising tie-in labels, all with a minimum of labor and with easy and ready operation from a carrier sheet or tape, regardless of its thickness or body and without intermediate storage or separation operations.

Another object is to provide a low cost, high speed label application system for advertising and merchandising work, which enables ready application to pressure sensitive labels, to packages, products or any clean, smooth display surfaces without moistening or waste motion and with assurance that the labels will be immediately disengaged from their carrier and will stick tight and won't dry out, curl or pop off and will stay neat and attractive though roughly handled, and at the same time which may be easily removed without soaking or scraping.

Another object is to provide a label dispensing system which will permit the use of any suitable type of pressure sensitive adhesive or carrier tape, whether of cloth, acetate film, cellophane, polyester film, vinyl film, lead foil, aluminum foil, cloth, paper, linen or glassine materials.

Still further objects and advantages will appear in the more detailed description set forth below, it being understood, however, that this more detailed description is given by way of illustration and explanation only and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects, it has been found most satisfactory according to one embodiment of the present invention to provide a carrier or storage place for a roll of the carrier strip, upon which carrier strip will be positioned the pressure adhesive labels.

The carrier strip preferably is of such a material so as to prevent penetration of moisture or oxygen to the adhesive surface of the label mounted thereon, and at the same time should be so coated as not to adhere to and be readily removable from the carrier strip.

Although glassine papers is usually a most suitable carrier, it is possible to make the backing or lining or carrier strip or tape of any suitable type of cloth, paper, acetate film, vinyl film or other synthetic or natural film materials, such as for example regenerated cellulose film or cellophane.

The carrier tape strip or backing is desirably slit longitudinally of the length thereof and intermediately of the transverse width of the label so that as the strip approaches a point of dispensation, part of the backing strip may be first removed, permitting a section of the pressure sensitive label to project and be subject to ready detachment from the balance of the carrier strip tape or other backing or lining material.

It has been found most desirable to strip the liner or backing from about half the lateral width of the label, so that the label may be readily removed and may be

grasped by the person who is to apply it to the article or surface which is to carry the marking.

Where a large number of labels are positioned in side by side relationship, as in connection with disks or small circular markers, a number of strips of the backing material may be pre-perforated or pre-scored longitudinally of the direction of the strip so as to leave portions of the labels exposed as to permit ready detachment thereof. Desirably this intermediate stripping is done automatically, incidental to the usage and dispensing of the labels and desirably may be done by an intermediate label feeding system which will separate the backing strip at a point prior to dispensation and cause the labels which are to be detached to be fed along with only a part of the carrier strip in position.

This may be done manually by a manual tape feed machine or automatically by a motor driven tape feed machine.

Desirably the partial stripping takes place a sufficient distance from the position where complete stripping takes place as to enable a continuous supply of partly stripped labels to be presented to the user or consumer at all times.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Fig. 1 is a top plane view of one form of machine for feeding and partly stripping the carrier, with the pressure sensitive labels positioned thereon showing a motor drive.

Fig. 2 is a side elevations view taken from the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical side sectional view of an alternative embodiment as compared to Figs. 1 and 2.

Fig. 4 is a fragmentary top perspective view showing the partial stripping of a carrier strip with laterally extending labels, the longitudinal axis of which is transverse to the longitudinal axis of the carrier strip or tape.

Fig. 5 is a top perspective view showing the dispensation of a strip of labels in which the longitudinal axis of the label is parallel or coincides with the longitudinal axis of the carrier strip.

Fig. 6 is a fragmentary top perspective view showing the use of a plurality of small labels which are carried in lateral side by side relationship upon a single carrier tape, and sections of which are partly stripped so as to permit ready manual grasping and removal of the labels from the balance of the carrier strip.

Fig. 7 is a top elevational view similar to Fig. 1 of still another alternative manual label feeding and partial stripping arrangement.

Fig. 8 is a side sectional view taken upon the line 8—8 of Fig. 7, showing a side view of the alternative embodiment of Fig. 7.

