United States Patent [19]

Haitmanek

[11] **3,889,845**

[45] **June 17, 1975**

[54] **MARKER STRIP DISPENSER**

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[73] Assignee: **Thomas & Betts Corporation,** Elizabeth, N.J.

[22] Filed: **Feb. 11, 1974**

[21] Appl. No.: **441,157**

[52] **U.S. Cl.** **221/70**

[51] **Int. Cl.** **B65h 5/28**

[58] **Field of Search** 221/311, 70, 71, 72, 73

[56] **References Cited**

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Attorney, Agent, or Firm—David Teschner; Jesse Woldman

[57] **ABSTRACT**

A dispensing device preferably for wire marker strips supported on a selectively slitted backing web comprises a body member having a strip deflector extending selectively into a dispensing zone communicating with a web receiving passageway defined by spaced upper and lower portions of the body member. Advancement of the web through the passageway causes successive marker strips to be selectively positioned by the strip deflector out of the plane of the backing web and into the dispensing zone for convenient removal from the backing web. Camming means which may comprise a suitably contoured surface adjacent the strip deflector operates to cam an unremoved marker strip back to its original position as it is moved past the dispensing zone.

10 Claims, 13 Drawing Figures

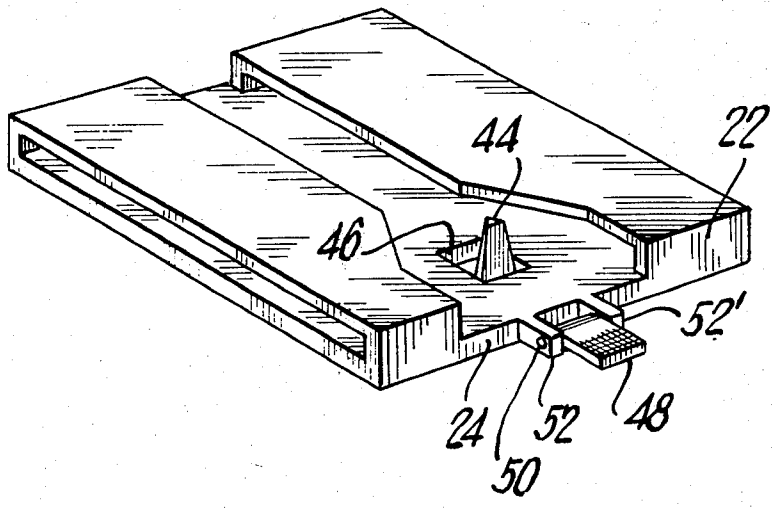


Fig.1.

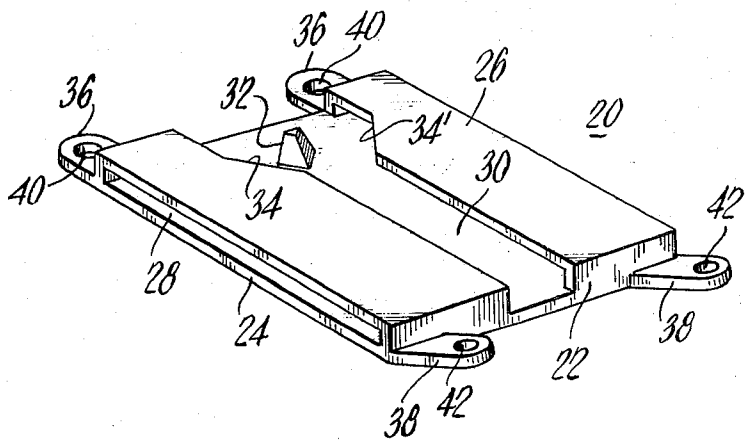


Fig.2.

