

Aug. 7, 1934.

W. N. BAKER

1,968,981

BAG CLOSURE

Filed Feb. 25, 1932

2 Sheets-Sheet 1

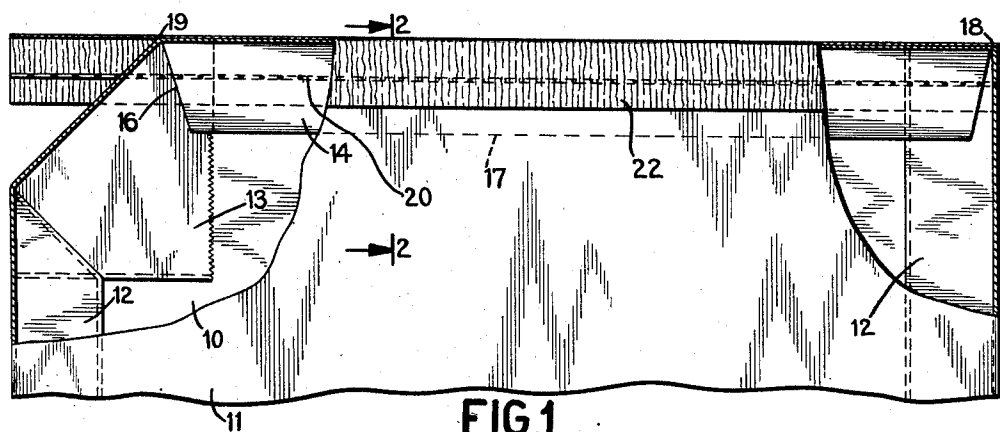


FIG. 1.

FIG. 2.

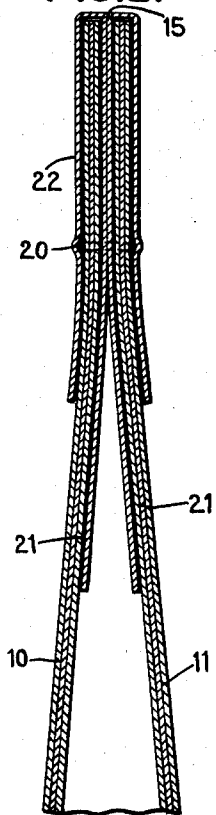


FIG. 3.

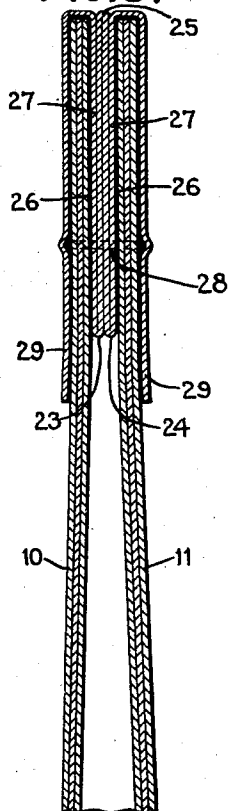


FIG. 4.

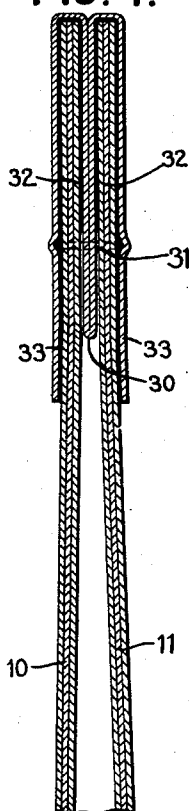
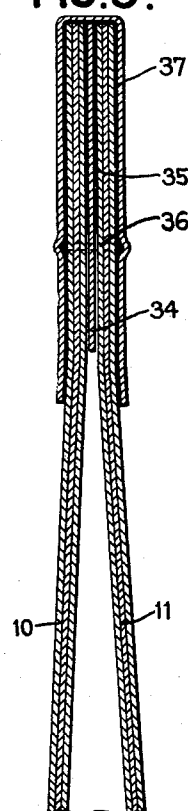


FIG. 5.



INVENTOR-

W. Noyes Baker
BY
H. C. Klieserud
ATTORNEY-

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W. N. BAKER

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2 Sheets-Sheet 2

FIG. 6.