Fig. 9 is a fragmentary horizontal sectional view taken upon the line 9—9 of Fig. 8, and upon an enlarged scale as compared with Fig. 8, showing manual feed arrangement.

Referring to Figs. 1 and 2, there is shown a casing A having a pin B in which is received a roll C of the carrier strip. The carrier strip C carries a series of labels D, which are normally held in position by means of the break arrangement E.

The carrier strip C, with the labels D, is normally fed to the partial stripping position F where one-half of the film tape or liner G is detached, and the other half H continues carrying the partly stripped labels I. These

labels J have the projective portions K, by which they may be readily grasped and then applied by the person operating the machine to the article desired.

In Figs. 4, 5 and 6 are shown three different typical label carrier combinations. Fig. 4 shows the combination which is being used in the system of Figs. 1 and 2.

In Figs. 5 and 6, similarly functioning parts are indicated by the same letters as in Fig. 4, except that the same elements are indicated by a prime in the embodiment of Fig. 5 and by a superior 2 in the embodiment of Fig. 6.

In Fig. 5 the labels D' have their axis parallel to or coincidental with the axis of the carrier tape C'. A much shorter portion of the label at K' will be available for grasping and removal from the balance H' of the carrier tape.

In the embodiment of Fig. 6 a series of disks are shown at D² which may consist of spot labels carried upon the tapes C². In this instance a series of strips G² are partly stripped away from the residual carrier strips H² and the disks may then be readily grasped at their overhanging portions K² and removed for application.

Referring to Figs. 1 and 2, the dispensing casing A has the side walls 10 and 11. The side wall 10 terminates at 13 while the side wall 11 has a continued portion at 14, and it projects substantially beyond the terminating edge 13 of the side wall 10.

These side walls are held in proper space relationship by the through bolts 14, 15, 16 and 17, which are in turn held in position by the nuts 18, 19, 20 and 21. Carried between the through bolts 16 and 17 is the pin arrangement B, which has a lower flat horizontal attachment portion 22, a vertical position 23, a semi-circular curved trough or receptacle portion 24, a flat guide portion 25, a vertical down guide portion 26, a curved downwardly and obliquely forwardly extending portion 27 and finally a bottom attachment portion 28.

The attachment portions 22 and 28 are respectively connected to the through bolts 16 and 17.

The lower edges of the side walls 10 and 11 also carry the foot supports 29 and 30, which may be adjustable, if desired, to maintain the dispenser in level position on the table top or base 31.

Carried on the through bolt 14 are the adjustable side knives or guide blades 32 and 33, the position of which may be adjusted on the bolt 14 by means of the thumb screws 34 and 35.

The blades 32 and 33 will hold the roll centrally in position inside of the trough portion 24 and assure that the labels D and the strip C will be properly fed toward partial stripping position F.

The brake member E has a rubber foot 45 which rests upon the label strip and which is carried on the base of the spring portion 46 having the upturned and over-turned member 47. The strip 46 then continues in the arched portion 48, which terminates in the vertical end portion 49, held in position by the screw 50 on the cross rod or spacer bolt 14.

In addition to the brake E, there may also be provided the resilient presser plate 51 held in position by the pins or bolts 52 on the cross rod or through bolt 15.

After the strip, with attached labels, passes over the guide 25 and under the brake member 45 and the presser plate 51, it is stripped at position F. At position F one-half of the strip G will pass down between the corrugated rolls 53 and 54, which are mounted between the rods 55 and 56 in the side plates 10 and 11. These intermeshing corrugated rollers 53 and 54 will grasp the strip G after ripping or separating the strip C along the score line 100.

This strip, as shown in Fig. 3, will be fed downwardly, as indicated at 57, where the waste strip will be disposed of. The balance of the strip H will then move in direction 58 to the roller or sleeve 59, which rides upon a bolt 60 carried by the side plate extension 14.

In the space indicated by the double arrow 61, one-half of the label will project beyond the residual portion H of the carrier tape and may be readily removed by grasping the projecting edge thereof and stripping it from the balance of the carrier tape.

