Nov. 26, 1968 F. E. HILTON 3,412,895

DISPENSER FOR CLOSURE DEVICE WITH PRICE TAG

Filed Dec. 20, 1965 2 Sheets-Sheet 1

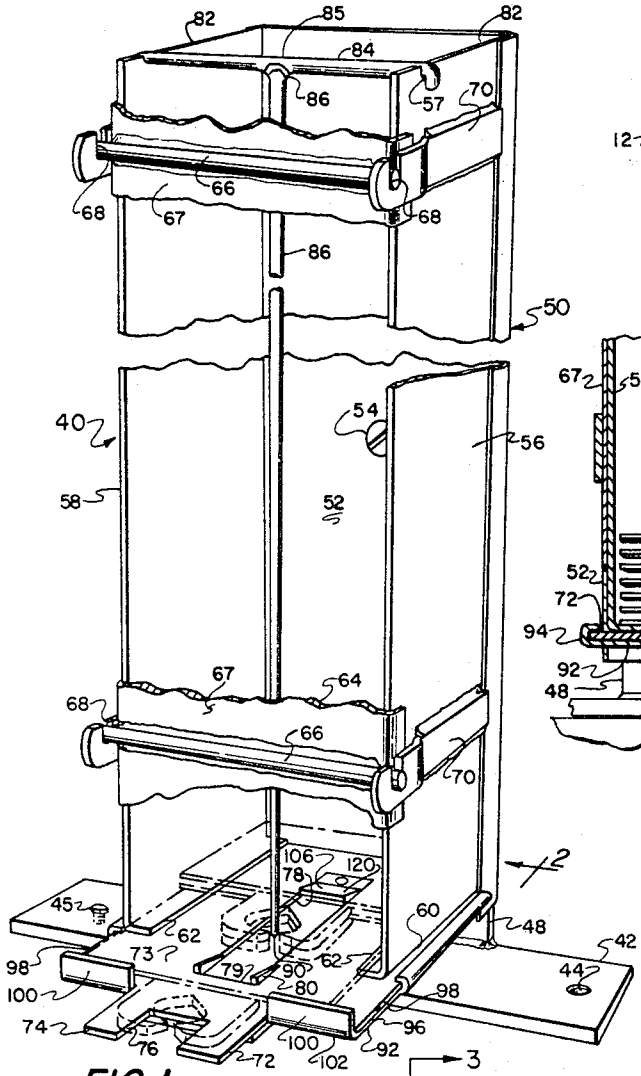


FIG. 1

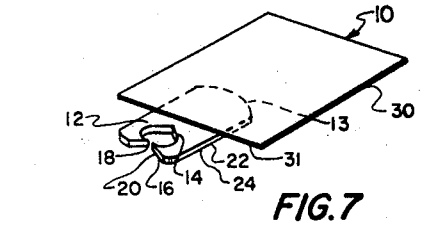


FIG. 7

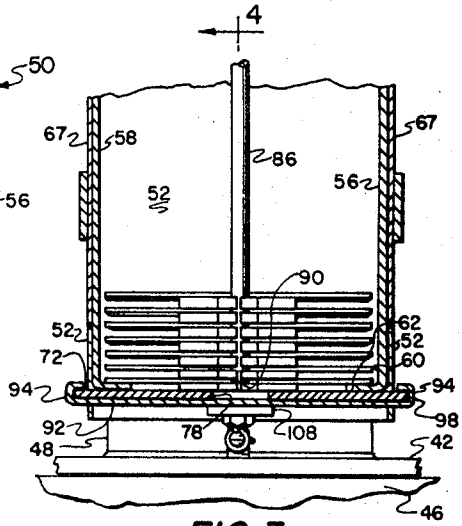


FIG. 3

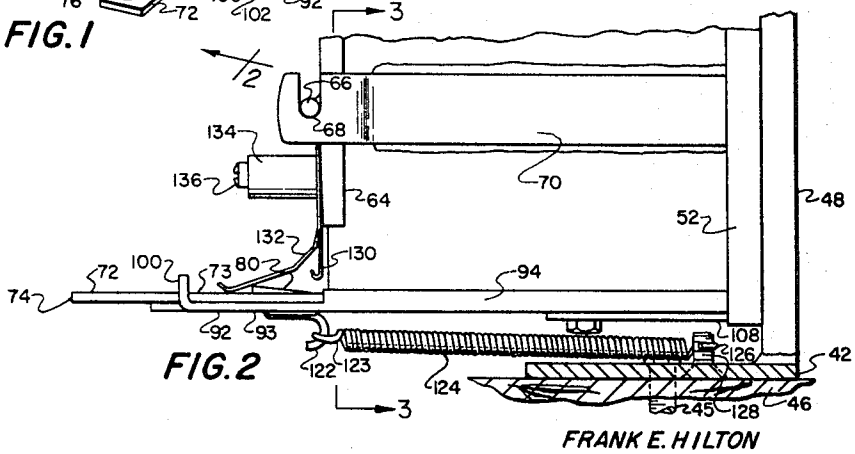


FIG. 2

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DISPENSER FOR CLOSURE DEVICE WITH PRICE TAG

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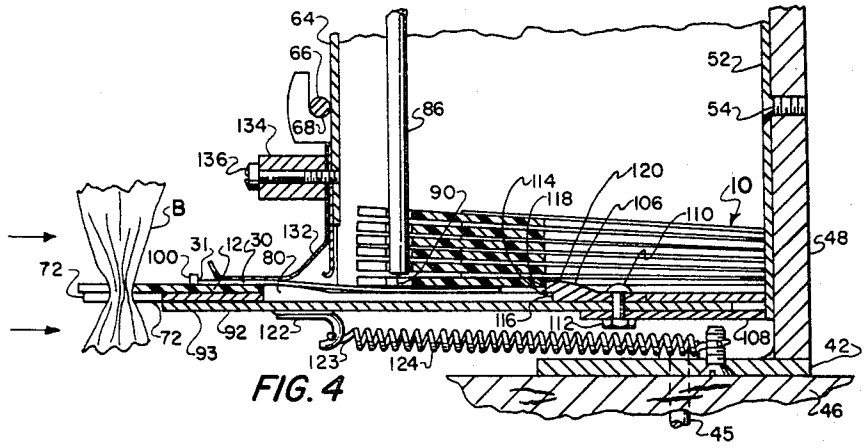


