May 26, 1970 E. W. HACKNEY 3,514,016

LABEL DISPENSING MACHINE

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FIG.1

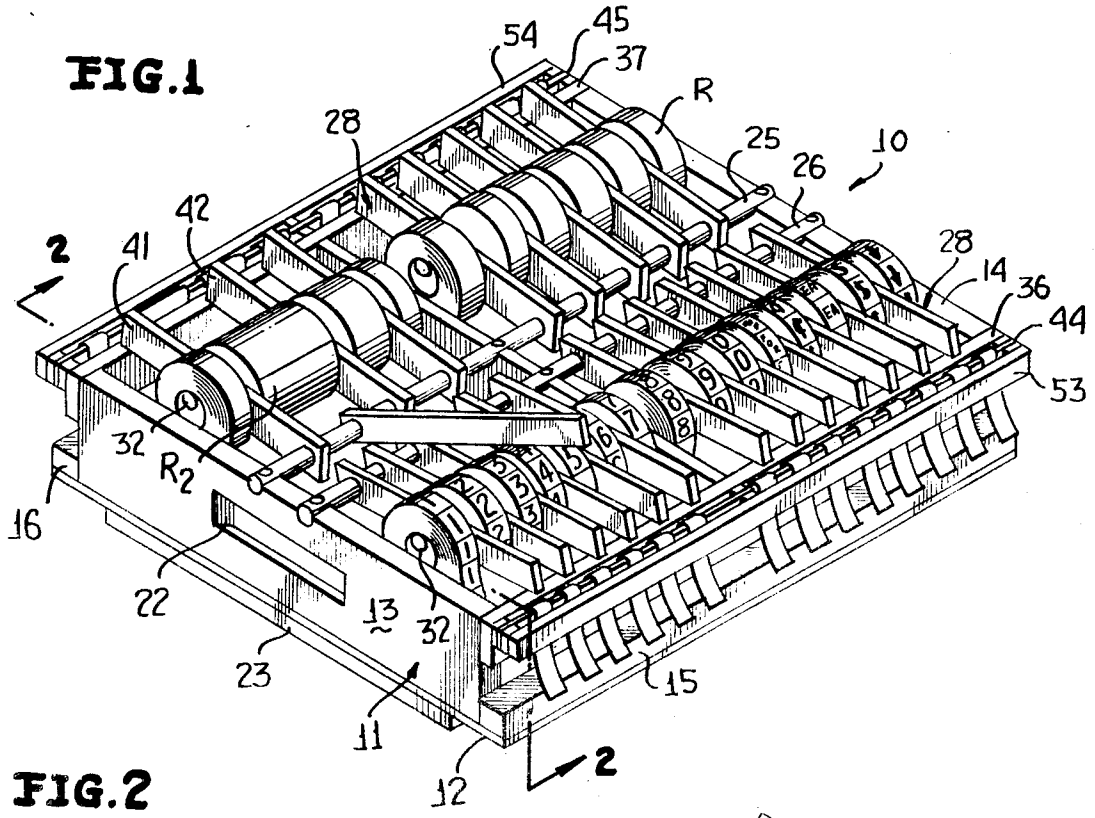
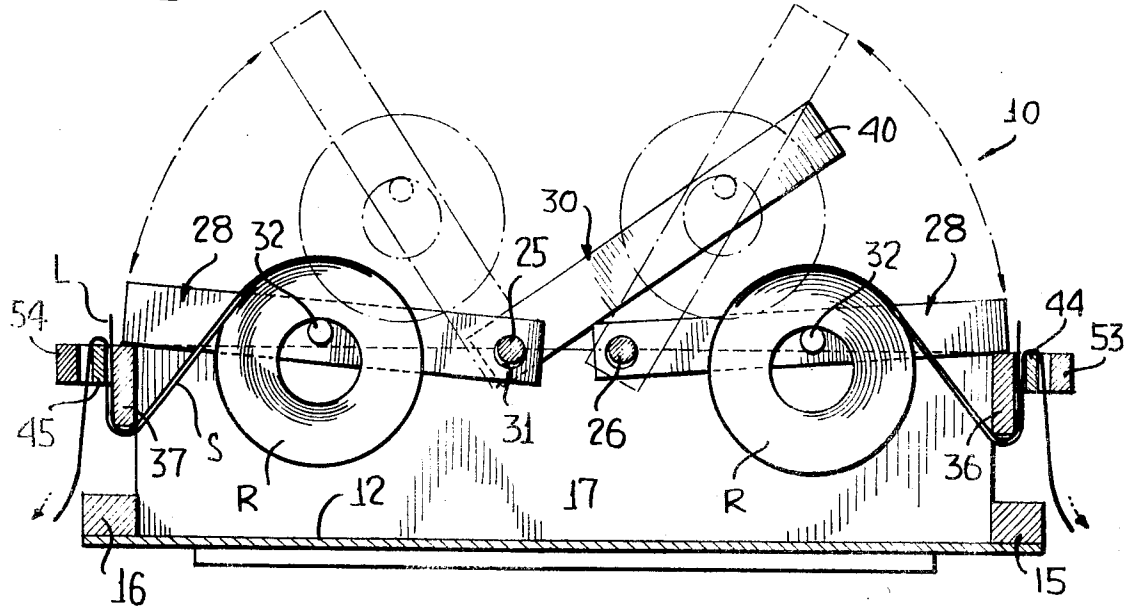