The strip, after removal of the labels, will then continue downwardly, as indicated at 62, and will pass over the roller 63 on the rod 64.

It will then pass upwardly, as indicated at 65 in Fig. 2, to between the corrugated rollers 53 and 54, and will then move downwardly to waste together with the balance of the previously stripped portion, as indicated at 57.

The angle bracket 67 is held in position on the wall 11 by means of the screw 68, which is held in position on the motor body 66 by means of the screw 69. The motor body will have a drive shaft 70, which will be connected by suitable reduction gearing to the shafts 55, 56 and 70, which actually drive or pull upon the strip H, as well as the downwardly extending partial stripped portion G.

In the alternative embodiment of Fig. 3 similarly functioning parts are indicated by the same numerals and letters provided with a superior 3.

In Fig. 3 there is shown an arm or handle 99, which is pivotally mounted on the shaft 101, which also carries the ratchet wheel or disc 102.

The arm or handle 99 carries the driving pole member 103, which is pivotally mounted at 104, and which is held down by the spring 105.

The ratchet wheel 102 meshes with pinions 106 and 107, which drive the shafts 55³ and 56³.

The break 15³ is held down by the resilient arm 51³ upon the strip C as it advances to partial stripping position at F³.

In operation as the arm or handle 99 is pressed downwardly, the pole 103 will drive the ratchet wheel 103 and shaft 55³ and 56³ to partially strip a row of labels K³.

The brake 15³ will prevent any advance of the label strip C³ beyond the amount regulated by reciprocating arm.

This manual operation by the arm or handle 99 is suitable where only a few labels K³ are to be used at a time.

Where a large number of labels K³ are to be used, the strip A may be driven by a motor drive such as shown at 66 in Figs. 1 and 2.

In the alternative embodiment of Figs. 7, 8 and 9 similarly functioning parts are indicated by same numerals and letters provided with a superior 4.

As shown in Fig. 7 the rubber brake pad 15⁴ is held by the resilient arm 51⁴ and it has a bent support member 150, which is mounted by means of the screw 151. It is provided with the loop member 152 above the rubber pad 154.

The role of tape C⁴ carrying the labels is held in the trough 24⁴ and the drive is accomplished by the handle or lever 99⁴.

This lever or handle 99⁴ is fixed to the shaft 101⁴ by means of the hub 153 and the set screw 154 (see Fig. 9).

The adjusting disc 155 will enable regulation of the throw of the arm 99⁴.

The shaft 101⁴ will drive the gear 102⁴. The gear 102⁴ carries the ratchet arrangement 156, which has a recess 157, the periphery of which has a plurality of teeth 158.

Fixed to the shaft 101⁴ is the plate 159, which carries the pole 160. Said pole 160 cooperates with the teeth 158 in the recess 157.

The other side of the plate 159 is provided with a stud 161 to which is attached a spring 162, and the spring 162 at its lower end 163 is connected to the shaft structure 28⁴.

The drive in this case will be from the handle 99⁴ through the shaft 101⁴ through the plate 159, the pole 160 and the ratchet 158.

The ratchet 158 is mounted on the gear 102⁴ by means

of the screw 164. The gear 102⁴ will drive the pinion 165, which in turn will drive the pinions 106⁴, and 107⁴.

This drive will cause a feeding of the label strip C⁴.

The slot 166 in the adjustment disc 155 will regulate the throw of the handle 99⁴, and will return the handle 99⁴ to its uppermost position, as is shown in Figs. 7 and 8.

By the method thus described, it is possible to remove labels most readily and with a minimum of manual operation and without intermediate stripping and storing operations from a carrier tape C by merely preliminary perforating or pre-scoring the carrier strip, as indicated at 100.

This will save considerable labor and will enable rapid dispensation of a large number of pressure sensitive labels when required without previous arrangement.

