July 31, 1956 R. E. ADAMS 2,756,922

PRODUCE BAG

Filed April 13, 1953 3 Sheets-Sheet 1

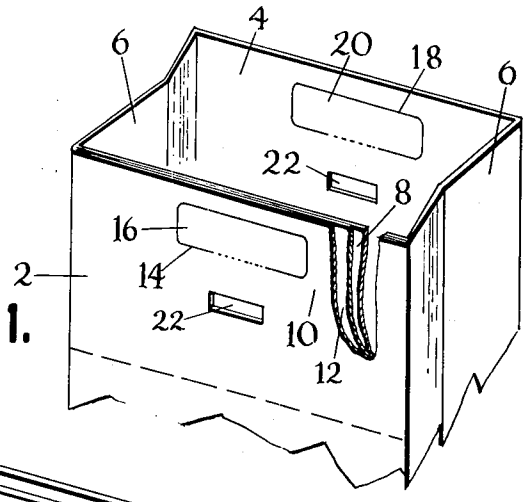


FIG. 1.

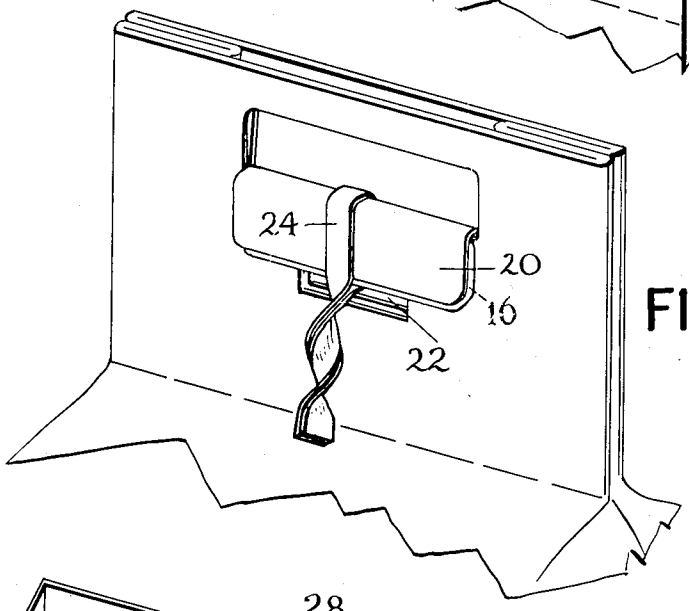


FIG. 2.

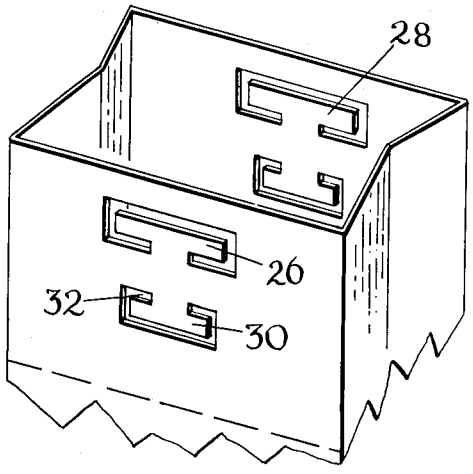


FIG. 3.

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PRODUCE BAG

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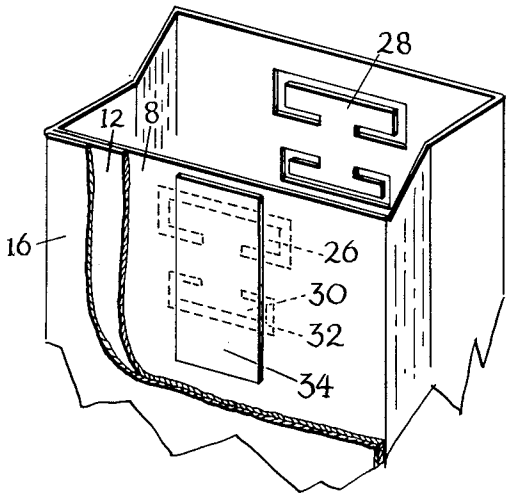


FIG. 4.

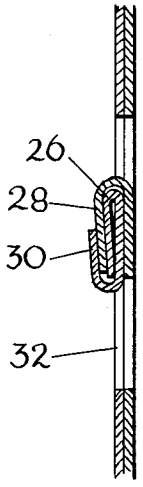


FIG. 5.

