Dec. 7, 1965 J. C. LOWRY 3,221,927

DISPENSING HOLDERS FOR STACKS OF BAGS

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FIG. 1.

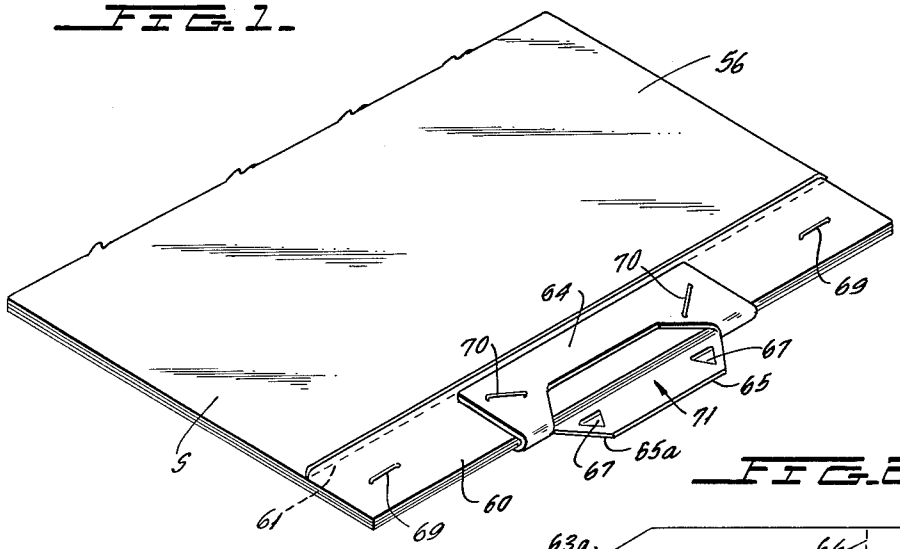


FIG. 2.

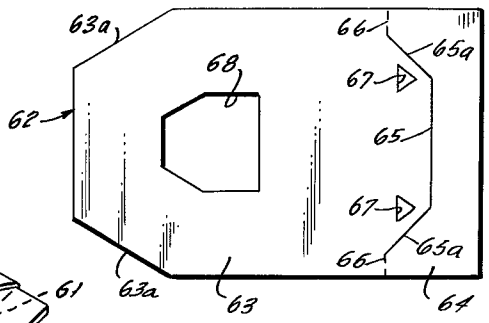
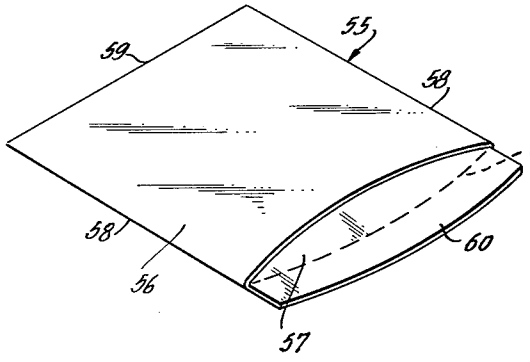


FIG. 4.



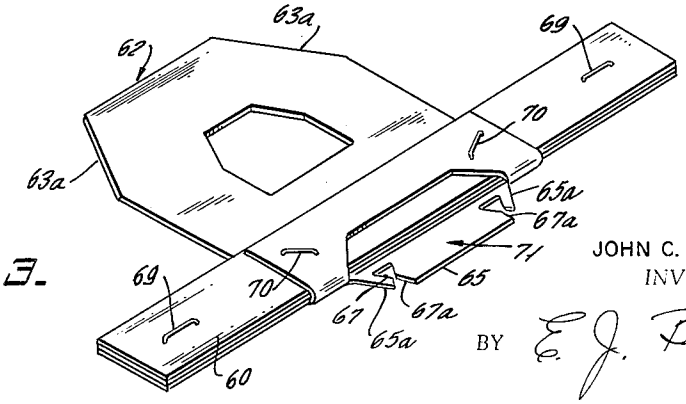


FIG. 3.

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FIG. 5.

