

May 20, 1952

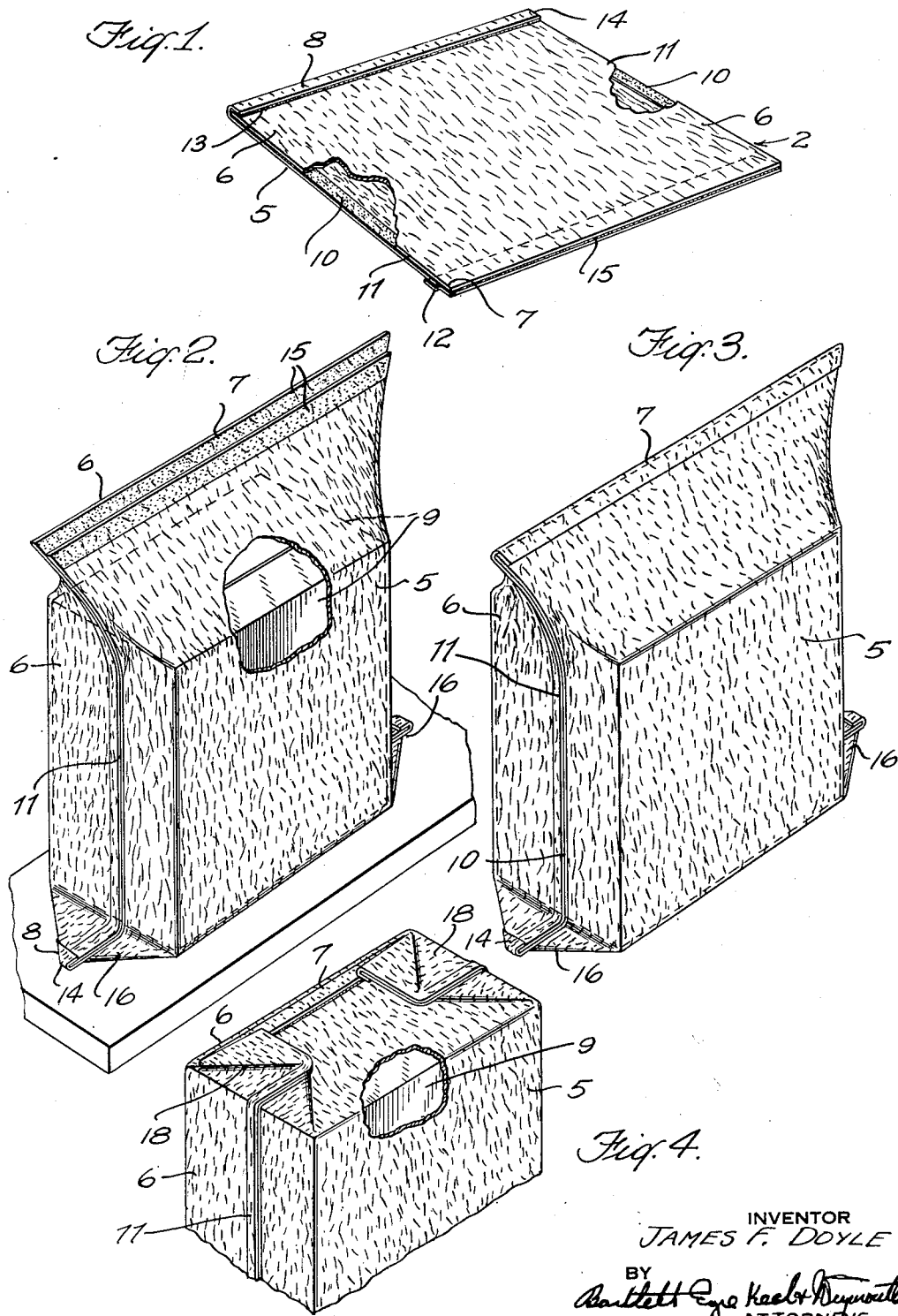
J. F. DOYLE

2,597,305

BAG

Original Filed Dec. 20, 1943

3 Sheets-Sheet 1



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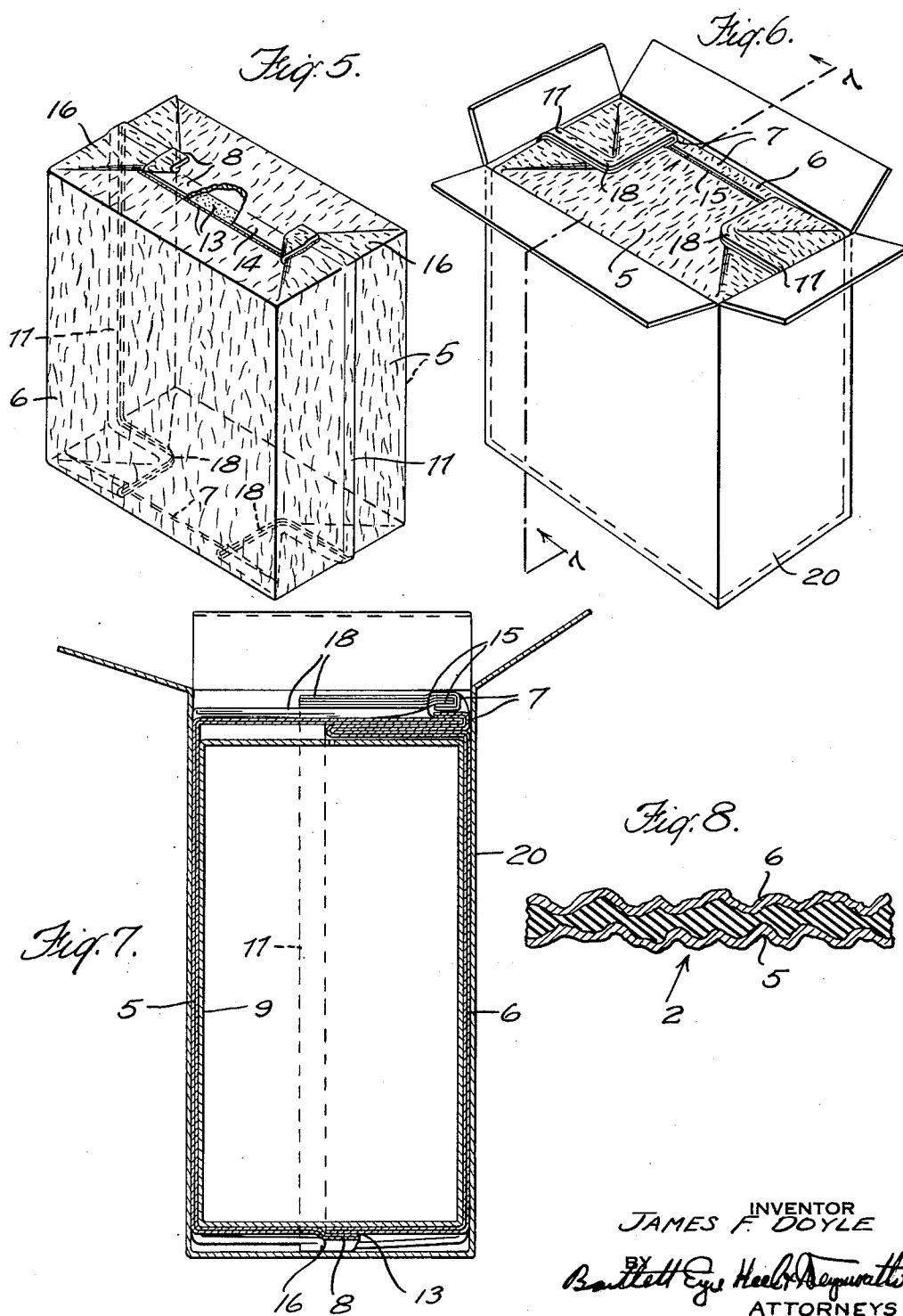
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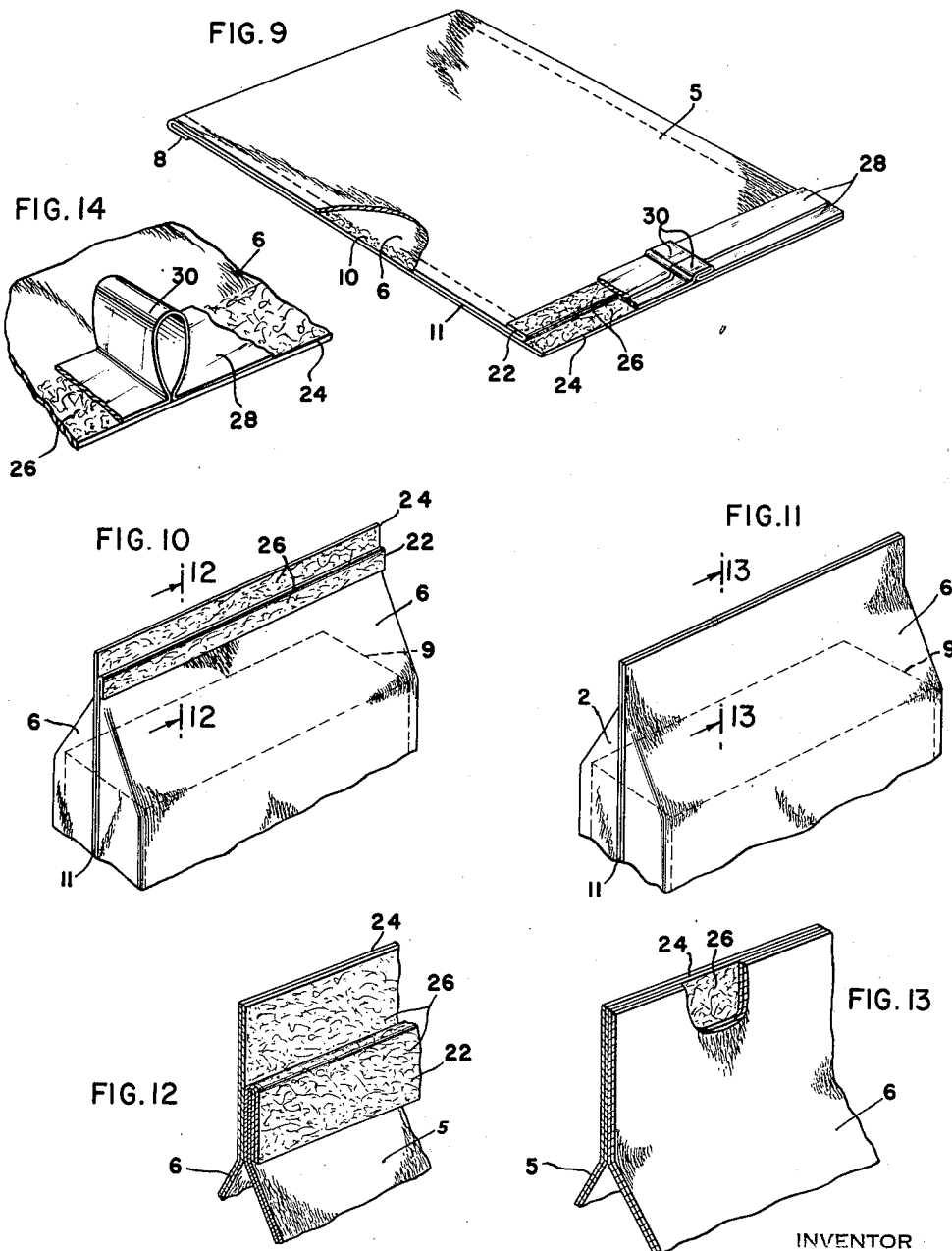
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3 Sheets-Sheet 3



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2,597,305

BAG

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Continuation of applications Serial No. 514,942,
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gust 11, 1945. This application November 20,
1946, Serial No. 711,189

4 Claims. (Cl. 229-53)

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The present invention relates to bags, and liners for bags and other containers.