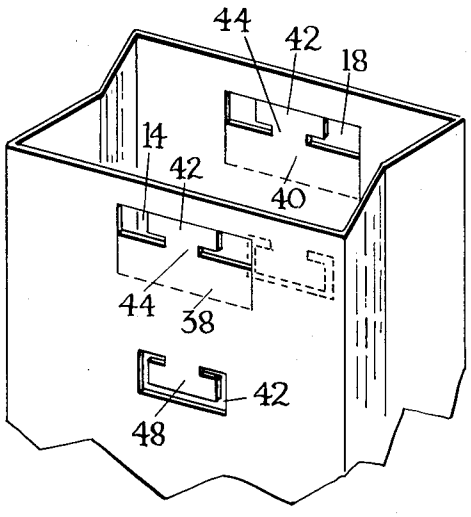


FIG. 6.

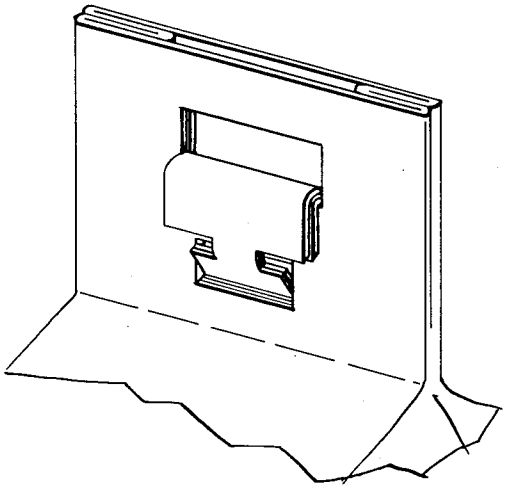


FIG. 7.

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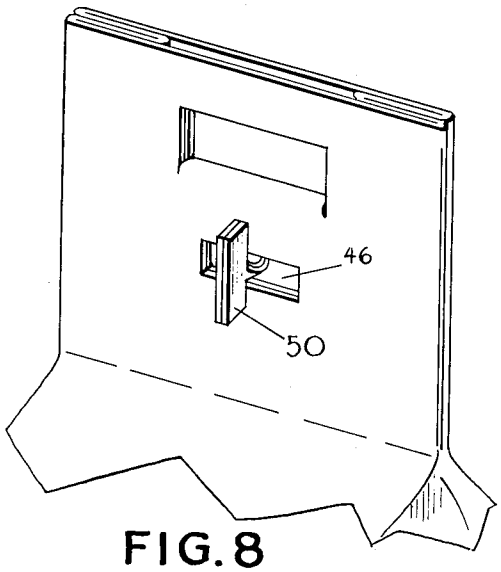


FIG. 8

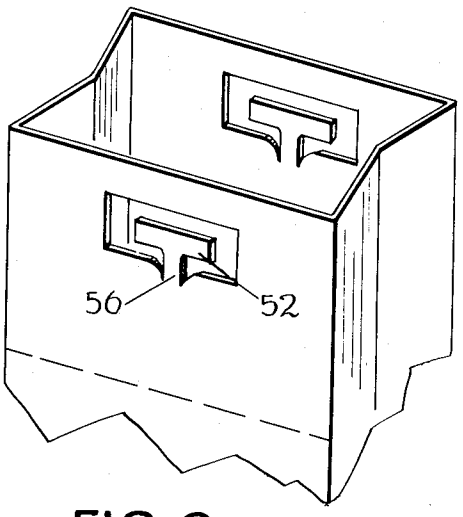


FIG. 9.

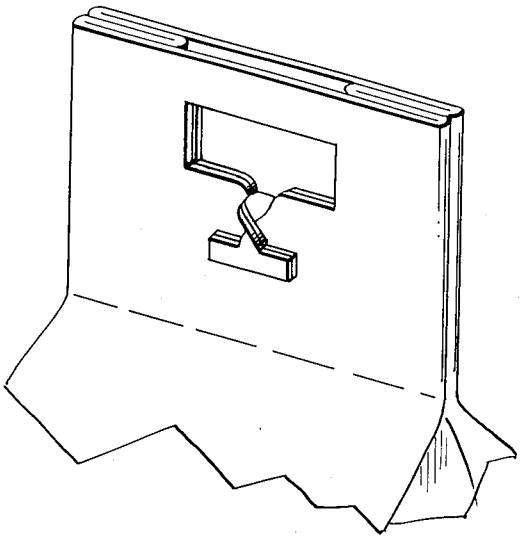


FIG. 10.