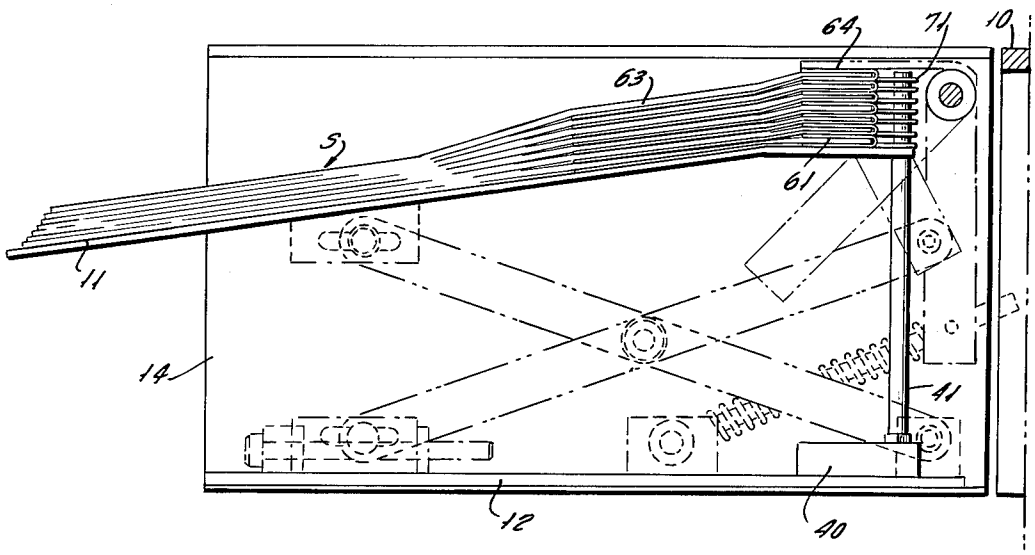
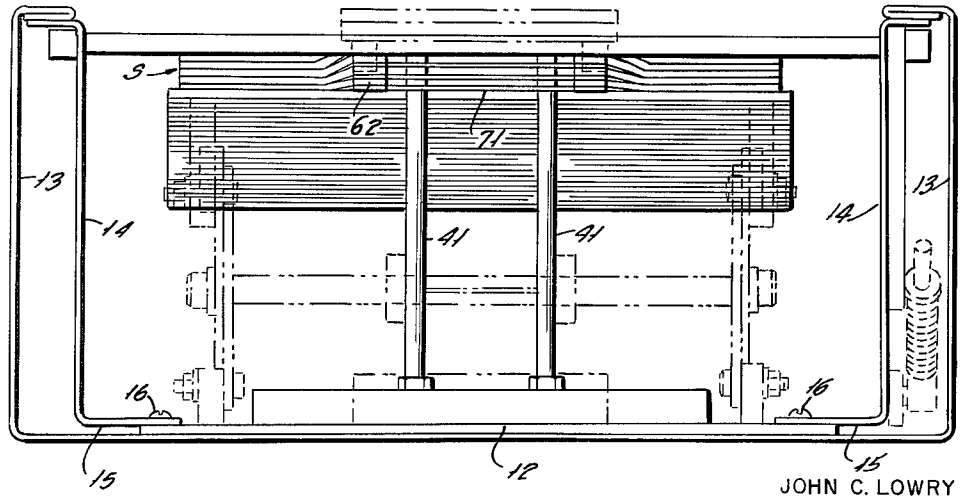


FIG. 6.



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DISPENSING HOLDERS FOR STACKS OF BAGS

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Original application Sept. 8, 1961, Ser. No. 136,838, now Patent No. 3,145,839, dated Aug. 25, 1964. Divided and this application Aug. 31, 1964, Ser. No. 393,097
1 Claim. (Cl. 221—26)

This invention relates to semi-automatic bagging machines and more particularly to novel means for improving the efficiency of operation thereof and is a divisional application of copending application Serial No. 136,838, filed September 8, 1961, now U.S. Patent 3,145,839.

In machines of the character with which we presently are concerned, a work surface generally is provided, to which articles to be packaged or bagged are delivered, and a bag supporting table is associated therewith, adjacent said work surface, for the reception and retention of a supply of bags in such manner as to be readily accessible to the operator. It has been found advantageous to provide the supply of bags in the form of "stacks" from which single bags may be detached successively as required. It is with an improved bag supporting table and novel bag stacking means to which the invention is directed.

The invention is particularly applicable for use in connection with bags produced from thermoplastic materials, each bag being sealed along the side edges and the rear surface thereof including a projecting lip, ready severance means, such as perforations or the like, being provided whereby the bag per se may be detached conveniently from the lip portion. However, bags formed from other materials and including varying structural differences may be utilized with equal facility.

It is a major purpose of the present invention to provide a novel method for securing and dispensing stacks of side-seal, perforated and lipped bags, desirably for use in connection with semi-automatic bagging machines.

