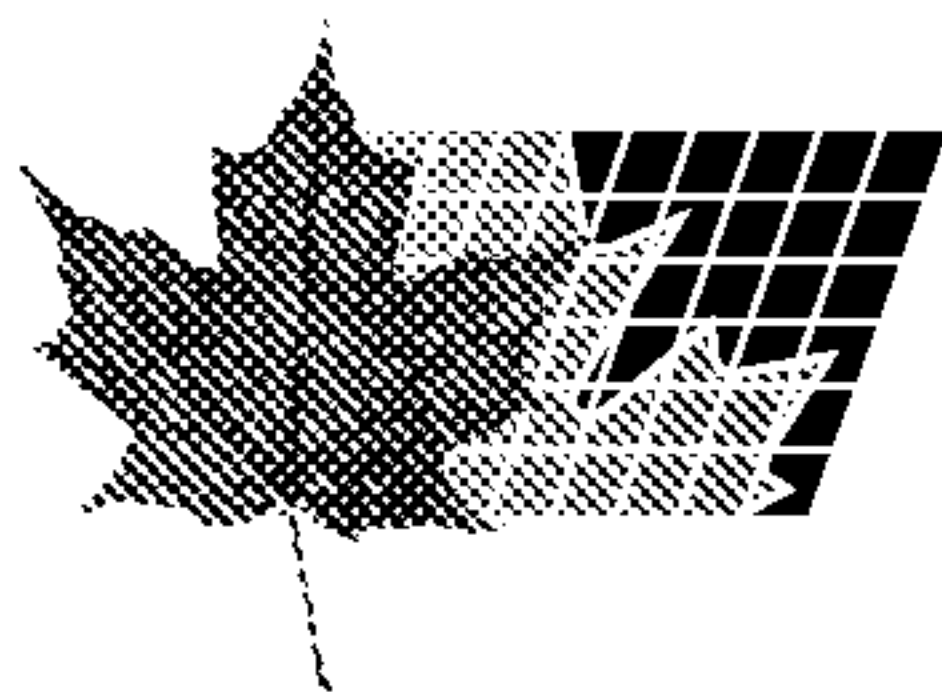




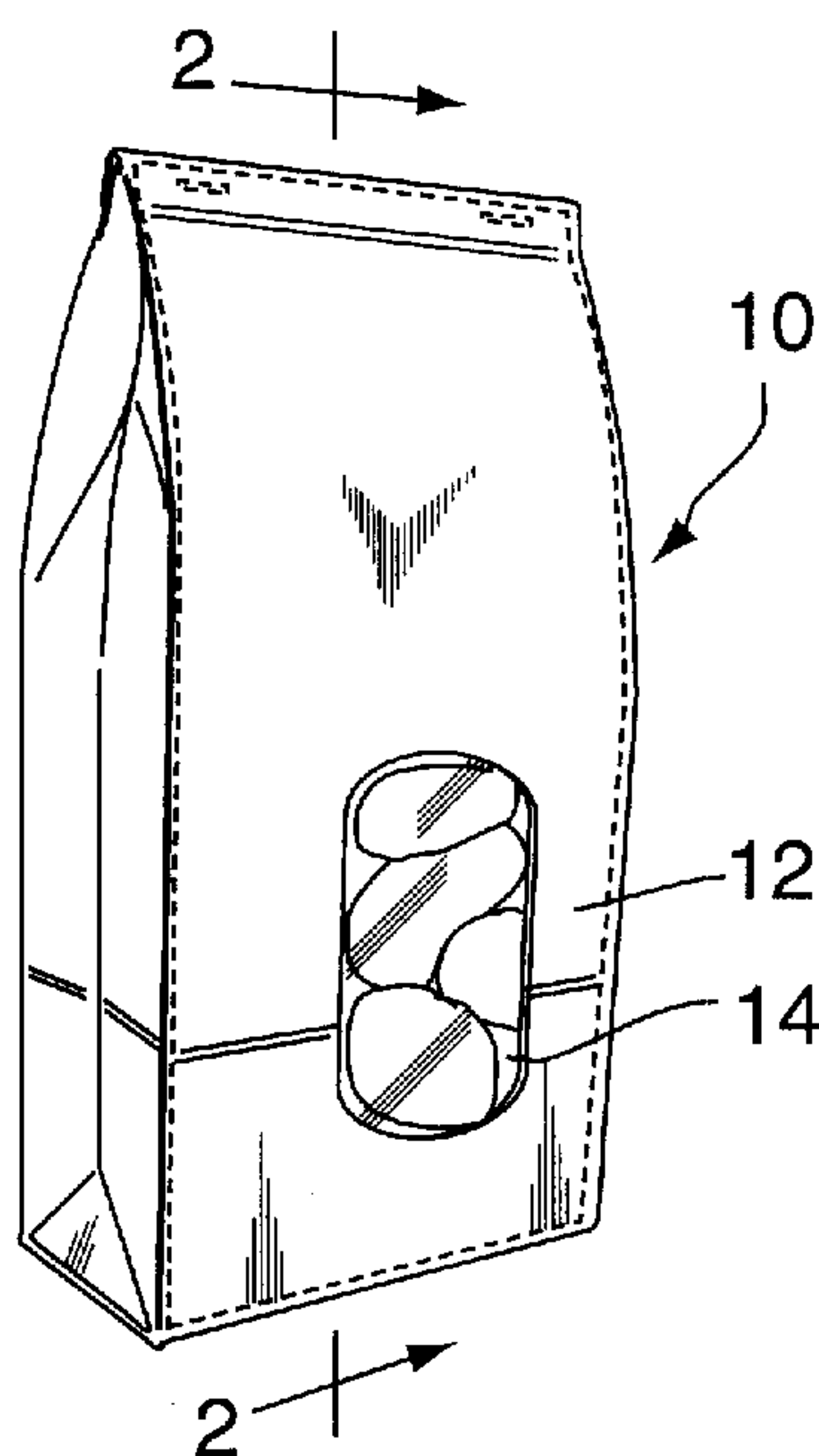
(72) UPSHAW, James, CA

(71) THE PRINCE EDWARD ISLAND BAG COMPANY LIMITED, CA

(51) Int.Cl.⁶ B65D 33/04

(54) **SAC A FENETRE**

(54) **WINDOWED BAG**



(57) A windowed bag wherein first and second sheets of paper are die cut to provide a window opening, and a transparent plastic intermediate layer forming the window has perforations to allow the first and second paper sheets to be glued together to form a composite. The composite is then cut, folded, and formed into a bag.

1125-3

ABSTRACT

A windowed bag wherein first and second sheets of paper are die cut to provide a window opening, and a transparent plastic intermediate layer forming the window has perforations to allow the first and second paper sheets to be glued together to form a composite. The composite is then cut, folded, and formed into a bag.

1125-3

WINDOWED BAG**BACKGROUND OF THE INVENTION**

This invention relates to windowed bags and more particularly to windowed bags for perishable goods such as vegetables.

One attempt to provide visual inspection of the contents of bags containing vegetables such as potatoes was in the form of a mesh covered aperture in a paper bag. The disadvantage of this construction is that of dirt or other debris falling out of the mesh covered opening.

Another process disclosed in US Patent 5,465,842 a heat sealable film bonded to paper or paper-like material having a window area.

This invention seeks to provide a windowed bag which eliminates the need for heat-sealing the plastic film covering the window.

It is preferable to form the composite sheets for bag making in continuous rolls and therefor sheets of transparent window material are generally used rather than cutting and positioning individual windows. It will be appreciated that reducing cost of material or eliminating steps such as heat-sealing would be desirable.

The use of molten polyethylene is discussed in US Patent 5,465,842, and it is apparent that if a blank window is cut prior to extruding the polyethylene, the molten polyethylene would pass through the window and contaminate the equipment. It is not possible to cut the window after the molten polyethylene has been applied to the paper because the polyethylene adheres to the paper to be removed.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings which illustrate embodiments of the invention:

Figure 1 is a perspective view of a windowed bag in accordance with this invention;

Figure 2 is a sectional view taken along the line 2 of Figure 1;

Figure 3 is a front view of the composite material prior to being folded and glued to form a bag; and

Figure 4 is a schematic diagram of the apparatus for forming the continuous composite web use to make the bag of this invention.