One of the objects of the present invention is to provide a novel and improved article of manufacture of this character.

In packaging certain products, such as dehydrated food and blood plasma for shipment, it is customary to place the product in a carton of corrugated paper or cardboard which is enclosed in a bag of a moistureproof paper. The carton is then closed, and the mouth of the bag is closed over the top of the carton so as to provide a moistureproof enclosure for the filled carton. The carton and the bag may then be placed in a second carton of heavy cardboard, and this second carton closed to complete the package.

Another object of the present invention is to provide a bag for use in a package of this kind which is of simple and strong construction, in which the inner carton may be easily and quickly inserted, which provides adequate moistureproof protection for the inner carton and the product, and which may be cheaply manufactured.

Another object of the invention is to provide a novel and improved protector strip for the outer surface of a tacky adhesive coating, such as a coating for the mouth of a bag or liner.

The invention is illustrated, by way of example, in the accompanying drawings, in which:

Figure 1 is a view in perspective of my improved bag with one wall partly broken away;

Fig. 2 is a view in perspective of the bag with the inner carton inserted therein, one wall of the bag being partly broken away;

Fig. 3 is a similar view with the mouth of the bag closed;

Fig. 4 is a similar view of the upper portion of the bag and carton with the closed top of the bag folded down over the top of the carton;

Fig. 5 is a view in perspective of the bag and inner carton in inverted position, the projecting bottom flaps of the bag being shown folded inwardly over the bottom of the carton;

Fig. 6 is a view in perspective showing the bag and inner carton inserted in an outer carton, the outer carton being ready to be closed;

Fig. 7 is a sectional view, partly diagrammatical, taken on the line 7-7 of Fig. 6;

Fig. 8 is a transverse sectional view of the material which is preferably used in the bag;

Fig. 9 is a view corresponding to Fig. 1 of a modified form;

Fig. 10 is a view in perspective of the upper portion of the bag of Fig. 9 when filled and about to be closed;

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Fig. 11 is a similar view of the bag when closed; Fig. 12 is a detail sectional view on an enlarged scale, taken on the line 12-12, of Fig. 10;

Fig. 13 is a similar view, taken on the line 13-13, of Fig. 11; and

Fig. 14 is a detail perspective view, similar to a portion of Fig. 1, but on an enlarged scale.

This application is a continuation of my pending applications Ser. No. 514,942, filed December 20, 1943, now abandoned, and Ser. No. 610,258, filed August 11, 1945, now abandoned.

The bag illustrated in Figs. 1 through 7 of the drawings may be made of the sheet material illustrated in Fig. 8. This material comprises two sheets of crinkled paper 2 which are separately crinkled and are laminated together by means of asphaltic or other suitable adhesive.

The bag is made up of two sheets 5 and 6 of this laminated paper which are arranged one upon the other with the crinkles of the paper extending longitudinally of the bag. The end 7 of the sheet 6 projects beyond the corresponding end of the sheet 5, and the end 8 of the sheet 5 projects a distance beyond the end of the sheet 6. The longitudinal margins of the two sheets are secured together by adhesive 10 so as to form a bag tube having side seams 11.

The projecting end or margin 8 of the sheet 5 is folded over and secured by adhesive 13 to the corresponding end margin of the sheet 6 so as to form a seam 14 closing said end or bottom of the bag tube.

