

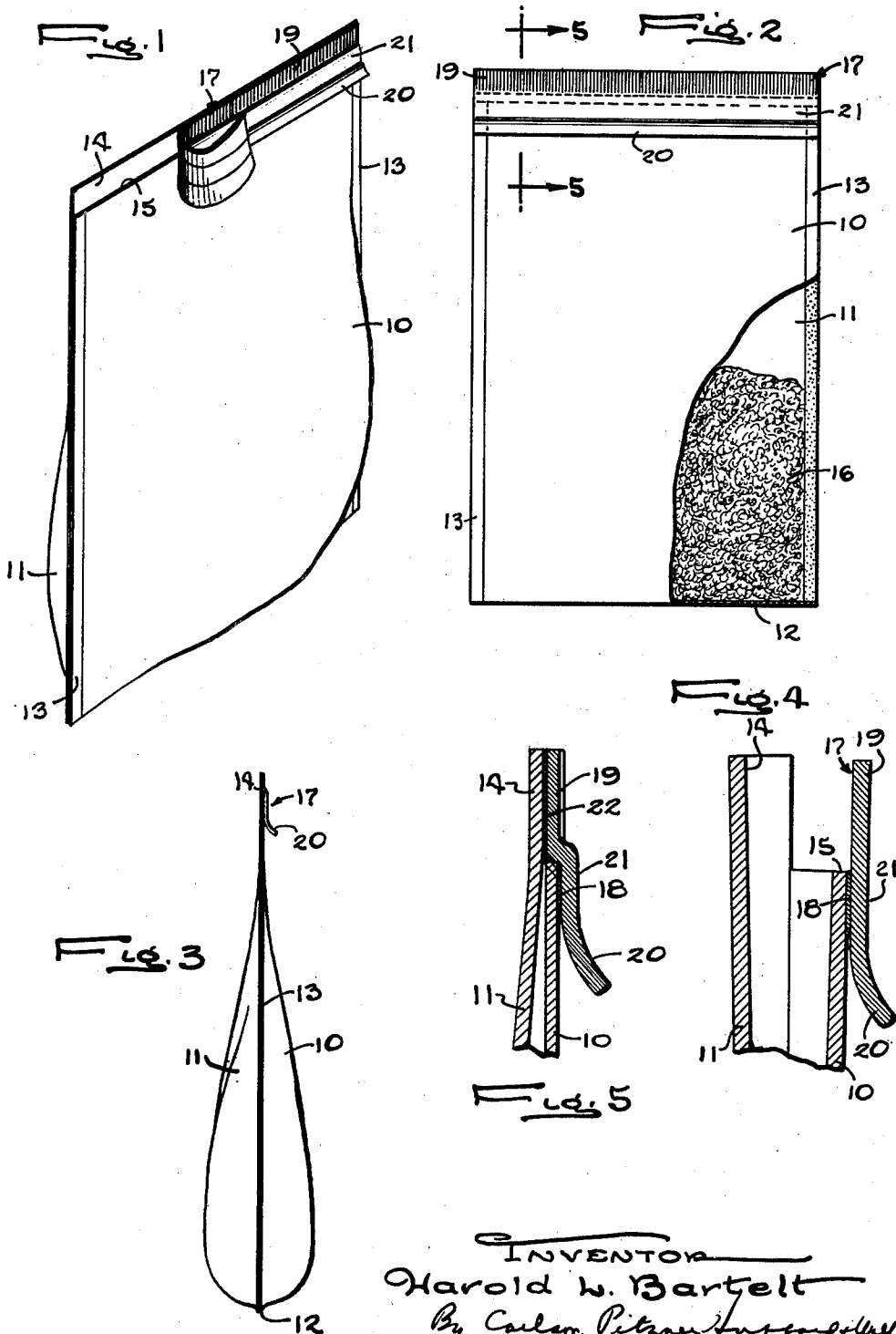
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QUICK OPENING BAG

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QUICK OPENING BAG

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This invention relates to bags having a projecting tab or flap which may be pulled to effect quick opening of the bag.

The general object is to provide a new and improved bag of the above character which is opened by breaking a heat seal joining the bag panels, which may be formed, filled, and closed in a high speed automatic machine, and which may be opened to the full width of the bag.

A more detailed object is to provide a bag having side panels joined together along one part by a high temperature heat seal and along another part by a separate strip overlapping adjacent portions of the panel surfaces and heat sealed at a lower temperature to such portions.