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United States Patent Office 2,756,922 Patented July 31, 1956

2,756,922

PRODUCE BAG

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Application April 13, 1953, Serial No. 348,427

3 Claims. (Cl. 229—65)

This invention relates to produce bags of the type frequently used for storing, shipping and marketing potatoes, apples and other fruit or vegetables and is directed particularly to bags which are formed of heavy or reinforced paper and provided with a handle opening near the top of the bag.

Bags of this type, when used in marketing potatoes for example, are generally filled and closed by the farmer or packer and are handled in large volume making it necessary to construct the bags so that the closing operation can be performed quickly and securely. It has been usual heretofore to close such bags by stitching or stapling but the sewing and stapling equipment is expensive and frequently breaks down during operations causing expensive delays. Moreover, the bags are generally filled at one station and moved by conveyor to the stitching device and sometimes spill their contents or are disarranged so that the stitching or stapling is irregular and unsightly. Furthermore, the purchaser often wishes to inspect the produce and it is sometimes necessary to empty and refill the bags in the event of spoilage of some of the contents, or if the contents should shrink during storage so that an extra potato or apple has to be added to bring the contents up to the weight marked on the bag. The bags must be reclosed after such operations, whereas bags which have been stitched or permanently stapled are so mutilated in opening them that reclosing or reuse is impossible.

Most bags in which a substantial weight of produce are packaged, such as potato bags holding 5 or 10 pounds of potatoes, are not provided with the conventional cut out handle openings because of the tendency of the handle to tear due to severe usage and the strains imposed on the sides of the bags by the weight and bulk of the contents. Furthermore, those bags having a cut out handle with an upwardly folded retaining flap forming a part of the handle allow the sides of the handle to spread apart to such an extent that the cut edges about the handle opening frequently tear allowing the contents to spill out. Moreover, small articles such as small potatoes, peas or string beans may fall out through the spread handle opening as the gussets at the sides of the bag expand.

In accordance with the present invention a new type of bag and bag closing means are provided which does not require any machinery or equipment for closing and which is capable of being opened and reclosed as often as may be desired. Moreover, the closing means are arranged so as to permit closing of the bag immediately upon filling whereby spilling of its contents is avoided yet ventilation of the bag is afforded and inspection of the contents is made possible. The construction provided is positive and neat in appearance and serves to secure the sides of the bag together at or below the bottom of the handle opening in a manner to relieve the handle portion from strains due to spreading action of the articles in the bag and to prevent spilling of articles through the handle opening.

These advantages are attained by providing the bag

with means which are manually operable to secure the retaining flap in folded position about the lower edge of the handle opening so as to secure the sides of the bag together below the handle opening. The bag can, therefore, be closed immediately upon filling and without the use of expensive equipment but may be opened and reclosed as often as required. The handle portions of the bag are held in direct contact and parallel to each other preventing spreading of the handle portion under load although an opening is provided which provides ventilation and may be used to allow inspection without full opening of the bag. The closing means may be constructed in various ways so as to be carried by or formed integral with the bag or they may be formed separately for application to the bag.

One of the objects of the present invention is to provide a new type of produce bag having a handle opening therein and means for releasably closing the bag below said opening.

Another object of the invention is to provide novel constructions whereby produce bags can be effectively closed without the use of special or expensive equipment.

A specific object of the invention is to provide produce bags with a handle opening together with a further opening adjacent and below the handle opening for receiving bag closing means to releasably close the bag between said openings.

These and other objects and features of the present invention will appear from the following description thereof in which reference is made to typical embodiments of the invention illustrated in the drawing for the purpose of indicating the nature of the present invention and various alternative forms thereof but without intending to limit the invention thereto.

In the drawings:

Fig. 1 is a perspective illustrating a portion of one form of bag embodying the present invention;

Fig. 2 is an enlarged view of the bag shown in Fig. 1 when secured in a closed position;

Fig. 3 is a perspective illustrating an alternative form of bag embodying the present invention;

Fig. 4 is a perspective showing details of construction of the bag of Fig. 3;

Fig. 5 is a vertical sectional view through the bag of Fig. 3 when in closed position;

Fig. 6 is a perspective illustrating another alternative form of the present invention;

Fig. 7 is a perspective showing the manner in which the retaining flaps of the bag of Fig. 6 are folded;

Fig. 8 is a perspective showing the closed bag of Fig. 6;

Fig. 9 is a perspective of still another form of the present invention; and

Fig. 10 illustrates the construction of Fig. 9 when in fully closed position.