FIG.2



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FIG.4

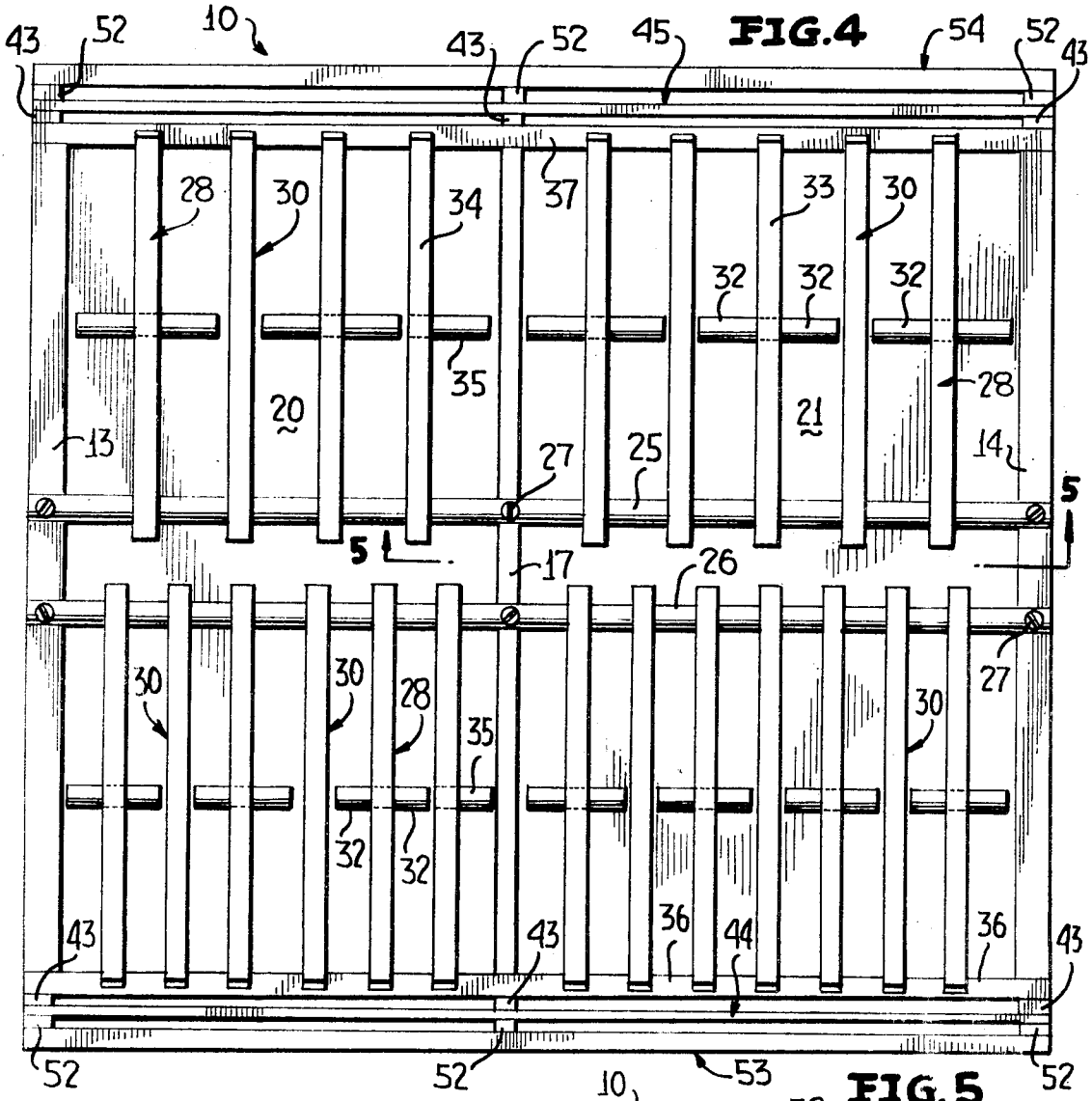


FIG.5

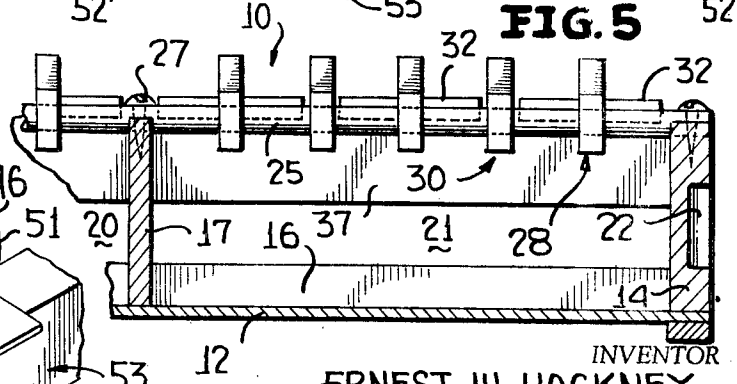
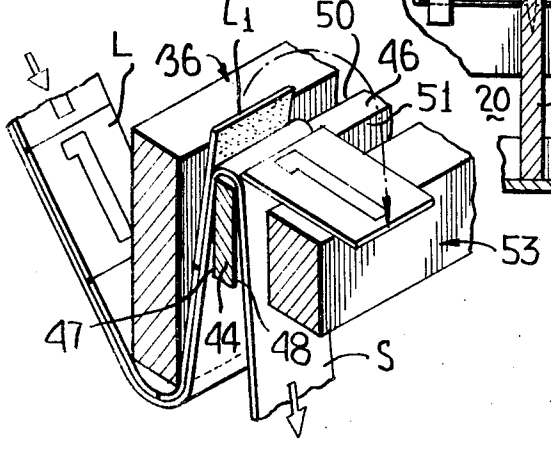


FIG.3



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LABEL DISPENSING MACHINE

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Int. Cl. B65h 5/28
U.S. Cl. 221—70 10 Claims

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a label dispensing machine having a plurality of individually pivotally mounted roll-supporting arms which are movable between a dispensing position at which the roll-supporting arms are disposed in a generally common plane and a non-dispensing position removed from the plane whereby rolls of varying axial thicknesses can be supported between a selected pair of the arms by pivotally moving an arm normally disposed therebetween to its non-dispensing position. Means are provided for breaking away and stripping successive labels from a carrier strip in roll-form carried by the roll-supporting arms. The machine also includes a spacer arm disposed generally parallel to and between a pair of the roll-supporting arms, and means mounting the spacer arm for movement to an out-of-the-way position whereby a roll can be positioned between and supported by the last-mentioned pair of roll-supporting arms.

This invention is directed to a label dispensing machine which sequentially removes labels from a rolled carrier strip. Conventional devices which dispense labels of this type generally include means for supporting only a single roll of the labels which renders it time consuming to, for example, change rolls to identify, price or otherwise label a variety of different articles.