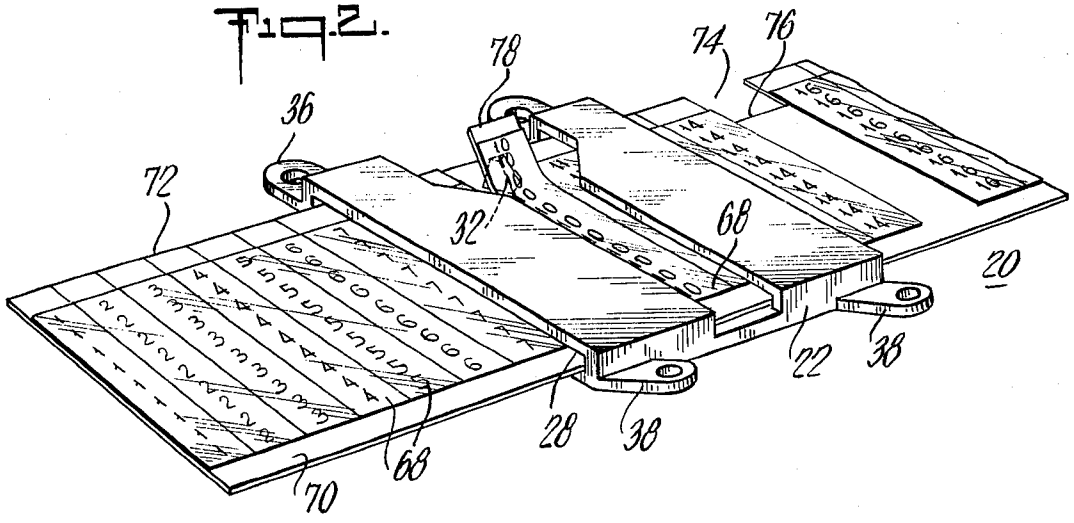


Fig.3.

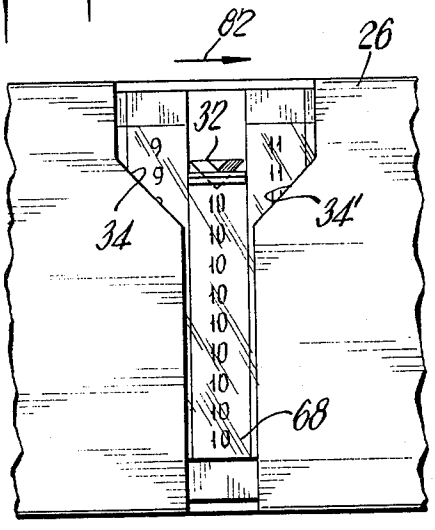


Fig.4.

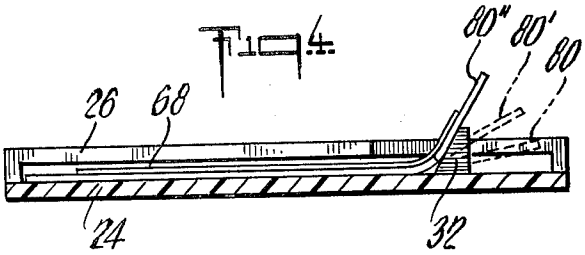


Fig. 5.

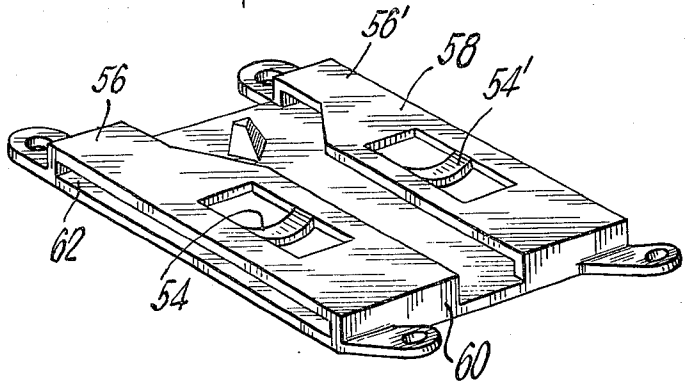


Fig. 6.

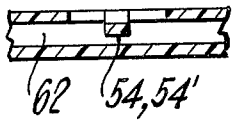


Fig. 7.

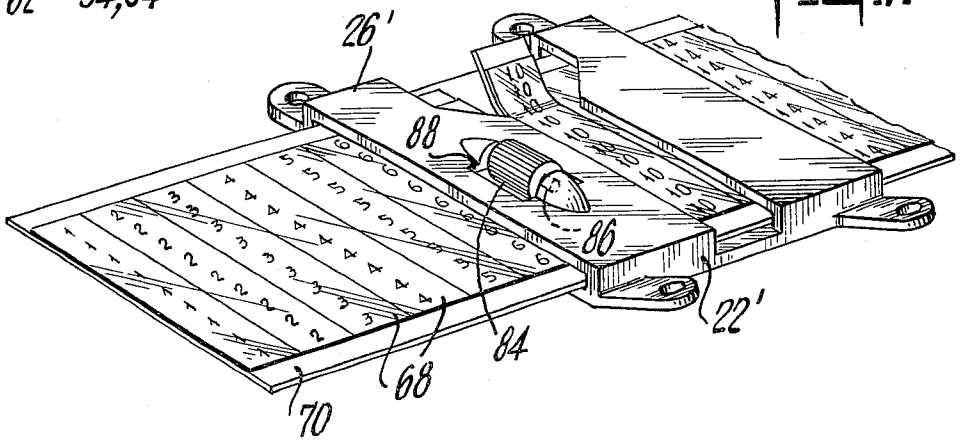


Fig. 9.