DETAILED DESCRIPTION

Referring now in detail to the drawings, a windowed bag in accordance with this invention is shown generally at 10 in Figure

1. The bag 10 has an outer or first layer 12 of paper or paper-like material having a cut out window 14. An intermediate transparent plastic layer of polyethylene or other suitable material is provided on an inner face of the layer 12. A second sheet of paper or paper-like material 18 is adhesively secured to the inner face of the first layer 12. The bag is cut and glued in any conventional manner to provide a bottom closure 19 and may be closed at its upper end by stapling or the like after the contents are in place.

As shown more clearly in Figure 2 a cut out window 14a is also provided in the second sheet 18 in register or alignment with the cut out 14 of the first sheet 12.

As shown in Figure 3 the intermediate transparent plastic layer 16 is provided with perforations 20 arranged in two rows adjacent the side edges thereof so that adhesive applied on the first or second sheets 12 and 18 respectively will contact the other sheet 12 or 18.

The process and apparatus for forming a composite endless form 40 for making the windowed bags 10 is shown schematically in Figure 4.

The process includes the steps of moving a strip of paper 42 from a roll 44. The paper strip 42 may be printed on an outer side 46 and have an adhesive receiving side 48.

A second paper strip 50 having an adhesive receiving side 52 removed from a supply reel 54 to a synchronized cutting unit 58 where the first trip of paper 42 and the second paper strip 50 are cut simultaneously to provide the window 16 of the bag 10.

The paper strips 42 and 50 are then separated by suitable rollers and a supply roll 60 of transparent polymeric film material 62 is positioned between the strips 42 and 50. The transparent film 62 is preferably inexpensive polyethylene having precut perforations 20 to be described below with reference to Figure 3. Adhesive is applied to the adhesive receiving side 52 of the strip 58 by a suitable adhesive applicator 70.

The paper strips 42 and 50 and the transparent strip 62 therebetween are pressed together by conventional rollers 72 and 74 to form the composite material 40. The composite strip 40 is then cut and folded to provide the individual bag forms 10 shown in Figure 3.

It is possible to use conventional water based adhesive to secure the transparent layer 62 to the paper strips 42 and 50 because the precut perforations 64 allow the adhesive to flow from the first paper strip 42 to the second paper strip 50 as shown in Figure 3. It is also possible to include cutting means to cut the perforations 20 in the transparent material 62 as it is withdrawn from the supply roll 60.

1125-3

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A windowed bag comprising a first sheet of paper having a side to receive printing and a side to receive adhesive;

a window opening therein;

a sheet of transparent film adhered to a major portion of the side of the paper to receive the adhesive;

a second sheet of paper having a side to receive adhesive and a window opening therein in register with the opening in said first sheet;

a layer of adhesive on said first and second sheets securing said transparent sheet to said first and second sheets to provide a windowed composite blank sheet wherein the sheet is folded and adhesively joined at side edges and;

a bottom edge to define a bag for holding articles.
2. A windowed bag manufacturing process comprising the steps of:

moving a paper strip having a print receiving side and an adhesive receiving side;

cutting at a synchronized cutting unit to provide a window area in each bag form;

moving a second paper strip to said synchronized cutting unit to provide a window area in the second paper strip;

cutting said first and second strip simultaneously separating the first and second sheets, moving a transparent perforated sheeting strip between the first and second paper strips; and

applying adhesive to an inner face of a selected one of the first and second paper strips pressing the first strip, the transparent strip and the second strip together and cutting and folding a composite strip so formed into individual bag forms.

3. A windowed bag as claimed in claim 1 wherein perforations are provided in the transparent sheet where the first and second sheets are adhesively joined together.