During the dispensing of labels of this type the carrier strip is bent gradually over a rounded surface which tends to but does not at all times succeed in breaking away the labels from the carrier strip. This disadvantage of conventional label dispensers has been overcome somewhat by spacing the labels from each other and providing a sharp edged "scraper" blade for removing those of the labels which do not break away from the carrier strip. As can be appreciated, it is relatively costly to position leading and trailing labels in spaced relationship to each other on the carrier strip and, of course, the removal thereof by a scraping action is objectionable from the standpoint of severing the carrier strip which would necessitate a rethreading operation or the possibility of the labels themselves becoming scratched or torn.

In accordance with the foregoing, it is the primary object of this invention to provide a novel label dispensing device which includes a plurality of pivotally mounted arms movable between dispensing and non-dispensing positions, the arms including means for supporting label rolls thereon, and each arm being capable of individual pivoting movement whereby label rolls of different axial widths can be supported between selected pairs of the roll-supporting arms in accordance with the type and/or size of labels which are to be applied to particular articles.

Still another object of this invention is to provide a novel label dispensing machine of the type heretofore described which includes a guide bar, a breaker bar and a stripper bar, and the breaker bar includes two breaker points defined by a uniplanar horizontal surface whereby upon the manual drawing of the carrier strip upwardly over and then down along the breaker bar successive labels are broken away from the carrier strip by one and/or the other of the breaker edges subsequent to being completely stripped from the carrier strip by the stripper bar.

Still a further object of this invention is to provide a novel label dispensing machine which includes spacer arms positioned between selected pairs of the roll-supporting arms whereby upon pivotal movement of the spacer arms to a non-dispensing position rolls of different axial width can be supported between the selected pairs of roll-supporting arms.

Yet another object of this invention is to provide means for mounting the roll-supporting arms and the spacer arms for relative sliding movement to additionally provide rapid adjustment for accommodating rolls of varying axial widths.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claimed subject matter, and the several views illustrated in the accompanying drawings.

In the drawings:

FIG. 1 is a top perspective view of a novel label dispensing machine of this invention, and illustrates a plurality of rolls supported by pivotally mounted roll-supporting arms and a pivotaly mounted spacer arm in an out-of-the-way position to permit the widest of the rolls to be supported between a pair of the roll-supporting arms.

FIG. 2 is an enlarged sectional view taken generally along line **2—2** of FIG. 1, and illustrates the manner in which the carrier strips of two label carrying rolls are drawn through the machine to remove labels therefrom and the manner in which the roll-supporting arms are pivoted to a non-dispensing position shown in phantom outline at which rolls can be removed from or positioned upon the roll-supporting arms.

FIG. 3 is a fragmentary perspective view of one of the carrier strips and the labels carried thereby, and illustrates the manner in which the carrier strip is threaded through a pair of gaps defined by a guide bar, a breaker bar, and a stripper bar, and additionally illustrates the manner in which a leading label is fully stripped from the carrier strip while a following label is broken away from the carrier strip by the breaker bar.

FIG. 4 is a top plan view of the label dispensing machine, and illustrates axially aligned roll-supporting rods carried by the roll-supporting arms in the absence of such rods on the spacer arms.

FIG. 5 is a fragmentary sectional view taken generally along line **5—5** of FIG. 4, and illustrates a central divider which in conjunction with side, front and rear walls forms a pair of chambers for storing rolls of labels.

A novel label dispensing machine constructed in accordance with this invention is best illustrated in FIGS. 1, 2 and 4 of the drawings and is generally designated by the reference numeral **10**. The label dispensing machine **10** includes a housing **11** defined by a bottom wall **12**, a pair of side walls **13**, **14**, a front wall **15**, and a rear wall **16**. A partition **17** (FIGS. 2 and 4) is secured to the front and rear walls **15**, **16**, respectively, and co-operates therewith and with the side walls **13**, **14** to divide the housing **11** into a pair of chambers **20**, **21** in which label rolls R can be stored.

Each of the side walls **13**, **14** includes a recess **22** for manually grasping and carrying the label dispensing machine **10**. A pair of rails **23**, **24** are also conventionally secured beneath the bottom wall **12**, and the distance between the rails **23**, **24** corresponds to the size of conventional grocery shopping carts. With the bottom wall **12** supported upon the upper edge of a shopping cart and the rails **23**, **24** projecting therein, the latter prevent the label dispensing machine **10** from inadvertently shifting upon and/or falling from the shopping cart.

