Sept. 21, 1937. J. A. FARMER 2,093,978

MEANS FOR SEALING BAGS

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Fig. 1.

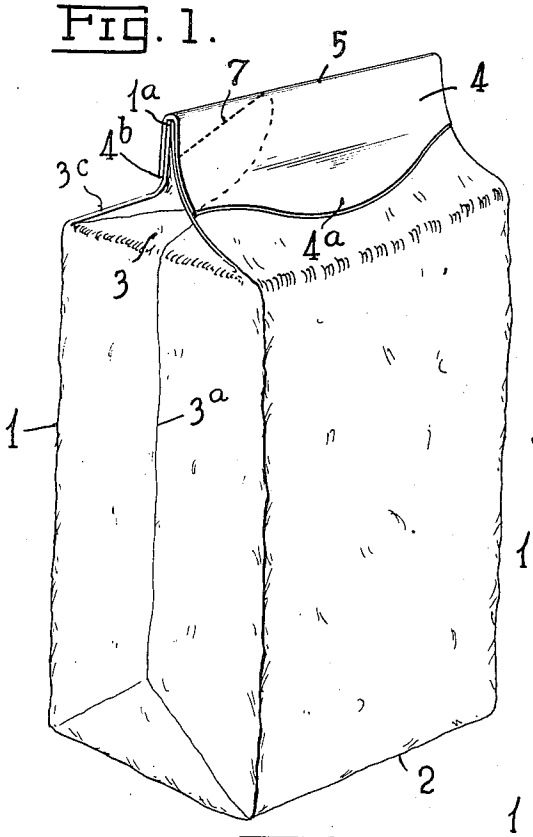


Fig. 2.

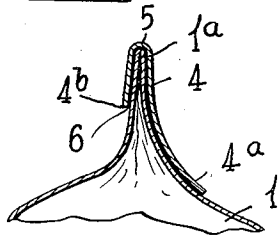


Fig. 4.

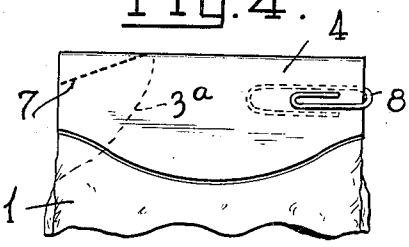


Fig. 5.

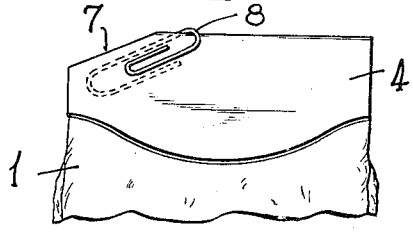
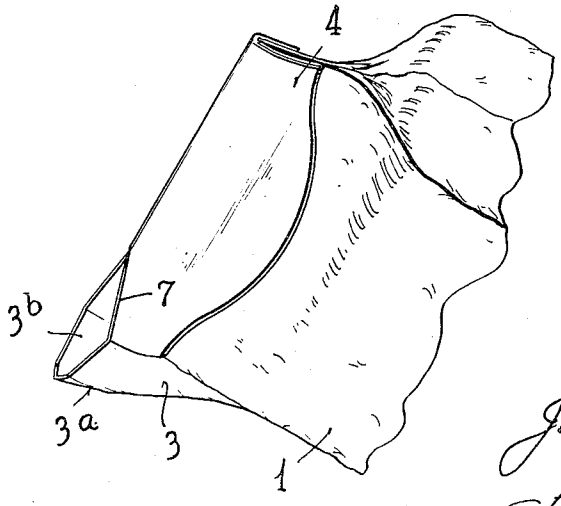


Fig. 3.



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Fig. 6.

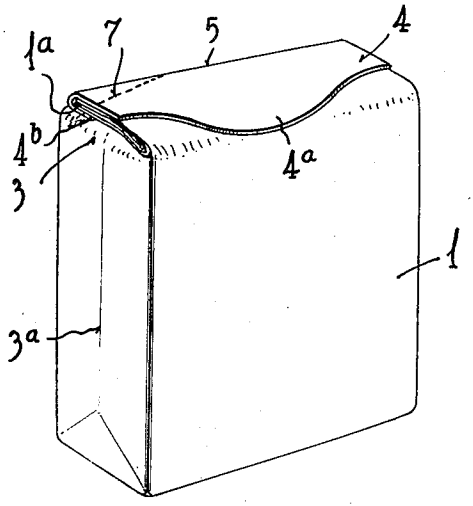


Fig. 7.