FIG. 4

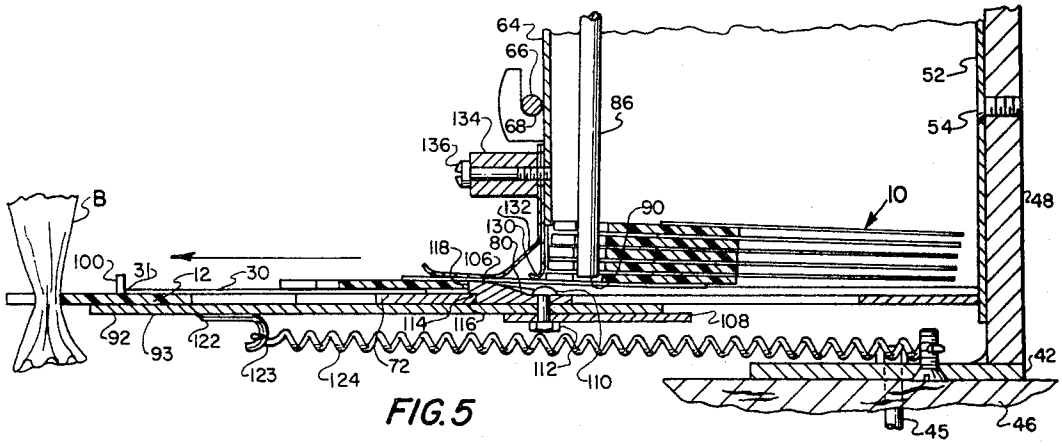


FIG. 5

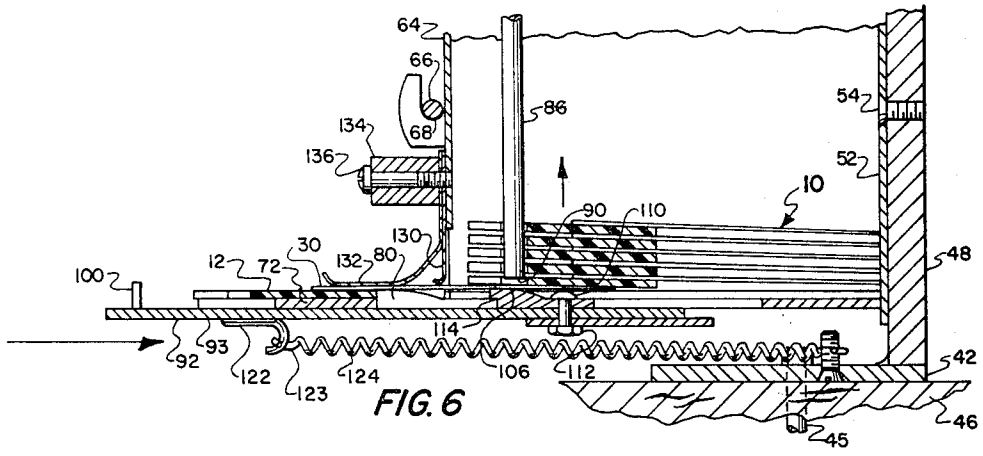


FIG. 6

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DISPENSER FOR CLOSURE DEVICE WITH PRICE TAG

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4 Claims. (Cl. 221—23)

ABSTRACT OF THE DISCLOSURE

A tubular magazine for receiving a stack of cardboard tags equiped with flat plastic bag closures glued to bottom faces thereof, said stack gravitating onto a magazine bottom plate where said tags are successively partially withdrawn forwardly from the bottom of the stack by a lug successively engaging said closures, to a position where the closure of the tag thus withdrawn is exposed and supported for pressurally applying a bag neck thereto, means being provided for actuating said lug manually as part of the act of completing the withdrawal of the tag after applying a bag neck to the closure of said bag.

BACKGROUND OF THE INVENTION

This invention relates to apparatus for dispensing closure devices, such as those that are made of polystyrene and are used to close the necks of polyethylene bags in which food and other products are packaged. More particularly, the invention relates to apparatus for dispensing plastic closure devices, to each of which is attached a paper tag on which price information or other advertising matter can be printed, as the devices are secured one-by-one to the necks of bags.

The plastic closure devices herewith concerned are made of sheet polystyrene and are characterized by having a bag-neck-confining opening, and an entrance slot or mouth extending from the edge of the closure to the opening. The paper tag mentioned above is attached to one side of the device by a suitable adhesive. The plastic closure device and paper tag thus form a two-level combination, the total thickness of which is equal to the combined thicknesses of the plastic part and the paper tag.

While the prior art abounds with dispensing devices for dispensing flat objects from the bottom end of a vertical column of these, which devices are manually operable to make such objects available one at a time, no such device has heretofor been developed which is adapted to perform such a feeding operation for a vertical stack of an assembled closure device and price tag as above described.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a new and improved apparatus for dispensing such plastic closure device and paper bag combinations.

It is another object of the present invention to provide such dispensing apparatus that will also hold such a plastic closure device and paper tag combination in proper position to receive the neck of a polyethylene bag manually inserted therein.