A pair of parallel rods **25, 26** are supported upon and secured to the side walls **13, 14** and the partition **17** by conventional screws **27** or other equivalent securing means. A plurality of roll-supporting arms **28** and spacer arms **30** are pivotally mounted upon the rods **25, 26**. The arms **28, 30** are pivotally hung upon the rods **25, 26** by providing the arms **28, 30** with apertures **31** which receive the rods **25, 26** prior to the rods **25, 26** being secured to the side walls **13, 14** and the partition **17**. It is to be particularly noted that the apertures **31** are of a size to permit the arms **28, 30** to be freely pivoted between the solid and phantom outline positions shown in FIG. 2 which represent the respective dispensing and non-dispensing positions of the roll-supporting arms **28**.

The roll-supporting arms **28** are identical to each other with but one exception, namely, selected ones of the arms **28** carry roll-supporting rods **32** which project outwardly of each side of the arms as, for example, a roll-supporting arm **33**, while others of the roll-supporting arms **28**, such as a roll-supporting arm **34**, carry a roll-supporting rod **35** which projects outwardly from but one of the sides of the arm **34**. The spacer arms **30** are on the other hand completely devoid of any type of roll-supporting means corresponding to the rods **32, 35**.

Referring now to FIGS. 2 and 4 of the drawings, a guide bar **36** is positioned above the front wall **15** and is secured to the side walls **13, 14** while a similar guide bar **37** is positioned above the rear wall **16** and is likewise conventionally secured to the side walls **13, 14**. The guide bars **36, 37** are also preferably secured to the ends of the partion **17**. In addition to functioning as a guide for carrier strips S which carry labels L, as best illustrated in FIGS. 2 and 3 of the drawings, the guide bars **36, 37** function to support the free ends of the roll-supporting arms **28** in the solid line or dispensing positions thereof, as shown in FIG. 2. The guide bars **36, 37** also support the free ends of the spacer arms **30** except when the spacer arms are pivoted to an out-of-the-way position, as indicated by the spacer arm **40** of FIG. 1 which is pivotally mounted between a pair of roll-supporting arms **41, 42**.

A plurality of identical spacer blocks **43** maintain breaker bars **44, 45** in spaced relationship to the respective guide bars **36, 37**. The breaker bars **44, 45** are likewise conventionally secured to the side walls **13, 14** and the partition **17**. The breaker bars **44, 45** are identical and each includes an uniplanar, flat, upper, horizontal surface **46** which in conjunction with a pair of parallel vertical surfaces **47, 48** (FIG. 3) define a pair of abrupt breaker edges **50, 51** which function to initially break away the labels L from the carrier strip S in a manner which will be described more fully hereafter.

A plurality of identical spacer blocks **52** (FIG. 4) maintain stripper bars **53, 54** in spaced relationship to the respective breaker bars **44, 45**. The stripper bars **53, 54** are likewise secured to the side walls **13, 14** and the partition **17**. In a preferred form of the invention, the bars **36, 37, 44, 45, 53,** and **54** are secured to the side walls **13, 14** and the partition **17** by screws which not only pass through the latter-identified bars but also through the spacer blocks **43, 52**.

The label dispensing machine **10** is loaded by simply pivoting any one of the roll-supporting arms **28** from the solid to the phantom outline position illustrated in FIG. 2 and slipping the selected roll upon the roll-supporting rods **32** or **35** depending upon the particular roll-supporting arm which is being loaded. Thereafter the loaded roll-supporting arm is pivoted downwardly to the solid outline position shown in FIG. 2 which is the dispensing position of the roll-supporting arms **28**. The strip S is then grasped and threaded downwardly beneath either of the guide bars **36, 37**, upwardly and over either of the stripper bars **44, 45**, and downwardly between either of the stripper bars **44, 45** and the adjacent respective breaker bars **53, 54**, as best illustrated in FIGS. 2 and 3 of the drawings.