In that form of the invention chosen for purposes of illustration in Figs. 1 and 2, the bag is of a gusset type having a front wall **2** and a rear wall **4** with side gussets **6** connecting the front and rear walls and expandable to accommodate the contents of the bag. The upper portions of the front and rear walls of the bag are preferably reinforced or stiffened by suitable means and for this purpose the bag is preferably formed with an inner liner **8** and an outer face sheet **10** formed of heavy paper. A reinforcing layer of heavy fiber board, fabric or metal stiffening material **12** is located between the face sheet and liner in the front and rear walls of the bag near the top thereof.

The front wall of the bag is provided with a cut out handle opening **14** within the reinforced upper portion thereof. A retaining flap **16** is connected to the front wall of the bag along the lower edge of the opening **14** and is foldable as shown in dotted lines in Fig. 1 so as to bend along its lower edge in closing the bag. The rear wall of

the bag is formed with a similar handle opening 18 within which is located a retaining flap 20 foldable along the dotted line at its lower edge in closing the bag. The two handle openings 14 and 18 are positioned to register with each other when the top of the bag is closed and the two retaining flaps 16 and 20 are designed to be folded together and about their lower edges so that rear flap 20 will be moved through both handle openings and downward over the lower edges of said opening overlying the front retaining flap 16. The sides of the bag are thus held together below the handle openings in a manner to prevent the escape of articles from the bag and to hold the cut portions of the bag together and parallel to each other throughout the portions thereof in which the handle openings are formed. The strains placed on the sides of the bag are, therefore, confined to the area below the handle openings so that the danger of tearing about the edges of the openings is materially reduced.

In order further to secure the top of the bag closed below the handle openings, the bag of Figs. 1 and 2 is also provided with additional fastening means. In the construction of Figs. 1 and 2 the front and rear walls of the bag are each formed with a second and smaller opening or slot 22 which extends generally parallel to the handle opening. This slot is spaced from the handle opening a distance approximately equal to the width of the flaps 16 and 20 so as to be exposed when the flaps are turned downward as shown in Fig. 2. A tie wire or tape 24 may then be passed through the registrating slots 22 and through the handle openings 14 and 18 and thereafter twisted or tied so as to hold the flaps in their folded and retaining position despite any strains which may be placed on the sides of the bag. The slots 22 afford ventilation for the contents of the bag and, if desired, they may be made large enough to permit them to be spread apart for inspecting the contents of the bag without fully opening or unfastening the tie wire.

In using bags of this type the fastening means may be applied by hand immediately upon filling the bag so that there is no danger of spilling the contents. The operation of inserting and twisting the tie wire can be performed in an instant by unskilled labor and without the use of any special tools or equipment. It is therefore faster and easier than when sewing or stapling machines are used and a neat attractive appearance is assured in every case.

In the construction illustrated in Figs. 3, 4 and 5 the fastening means by which the retaining flaps 26 and 28 are held in folded relation is formed integral with or secured to the bag itself. For this purpose a securing tab 30 is attached to the front wall 2 of the bag and projects downward into the slot 32 in position to be turned upward over the free edges of the folded retaining flaps 26 and 28, as shown in Fig. 5.

The securing tab 30 preferably embodies a deformable metal insert 34 which as shown in Fig. 4 need only extend throughout a limited area of the front wall of the bag and is positioned between the inner liner 8 and the outer face sheet 10 of the paper or material of which the front wall of the bag is formed. The deformable insert 34 is preferably an added element but may be a portion of the stiffening or reinforcing material 12 carried by the upper portion of the front and rear walls of the bag if desired. By using a relatively small insert 34 the cost of the added element is reduced and it can be applied to finished bags after the handle opening has been formed. However, by placing the insert between the inner and outer layers of the material of which the bag is formed it may be stamped or cut out in the same operation used in forming the handle opening and slot 32. In this way, the retaining flap 26 on the front wall of the bag may be so stiffened as to remain in its folded position even when the bag is subjected to severe strains or in the event the securing tab 30 should be improperly folded or torn off altogether.

In closing the bag of Figs. 3, 4 and 5, the retaining flaps

are pushed through the handle openings and bent downward about their lower edges, after which the tab 32 is bent upward to hold the retaining flaps securely in place. As shown in Fig. 5 only one face of the bag need have a securing tab 30 carried thereby although as shown in Fig. 4 both faces of the bag may have securing tabs for folding together and upward over the downwardly turned edges of the retaining flaps 26 and 28.