It is a still further object of the present invention to provide such an apparatus wherein the act of withdrawing a bag and closure device attached thereto actuates the apparatus, thereby to draw another plastic closure device and paper tag combination into the bag-neck-receiving position.

Other objects and advantages of the invention will become more apparent hereinafter.

In accordance with the illustrated embodiment of the present invention, the apparatus is adapted to dispense a plastic closure device and paper tag combination from a vertical stack of such combinations, and then to hold such a combination in a bag-neck-receiving position while the neck of a bag is inserted into the bag-neck-confining opening thereof. The apparatus comprises means to hold a plurality of such combinations in vertical stacked relation, means to slide the lowest one in the stack to a bag-neck-receiving position, means to hold the combination in said position while the neck of a bag is inserted into the bag-neck-confining mouth thereof, and means to return the slide means back to its original position underneath the stack of plastic closure device and paper tag combinations.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the apparatus of the present invention, with parts broken away, showing several plastic closure device and paper tag combinations in phantom lines;

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1, but showing only the lower portion of the apparatus of the present invention;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 3 and showing a polyethylene bag in the bag-neck-closing position;

FIG. 5 is another sectional view taken on line 4—4 of FIG. 3, this view, however, showing the polyethylene bag in its forwardmost position;

FIG. 6 is another sectional view taken on line 4—4 of FIG. 3, this view showing the slide means returning to its original position, the polyethylene bag having been removed; and

FIG. 7 is a perspective view of one of the plastic closure device and paper tag combinations herewith concerned.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, the plastic closure device and paper tag combination **10**, which the apparatus of the present invention is designed to dispense, is shown in FIG. 7. The combination **10** includes a plastic closure device **12**, which is made of polystyrene sheet material. The device **12** is characterized by having a bag-neck-confining opening **14**, which is connected to one of the edges **16** of the device **12** by a narrow entrance slot or mouth **18** having widely flaring lips **20**. The front to back dimension of the device **12** may be about ⅞ inch.