In FIG. 1 the dispensing machine **10** is illustrated being loaded with a plurality of rolls adjacent the front wall **15** which are of a generally uniform axial width. However, it will be appreciated that the rolls R may vary in width and in order to load such rolls in the machine **10** two loading methods or a combination thereof may be employed as follows.

Referring to FIG. 1, a roll R2 is illustrated in its loaded position supported by the rods **32** (not shown) of the roll-supporting arms **41, 42**. The roll R2 is appreciably axially wider than the remaining illustrated rolls and it is thus necessary to swing the spacer arm **40** to its out-of-the-way position prior to performing the loading operation heretofore described. In other words, with the spacer arm **40** positioned as shown in FIG. 1, the roll-supporting arms **41, 42** are then pivoted upwardly to the load position, the roll R2 is loaded upon the rods **32** and the arms **41, 42** are then repositioned as shown in FIG. 1 after which the carrier strip of the roll R2 is threaded through the spaces between the bars **37, 45** and **54**, in the manner heretofore described.

Assuming that the roll R2 is somewhat axially narrower than illustrated, it is to be noted that the space between te hroll-supporting arms **41, 42** can be reduced by simply shifting or sliding the arms **41, 42** relative to each other along the rod **25**. Likewise, if the roll R2 is slightly axially wider than illustrated, the arms **41, 42** can be shifted away from each other. Thus, both the movement of the spacer arms **30** to the out-of-the-way positions thereof and the sliding movement of the roll-supporting arms **28** and a combination of both permits rolls of varying axial widths to be positioned upon the roll-supporting arms **28**.

It is, of course, also possible to not only move the spacer arms **30** to an out-of-the-way position, as illustrated by the spacer arm **40**, but if exceptionally long rolls are supported it is also possible to, for example, move the roll-support arm **33** (FIG. 4) and the spacer arm to either side thereof to the out-of-the-way position and support a roll of labels between the remaining roll-support arms **28** between the partition **17** and the side wall **14**.

Once the rolls of labels have been loaded in the manner heretofore described, any label may be selectively removed from its associated roll by simply grasping the end of the carrier strip S and manually pulling the same downwardly, as is best illustrated in FIG. 3 of the drawings. During this pulling action, the strip S is bent across the breaker edges **50, 51** and the abrupt change in direction causes a label, such as the label **L1**, to be broken away from the strip S as the strip S bends across the edge **50**. The edge **50** thus facilitates the initial breaking away of the label **L1** and succeeding labels from the strip S. However, after the trailing edge passes beyond the space between the guide and breaker bars, the trailing edge generally remains adhered to the strip S but is eventually broken away therefrom by the continuous bending of the strip S over the edge **51**. Thus, the edges **50, 51** assure the complete breaking away of each of the labels from the carrier strip S which are subsequently deposited upon the upper surface (unnumbered) of the stripper bars **53** or **54**. It is thereafter a simple matter to grasp the end of each of the labels projecting beyond the stripper bars and apply the same to a desired article.

I claim:

1. A label dispensing machine comprising a plurality of roll-supporting arms disposed in substantially parallel relationship to each other, said roll-supporting arms each including means for rotatably supporting a roll of labels which are adapted for sequential removal from a carrier strip, means mounting said roll-supporting arms for individual pivoting movement between a dispensing position at which said roll-supporting arms are disposed in a generally common plane and a nondispensing position removed from said plane whereby rolls can be supported between a selected pair of said arms by pivotally moving an arm normally disposed therebetween to its nondispens-

ing position, means for breaking away each label from its carrier strip, means for stripping each broken-away label from its carrier strip, and at least a pair of said arms being freely relatively slidable toward and away from each other to vary the distance therebetween to accommodate rolls of varying axial thicknesses.

2. The label dispensing machine as defined in claim 1 including a spacer arm devoid of roll-supporting means disposed generally parallel to and between a pair of roll-supporting arms in the dispensing position thereof, and means mounting said spacer arm for movement to an out-of-the-way position whereby a roll can be positioned between and supported by said last-mentioned pair of roll-supporting arms.

3. The label dispensing machine as defined in claim 1 wherein said roll-supporting means are defined by a pair of rods carried by at least one of said roll-supporting arms, and said rods project away from opposite sides of said at least one roll-supporting arm.