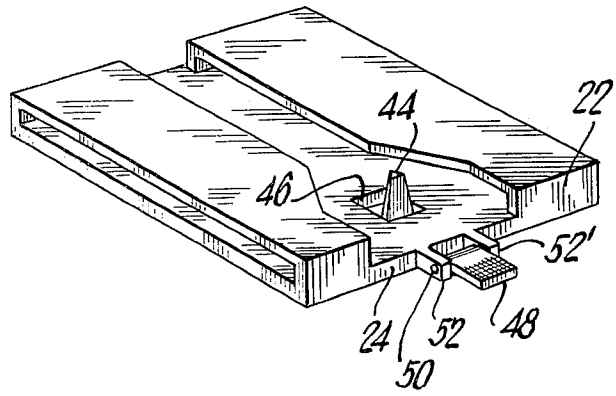


Fig. 8.

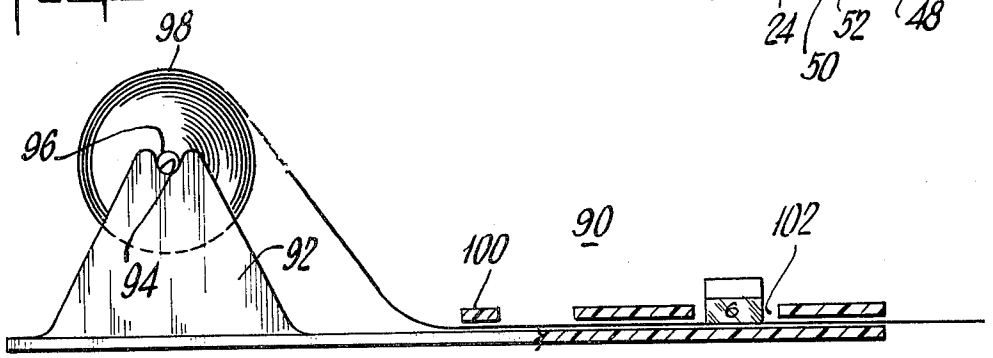


Fig.10.

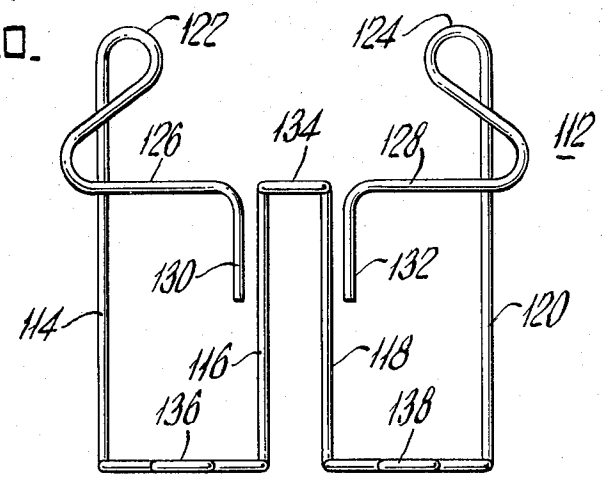


Fig.11.

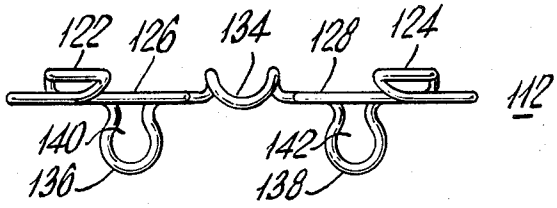


Fig.12.