It is a further object of the invention to provide a novel holder for a plurality of side-seal, perforated and lipped bags from which single bags may be detached successively, until the stack is exhausted, without disturbing the holder.

Further objects and advantages of the invention will be readily apparent from the following description taken in conjunction with the accompanying drawings wherein:

FIGURE 1 is a fragmentary perspective view of a stack of bags secured within the novel holder of the present invention;

FIGURE 2 is a plan view of the holder detached, prior to application to a stack of bags;

FIGURE 3 is a perspective view of the holder and lip remnants, the bags of the stack having been detached;

FIGURE 4 is a perspective view of a single side-seal perforated and lipped bag of the character contemplated;

FIGURE 5 is a front elevational view, partly in section, of a portion of a semi-automatic bagging machine, illustrating in particular the bag supporting table and a plurality of stacks of bags positioned thereon; and

FIGURE 6 is an end elevational view of the bag supporting table of FIGURE 1, viewed from the right hand side.

As shown in the drawings, the semi-automatic bagging machine desirably includes a suitably supported work surface **10**, illustrated somewhat diagramamtically, to which is delivered a supply of articles to be bagged or packaged. Delivery may be by batch or continuous process, as is well known in this art and requires no particular discussion here. A bag supporting table, indicated generally at **11**, is positioned adjacent to the work surface,

preferably substantially contiguous therewith, and a supply of bags is supported upon this table in such manner as to be readily accessible to the operator who successively detaches a bag from the source of supply, inserts into the bag the item or items being packaged and then passes the bag on to suitable closing or sealing mechanism, not shown.

Where the bags employed are of polyolefin materials, such as polyethylene, polypropylene, and the like, as are being employed in constantly increasing quantities in modern day packaging, it has been found desirable to secure a plurality of such bags into a stack and to dispense the individual bags from the stack. The bag supporting table **11** of the present invention is designed to receive and securely retain thereupon a plurality of stacks of bags from which individual bags may be progressively detached from successive stacks of bags as required.

As illustrated, particular reference being had to FIGURES 5 and 6 of the drawings, the bag supporting table structure includes a base plate **12**, outer longitudinal side walls **13** and inner side wall portions **14** having inwardly directed lower extremities **15** secured to the base plate in any desired manner as by screws or the like **16**.

A horizontally disposed and vertically adjustable bag supporting table **11** is supported above the base plate and means is provided for urging this table upwardly whereby the level of the uppermost bag thereon will approximate the plane of the work surface **10**.

A transversely disposed saddle pin bracket or wicket **40** is mounted upon the base plate **12** and a pair of vertically disposed saddle pins **41** are attached to this bracket in any desired manner. It will be noted that these saddle pins are of a sufficient length, or height, to extend a slight distance above the top of the bag supporting table, when said table is in its uppermost position, for a purpose to be described more fully hereinafter.

There has been illustrated in FIGURE 4 of the drawings a single bag of a character particularly suited for use in connection with the present invention. It will be understood that this showing is for illustrative purposes only and is in no manner to be viewed as limiting.

The bag **55**, desirably produced from thin thermoplastic sheet material includes a front portion **56** and a rear portion **57**. The side edges **58** have been sealed in manufacture and the bottom edge **59** is comprised by a unitary fold and may, if desired, be gusseted to provide expandable characteristics. The rear portion includes an extending lip **60** and a line of perforations, or the like, **61** is provided whereby this lip, or only a portion of the width thereof, depending upon the location of the perforations, may be detached with ease.

Material, and bags, of this character are extremely thin and present corresponding problems in connection with the convenient handling thereof. Thus it is proposed to provide packages or stacks of such bags, from which individual bags may be separated successively, with particular ease, for more convenient use, particularly in connection with semi-automatic bagging machines.

A suitable holder is provided for securing a plurality of bags into a stack for convenient handling, as discussed hereabove. Desirably this holder is produced in the form of a flat blank from inexpensive sheet material, such as paperboard, or the like, and may be stamped out of such material with particular economy.

In the preferred embodiment thereof illustrated in FIGURE 2 of the drawings, the holder or saddle, indicated generally at **62**, is of substantially rectangular configuration and includes a bottom portion **63** and a top portion **64** separated from the bottom portion by a transverse silt **65** which includes diverging angularly disposed end portions **65***a* which terminate short of the longitudinal edges of the holder. If desired, score lines **66** extending from the ex-

tremity of each angularly disposed slitted portion **65***a* to the adjacent longitudinal edge of the saddle may be provided, to assist in the bending of a holder at the time of attachment to a stack of bags, and the score lines together with the slitted portion provide the line of demarcation between the top and bottom portions of the holder.