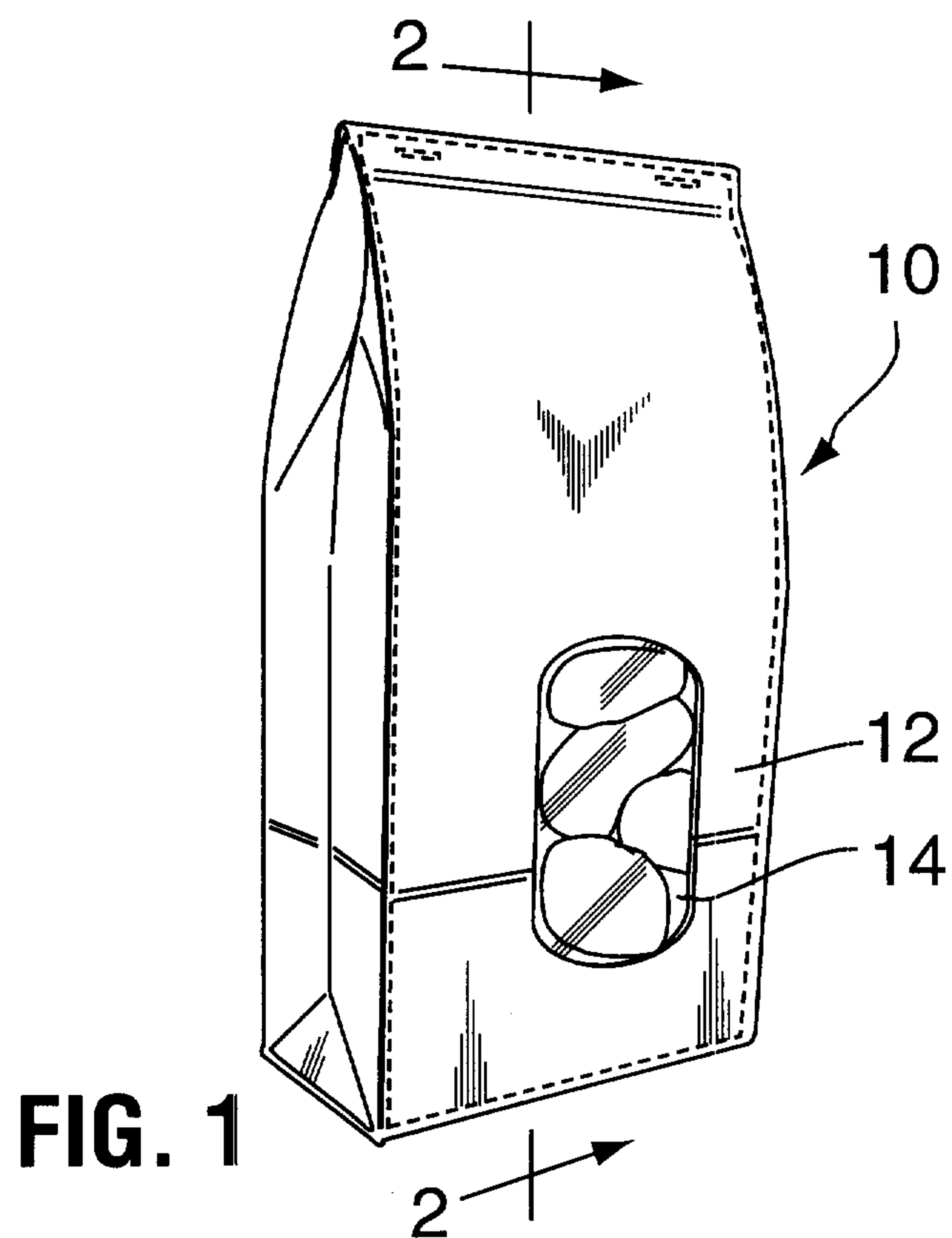


FIG. 1