The plastic closure device **12** has upper and lower surfaces **22** and **24** respectively. Attached to the upper surface **22** by a suitable adhesive is a paper tag **30** on which price information or advertising matter may be imprinted. The paper tag may be of any suitable size and is preferably larger than the plastic closure device **12**. The paper tag **30** is typically made of a stiff paper, such as is commonly referred to as cardboard, and which may be coated or treated in any of a variety of ways. The plastic closure device **12** typically is 0.035 inch thick; the paper tag may be of lesser thickness. The relationship of these thicknesses to the apparatus of the present invention will be made more clear in the following description.

The apparatus of the present invention is shown in FIGS. 1, 2 and 3. Its operation is indicated in FIGS. 4, 5 and 6. The apparatus, which will be generally referred to by the numeral **40**, includes a supporting plate **42**, which is provided with bolt holes **44** in which are received bolts **45** so that it can be attached to a work bench or table **46**, as desired. Attached to the rear of the sup-

porting plate **42**, as by welding, is a vertically extending plate **48**.

Attached to the plate **48** is a housing **50**, as shown in FIG. 1. The housing **50** has a rear wall **52**, which is attached to the plate **48** by a screw **54**. Attached to the rear wall **52** are two side walls **56** and **58**, and these side walls terminate at their lower ends **60** in inwardly extending flanges **62**, as shown in FIGS. 1 and 2. A forward wall **64**, shown broken away in FIG. 1, completes the housing **50**. The forward wall **64** has two rods **66** welded to the forward face **67** thereof, which rods **66** are adapted to be received in slots **68** formed in the forward ends of side brackets **70**, which are suitably attached to the side walls **56**, **58** as by welding. When the rods **66** are fitted within the slots **68** in the brackets **70**, the forward wall **64** is retained in position.

Attached to the lower surfaces of the flanges **62** by welding is a base plate **72**. The base plate **72** has a forwardly projecting portion **74**, shown clearly in FIGS. 1 and 2, in which is positioned a slot **76** adapted to receive the neck of a bag B. (See FIGS. 4–6.) The base plate **72** also contains a rectangular interior slot **78**, positioned in the central portion of the plate. Affixed to the upper surface **73** of the base plate **72** and at the forward edge **79** of the rectangular slot **78** are two stops **80**, and these stops must extend above the upper surface **73** of the base plate **72** by an amount approximating the thickness of a plastic closure device **12**. Thus, the rear edge **13** of the device **12** is retained by the stops **80** as the neck of the bag B is forced into the mouth **14** of the device **12**.

Supported by the upper edges **82** of the side walls **56** and **58** is a crosspiece **84**, as shown in FIG. 1. The crosspiece **84** rests in slots **57** provided in the side walls **56** and **58**. Welded to the center **85** of the crosspiece **84** is a vertically extending rod **86**, and this rod **86** depends downwardly interiorly of the housing **50** and is adapted to pass through the bag-neck-confining openings **14** in the plastic closure devices **12** when a plurality of the combinations **10** are stacked on the base plate **72**. Thus, the rod **86** is supported at its uppper end **88**, but its lower end **90** is spaced from the base plate **72** by an amount sufficient to allow a plastic closure device and paper tag combination **10** to pass thereunder. The mounting of the rod **86** is flexible, inasmuch as the crosspiece **84** can rotate in the slots **57**. The rectangular slot **78** in the base plate **72** is positioned immediately beneath the lower end **90** of the rod **86**.

A sliding plate **92** is mounted beneath the base plate **72** and is formed with a guide **94** on each of its lateral edges **96**. The guides **94** are adapted to slide on the lateral edges **98** of the base plate **72**, as clearly shown in FIGS. 1 and 2.

Two vertically extending lugs **100** are formed, one on each side of the forward edge **102** of the sliding plate **92**. The lugs **100** are positioned on either side of the forwardly projecting portion **74** of the base plate **72** and are adapted to catch the forward edge **31** of a paper tag **30**. Thus, after a bag B has been inserted into the bag-neck-confining opening **14** of a plastic closure device **12**, a forward pull on the bag will cause the forward edge **31** of the paper tag **30** to abut against the lugs **100**, thereby to slide the plate **92** forwardly.