In the construction of Figs. 6, 7 and 8, the retaining flaps 38 and 40 are formed somewhat shorter than the handle openings 14 and 18 and are each provided at its upper edge with a securing tab 42 connected to the flap by a reduced neck 44. When the flaps 38 and 40 are bent downward about their lower edges the tabs 42 can be inserted through the slot 46 and may be twisted about the reduced neck to project beyond the sides of slot 46 and lock the retaining flaps securely in bag closing position. In this construction the slot 46 is further provided with a deformable securing tab 48, as shown in Fig. 6, positioned to register with the securing tabs 42 on the folded retaining flaps 38 and 40. The three tabs may then be twisted together to form a locking head 50 which extends across the slot 46, as shown in Fig. 8, to hold the retaining flaps in their downwardly folded position.

The construction shown in Figs. 9 and 10 shows a bag embodying the present invention in which the retaining flaps 52 are each formed smaller than the handle openings 54 and are generally T-shaped in form. The retaining flaps are thus connected to the front and rear of the bag by necks 56 which extend downward within a slot between the restricted sides 58 of the lower portion of the handle openings 54. When these retaining flaps are bent downward the flaps may be twisted about the necks 56 to tie the sides of the bag together at the lower edge of the handle opening and secure the handle portions of the bag together.

With each of the forms of the invention shown the bag may be closed and the front and rear secured together below the handle opening without the use of any special equipment or machinery. Moreover, the handle portions of the front and rear lie in flat engagement with each other extending upward from the point of closing adjacent the lower edges of the handle opening so that the strains of the produce on the sides of the bag are not transmitted to the handle portions and tearing of the bags about the handle openings is substantially eliminated.

At the same time the fastening means provided are capable of being released to open the bag for inspection of its contents or refilling without destroying the fastening means. The fastening means can then be reused to secure the bag in closed position again and will serve to secure it just as firmly on reuse as when originally closed.

The constructions of the present invention may be readily produced by high speed bag making equipment and with little or no additional expense. The shape of the retaining flaps and handle openings and the position of the handle openings and securing slot may, of course, be varied considerably. It should therefore be understood that the particular embodiments of the invention shown in the drawings and described above are intended to be illustrative only and are not intended to limit the scope of the invention.

I claim:

1. A produce bag having opposite side walls connected together at their edges by gussets and having registering handle openings formed in both side walls, that portion of said side walls in which the handle openings are formed being reinforced and stiffened throughout a substantial area thereof below said openings, retaining flaps formed integral with said side walls and extending into said handle openings, said retaining flaps being foldable downwardly about their lower edges for movement through said handle openings to secure the reinforced portions of said opposite side walls of the bag together adjacent the lower edges of said handle openings and throughout a substantial por-

tion of the side walls below said opening, said side walls of the bag also being provided with registering slots located below said handle openings in position to be exposed adjacent the edges of said retaining flaps when in their downwardly folded position, and a deformable securing member extending through said registering slots and through said handle openings and about the downwardly folded retaining flaps positively holding the flaps in said downwardly folded and bag closing position.

2. A produce bag having opposite side walls connected together at their edges by gussets and having registering handle openings formed in both side walls, retaining flaps formed integral with said side walls and extending into said handle openings, said retaining flaps being foldable downwardly about their lower edges for movement through said handle openings to secure said opposite side walls of the bag together adjacent the lower edges of said handle openings, said side walls of the bag also being provided with registering slots located below said handle openings in position to be exposed adjacent the edges of said retaining flaps, the free edge portion of at least one of said folded retaining flaps having a head formed to extend through said slot and connected to the retaining flap by a neck of reduced width, said head being twistable on said neck to lock said retaining flaps in said folded position.

3. A produce bag having opposite side walls connected together at their edges by gussets and having registering handle openings formed in both side walls, retaining flaps formed integral with said side walls and extending into

said handle openings, said retaining flaps being foldable downwardly about their lower edges for movement through said handle openings to secure said opposite side walls of the bag together adjacent the lower edges of said handle openings, said side walls of the bag also being provided with registering slots located below said handle openings in position to be exposed adjacent the edges of said retaining flaps, the free edge portion of at least one of said folded retaining flaps having a head formed to extend through said slot and connected to the retaining flap by a neck of reduced width, said head being twistable on said neck to lock said retaining flaps in said folded position, there being a securing tab extending downward into said slot and registering with the head on said retaining flap for twisting therewith in locking the retaining flaps in said folded position.

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