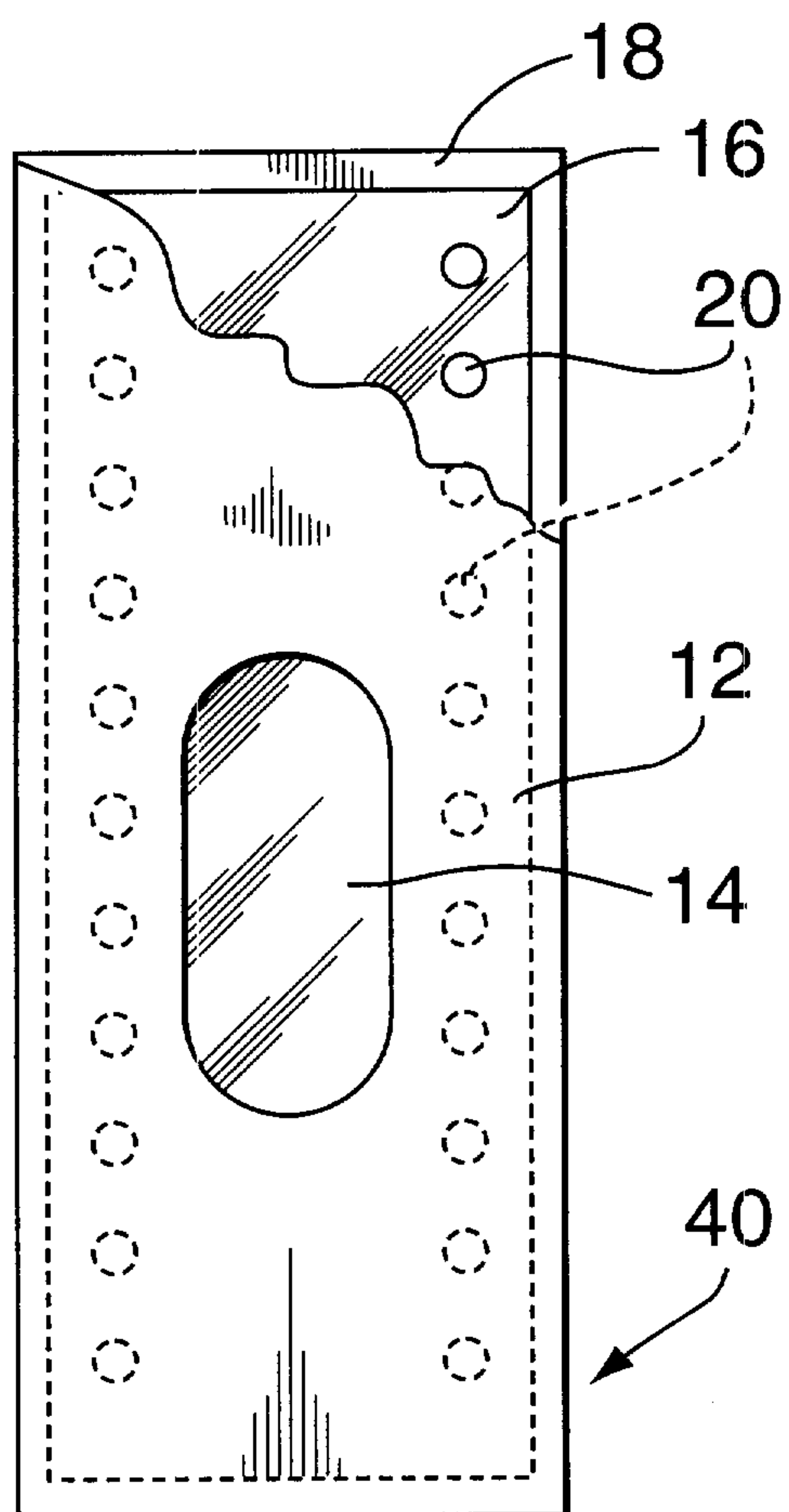


FIG. 3

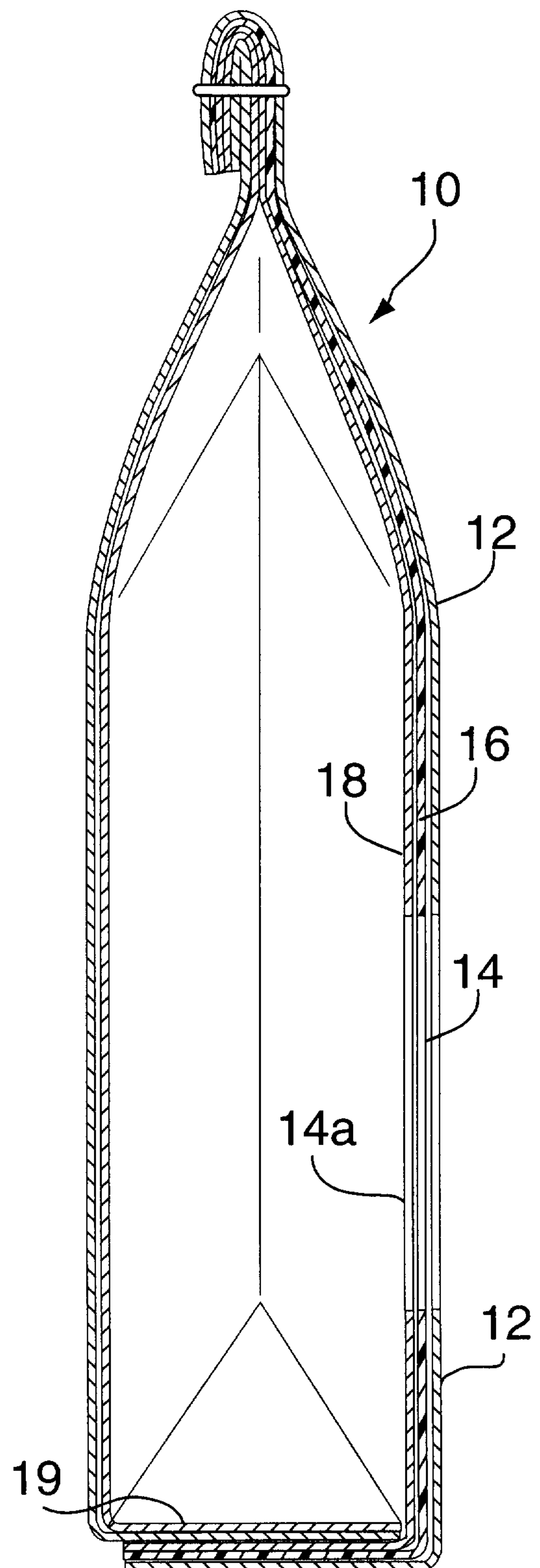