The inner side of the projecting end or margin 7 of the sheet 6 and the inner side of the margin of the adjacent end of the sheet 5 are coated with adhesive 15. A strip 12 of cellophane or other suitable material may be placed over the thus formed two marginal strips of adhesive 15 so as to protect them.

The adhesive employed for laminating the crinkled paper 2, for the side and bottom seams, and also for the margins of the side walls at the mouth of the bag is preferably made of asphalt containing a suitable filler or plasticizer. I have found that adhesive of this kind remains flexible and non-brittle even at low temperatures, and tacky at normal temperatures.

The bag thus formed is of suitable size to receive a carton 9 of corrugated cardboard, the carton being placed in the bag either before or after the carton is filled with the product to be packaged. This carton may be of the usual form for packages of this kind having vertical side walls and flat top and bottom walls.

Owing to the flexibility and circumferential

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stretchability of the material of the bag, the insertion of the carton 9 enables the bag to tightly embrace the vertical sides of the carton as shown. The bottom of the carton causes the bottom of the bag to flatten out, and the bottom seam of the bag to be folded tightly against the bottom of the carton and the side seams of the bag to be folded over tightly against the side walls of the carton. The projecting V-shaped corner flaps 16 may be either folded underneath against the bottom of the bag as shown or folded upwardly against the sides of the bag.

When the carton has been thus placed in the bag and the top of the carton closed, the side walls of the mouth of the bag may be brought together as shown in Fig. 2. Then the asphalt coated projecting end 7 of the side wall 6 of the bag may be readily folded over the asphalt coated upper margin of the side wall 5 of the bag. The asphalt thus applied to the upper margins of the side walls of the bag is sufficiently tacky that when the end 7 is folded over and pressure is applied by means of rollers, or other suitable means, the adhesive securely closes and seals the upper end or mouth of the bag.

When the bag has thus been closed, the mouth portion thereof projecting above the top of the carton, may be folded downwardly and the projecting corners 18 folded inwardly and downwardly as shown in Fig. 4 so as to form a substantially flat top surface.

The bag with the enclosed inner carton is then ready to be placed in the outer carton 20. In placing it in the outer carton the V-shaped bottom flaps 16, as previously stated, may be either folded downwardly and inwardly flat against the bottom side of the bag, as shown in Fig. 5 or 7, or may be folded against the vertical sides of the bag. Also, the top of the bag may be folded as above described either before or after being placed in the outer carton. When the bag is thus inserted in the outer carton the top of this carton may be closed to complete the package.

It will be apparent that my improved bag as above described is capable of closely embracing the vertical sides of the inner carton and provides effective moisture-proof protection for the inner carton and the product; that the inner carton may be easily inserted in the bag and the bag securely sealed; that the sealed bag with the enclosed filled inner carton may be easily inserted in the outer carton and the outer carton closed; and that the completed package is strong and durable, and capable of withstanding rough usage during shipment.

In the form shown in Figs. 9 through 14, the upper margin 22 of one side wall of the bag is folded back upon itself. The outer side of this margin 22 and the inner side of the adjacent margin 24 of the other side wall are coated with suitable asphaltic or other adhesive 26 which remains tacky at normal temperatures and which when the two coated surfaces are brought together may be securely sealed by the application of either pressure alone or heat and pressure.

With this construction, after the bag is filled, it may be easily and securely closed by folding upwardly the margin 22 against the margin 24 and applying pressure or heat and pressure to the margins to complete the seal. Separate strips of cellophane 28 may be applied over the adhesive coatings 26 so as to protect the adhesive during shipment. The edges of the cellophane strips should project beyond the edges of the strips of adhesive with the inner edges of the strips over-

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lapping, so as to prevent spreading of the adhesive beyond the edges of the strips. When the bag is to be used these strips of cellophane may be removed to expose the adhesive.