A pair of aligned spaced apertures **67** are provided in the base portion, immediately adjacent the edge provided by the slit **65** and the spacing between these apertures is complementary to the spacing between the saddle pins **41**, each aperture being of sufficient size to readily accommodate a saddle pin. The base portion may be provided with an aperture **68**, to permit the ready grasping of the holder and, if desired, the free corners of the base portion may be cut away as indicated at **63***a*, to further facilitate convenience in handling.

The securing of the holder to a stack of bags is a particularly simple matter and requires neither skill nor extreme accuracy. A plurality of bags (desirably a predetermined quantity thereof) is assembled, with the lip portions in alignment, to provide a stack S and, if desired, fastening elements such as staples or the like **69**, extending through the lip portions, may be utilized although these are not essential. The holder is then positioned, substantially centrally of the lip portions of the stack, with the bottom portion **63** beneath the stack S and top portion **64**, folded back along the score lines **66**, overlying the lip portions **60** in substantial alignment with the perforated edge thereof but not extending therebeyond. Staples or the like **70** may be employed to secure the holder to the stack of bags. The holder **62** thus becomes a saddle, securely attached to the lip portions **60** of the bags in the stack S, and the extremity of the base portion **63** which is defined by the slit provides a tab **71** which projects beyond the stack and includes the apertures **67** to facilitate ease of engagement with the saddle pins **41** of a bag table supporting structure as shown in FIGURES 5 and 6.

It will be understood that, if desired, the arrangement of the slitted portion may be reversed in which event the tab portion will be coextensive with the top face of the saddle rather than with the bottom portion thereof.

Manual elevation of a saddle pin cover of the bag supporting table structure exposes the upper extremities of the saddle pins and a plurality of stacks of bags may be positioned upon the bag supporting table, which can be readily depressed to receive a multiplicity of such stacks, with the saddle pins projecting through the apertures in the superimposed stack saddles. Return of the saddle pin cover to normal position will lock these stacks of bags in position and obviate any possibility of inadvertent disengagement or displacement.

With the bag supporting table loaded in this manner, and articles to be bagged delivered to the work table, the operator detaches the uppermost bag (if desired, an air stream, not shown, may be provided to facilitate the opening of the bag mouth prior to detachment) and proceeds

with the required bagging operation. Successive bags are detached, and filled, until the uppermost stack is exhausted. The operator then may grasp the exposed bottom portion **63** of the saddle of the exhausted stack, the aperture or finger portion **68** making for ease of grasping, and tear the holder and lip remnants from the saddle pins. Desirably, the nature of the material from which the holder or saddle is produced is such that there is but minimum resistance to the rupturing of the saddle pin apertures as indicated at **67***a*, see FIGURE 3 of the drawings. The saddle and lip remnants may be discarded or, consideration being given to the polyolefin material present, put aside for salvage purposes.

With the removal of the saddle and lip remnants of the exhausted stack, the bags of the next successive stack are exposed and are immediately available for continuing bagging operations, the bag supporting table having moved upwardly to its upper limit of movement simultaneously with the removal of the saddle of the exhausted stack.

There has thus been described a novel holder or saddle for stacked bags. Since this holder or saddle has separate utility, apart from bagging machines of the character illustrated and described, and since various changes may be made therein without departing from the spirit and scope of applicant's inventive teachings, the invention is not considered limited to that which is shown in the drawings and described in the specification, and reference therefore is had to the claim for summaries of the novel features of construction, novel combinations of parts, and novel method of operation, for all of which protection is desired.

What is claimed is:

In a dispenser for a stack of bags, in combination, a horizontally disposed bag supporting table, resilient means urging said bag supporting table upwardly, at least one stack of bags supported upon said table, a dispensing saddle provided with a retaining tab having a pair of spaced apertures therein, one end of said stack of bags connected to said dispensing saddle, a pair of vertically disposed complementarily spaced saddle pins positioned transversely of said bag supporting table, and adjacent one end of said bag supporting table, said table being movable vertically with respect to said saddle pins, the inner extremity of the bag supporting table having spaced notches, said saddle pins extending through said aperture in said saddle of each stack and through said notches in said bag supporting table to retain said stack in fixed position with respect to said bag supporting table.

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