4. The label dispensing machine as defined in claim 1 wherein said mounting means include a pair of generally parallel rods, said mounting means mount said roll-supporting arms on said rods with the roll-supporting arms on a first of said rods projecting in a direction opposite to the roll-supporting arms carried by a second of said rods.

5. The label dispensing machine as defined in claim 2 wherein said roll-supporting means are defined by a pair of rods carried by at least one of said roll-supporting arms, and said rods project away from opposite sides of said at least one roll-supporting arm.

6. The label dispensing machine as defined in claim 2 wherein said mounting means include a pair of generally parallel rods, said mounting means mount said roll-supporting arms on said rods with the roll-supporting arms on a first of said rods projecting in a direction opposite to the roll-supporting arms carried by a second of said rods.

7. The label dispensing machine as defined in claim 5 wherein said mounting means include a pair of generally parallel rods, said mounting means mount said roll-supporting arms on said rods with the roll-supporting arms on a first of said rods projecting in a direction opposite to the roll-supporting arms carried by a second of said rods.

8. A label dispensing machine comprising a plurality of roll-supporting arms disposed in substantially parallel relationship to each other, said roll-supporting arms each including means for rotatably supporting a roll of labels which are adapted for sequential removal from a carrier strip, means mounting said roll-supporting arms for individual pivoting movement between a dispensing position at which said roll-supporting arms are disposed in a generally common plane and a nondispensing position removed from said plane whereby rolls can be supported between a selected pair of said arms by pivotally moving an arm normally disposed therebetween to its nondispensing position, means for breaking away each label from its carrier strip, means for stripping each broken-away label from its carrier strip, and at least a single spacer arm disposed generally parallel to and between a pair of said roll-supporting arms in the dispensing position thereof, means mounting said spacer arm for movement to an out-of-the-way position whereby a roll can be positioned between said last-mentioned pair of roll-supporting arms, and said last-mentioned pair of roll-supporting arms having means for mounting a roll therebetween.

9. A label dispensing machine comprising a pair of side walls, a rod positioned between said side walls in generally normal relationship thereto, a plurality of roll-supporting arms disposed in substantially parallel relationship to each other and normal to said rod, said roll-supporting arms each including means for rotatably supporting a roll of labels which are adapted for sequential removal from a carrier strip, means pivotally mounting said roll-supporting arms upon said rod for pivotal movement between dispensing and nondispensing positions, a guide bar remote from and parallel to said rod beneath and forwardly of which said carrier strips are adapted to pass, a breaker bar spaced from said guide bar over and forwardly of which said carrier strips are adapted to pass, said breaker bar having two abrupt 90 degree edges defining breaking points at either of which the labels are broken from the carrier strips, a stripper bar forwardly of said breaker bar for stripping each broken-away label from its carrier strip, a spacer arm devoid of roll-supporting means disposed generally parallel to and between a pair of roll-supporting arms in the dispensing position thereof, and means mounting said spacer arm for movement to an out-of-the way position whereby a roll can be positioned between and supported by said last-mentioned pair of roll supporting arms.

10. A label dispensing machine comprising a pair of side walls, a rod positioned between said side walls in generally normal relationship thereto, a plurality of roll-supporting arms disposed in substantially parallel relationship to each other and normal to said rod, said roll-supporting arms each including means for rotatably supporting a roll of labels which are adapted for sequential removal from a carrier strip, means pivotally mounting said roll-supporting arms upon said rod for pivotal movement between dispensing and nondispensing positions, a guide bar remote from and parallel to said rod beneath and forwardly of which said carrier strips are adapted to pass, a breaker bar spaced from said guide bar over and forwardly of which said carrier strips are adapted to pass, said breaker bar having two abrupt 90 degree edges defining breaking points at either of which the labels are broken from the carrier strips, a stripper bar forwardly of said breaker bar for stripping each broken-away label fom its carrier strip, and at least a pair of said arms are freely relatively slidable toward and away from each other to vary the distance therebetween to accommodate rolls of varying axial thickness.

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U.S. Cl. X.R.

242—55.3