The thickness, flexibility and stiffness of the carrier strip and the labels D may be varied, and instead of always requiring the labels D to be of stiffer material than the flexible strip C, it is possible to have labels D which are of most flexible material and a much wider variety of masking tapes, backings, linings, labels and markers may be employed, whether of cloth, acetate, cellophane, polyester film, vinyl film, metal foil or paper or plastic sheet materials of wide variety.

Either the manually driven arrangement of Figs. 3, 7 and 8, or the motor driven arrangement of Figs. 1 and 2 may be utilized to achieve the dispensing system of the present invention.

The present invention is applicable to all die cut shapes whether useful as labels, masks, pasters or for other purposes and whether such die cut shapes are printed or plain and whether they are of fabric, paper, plastic sheet materials or the like.

The backing may also consist of various materials whether paper, plastic or fabric and the backing sheet may be so split, scored or otherwise rendered tearable or separable so that it will render exposed a small part of the label or die cut shape or a large part of the label or die cut shape.

Referring to Figs. 4, 5 and 6, where it is shown that the score lines 100, 100' and 100² extend under the middle of the die cut shapes or labels K, K' and K², these score lines, cutting lines or tear lines may also be displaced so that they will expose anywhere from one-quarter to three-quarters of the die cut shape or label or more or less.

Instead of the corrugated driving rollers, shown at 53 and 54 in Fig. 2, or 53³ or 54³ in Fig. 3, it is possible to use other methods of feeding the backing strip, and smooth rollers may be used as well as other guide and drive means.

The die-cut shapes may be suitably printed before or after attachment to the backing sheet and before or after die cutting.

Although rectangular and circular shapes are shown in Figs. 4 to 6, it is apparent that a wide variety of shapes, forms and sizes as well as a wide variety of symbolic shapes and sizes may be employed.

The present machine and method may also be applied to double-coated or double-faced adhesive tapes, strips, cutout or similar pressure-sensitive material.

These double-faced adhesive strips may be in continuous lengths or they may have been die-cut to be placed upon the back of implements, ornaments, labels or the like.

Desirably, one pressure-sensitive adhesive device in die-cut or shaped form is applied to a longitudinally slit or scored carrier tape while the other side has readily removable cover strips thereon which may be removed after one adhesive face has been removed from the carrier tape and applied to an emblem, initial, trade-mark or even to such materials as sachets or feathers to be attached to greeting cards, for example.

In this manner it is possible to most readily apply adhesive backings to various types of implements, labels, cut-outs or even to such irregular articles as sachets or feathers which are to be mounted upon other articles.

Instead of restricting the pressure-sensitive adhesive to the back of the die-cut shape or label, it may also or instead be applied to the contacting face of a carrier strip, sheet or tape, which adhesive may be of high, low or medium tackiness. In this case the label may have non-pressure-sensitive adhesive such as a water soluble glue, which requires water moistening or no adhesive at all.

For example, various types of disks, Christmas or charity seals, stamps, stickers, washers, gaskets, metal plates, paper cut-offs, felt backings, cork inserts, valve faces and so forth may be readily shipped, stored, merchandised and distributed in this manner and then removed by the user from the carrier at the place of application or assembly.

While there has been herein described a preferred form of the invention, it should be understood that the same may be altered in details and in relative arrangement of parts within the scope of the appended claims.

Having now particularly described and ascertained the nature of the invention, and in what manner the same is to be performed, what is claimed is:

1. A method of dispensing pressure sensitive adhesive-coated die cut shapes or labels from a carrier strip carrying the same which comprises first partly stripping the carrier strip and removing the die cut shape or label from the balance of the strip, said carrier strip being fed horizontally past spaced first and second positions, the first position serving as a partial stripping position at which the carrier strip is longitudinally removed and the labels being removable by hand between the first and second positions.

2. A method of dispensing pressure sensitive adhesive-coated die cut shapes or labels from a carrier strip carrying the same which comprises first partly stripping the carrier strip and removing the die cut shape or label from the balance of the strip, said carrier strip being longitudinally scored so that a part thereof may be readily stripped from the pressure sensitive side of the shapes or labels, said carrier strip being fed horizontally past spaced first and second positions, the first position serving as a partial stripping position at which the carrier strip is longitudinally removed and the labels being removable by hand between the first and second positions.