Another object is to provide a bag of the above character in which one panel is shorter than the other and the intermediate portion of a separate ribbon is sealed across the outer face of the shorter panel at the end thereof and across the inner face of the projecting part of the longer panel while leaving one edge portion of the strip as a free outwardly projecting tab which may be grasped manually to strip the ribbon off from the bag in opening the latter.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

Figure 1 is a perspective view of a quick opening bag embodying the novel features of the present invention.

Fig. 2 is an elevational view with a portion of one wall of the bag broken away.

Fig. 3 is a side view.

Figs. 4 and 5 are enlarged fragmentary cross-sectional views taken along the line 5-5 of Fig. 2 before and after closing of the bag.

The bag shown in the drawings for purposes of illustration comprises two generally rectangular side panels 10 and 11 lying face to face and joined together along three edges. The panels are composed of or coated on their inner surfaces with thermoplastic material which will soften when heated to a predetermined temperature, for example 250 degrees F. and enable selected areas of the panels, when pressure is applied, to fuse together and become integrally joined. Polyethylene or materials sold under the trade names of Pliofilm and cellophane are examples of the numerous suitable materials that may be used.

Herein, the panels 10 and 11 comprise opposite edge portions of a band of heat sealable material folded intermediate its edges to leave the panels joined at their lower edges 12. The folded band

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is cross-sealed at spaced intervals along its length by pressing the band momentarily between two shoes at least one of which is heated to the temperature at which the thermoplastic material fuses. The cross-seals are then split longitudinally to separate each intervening pocket from the folded strip and form the bag whose panels are integrally joined by seals 13 along opposite side edges.

The panel 10 may be made somewhat shorter than the panel 11 so that the free end portion 14 of the latter projects beyond the end 15 of the panel 10 and forms an outwardly projecting flap at the open end of the bag. The flap 14 and the panel 10 may be separated from each other to permit the material 16 to be packaged to be delivered through the bag opening.

In accordance with the present invention, the bag, after being filled, is closed by means of a separate strip or ribbon 17 which extends across and overlies adjacent end portions of the two panels and is joined to each by heat seals 18 and 22 formed by pressing the overlapped parts together at a temperature considerably lower than that at which the material of the panels will soften and fuse together. For this purpose, the inner surface of the strip 17 is composed of or coated with a thermoplastic material such, for example, as a so-called amorphous waxy material sold by Marathon Paper Company under the name Parocoat and by Standard Cap and Seal Company under the name Cheesewrap. These are typical of the materials which may be used to form the low temperature seals and will, when heated to 125 degrees F. join intimately to the panels as the two are pressed together.

In the bag shown, the intermediate portion 21 of the strip 17 is joined by the seal 13 to the outer surface of the short panel 10 at the end and across the full width thereof while the seal 22 joins the outer edge portion 19 of the strip against the inner surface of the flap 14 over substantially the entire area. To form and close the bag in this manner, the strip 17 is laid across the open end portion of the bag with the outer edge portion 19 facing and overlapping the flap 14 and the inner edge portion 20 and the intermediate portion 21 overlying the upper end portion of the short panel 10. Then, the intermediate portion 21 and the corresponding portions of the panels 10 and 11 are pressed together between two shoes at least one of which is heated sufficiently to fuse the material or coating on the strip and form the heat seal 18. The strip is thus attached firmly to the panel

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10 along its center line while leaving the inner and outer edge portions 19 and 20 free and detached from the panels 10 and 11. Since the heat seal 18 is formed by heating of the strip 17 to a temperature substantially lower than that at which the thermoplastic of the panels starts to soften, the panels 10 and 11 will remain unaffected even though these panels are pressed together and heated during formation of the seal 18. Thus, the strip 17 becomes a unitary part of the open bag and is carried with the latter during filling of the bag.

After the bag has been filled by the delivery of the material 16 into the open end between the strip 17 and the flap 14, the bag is closed by forming a seal 22 between the outer edge portion 19 of the strip and the opposed surface of the flap 14 over the entire area thereof. This is accomplished by compressing the parts between shoes heated to the temperature at which the thermoplastic of the strip will fuse and then unite with the flap upon cooling.

A portion of the strip 17, in this instance the inner edge portion 20, is left free and detached from the panels 10 and 11 so as to form a tab which may be gripped manually and pulled away from the bag to break the seal 22 and enable the bag to be opened. In this operation, the tab 20 is gripped at one end and pulled outwardly and away from the panel 10 thus breaking the seals 18 and 22 progressively along the top of the bag as the strip 17 is peeled off from the latter as shown in Fig. 1. Any desired width of the bag top may be opened and, if the strip 17 is removed completely, the bag will be opened to its full width.

