Dec. 29, 1959 F. J. CHANDLER 2,918,958

SPOUT-TYPE BAG

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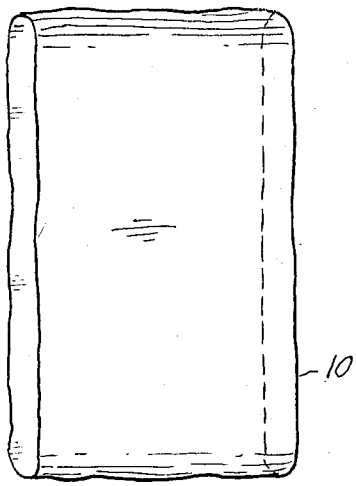


FIG. 1.

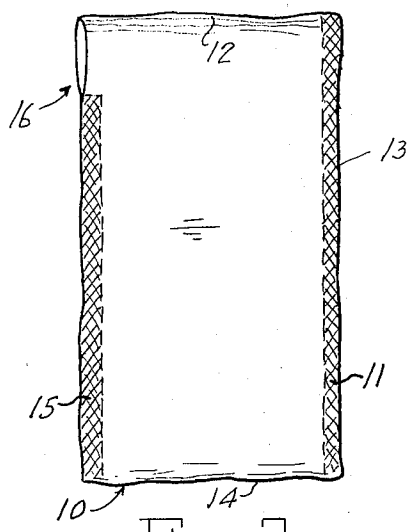


FIG. 2.

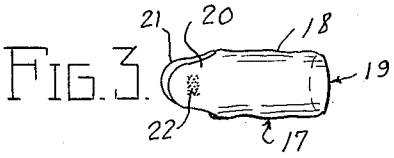


FIG. 3.

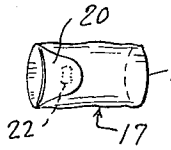


FIG. 4.

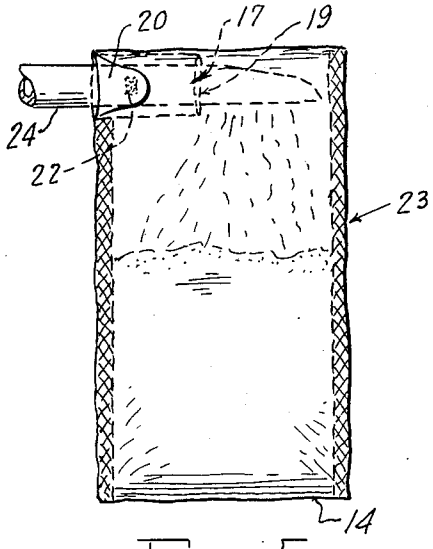


FIG. 5.

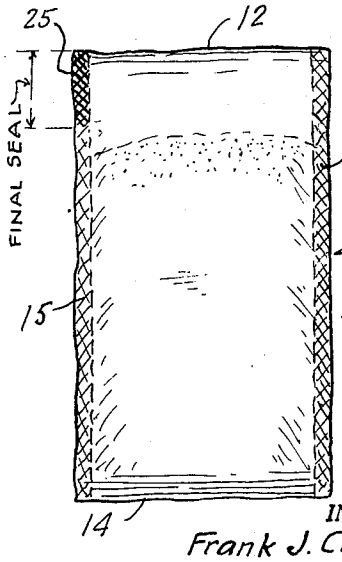


FIG. 6.

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SPOUT-TYPE BAG

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2 Claims. (Cl. 150—9)

This invention relates to spout-type bags, and more particularly to a bag adapted to be filled from the filling spout of a filling machine, which is fabricated from heavy thermoplastic sheet material or other heavy sheet material coated with pressure or heat sensitive adhesive.

A great many powdered, granular, or liquid materials are currently packaged in multi-layer paper bags and in bags formed from sheet plastic materials such as vinyl film and polyethylene film. The sheet plastic materials have the advantage that they are impermeable to moisture and thus, when properly sealed, can contain materials which would be ruined by moisture after long periods.

The disadvantage, however, in most of the bags fabricated from plastic film arises from the difficulty in sealing the spout-receiving opening after the bag is filled. Most powdered or granular materials include fine dust. During the filling of the bag, a layer of fine dust is wafted onto and remains on the areas which must subsequently be sealed to each other after filling, in order to hermetically seal the bag.

It is the principal object of the present invention to provide a simple bag construction and method for fabricating the bag wherein the areas to be sealed after the bag is filled are protected against the collection of fine dust thereon during the filling operation and they may then be sealed directly to each other without interference.

It is yet another object of the instant invention to provide an inexpensive throw-away protector for the spout opening of a spout-type bag which will prevent the deposition of foreign material on surfaces to be sealed together after the bag is filled, and which is readily removable and disposable to permit the final sealing of the bag.

Other and more specific objects and advantages of the invention will be apparent from the specification which follows and from the drawings, in which—

Fig. 1 is a view in perspective of a portion of a large tube or sleeve of sheet material from which a bag embodying the invention may be fabricated according to the invention;

Fig. 2 is a view similar to Fig. 1, but showing the bag preliminarily sealed to close it upon three sides and to close the fourth side except for an opening of sufficient size to recieve the spout of a spout filling machine;

Fig. 3 is a view in perspective of a protective tube adapted to be incorporated with the partially sealed bag of Fig. 2 according to the invention;

Fig. 4 is a view similar to Fig. 3, but showing the tube in position to be combined with the partially sealed bag of Fig. 2;

Fig. 5 is a fragmentary view in perspective showing a bag fabricated according to the invention with a filling machine spout inserted therein during filling of the bag, and

Fig. 6 is a view similar to Fig. 5, but showing the bag after it has been filled and finally sealed according to the invention.