3. A method of dispensing pressure sensitive adhesive-coated die cut shapes or labels from a carrier strip carrying the same which comprises first partly stripping the carrier strip and removing the die cut shape or label from the balance of the strip, said strip being longitudinally pre-formed so that a part thereof may be readily removed from the backs of the pressure sensitive shapes or labels, said carrier strip being fed horizontally past spaced first and second positions, the first position serving as a partial stripping position at which the carrier strip is longitudinally removed and the labels being removable by hand between the first and second positions.

4. A method of dispensing pressure sensitive adhesive coated die cut shapes or labels from a carrier strip carrying the same which comprises first partly stripping the carrier strip and removing the die cut shape or label from the balance of the strip, said labels being partly so stripped that a substantial part of the shapes or labels will project over the free edge of the residual carrier strip, said carrier strip being fed horizontally past spaced first and second positions, the first position serving as a partial stripping position at which the carrier strip is longitudinally removed and the labels being removable by hand between the first and second positions.

5. A dispensing mechanism comprising a carrier for a roll of pressure sensitive adhesive-coated die cut shapes or labels and means to strip part of the carrier from the pressure sensitive shapes or labels, said carrier strip being fed horizontally past spaced first and second positions, the first position serving as a partial stripping position at which the carrier strip is longitudinally removed and the labels

being removable by hand between the first and second positions.

6. A dispensing mechanism comprising a carrier for a roll of pressure sensitive adhesive-coated die cut shapes or labels and means to strip part of the carrier from the pressure sensitive shapes or labels, said means including a pair of driving rollers to engage and strip part of the carrier from the pressure sensitive shapes or labels and guide rollers to carry the residual carrier strip to and beyond a place of dispensation, said mechanism being provided with spaced first and second carrier rollers to carry the carrier for the labels horizontally from the first carrier rollers serving as said stripping means and said labels being removable by hand between said first and second rollers.

7. A dispensing mechanism comprising a carrier for a roll of pressure sensitive adhesive-coated die cut shapes or labels and means to strip part of the carrier from the pressure sensitive shapes or labels, said means including a pair of driving rollers to engage and strip part of the carrier from the pressure sensitive shapes or labels and guide rollers to carry the residual carrier strip to and beyond a place of dispensation, said place of dispensation permitting exposure of at least half of the shapes or labels beyond the edge of the residual carrier strip, said mechanism being provided with spaced first and second carrier rollers to carry the carrier for the labels horizontally from the first carrier roller serving as said stripping means and said labels being removable by hand between said first and second rollers.

8. A dispensing mechanism comprising a carrier for a roll of pressure sensitive adhesive-coated die cut shapes or labels and means to strip part of the carrier from the pressure sensitive shapes or labels, and manually actuated means to operate said stripping means, said mechanism being provided with spaced first and second carrier rollers to carry the carrier for the labels horizontally from the first carrier rollers serving as said stripping means and said labels being removable by hand between said first and second rollers.

9. A dispensing mechanism comprising a carrier for a roll of pressure sensitive adhesive-coated die cut shapes or labels and means to strip part of the carrier from the pressure sensitive shapes or labels and motor driving means to actuate said stripping means, said mechanism being provided with spaced first and second carrier rollers to carry the carrier for the labels horizontally from the first carrier rollers serving as said stripping means and said labels being removable by hand between said first and second rollers.

10. A label dispensing machine comprising a roll supply of a strip of spaced pressure adhesive backed labels arranged in a row and a carrier strip longitudinally slit below said labels so that if part of the carrier strip is removed the labels will project over and may be readily removed, said machine having parallel spaced rollers over which said strip is passed, the first roller serving partly to strip the carrier strip and the second roller serving to wind up the residual carrier strip, the space between the rollers with the projecting labels serving to enable ready removal of the labels.

11. The machine of claim 10 in which said rollers feed the separated carrier strip to a common wind-up point below said rollers.

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