FIG. 2

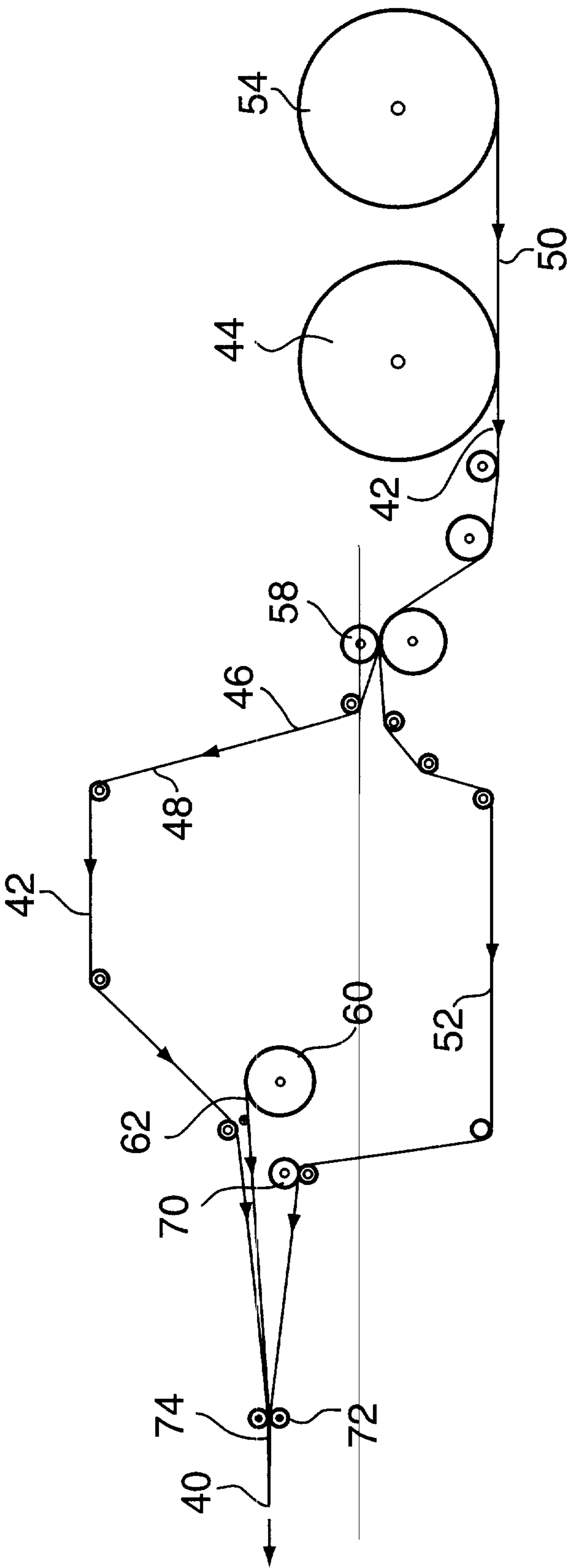


FIG. 4