Affixed to the upper surface of the sliding plate **92** is a carrying lug **106**. Affixed to the lower surface of the sliding plate **92** is a stop plate **108**. The lug **106** and the stop plate **108** are joined to the sliding plate **92** by means of a bolt **110** and nut **112**, as shown in FIGS. 4–6.

The carrying lug **106** is itself best shown in FIGS. 1, 4, 5 and 6. It is seen to have a stepped forward edge **114**, comprising a lower vertical surface **116** and an upper vertical surface **118**. The surface **116** is substantially the same height as is the thickness of the base plate **72**. The thickness of the upper surface **118** is substantially equal to the thickness of a plastic closure device **12**.

The lug **106** is positioned on the sliding plate **92** so that it extends into and can ride within the rectangular slot **78** and it projects above the upper surface of the base plate **72**. Thus, the lower vertical surface **116** functions as a stop to limit the forward motion of the sliding plate **92**, and the upper vertical surface **118** functions as a means to slide one of the plastic closure device and paper tag combinations **10** forwardly along the base plate **72** when the sliding plate **92** is moved forwardly.

The lug **106** has an upper surface **120** which is tapered rearwardly from the stepped forward edge **114**, thereby to act as a lift. In this manner, the lug **106** serves to lift the stack of plastic closure device and paper tag combinations **10** vertically when the sliding plate **92** retracts rearwardly along the base plate **72**.

Affixed to the lower surface **93** of the sliding plate **92** is a hook **122**, to which is attached the forward portion **123** of a coiled spring **124**. The rear portion **126** of the coiled spring **124** is attached to an upstanding bolt **128**, which is received within the supporting plate **42**. This is clearly shown in FIGS. 2, 4, 5 and 6. The coiled spring **124** is extended as the sliding plate **92** is pulled forwardly and serves to return the sliding plate **92** to its original position when forward pressure is removed.

Affixed to the forward wall **64** of the housing **50** are two spring members **130** and **132**, as clearly shown in FIGS. 2, 4, 5 and 6. The spring members **130** and **132**, are retained in position by a retaining block **134**, which is attached to the forward wall **64** by means of a bolt **136**, as shown. The spring member **130** serves to prevent the stack of plastic closure device and paper tag combinations **10** from moving forwardly, and particularly serves to retain the next to lowest one from being pulled forwardly by the lug **106**, which might occur due to friction between the upper surface of the lowest combination **10** and the next to lowest one. The spring **132** extends forwardly as shown and serves to maintain a downward pressure on the plastic closure device and paper tag combinations.

The operation of the apparatus **40** is best understood by referring to FIGS. 4, 5 and 6. A stack of plastic closure device and paper tag combinations **10** is shown positioned on the base plate **72** with the rod **86** passing through the openings **14** thereof. FIG. 4 shows one of the combinations **10** in its bag-neck-receiving position, the operator having inserted the twisted neck of a bag B into the opening **14**. The rear edge **13** of the plastic closure device **12** is seen abutting against the stops **80** on the base plate **72**, furnishing resistance against the rearward thrust necessary to insert the neck of the bag B into the opening **14**. The paper tag **30** is urged downwardly by the spring **132**. The carrying lug **106** is shown with its upper vertical surface **118** abutting the rear edge **13** of the next plastic closure device **12** in the stack, ready to thrust that particular combination **10** forwardly along the base plate **72**, when the sliding plate **92** is moved forwardly.

After the neck of the bag B has been inserted into the opening **14** of the plastic closure device **12**, as shown in FIG. 4, a forward pull is exerted on the bag B by the operator, thereby to draw the sliding plate **92** forwardly against the tension of the coiled spring **124**. This is accomplished because the forward edge **31** of the paper tag **30** abuts against the lugs **100**, thereby to transmit the forward pull to the sliding plate **92**. As the sliding plate **92** moves forwardly, the surface **118** on the carrying lug **106** pushes the rear edge **13** of the next plastic closure device **12** forwardly until the lower vertical surface **116** of the lug **106** abuts against the forward edge **79** of the rectangular slot **78** in the base plate **72**, as shown in FIG. 5. When this occurs, forward motion of the sliding plate **92** ceases and the next to lowest combination **10** is seen to be in the bag-neck-receiving position. The spring **130** is shown restraining the rest of the plastic closure device and paper tag combinations **10** in the stack, and particularly the next to lowest one, from moving forwardly, which might occur due to the friction between the upper

surface of the lowest combination and the lower surface of the next to lowest one. The lower end **90** of the rod **86** is shown tilted somewhat forwardly, which is due to the rotation of the crosspiece **84**, as above mentioned. During the entire operation the edges of the paper tags **30** are supported on the inwardly extending flanges **62**. (See FIG. 3).