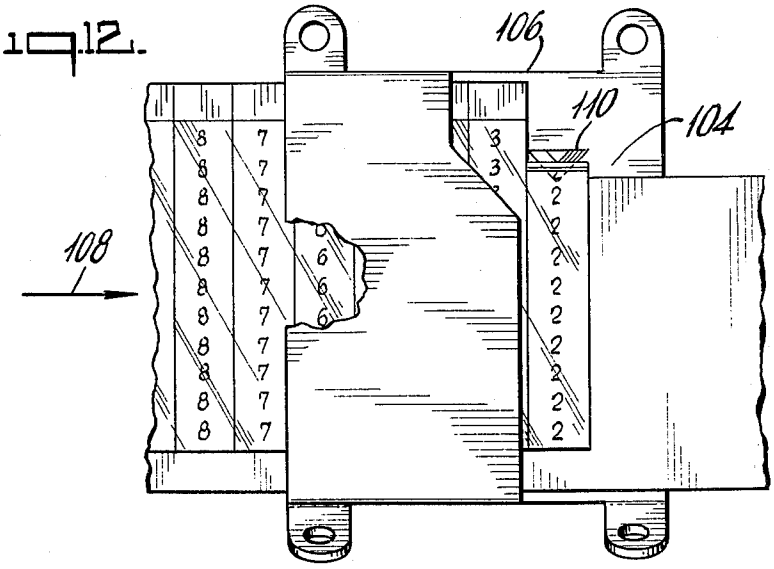
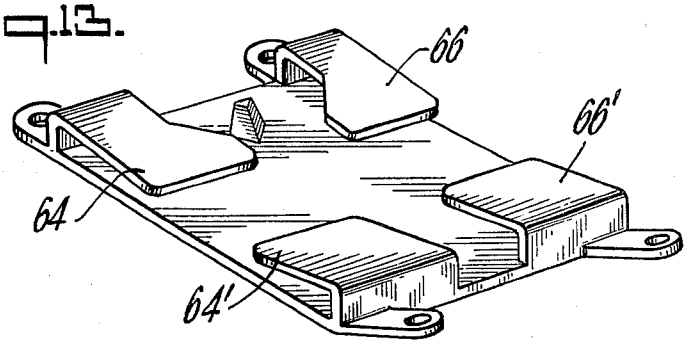


Fig.13.



MARKER STRIP DISPENSER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention is directed to the field of dispensing means and principally to a marker strip dispensing device.

2. Description of the Prior Art

A variety of marker strips are presently produced for employment as identification means in many industrial and commercial applications. An example of such uses include employment as a wire marker for harnesses, a pipe marker for fluid transfer equipment, and instructional tags or the like providing directional and warning information thereon. The strips are commonly affixed to a backing web which is selectively slitted to permit a particular marker strip to be lifted out of the plane of the backing web and removed therefrom for attachment to the desired device. In many cases the operator may have but one hand free to perform this manipulation the other hand being employed, for example, to support the item to which the marker strip is to be attached so that such manipulation may become quite cumbersome and inconvenient in practice since the individual strips may be quite narrow and lie in such close proximate relationship to one another as to cause difficulty in separating a particular strip from the remainder when only one hand is available to perform this operation. Furthermore, cleanliness at the workplace may be less than ideal so that the continued handling of the marker strips thereat may readily result in the marker strip indicia being at least partially obliterated by the contaminants within the work area. Additionally, where a large quantity of such marker strips are required for immediate availability in a particular application, there exists a further problem of storage, wherein the user may be required to store a supply thereof in a tool box or the like, resulting to further damage and or defacing of the strips and the corresponding indicia printed thereon.

SUMMARY OF THE INVENTION

The invention overcomes the problems and limitations noted above with respect to prior means for dispensing marker strips by providing a simple, convenient, inexpensive, and reliable marker strip dispenser, which may include storage means, to permit the convenient removal of a selective marker strip from a plurality of such strips customarily affixed to a backing web or the like. The device comprises essentially a strip deflector extending selectively from a portion of a body member having upper and lower portions selectively spaced from one another to provide a web receiving passageway therebetween. The strip deflector extends into a dispensing zone which may comprise an opening or slot of suitable width communicating with the web receiving passageway and coincident with the strip deflector so that, as each strip is deflected out of the plane of the backing web and into the dispensing zone, it may be readily grasped by the operator for removal from the backing web. The strip deflector may be either permanently affixed to the body member or retractably coupled thereto, the latter embodiment permitting the backing web to be readily advanced through the web receiving passageway without interference from the strip deflector until a desired position is reached at which time the strip deflector may then be selectively

extended towards the dispensing zone to deflect the desired marker strip thereinto. Camming means comprising preferably one or more selectively contoured surfaces may be employed to return an unremoved deflected marker strip back to its original position in the general plane of the backing web as the backing web is advanced through the dispenser. The dispenser may be conveniently fabricated from plastic material which may be molded to provide an integral readily manufactured, low cost one-piece device or may comprise an inexpensive wire form suitably bent into the desired shape. Means such as a knurled wheel or the like, which may be rotatably coupled to the body member, may be employed to advance the marker strips into the dispensing zone to avoid the need for the operator to accomplish this operation by physically handling the indicia bearing surfaces of the marker strips. Deflectable struts or the like my also be included to maintain a relatively constant pressure against the surface of the marker strips for purposes of alignment and stability. The dispenser may be fabricated from either opaque or clear plastic material, the latter arrangement providing window-like areas for viewing the indicia on either side of the dispensing zone. It is therefore an object of this invention to provide a novel marker strip dispenser.