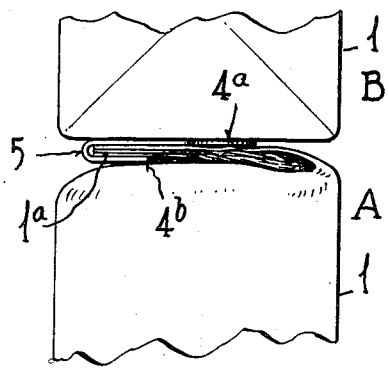
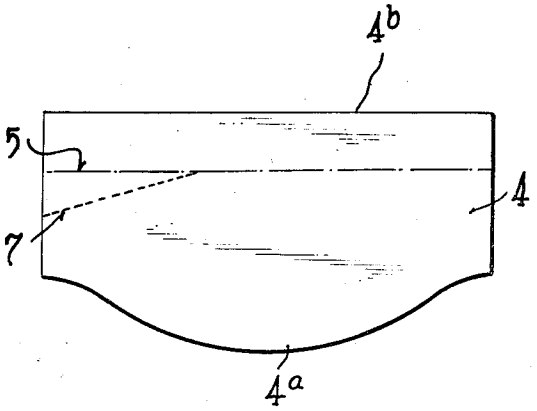


Fig. 8.



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2,093,978

MEANS FOR SEALING BAGS

John A. Farmer, Lancaster, Pa.

Application September 26, 1935, Serial No. 42,345

6 Claims. (Cl. 229—62)

This invention relates to means for and a method of sealing and opening bags, and more particularly bags adapted for use in connection with the sale of powdered or fluent material.

The present invention may be considered as a further development of the ideas disclosed in my prior copending applications Serial No. 745,121, filed September 22, 1934; Serial No. 30,005, filed July 5, 1935; and Serial No. 32,422, filed July 20, 1935. It constitutes a continuation in part of said last mentioned application.

In my said prior applications, I disclose the use of a sealing member or closure tab associated with the open end of a bag and secured thereto by means of staples or other fastening devices extending through the tab and end portions of the bag.

While fastening devices of this character are satisfactory for certain classes of material, they are considered objectionable for use in connection with the packaging of food products such as flour or cereals, because of the possibility of these fastening devices becoming mixed with the food products and thus giving rise to danger of personal injury.

One object of the present invention, therefore, is to devise satisfactory means for closing or sealing a bag without the use of fastening devices.

In my said copending application Serial No. 32,422, I have illustrated how a bellows-sided or gusset-type bag may be sealed and the corner then cut off, and the gusset pulled out to form a pouring spout. An object of the present invention is to devise an improved construction of this character whereby the gusset will be more firmly held in position when pushed back to its original place.

A further object is to provide simple and efficient means for re-sealing a bag after it has been cut to form a pouring opening, in accordance with my invention.

In my said prior application Serial No. 745,121, I have shown the closure tab as comprising skirts, both of which have depending rounded edges. I find, in practice, however, that difficulty is sometimes experienced in properly packing or assembling a plurality of packages of this character in a shipping box or carton.

A still further object of the present invention is to overcome this difficulty, and to this end I now contemplate forming the tab in such a manner as not to interfere with the folding over of the top of the bag, when required.

In order that the invention may be readily understood, reference is had to the accompanying drawings forming part of this specification and in which:

Fig. 1 is a perspective view of a bellows-sided bag having a closure member applied thereto in accordance with the present invention;

Fig. 2 is a fragmentary transverse section through the upper end of the bag and closure;

Fig. 3 is a perspective view showing how the gusset may be pulled out to provide a pouring spout;

Fig. 4 is a fragmentary front elevation showing how a re-sealing clip may be housed within the pocket formed by one of the gussets;

Fig. 5 is a similar view showing how such a clip may be used for re-sealing the bag after it has been cut to form a pouring spout;

Fig. 6 is a perspective view of a package such as shown in Fig. 1, but illustrating how the top portion may be folded over;

Fig. 7 is a fragmentary side elevation showing portions of two adjacent packages, and illustrating the purpose of folding over the top, as shown in Fig. 6; and

Fig. 8 is a developed or flat view of the form of sealing tab which I preferably employ.