A bag embodying the invention may be fabricated

according to the invention from a large sleeve **10** of plastic film or other sheet material which is either thermoplastic, and may thus be sealed together by the application of heat, or which is coated by heat sealable adhesive, a pressure sensitive adhesive, or other substance permitting closure of the open ends of the sleeve section **10**.

The first step in fabricating a bag embodying the invention is illustrated in Figure 2 where a complete seal **11** is shown as being formed across one open end of the sleeve **10**. At this point, the tube **10** is closed at three of its sides, respectively, the top **12**, right side **13** and bottom **14**. A partial seal, indicated at **15**, is formed to close the fourth side of the sleeve **10** except for an opening indicated at **16** of such length that it is adapted to receive the end of a filling spout of a machine which feeds powdered, granular or liquid materials. A small tube **17** (Fig. 3) of fibrous sheet material, for example kraft paper or similar material, is formed with a longitudinal seal generally indicated at **18**, an open end **19**, and two opposed extension tabs **20** and **21** at the end opposite the end **19**. A small area of pressure sensitive adhesive **22** is spread on the outer sides of the tabs **20** and **21**.

The two extension tabs **20** and **21** are then folded back upon the tube **17** as shown in Fig. 4, but the area of adhesive **22** is not pressed into contact with the exterior of the tube **17**. An assembler then takes the small tube **17**, for example by inserting his forefinger into the tube from the end of the tabs **20** and **21**, and holds the tabs **20** and **21** away from the wall of the tube **17**, inserting the tube **17** into the almost closed pouch or bag formed from the sleeve **10**. The assembler then presses the tabs **20** and **21** against the outer surfaces of the front and back walls of the bag, adhering the tabs **20** and **21** to the outer sides of the front and back walls of the bag **23**.

The bag **23** is now completely assembled and ready to be filled. The tabs **20** and **21** retain the protective sleeve **10** in place with the tube **17** lying tightly adjacent the inner edges of the front and back walls of the bag **23** at the opening **16** therein. The tube **17** extends into the bag **23** with its open end **19** opening to the interior of the bag **23**. The bag **23** as thus assembled may be shipped or otherwise handled in the same manner as other bags suitable for spout-filling machines.

At the location where the bag **23** is to be filled, an operator places it over the end of a filling machine spout fragmentarily indicated at **24**, shoving it onto the spout **24** and sliding the spout **24** through the tube **17** into the interior of the bag **23**. In Figure 5 the bag **23** is shown in position on the spout **24** with powdered or other material being fed from the end of the spout **24** in the interior of the bag **23**. After the bag is filled to a level no higher than the bottom of the opening **16**, it is drawn off of the spout **24** and the operator again inserts his forefinger into the tube **17**, catching it and pulling it out of the bag, tearing the tube **17** away from the bag by either tearing the material from which the tube **17** is formed or tearing loose the tacking where the pressure sensitive adhesive **22** has been pressed against the outer walls of the bag **23**.

After removal of the protective sleeve **17**, the edges of the front and back walls adjacent the opening **16** are closed by a final sealing generally indicated at **25** in Fig. 6. Any dust or other foreign matter billowing or wafted by air being exuded from the bag **23** during filling, or carried by ambient air, is prevented from falling upon the inner surfaces of the front and back walls of the bag **23** adjacent the opening **16** by the presence thereagainst during filling of the sleeve **17**. Any such foreign material accumulates on the inner surfaces of the tube **17** and, thus, when the tube **17** is torn away is removed

as well, leaving the surfaces to be sealed free of interfering material so that an hermetic seal of the bag may then be made.

In addition to the protective feature of the invention as discussed above, bags fabricated according to and embodying the invention possess great structural strength permitting them to be supported upon the spout **24** and to resist damage during handling after filling. This strength results from the use of a large diameter sleeve **10** with the material of the walls being continuous over the top **12** and bottom **14**. In many prior art bags fabricated from, for example, polyethylene, the bags are made from tubes but the continuous lengths of material extend around the sides and the bottoms of the bags are fabricated by sealing the material to itself. Resistance to the weight of the material as the bag hangs from a filling spout, or during shipment after filling, is thus provided by only the strength of the seal as contrasted to the strength of the material itself as in the instant invention.

I claim:

1. A spout type bag consisting of opposed rectangular, front and back walls of flexible sheet material closed along one side and along the top and bottom thereof and partially closed along the other side thereof except for an opening at the top of such other side, and a tube of fibrous sheet material extending through such opening into the interior of said bag with its inner end open, and having a pair of opposed continuous extension tabs on its outer end folded around overlying the exterior of said front and back walls adjacent such opening, said tabs being tacked to said walls, the main portion of said tube lying against the areas of the inner surfaces of said walls adjacent such opening for preventing deposition of dust and foreign matter thereon, said tube being removable through said opening whereby said areas are sealable to each other for finally closing said bag.

2. A spout-type bag consisting of opposed rectangular front and back walls of flexible thermoplastic sheet material fabricated from a length of sleeving, the front and back walls being continuous over the top and bottom of said bag, sealed to each other along one side thereof and partially sealed to each other along the other side thereof except for an opening at the top of such other side, and a tube of fibrous sheet material extending through such opening into the interior of said bag with its inner end open, and having a pair of opposed continuous extension tabs on its outer end folded around and overlying the exterior of said front and back walls adjacent such opening, said tabs being tacked to said walls, the main portion of said tube lying against the areas of the inner surfaces of said walls adjacent such opening for preventing deposition of dust and foreign matter thereon, said tube being removable through said opening whereby said areas are sealable to each other for finally closing said bag.

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