When the sliding plate **92** reaches its forwardmost position, as shown in FIG. 5, such that the lower vertical surface **116** of the lug **106** abuts the forward edge **79** of the rectangular slot **78** in the base plate **72**, the operator pulls the bag B upwardly and outwardly thereby to remove it, along with its plastic closure device and paper tag combination, from contact with the lugs **100**. This permits the coiled spring **124** to act upon the sliding plate **92** and return the same to its original position underneath the stack of plastic closure device and paper tag combinations **10**. As the sliding plate **92** retracts rearwardly, the tapered upper surface **120** of the lug **106** slides back under the stack of plastic closure device and paper tag combinations **10**, lifting the same as shown in FIG. 6. The sliding plate **92** moves rearwardly until the stop plate **108** abuts the rear wall **52** of the housing **50**, thereby placing the apparatus **40** in condition for the entire sequence to be repeated.

In the foregoing description the apparatus of this invention has been described with reference to a certain particular preferred embodiment. It is to be understood, however, that the specific details shown are merely illustrative, and that the invention may be carried out in other ways without departing from the true spirit and scope of the following appended claims.

I claim:

1. In a dispenser of price tags each of which has a flat plastic bag closure glued to a front edge portion of the bottom face of said tag, a portion of said closure extending forwardly from beneath said tag and being provided with a bag neck closing aperture to which access is had through an opening in the front edge of said closure, the combination of:

a tubular magazine for receiving a stack of said tags;

a magazine bottom for supporting said stack, said bottom extending forwardly from beneath said stack to provide a support for side portions of the closure of a tag when the latter has been partially withdrawn forwardly from the bottom of said stack to a position in which the aperture of said closure is exposed forwardly and upwardly and downwardly for the introduction of a bag neck into said aperture;

reciprocating lug means for engaging the back of a closure of the bottom tag in said stack and shifting said tag and closure forwardly to locate the latter in said position;

spring means for retracting said reciprocating lug means following a tag and closure shifting movement as aforesaid;

stationary lug means located just back of said position to prevent backward movement of a closure from said position while a bag neck is being inserted in said closure;

means for actuating said reciprocating lug means manually, incidental to the forward withdrawal of the tag and its closure from said position after having applied a bag neck to said closure in said position, whereby said reciprocating lug means is caused to engage the back of the closure of the next lowermost tag of said stack and shift said tag and closure forwardly delivering said closure into said position,

the means last recited being actuated by engagement with a front edge of a tag being withdrawn from said dispenser immediately following the application of a bag neck to the closure of said tag,

said magazine bottom being provided with an interior slot within which said reciprocating lug means reciprocates;

a plate slideably mounted on said bottom for reciprocating movement parallel with said slot, said reciprocating lug means being mounted on said plate; and

means formed on the front end of said plate for engagement incidental to the forward movement of manually withdrawing a tag and closure from said dispenser immediately following the application of a bag neck to said closure, for reciprocating said plate and lug means to deliver the closure of the next lowermost tag into said position.

2. A combination as recited in claim **1**, wherein

the lug means last recited therein are bent upwardly from front edge portions of said sliding plate to be engaged by corresponding front edge portions of a tag being withdrawn from the bottom of said dispenser by a bag neck which has just been applied to the closure of said tag.

3. A combinationas recited in claim **1**, wherein

said stationary lug means located just back of said position are formed on said bottom along the adjacent edge portions of said slot and have rearwardly inclined faces to lift the closure of a tag being fed forwardly from the bottom of said stack so that said closure will drop over and in front of said stationary lug means when arriving in said position.

4. A combination as recited in claim **3**, wherein

said reciprocating lug means constitutes a lug having a vertical overhanging front face which is slightly higher than said stationary lug means and overhangs the front edge of said slot so as to assure the delivery of each tag and closure combination with the closure thereof disposed in said position and forwardly clear of said stationary lug means so that as said reciprocating lug means withdraws following said feeding movement the closure delivered to said position is retained therein by said stationary lug means engaging the rear edge of the closure.

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