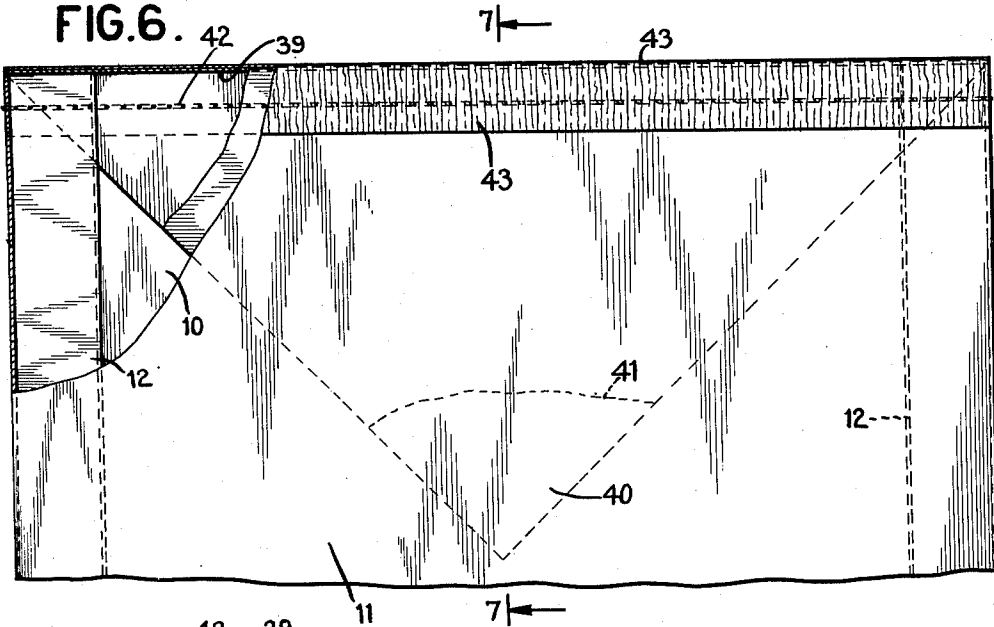


FIG. 7.

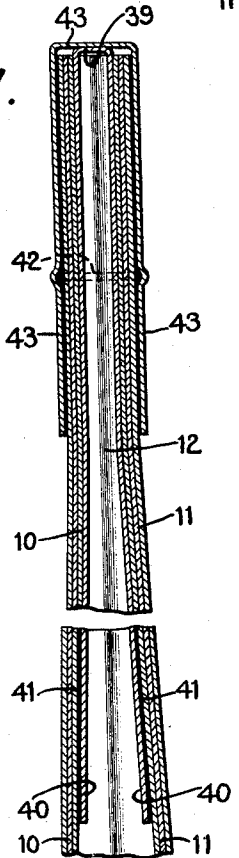


FIG. 8.

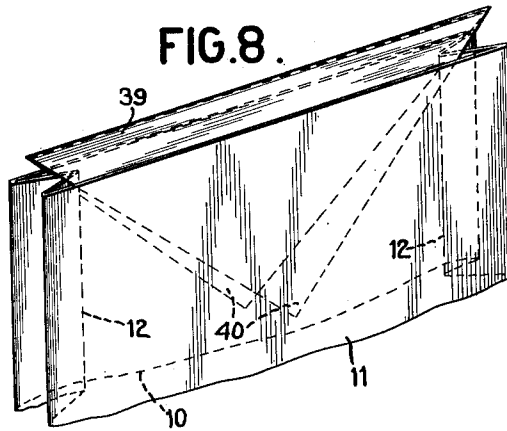
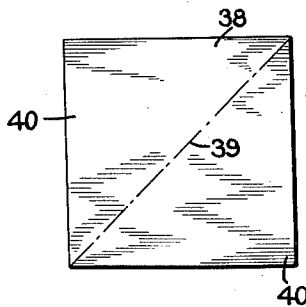


FIG. 9.



INVENTOR-
W. Noyes Baker
BY
H. C. Kiserud
ATTORNEY-

UNITED STATES PATENT OFFICE

1,968,981

BAG CLOSURE

Webster Noyes Baker, Baldwin, Long Island, N. Y.,
 assignor to Bagpak, Inc., New York, N. Y., a
 corporation of Delaware

Application February 25, 1932, Serial No. 595,030

4 Claims. (Cl. 229—62)

This invention relates to improvements in closures for bags formed of paper or similar material and it may be applied effectively to either gusseted or non-gusseted bags. It is a primary object of the invention to produce a bag closure which is strong and durable, being capable of withstanding the shocks incident to rough handling of bags when filled with heavy substances. The contemplated closure is such, furthermore, that it will effectively prevent loss of any of the contents of the bag through sifting. It may be provided with or without a valve and may be applied to either or both ends of an open-mouthed bag.