Bags or liners of the type of my improved bag or liner may be made of considerable width, the standard width being 96 inches, and it has been difficult for the packer to remove the cellophane strips such as strips 28 from the adhesive especially in the case of the wider bags. To overcome this, I have provided a loop 30 in each cellophane strip through which the packer may insert his finger or otherwise grasp the loop and easily rip the strip from the adhesive (Figs. 9 and 14). In the case of the wider bags at least, the loop is preferably made in each strip substantially midway between its ends, so as to reduce the distance the strips are removed at opposite sides of the loop.

While it is preferred that the bag be made of laminated crinkled paper as described, it will be apparent that in certain instances it may be made of other material, such as plain paper, paper attached to textile fabric, and reinforced paper. It will also be apparent that certain features may be employed in other types of bags, such as bags made of a single sheet of paper or other material, and in case the bag is of the tubular type the folded over margin of the modified form may be provided by slitting the longitudinal edges of the bag at the mouth thereof previously to folding down the margin.

It will be noted that in both forms, the strips of adhesive for closing both the bottom and top of the bag extend across and form continuations of the adhesive of the side seams. This ensures maximum strength at the corners and effectively prevents sifting or leakage.

As will be evident to those skilled in the art, my invention permits various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. A bag of the class described, comprising two sheets of crinkled paper having the crinkles extending longitudinally thereof, said sheets being arranged in superposed relation with one end of each sheet projecting a distance beyond the corresponding end of the other sheet, the inner sides of the longitudinal margins of the sheets being adhesively secured together to form the side seams for the bag, and the projecting end margin of one sheet being folded over and secured to the corresponding margin of the other sheet to form a closed bottom for the bag, and pressure-sensitive adhesive coating the corresponding margins of the other ends of the sheets, the latter adhesive coating connecting the adjacent ends of the adhesive that secures said longitudinal margins of the sheets together.

2. A bag of the class described, comprising two sheets of crinkled paper having the crinkles extending longitudinally thereof, each of said sheets being made of a plurality of plies of crinkled paper laminated together by means of a layer of asphaltic adhesive, said sheets being arranged in superposed relation with one end of each sheet projecting a distance beyond the corresponding end of the other sheet, the inner sides of the longitudinal margins of the sheets being adhesively secured together to form the side seams for the bag, and the projecting end margin of one sheet being folded over and secured to the corresponding margin of the other sheet to form a closed bottom for the bag, and adhesive coat-

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ing the corresponding margins of the other ends of the sheets.

3. A bag of the class described comprising two sheets of crinkled paper having their crinkles extending longitudinally of the bag, each sheet forming a side wall of the bag, said sheets being arranged in superposed relation with strips of adhesive securing the inner sides of the longitudinal margins thereof together to form the side seams of the bag, the margin at one end of one of the side walls being folded over the corresponding edge of the other side wall and adhesively secured to said side wall to form the bottom of the bag, the ends of the walls of the mouth of the bag projecting one beyond the other, and the corresponding margins of the side walls at the mouth of the bag being coated with normally tacky asphaltic adhesive, whereby upon folding the projecting end of one wall over the corresponding end of the other wall the mouth of the bag may be closed, said asphaltic adhesive that connects the margins of the mouth of the bag connecting the adjacent ends of said longitudinally extending strips of adhesive.

4. A bag of the class described, comprising two sheets of crinkled paper having their crinkles extending longitudinally of the bag, each sheet forming a side wall of the bag, said sheets being arranged in superposed relation with the strips of adhesive securing the inner sides of the longitudinal margins thereof together to form the side seams of the bag, the margin at one end of one of the side walls being folded over the cor-

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responding edge of the other side wall and adhesively secured to said side wall to form the bottom of the bag, the margin of one side wall at the upper end of the bag being folded back upon itself, and pressure sensitive adhesive coating the outer surface of the last mentioned margin and the inner surface of the corresponding margin of the other side wall and connecting the adjacent ends of said longitudinally extending strips of adhesive.

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