It is yet a further object of this invention to provide a simple, inexpensive and readily manufactured marker strip dispenser for employment with selectively slotted marker strip bearing cards or the like.

It is another object of this invention to provide means for selecting a desired marker strip from a plurality thereof.

It is a further object of this invention to provide means for storing and selectively dispensing indicia bearing marker strips from a given supply thereof.

It is yet a further object of this invention to provide means for selectively positioning a portion of a selected marker strip for convenient removal from a backing web containing a plurality of such strips.

It is still another object of this invention to provide a device for storing, transferring and selectively positioning a supply of marker strips for use at a work place.

It is still a further object of this invention to provide a marker strip dispenser having means for selectively deflecting a portion of a given marker strip out of the plane of a supporting backing web for presentation to the user.

It is still another object of this invention to provide a marker strip dispenser having a selectively extendable strip deflector adapted to selectively position a portion of a marker strip for convenient removal from a supporting backing web.

Other objects and features will be pointed out in the following description and claims and illustrated in the accompanying drawings which disclose, by way of example, the principle of the invention and the best mode contemplated for carrying it out.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective view of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 2 is a perspective view showing a typical application of the device of FIG. 1.

FIG. 3 is a fragmentary top plan view of a portion of the device of FIG. 1.

FIG. 4 is a side elevational view, in section, of a portion of the device of FIG. 3.

FIG. 5 is a perspective view showing a further embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 6 is a fragmentary side elevational view, in section, of a portion of the device of FIG. 5.

FIG. 7 is a perspective view of a further embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 8 is a side elevational view, partly in section, of yet another embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 9 is a perspective view of a further embodiment of the strip deflector of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 10 is a top plan view of still another embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 11 is a rear elevational view of the device of FIG. 10.

FIG. 12 is a top plan view, partly cut away, of yet another embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

FIG. 13 is a perspective view of yet a further embodiment of a marker strip dispenser constructed in accordance with the concepts of the invention.