A feature of the improved closure is the provision of a reinforcing element, formed of a relatively tough, pliable material, within the mouth of the bag. This element may conveniently be secured in position by the fastening means employed for the bag end, such as stitching, stapling or the like. It may, if desired, be additionally held by other means such as paste. The inserted element may in itself constitute the complete sealing means for the end of the bag tube or it may, if desired, be supplemented by a separate sealing strip. In any case the inserted element will serve to strengthen the closure substantially and will permit a certain yielding of the walls of the bag without undue strain upon the fastening elements as the result of rough handling.

Various other features and advantages of the invention will appear from the detailed description of several embodiments of the same which will now be given in conjunction with the accompanying drawings in which:—

Fig. 1 is a face view of one end of a bag embodying the invention, one wall being broken away in part to disclose the interior.

Fig. 2 is an enlarged transverse sectional view along the line 2—2 of Figure 1.

Figs. 3, 4 and 5 are similar, sectional views showing modified constructions.

Fig. 6 is a view, similar to Figure 1, showing a further modification.

Fig. 7 is a transverse sectional view along the line 7—7 of Figure 6.

Fig. 8 is a perspective view of the end of the modified bag at an intermediate stage in its production, and

Fig. 9 is a detail view of the reinforcing element employed in the Figure 6 embodiment.

Referring now to Figures 1 and 2 of the drawings a gusseted, valve bag is shown. The bag may suitably be of multi-wall construction and

may have its end formed by bringing together the ends of the two side walls 10 and 11 of a bag tube. The edges of the tube may be gusseted as indicated at 12 and a valve 13 may be formed at one corner by extending a portion of the bag adjacent the gusset slightly beyond the free end and folding it inwardly in the usual manner. A reinforcing element 14 comprising a section of tough, sheet material, such as kraft board of suitable gauge or creped kraft or similar material may be formed by folding a substantially rectangular strip along its median line 15 and, either before or after folding, cutting the side edges as at 16 to provide a slight taper toward the free longitudinal edges 17. The folded edge of this strip may conveniently be of such length as to fit snugly between the corners 18 and 19 of the bag tube. Due to the somewhat smaller dimension of the edges 17 the two sides of the element may be readily inserted on opposite sides of the gussets 12 or in other words between these gussets and the main walls of the bag. If desired, the reinforcing element may be simply loosely inserted in position and subsequently secured by the stitching 20 or other means employed for securing the ends of the bag walls together. Prior to the application of the stitching the element will be held in place by virtue of the folded edge 15 resting upon the gusseted portions of the bag. It may be found expedient, however, to provide additional means for temporarily or permanently retaining the element in position. For example the two sides of the strip may be pasted, as at 21, to the side walls 10 and 11. The paste may extend over any portion of the surface desired, i. e. simply at their inner ends or over substantially the entire surface. The construction as thus far explained provides effective reinforcement to the closure. A certain yield is imparted to the means for securing the bag walls by virtue of the interposed element so that shocks to which the bag is subjected when loaded are more readily absorbed and there is less tendency for the securing means to cut into the paper. The portions of the strip inward of the line of stitching, particularly when adhesively connected with the walls 10 and 11, will provide a yielding flexure of these walls as they are forced apart.

For many purposes the structure explained above will also be quite satisfactory from the standpoint of providing an effective seal. This is particularly true if the paste or other adhesive 21 is applied over substantially the entire surface of element 14. However, should it be found

desirable to effect a more complete seal so as to prevent the sifting of even the finest pulverulent products this may be done by applying an additional sealing strip 22 over the end of the bag. This strip may be secured by means of paste and is preferably applied over the stitching on the two sides of the bag. It will thus serve to prevent sifting even through the fine needle holes left in the course of stitching.

In Figure 3 there is shown a slightly modified construction in which a single element is adapted to provide a complete seal as well as a substantial reinforcement. The strip of reinforcing material, which may in this instance be somewhat lighter than before, as, for example, a form of heavy creped kraft, is folded to provide two parallel and adjacent folded edges 23 and 24 and a third folded edge 25. The edges 23 and 24 are inserted into the mouth of the bag and, if the bag is gusseted, are placed on opposite sides of the gussets as before. Paste may be advantageously applied as at 26 between the surfaces 27 of the strip and the inner walls of the bag. Securing means such as stitching 28 is then applied to tie the bag walls and the several folds of the reinforcing element together. The extending free ends 29 of the element are then folded over the ends of the bag walls and adhesively secured to the outer surfaces of the latter over the stitching. This construction likewise forms a substantial reinforcement as well as an effective seal.