Referring to the drawings in detail, I have illustrated in Fig. 1 a bellow-sided bag 1, of paper, cellulose film, metal foil or the like, preferably having a flat bottom 2 and formed at each side with gussets 3 normally infolded along a central longitudinal crease line 3a, the gussets extending up to the top of the bag.

As in my said prior copending applications, after the bag is filled with the fluent material, the upper ends of the side walls are brought together in flat relation, as shown at 1a, with the infolded gussets between them, and my improved closure tab or sealing member is then secured to such end portions of the bag.

While I may use staples or the like, as in my prior applications, according to the present invention, I preferably secure the closure tab to the bag by means of a suitable cement or adhesive which is applied over substantially the entire inner surface of the tab.

This sealing tab comprises a piece of cardboard, fiber board, tag board or heavy paper which is more or less resilient and which has sufficient stiffness to tend to retain its shape. The tab 4 is folded at 5 over the upper edges of the bag in such manner as to form a relatively long skirt 4a, preferably having a rounded lower edge, and a relatively short skirt 4b preferably

having a straight lower edge. The adhesive cement is indicated at 6 in Fig. 2.

Different methods of applying the sealing tab to the bag end may be employed. According to one method, the entire surface of the tab may first be gummed or coated with adhesive cement which is allowed to dry. The portion of the cement on the inside of the short skirt 4^b is then moistened and applied to the upper edge of one side of the bag. The bag may then be filled, the sides brought together as described and the cement on the remaining portion of the inner surface of the tab moistened, and the tab folded down and pressed against the bag so as to adhere thereto and produce a seal, as shown in Figs. 1 and 2. This folding may be along a line either coincident with the edge of the bag end, as shown, or somewhat below the same, as illustrated in my copending prior application Serial No. 30,005, and in this latter case, the end portion of the bag will be folded over also.

As an alternative method, the bag may be filled, the sides brought together, and then the tab coated with cement and immediately applied over the top of the bag. Or, the tab having been previously coated and dried, may be then moistened and applied to the bag mouth. Or the end portions of the bag itself may be coated. The end portions of the bag may be either unfolded, as shown, or folded over before the tab is applied, as illustrated in my prior copending application Serial No. 745,121.

While I have referred to the adhesive cement being moistened, it will, of course, be understood that I also contemplate securing the tab in position by means of an adhesive which is softened by heat, or by some substance other than water.

Again, as in my said prior copending application Serial No. 32,422, I contemplate cutting off the corner of the tab and associated end portions of the bag along a diagonal line, such as indicated at 7 in Figs. 1 and 4, this line preferably making a more acute angle with the upper edge of the bag than in some of my prior applications above referred to and extending substantially to the crease of the gusset. Obviously, if the end portions of the bag have been folded over, the cut line must extend to a point on the fold beyond the gusset, as shown in my prior copending application Serial No. 32,422, in order to free the gusset. After the corner of the bag has been thus cut off, the upper end of the gusset 3 may be pulled out to provide a pouring spout 3^b, as shown in Fig. 3. When the desired amount of material has been poured out, the gusset may be pushed back into its original position to re-close the opening.

I have found that, by reason of the stiffness of the closure tab or sealing member, and especially by reason of its being cemented over its entire surface to the sides of the bag, it constitutes a reinforcing means for the bag ends and renders them more rigid than when the tab is merely on one side of the bag, or when no tab is employed, as in my prior co-pending application Serial No. 32,422. Because of this reinforcement, and also due to the natural resilience of the tab, I find that, with the present construction, the gusset is clamped more firmly between the two skirts of the tab and the pouring opening is more effectively re-closed. The cementing of the closure tab or sealing member to the bag as described therefore has a peculiar advantage in connection with a bag of the gusset type when cut to form a pouring spout in accordance with my invention.