Similar elements are given similar reference characters in each of the respective drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to FIGS. 1, 2, 3 and 4 there is shown a marker strip dispenser 20 constructed in accordance with the concepts of the invention. The dispenser 20, which may be conveniently fabricated either from metallic or plastic material whereby in the latter arrangement the dispenser 20 may be molded as an integral unit, comprises a body member 22 having a first or lower portion 24 and a second or upper portion 26, said second portion 26 being selectively spaced from the first portion 24 to provide a slot-like web receiving passageway 28 therebetween. The second portion 26 comprises a pair of generally coplanar elements separated by a dispensing zone 30 comprising essentially a selectively configured slot communicating with the web receiving passageway 28 and having a length essentially equivalent to the width of the web receiving passageway 28. Extending selectively from the first portion 24 of the body member 22 towards the dispensing zone 30 is a strip deflector 32 formed so as to define a generally tapered upstanding protrusion situated generally centrally of the width of the dispensing zone 30. As may be further noted from an examination of FIG. 1, the slot defining the dispensing zone 30 enlarges somewhat in the area generally adjacent the strip deflector 32 and is defined thereat by a pair of obliquely oriented edge surfaces 34, 34' forming part of the contour of the second portions 26 of the body member 22 generally adjacent the dispensing zone 30. The surfaces 34, 34' provide camming means, as will be described in further detail hereafter. Extending outwardly from the body member 22 is a first pair of mounting means 36 and a second pair of mounting means 38, for demountably attaching the marker strip dispenser 20 to a supporting surface (not shown), where necessary or desirable. Each of the mounting means 36 comprises an essentially flat protrusion extending generally parallel to the plane of the body member 22 and having a fastener receiving aperture 40 extending generally transversely therethrough to permit the body member 22 to be fastened to a supporting surface either by nails, screws, or other like devices in a manner well known to those skilled in the art. The second mounting means 38 situated on the opposite side of the body member 22 are essentially similar to the first mounting means 36 but are disposed at a generally oblique angle to the plane of the body member 22, thereby permitting the body member 22 to be fastened to a supporting surface or the like at a convenient inclined angle, where necessary or desirable. Each of the mounting means 38 is also provided with a fastener receiving aperture 42 essentially duplicative of the aperture 40 and utilizable in like manner. It will, of course, be readily apparent to those skilled in the art that the completely enclosed apertures 40 and 42 may, of course, be replaced by an open slot or keyway, where necessary or desirable, so that the dispenser 20 may be placed over existing fasteners for rapid attachment and removal. Although the strip deflector 32 is illustrated in the embodiment in FIG. 1 as affixed to the first portion 24 of the body member 22, this arrangement may be readily modified as shown in detail in FIG. 9 wherein a strip deflector 44 is shown extending through a generally transverse aperture 46 in the first or lower portion 24 of the body member 22 and selectively displaceable towards and away from the dispensing zone 30 by the manipulation of a lever 48 to which the strip deflector 44 is coupled. The lever 48 is movably attached to the body member 22 by means of a pin 50 engaging a pair of spaced, apertured flanges 52, 52' extending outwardly from the edge of the body member 22 generally adjacent the aperture 46. The strip deflector 44 may thus be retracted from the dispensing zone 30 and below the surface of the first portion 24 to provide an uninterrupted path within the web receiving passageway 28 for use in a manner to be described in more detail hereafter. It will, of course, be clear that the lever 48 may be replaced by any one of a number of toggle arrangements in which the deflector 44 may be releasably locked in either an extended or retracted position, and selectively repositioned thereafter, as required. The advantages of this arrangement will become clear as the use of the dispenser 20 is explained in greater detail below. Either one or both of the two elements comprising the second portion 26 of the body member 22 shown in FIG. 1 may be modified as illustrated, for example, in FIG. 5. As shown, there is provided a pair of resilient struts 54, 54' extending respectively from each of the elements 56, 56' comprising a dispenser second portion 58 into a web receiving passageway 62 to provide a partial restriction thereat. The manner in which the struts 54, 54' communicate with the web receiving passageway 62 is shown in greater detail in the fragmentary sectional view of FIG. 6. The struts 54, 54' are arranged to bear against an adjacent surface of the web supported marker strips inserted within the web receiving passageway 62 in a manner to be described in more detail hereinafter, so as to partially restrain the free move-

ment of the strips within the passageway **62** and to prevent inadvertant misplacement thereof. Alternatively, one or more resiliently deflectable flat springs (not shown) may be cooperatively coupled to the under side of the second portion **58** for engagement with the adjacent surface of the marker strips to effect the desired retention. As a further example, each of the two elements making up the second portion **26** of the body member **22** of the embodiment illustrated in FIG. **1** may be further divided into a pair of overhanging elements **64, 64'** and **66, 66'**, as exemplified in FIG. **13**, each of the aforesaid elements being inclined at a predetermined angle and directed towards the first or lower portion of the body member so that each of the opposing free edges of the elements **64, 64'** and **66, 66'** or any suitable combination thereof may be caused to bear against the adjacent surface of the marker strips positioned within the web receiving passageway to provide a partial restraint therefore.