A further modification is shown in Figure 4. Here a single element serves as a reinforcing and sealing member as in Figure 3. However, the element is provided with only a single fold 30 which is inserted into the mouth of the bag. If it is applied to a gusseted bag it is made to terminate at the gussets or its ends are placed between the gussets and one or the other of the side walls of the bag. When applied to a non-gusseted bag it may conveniently extend to the edges of the bag. Stitching 31 or other securing means is then passed through the folded portion 30 and the bag walls. Paste may be applied as at 32 but should not extend below the line of stitching since the fold 30 will prevent separation of the courses of the strip and any spreading of the bag walls would necessarily tend to tear the inner ply of these walls. As in the form of Figure 3 the extending ends 33 of the strip may now be folded over the free edges of the bag walls and may be adhesively secured to their outer surfaces over the stitching 31.

A very simple construction is illustrated in Figure 5. The reinforcing element is simply in the form of a flat strip 34 of kraft board or similar material. This is inserted between the walls 10 and 11 at the end of the bag tube. If the latter is gusseted the strip will extend only between the inner edges of the gussets or if made longer its ends will be placed between the gussets and one or the other of the main walls of the bag. If applied to the valved end of a valve bag it may be terminated adjacent the inner end of the valve extension or it may extend into the pocket between this extension and one wall of the bag, in the same manner as one portion of the element 14 of Figure 1. The element 34 is preferably adhesively secured to the walls 10 and 11 as by paste 35. This not only provides a convenient means of temporarily retaining the element in position in the course of manufacture of the bag but also assists in permanently uniting the parts and in provid-

ing a seal. Stitching 36 or other securing means is provided along a line beneath the pasted portion of the element to bind the bag walls and the strip firmly together. If additional sealing means is considered desirable in order to render the closure completely sift-proof a sealing strip 37, formed, for example, of creped kraft, may be adhesively applied over the end of the bag and over the stitching 36.

In Figures 6 to 9, inclusive, there is shown a further modification which is simple, inexpensive and readily applicable to all forms of bags. It is shown in Figure 6 as applied to the end of a gusseted bag having no valve. The reinforcing element in this case is in the form of a small square section 38 of kraft board or the like. This is folded along one of the diagonals as indicated at 39. The folded edge 39 should be of sufficient length to extend from one edge of the bag to the opposite edge. The points 40 formed by the opposite corners of the section may be readily inserted between the walls 10 and 11 of the bag tube and the two triangular portions on opposite sides of the fold 39 will fall in part between the gussets 12 and the adjacent walls. Paste may, if desired, be applied over substantially the entire area of the outer surface of the element 38 although it is preferably confined to the tips 40 as indicated by the dotted line 41 in Figure 6. This will serve to retain the element in position prior to the application of the stitching or other securing means 42. Where the bag tube is gusseted, however, the employment of paste is not essential and it may be omitted, if desired, since the element is held in place by resting on the gussets. A sealing strip 43 may, as in the other forms, be applied over the end of the bag and be adhesively attached thereto, if desired. This, then, will result in a completely sift-proof closure.

While various illustrative embodiments of the invention have been disclosed in considerable detail it will be understood that numerous other variations in construction may be employed without departing from the general principles and scope of the invention as defined by the claims.

I claim:

1. A closure for a gusseted bag which comprises a folded reinforcing element inserted within the mouth of the bag, portions of said element being placed between the gussets and each wall of the bag, and means for securing said element between the ends of said bag walls.

2. A closure for a gusseted bag which comprises a folded reinforcing element inserted within the mouth of the bag, portions of said element being placed between the gussets and each wall of the bag, means for securing said element between the ends of said bag walls, and sealing means adhesively applied over said securing means.

3. A bag closure which comprises a folded reinforcing element inserted within the mouth of the bag between the walls thereof with the free ends innermost, the fold of said reinforcing element being positioned adjacent the end of said bag mouth, the free ends of said reinforcing element being adhesively secured to the walls of the bag, stitching for securing said element and the walls of said bag together intermediate the fold and free ends of the element, and a sealing strip applied over the end of said bag.

4. A closure for a gusseted bag which comprises a folded reinforcing element inserted within the mouth of the bag with the free ends innermost, the fold of said reinforcing element being positioned adjacent the bag mouth, portions, of said element being placed between the gussets and each wall of the bag, means for adhesively securing the free ends of the reinforcing element to the bag walls, and stitching for securing the bag walls and said element together at a point intermediate the free ends and fold of the element.

W. NOYES BAKER.

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15	90
20	95
25	100
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45	120
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55	130
60	135
65	140
70	145
75	150