As in my said prior application Serial No. 745,121, and in order to seal the pouring opening still more effectively, I may employ a metal clip such as shown at 8 in Figs. 4 and 5, the clip illustrated being similar to the ordinary well known paper clip. This clip may be conveniently housed within the pocket formed by the inturned gusset at one side of the bag, as shown in Fig. 4, and when it is desired to re-seal the bag, the clip may be removed and placed in position so as to close the pouring opening, as shown in Fig. 5.

When assembling or packing a number of bags or packages such as shown in Figs. 1 and 6 in a box or carton for shipping or storage purposes, it is desirable to be able to fold down the top portion of the bag upon itself so as to provide a more or less flat upper end, as shown in Fig. 6. This may be accomplished by providing at least one skirt of the closure tab 4 with a straight lower edge, as clearly shown at 4^b. The top of the bag may then be folded down about this straight edge 4^b, as shown in Figs. 6 and 7. In Fig. 7, I have shown two packages A and B superposed as they would be in packing, and it will be seen that the bottom of bag B rests snugly against the relatively flat top of bag A, thus making compact assembly possible. This method of folding and packing is, of course, inherent in the form of tab illustrated.

While, as preferred, I have shown one leg or skirt of the tab 4 as relatively long and provided with a rounded lower edge, as illustrated at 4^a and as in my prior copending applications, it will of course be understood that both legs or skirts may be made with a substantially straight lower edge, the same as the skirt 4^b if desired. In that case, the top of the bag can be folded down in either direction.

In Fig. 8, which shows the closure tab in the form of a flat blank, the skirts with the rounded and straight edges are shown respectively at 4^a and 4^b, while 5 designates the line about which the blank is folded over the top of the bag.

What I claim is:

1. A package comprising a flexible, bellows-sided bag having infolded portions constituting gussets, the end portions of the bag walls, including said gussets, being brought together at the top in flat relation, and means securing said end portions in such position, whereby the corner of the end portions of one of the gussets may be cut off along a diagonal line to provide a pouring opening, and a spring clip normally housed substantially within one of said gussets, and capable of being removed and applied to the edges of said pouring opening to close the same.

2. A package containing fluent material and comprising a flexible, bellows-sided bag having portions at each side infolded about a longitudinal crease line forming gussets extending to the top of the bag, the end portions of the bag walls being brought together at the top in flat relation with the infolded gussets between them, and means for securing them in this position, the upper corner of the bag and gusset at one side being cut off on a diagonal line to provide a dispensing opening, said line extending substantially to the crease and being so located that the gusset may be pulled out of such opening to form a spout.

3. A package adapted to contain fluent material and comprising a bellows-sided bag having portions at each side infolded about a longitudinal crease line forming gussets extending to the top of the bag, the end portions of the bag

walls being brought together at the top in flat relation, with the infolded gussets between them, and a sealing member embracing and enclosing the end of the bag, said sealing member having thereon a mark defining a diagonal line of severance along which the corner of the bag walls and the end of the associated gusset may be cut off to provide a pouring opening, and through which opening the gusset may be pulled out to provide a pouring spout.

4. A package comprising a flexible bag containing any desired material, the end portions of the bag walls being brought together at the top in flat relation throughout a transverse zone, and a sealing tab having skirts of relatively stiff sheet material straddling and embracing the said end portions and secured thereto, one of said skirts extending a substantial distance longitudinally of the upper portion of the bag, and the other of said skirts being shorter and having a substantially straight lower edge, whereby the end of the bag is reinforced and stiffened, but may be folded over, to facilitate packing in cartons.

5. A package comprising a flexible bag containing any desired material, the end portions of the bag walls being brought together at the top in flat relation, and a separate closure tab of folded sheet material of a character different from that of the bag having skirts straddling and embracing the said end portions and secured thereto, one of said skirts extending a substantial distance longitudinally of the bag, and the other of said skirts being shorter and having a substantially straight lower edge.

6. The herein described method of dispensing finely divided material from a bellows sided bag having infolded, longitudinally extending gussets, and the end portions of the bag being brought together at the top in flat relation, with the gussets between them, and a closure tab of sheet material, of the full width of the bag, being applied over and completely enclosing the end portions thereof, which method comprises cutting off a corner of said tab and associated bag and gusset portions along a diagonal line, and pulling out of the opening thus formed the upper end portion of the gusset to provide a pouring spout.

JOHN A. FARMER.