Returning now specifically to FIG. **2** there is shown disposed within the web receiving passageway **28** of the dispenser **20** a series of marker strips **68** disposed on a backing web **70** partially encompassed within the web receiving passageway **28** of the dispenser **20.** The back of each marker strip **68** customarily comprises an adhesive layer (not shown) contacting the backing web **70** which may be suitably treated so as to permit the strip **68** to be readily removed from the backing web **70.** The backing web **70** is further slit between each pair of adjacent marker strips **68** for a short distance from the top edge **72** of the backing web **70** towards the distal edge thereof to provide a grasping portion for removing the particular marker strip **68** from the backing web **70.** The extent of this slit may be more fully appreciated by observing the area designated as **74** in FIG. **2** where the backing web **70** is shown as extending up to the line **76** which is visible after the removal of a respective marker strip **68** therefrom. As further illustrated in FIG. **2,** the marker strip **68** bearing the indicia numeral "**10**" is shown as disposed adjacent the strip deflector **32** within the dispensing zone **30** with one end of the marker strip **68** being deflected upwardly, as at **78,** out of the general plane of the backing web **70** and away from the adjacent marker strips upon its contact with the strip deflector **32** so that the aforementioned end of the marker strip **68** is presented to the user in a convenient position for removing the particular marker strip from the backing web **70.** The sequence of planar deflection of the portion **78** of the marker strip **68** is shown partly by the dotted outline **80** and **80'** and the solid outline **80''** in FIG. **4.** To appropriately position a desired marker strip located remote from either end of the backing web **70** within the dispensing zone **30,** the backing web and the supported marker strips must be selectively advanced through the web receiving passageway **28** sufficiently to place the desired marker strip **68** in the proper position for removal. Accordingly, each marker strip advancing past the strip deflector **32** will be caused to be deflected upwardly as shown in FIG. **2** at **78.** To insure that a deflected and non-removed marker strip **68** is re-deflected back to its original position coplanar with the backing web **70** oblique surfaces **34, 34'** are provided to operate as camming means to appropriately engage the deflected portion of the marker strip and cause it to be urged back to its original position as the marker strips are advanced through the web receiving passageway **20.** This manipulation is shown in detail in FIG. **3** wherein the marker strip bearing the indicia numeral "**11**" is shown engaging the obliquely angled surface **34'** of the second portion **26** of the body member **22** so that upon further movement of the marker strip to the right in FIG. **3,** as indicated by the arrow **82,** the deflected portion of the marker strip will be re-deflected downwardly towards the backing web **70.** Although the backing web **70** together with the marker strips **68** disposed thereon may be advanced within the marker strip dispenser **20** simply by grasping one end thereof and moving the combination back and forth as desired to selectively position a particular marker strip within the dispensing zone **30,** a problem arises in the case where the user's hands may be covered with grease, oil, or other contaminants present in the area in which such strips are to be used, which contaminants may be transferred to the marker strip surfaces causing at least a partial obliteration of the indicia thereon. In such cases, there may be provided advancing means which, as illustrated in FIG. **7** by way of example, may comprise a knurled wheel **84** rotatably attached to the second portion **26'** of the body member **22'** by means of a pin **86** supported adjacent a suitable transverse opening **88** in the second portion **26'**. The diameter of the knurled wheel **84** is designed so that the portion thereof extending within the web receiving passageway **28** is spaced from the upper surface of the first portion **24** of the body member **22** a distance slightly less than the thickness of the composite marker strip-assembly so that a slight pressure is exerted thereagainst. Thus, as the wheel **84** is rotated in either a clockwise or counterclockwise direction, the underlying marker strip assembly will respond to the force of the knurled portion of the wheel thereagainst and be moved in the appropriate direction to align the desired marker strip with the dispensing zone **30** with a minimum of handling by the user. Slide devices and the like (not shown) may be employed in a similar manner to similarly effect transfer of the marker strips, where necessary or desirable.

Turning now to FIG. **8** there is shown a further embodiment of a marker strip dispenser **90** constructed in accordance with the concepts of the invention. The body member first and second portions and strip deflector of the dispenser **90** are essentially duplicative of such elements described heretofore with respect to the dispenser **20** illustrated in FIG. **1,** and may include any one of the further modifications thereof as further described heretofore. In this case, however, there is further provided a pair of upstanding brackets **92** (only one of which is visible in FIG. **8**) having grooved portions **94** providing a bearing seat for a spindle **96** upon which is wound a supply roll **98** consisting of a plurality of marker strips arranged on a backing web in a manner similar to the assembly illustrated in FIG. **2.** The brackets **92** thus provide storage means for a plurality of marker strips which are fed through a guide **100** into a dispensing zone **102** which is essentially duplicative of the dispensing zone **30** of the embodiment illustrated in FIG. **1.** This arrangement may be found particularly useful where the marker strip dispenser **90** is employed in a relatively permanent position adjacent a work station and where it is necessary or desirable to insure that an adequate supply of marker strips is continuously available to the user during the work period. For additional convenience, the embodiment illustrated in FIG. **8** may be advantageously modified to provide an ar-

rangement similar to that illustrated in FIG. **12** in which a dispensing zone **104** is located adjacent one edge of a body member **106** rather than generally centrally thereof as in the embodiment illustrated in FIG. **1**, since the marker strips are fed continuously from the roll **98** into one side of the dispenser in a direction indicated by the arrow **108.** Thus, as the marker strip assembly is advanced through the body member **106** towards the dispensing zone **104,** such marker strip, in turn, will be presented to the user, suitably deflected by a deflector **110,** for rapid and convenient removal from the dispensing zone **104.**