It will be apparent that the bag constructed as described above lends itself readily to manufacture, filling, and closure in an automatic machine in which the side and end seals are formed by pressing the bag panels between heated sealing elements. By employing a separate closure strip secured to both walls of the bag by seals weaker than the main seals that form the bag, the bag may be opened quickly simply by pulling on the projecting tab. Moreover, the bag may be opened to any desired width and the contents thereof removed quickly.

I claim as my invention:

1. A bag comprising two panels with opposed surfaces composed of material fusible above a predetermined temperature, one of said panels being longer than the second panel to provide a flap projecting beyond the end of the second panel, heat seals joining said panels along the side edges of the bag, a separate strip of material having a surface composed of material different than said first material and fusible at a temperature lower than said predetermined temperature, said strip lying against the inner surface of said flap and the adjacent outer surface of said second panel, a heat seal joining the intermediate part of said strip to said second panel along the full width of the latter while leaving the inner edge portion of the strip unsealed and free to form a pull tab, and a heat seal joining the outer edge portion of said strip to said flap along the full width of the bag whereby to close the open bag end.

2. A bag comprising two panels with opposed surfaces composed of material fusible with each other when pressed together and heated above a predetermined temperature, one of said panels being longer than the second panel to provide a flap projecting beyond the end of the second

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panel, means joining said panels along the side edges of the bag including a high temperature, a separate strip of material having a surface fusible at a temperature lower than that at which said first mentioned material softens and fuses, said strip having one edge portion lying against the inner surface of said flap and an intermediate part extending across the adjacent end portion of the shorter panel against the outer surface thereof, and a heat seal joining said intermediate part of said strip to said second panel along the full width of the latter while leaving the inner edge portion of the strip unsealed and free to form a pull tab.

3. A bag comprising, long and short generally rectangular panels lying face to face with one end of the short panel spaced inwardly from the corresponding end of the long panel to form a flap across the bag end, the opposed surfaces of said panels being composed of material fusible under pressure at a predetermined temperature, means joining said panels at their side edges including a high temperature seal extending along at least one edge of the bag for the full length of said short panel, a separate strip of material wider than said flap extending across the bag with one edge portion lying against the inner surface of said flap and the opposite edge portion overlapping and lying against the adjacent end portion of said short panel on the outer surface thereof, and a low temperature heat seal joining the intermediate portion of said strip and the extreme end portion of said short panel while leaving the opposite edge portions of the flap free and unattached to said flap and said short panel.

4. A bag comprising two panels with opposed surfaces of material fusible above a predetermined temperature, one of said panels being longer than the second to provide a flap projecting beyond the end of the other panel, a heat seal extending longitudinally of the bag to said flap and joining said panels integrally together, a separate strip of material having a surface fusible at a temperature lower than said predetermined temperature and lying against the inner surface of said flap and the adjacent outer surface of said second panel, a heat seal joining the intermediate part of said strip to said second panel along the end portion of the latter while leaving a part of the strip unsealed and free to form a pull tab, and a second low temperature heat seal joining the outer edge portion of said strip to said flap whereby to close the open bag end.

5. A bag comprising two panels with opposed surfaces of material fusible above a predetermined temperature, one of said panels being longer than the second to provide a flap projecting beyond the end of the other panel, a heat seal extending longitudinally of the bag to said flap and joining said panels integrally together, a separate strip of material having a surface fusible at a temperature lower than said predetermined temperature and lying against the inner surface of said flap and the adjacent outer surface of said second panel, and a heat seal joining the intermediate part of said strip to said second panel along the end portion of the latter while leaving a part of the strip unsealed and free to form a pull tab.

6. A bag comprising two panels composed of material fusible above a predetermined temperature, a high temperature heat seal extending longitudinally of the bag and joining overlapping portions of said panels together, a separate strip

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of material having a surface fusible at a temperature lower than said predetermined temperature and overlapping adjacent portions of said two panels at one end of the bag, and two low temperature heat seals joining the longitudinally extending portions of said strip to the respective panels while leaving a part of the strip unsealed and free to form a pull tab.

7. A bag comprising two panels composed of material fusible above a predetermined temperature, a high temperature heat seal extending longitudinally of the bag and joining overlapping portions of said panels together, a separate strip of material having a surface fusible at a temperature lower than said predetermined temperature and overlapping adjacent portions of said two panels at one end of the bag, and two

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low temperature heat seals joining the longitudinally extending portions of said strip to the respective panels while leaving an outer edge portion of the strip free and unsealed whereby to provide a projecting pull tab.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,853,013	Brady	Apr. 5, 1932
1,951,599	Dever	Mar. 20, 1934
1,987,545	Alexander	Jan. 8, 1935
2,183,039	Farmer	Jan. 23, 1940
2,404,337	Williams et al.	July 16, 1946