Referring now to FIGS. **10** and **11** there is shown a further embodiment of a marker strip dispenser **112** constructed in accordance with the concepts of the invention. The dispenser **112** comprises essentially a wire form structure in which the elements **114, 116, 118,** and **120** lie in a common plane and generally define the first or lower portion of the dispenser. Each of the elements **114** and **120** thereafter extend upwardly to arcuate elements **122** and **124,** respectively, where the form departs from the original plane of the elements **114,** 116, 118 and **120** and extends forwardly thereof along the elements **126** and **128** which communicate with a further pair of elements **130, 132,** respectively, which are coplanar with elements **126** and **128** and, in combination therewith, define the second or upper portion of the dispenser. Portions **126, 128, 130,** and **132** lie in a common plane selectively spaced from the plane defined by the elements **114, 116, 118** and **120** to provide a web receiving passageway therebetween. The upper end of elements **116** and **118** communicate with a further portion **134** lying in a plane generally perpendicular to the plane of elements **116** and **118** to provide a strip deflector operative in a manner similar to that described above with respect to the element **32** illustrated in FIG. **1.** The lower end of elements **114, 116 118** and **120** join with a pair of looped portions **136** and **138** (See FIG. **11**) planarly disposed generally normal to the plane of elements **114, 116, 118** and **120** to define the lower boundary of the web receiving passageway, the strip deflector **134** providing the upper boundary therefor. The portions **136** and **138** additionally provide mounting means for the dispenser **112,** each of the portions **136** and **138** being configured to provide a fastener receiving aperture **140, 142,** respectively, for the receipt therethrough of a nail, screw, or other like fastening device to permit the dispenser **112** to be attached to a support (not shown). The looped portions **136** and **138** may, of course, be disposed in the same plane as the elements **114, 116, 118** and **120,** where necessary or desirable. The wire form structure comprising the marker strip dispenser **112** may be fabricated from a given length of metallic strip or may be molded into the desired shape from any suitable plastic material, either arrangement providing a sufficiently resilient structure so that the plane defined by elements **126, 128, 130,** and **132** may be disposed in relatively close proximate relationship to the plane defined by elements **114, 116, 118** and **120** to provide a gap therebetween slightly less than the thickness of the marker strip backing web combination, to provide a spring-like holder for the marker strips inserted therebetween. The lodged portions adjacent the elements **122** and **124** may also serve as fastening means for the dispenser **112** in a manner similar to that described above with respect to the portions **136** and **138.**

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A device for selectively positioning a marker strip for removal from a backing web containing a plurality of such strips, comprising: a body member having web support means comprising a first portion and a second portion, said first and said second portions being arranged in selectively spaced relationship to define a web receiving passageway therebetween, a dispensing zone adapted to permit the removal of said marker strip from said web, said dispensing zone extending essentially across the width of said web receiving passageway and communicating therewith, said dispensing zone comprising an opening adapted to receive said marker strip therethrough; and a strip deflector extending selectively from said web support means first portion towards said dispensing zone to planarly deflect a selective portion of said marker strip out of the plane of said web receiving passageway and into said dispensing zone for removal of said marker strips from said web; said web support means second portion further comprising camming means for returning the deflected portion of an unremoved marker strip to its original position upon the selective advancement of said marker strip through said web receiving passageway and into engagement with said camming means.

2. A device as defined in claim **1** wherein said camming means comprises a selectively formed surface disposed in close proximate relationship to said strip deflector.

3. A device as defined in claim **1** further comprising means for selectively advancing said marker strips within said web receiving passageway.

4. A device as defined in claim **3** wherein said advancing means comprises a movable member cooperatively attached to said web support means for selective engagement with said marker strips.

5. A device as defined in claim **1** further comprising means for selectively positioning said strip deflector with respect to said dispensing zone.

6. A device as defined in claim **5** wherein said strip deflector positioning means is movably coupled to said web support means first portion.

7. A device as defined in claim **1** wherein said web support means first and second portions each comprise generally planar elements, said second portion being disposed in substantially parallel planar relationship to said first portion.

8. A device as defined in claim **7** wherein said web support means second portion comprises a first element and a second element arranged in generally coplanar relationship, said dispensing zone being located generally intermediate said first element and said second element.

9. A device as defined in claim **1** further comprising means for selectively maintaining said marker strips in a given position adjacent said dispensing zone.

10. A device as defined in claim **9** wherein said position maintaining means comprises resilient pressure means co-operative with said web receiving passageway to provide a partial restriction thereat, said resilient pressure means being selectively deflectable upon engagement with selected portions of said marker strips.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 3,889,845

DATED : June 17, 1975

INVENTOR(S) : Louis F. Haitmanek

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 7, line 64, "lodged" should be -- looped --

Signed and Sealed this

fourteenth Day of *October 1975*

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks