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(54) Packaging bag and method for its fabrication.

(57) The invention relates to a cardboard-made bag-like package and a method for the fabrication thereof. The package is fabricated of two separate cardboard sheets (1, 2) of which the longer and narrower cardboard sheet (1) is double-folded along a folding line (5) that forms the package bottom. The shorter and wider cardboard sheet (2) is adhered to one of the folded halves of longer cardboard sheet (1) in order to provide the package with a double wall, from whose top edge the end zone (4) of longer cardboard sheet (1) extends for forming a package closing flap. Side strips (3) of shorter cardboard sheet (2) are folded around the side edges of the other folded half of longer cardboard sheet (1) and adhered to its outer surface. The package can be fabricated at a high rate of production from cardboard webs delivered from supply rollers without cutting waste pieces.

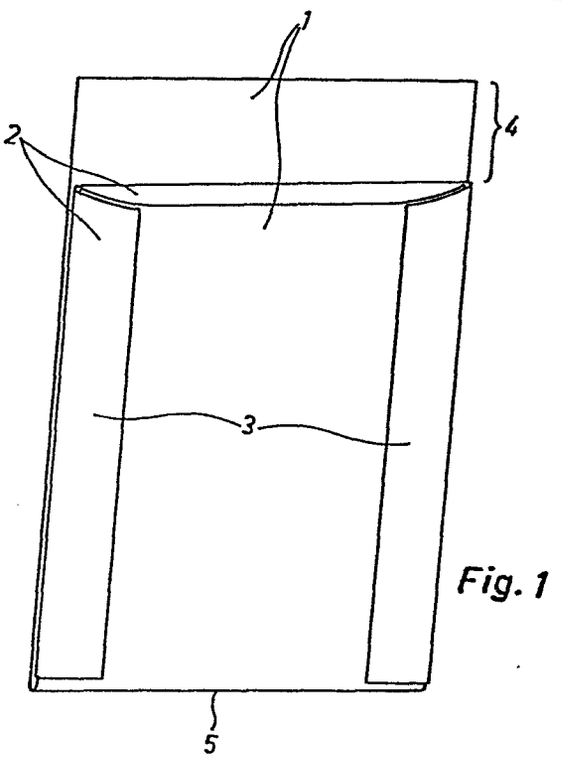

Fig. 1

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Packaging bag and method for its fabrication.

The present invention relates to a packaging bag made of cardboard, whose height substantially exceeds its width and whose one narrow side is open and forms the mouth of said package with a closing flap extending from one edge thereof, said flap being foldable across the mouth over on the other side of a package for sealing the mouth.

A packaging bag of this type is anticipated in the Applicant's FI Patent publication 65591. In that embodiment, a backing board for bracing the package is enclosed between layers of paper placed on both sides of the board. Achieved this way is a high-quality packaging bag that can be fabricated with an automatic machine at a high rate of production. However, the required paper is even more expensive than cardboard per unit area. This is why the material costs of such a package become relatively high.

An object of this invention is to provide a packaging bag serving the same purpose with substantially lower material costs.

This object is achieved by means of a packaging bag of claim 1 that can be fabricated by a method of claim 2 at a high rate of production in an automatic machine.

The invention will now be described in more detail with reference made to the accompanying drawings, in which

fig. 1 is a perspective view of a package according to a first embodiment of the invention and

fig. 2 is a perspective view of a package according to a second embodiment of the invention.

Figs. 3-5 show the various steps of fabrication of a package corresponding to the embodiment of fig. 1. The same steps of fabrication also relate to the embodiment of fig. 2, the only difference being that at the outset stage of fig. 3 a longer cardboard sheet 1 is placed on top of a shorter cardboard sheet 2.

The height of a packaging bag exceeds substantially the width thereof and one of its narrow sides is open to form the mouth of a package. Extending from one edge of the mouth is a closing flap 4 that can be folded across the mouth over on the other side of a package for sealing the mouth.

The package is comprised of two separate cardboard sheets 1 and 2, the width of cardboard 1 being equal to that of the package and the length thereof being more than twice the height of said package. Cardboard 1 is double-folded along a folding line 5 which serves as the bottom of a packaging bag.

The length of a second cardboard sheet 2 equals to the height of a package, i.e. to the length of the shorter folded half of cardboard 1. The width of cardboard 2 exceeds substantially that of the package and side strips 3 extending beyond the width of a package are folded over the edges of the shorter folded half of cardboard sheet 1 and stuck with adhesive on the outer surface of cardboard sheet 1. The central section of cardboard sheet 2 is stuck with adhesive on the inner or outer surface of the longer folded half of cardboard sheet 1. In the embodiment of fig. 1, it has been adhered to the

inner surface and, in the embodiment of fig. 2, to the outer surface.

Since the high side edges of a packaging bag have been sealed by means of folded side strips 3 of cardboard sheet 2, said strips being adhered to the outer surface of cardboard sheet 1, on opening said package the adhesive joint is only subjected to shearing forces, i.e. forces parallel to the plane of the adhesive layer for ensuring that the adhesive joint is not torn open even if an article to be inserted in said package would produce a major stress on the side edges of a package. The cardboard material itself is sufficiently tough to prevent disruption at the side edges of a package.

A claimed package can be fabricated at a high rate of production with a method whose principle is illustrated in figs. 3, 4 and 5. The starting materials comprise two cardboard webs on a supply roller, one a little wider than the other. The narrower web is pulled over at a double rate of speed compared to the wider. Both webs are cut into rectangular cardboard sheets, so that sheets 1 cut out of the narrower web are more than twice longer than sheets 2 cut out of the wider. An adhesive is applied to the surfaces of sheets 1 and 2 to be placed against each other and the sheets are superposed as shown in fig. 3 in a manner that the longer sheet 1 extends on both sides beyond the shorter sheet 2, the extent on one side being substantially equal to the length of shorter sheet 2. The shorter sheet side strips 3 extend on both sides beyond the side edges of longer sheet 1. This is followed by double-folding said longer sheet 1 at the edge of shorter sheet 2, as shown in the step of fabrication of fig. 4, along a folding line 5 which builds the bottom for a finished packaging bag. The next step is to fold the side strips

3 of shorter sheet 2 around the side edges of the folded section of longer sheet 1 and adhered with a glue to the outer surface of the folded section of sheet 1.

The fabrication can be performed without cutting waste pieces whose further treatment would involve extra work. Cardboard material is relatively inexpensive, if compared e.g. to paper. Although the side wall of a packaging bag 1 is made of double cardboard, this does not increase the costs substantially in view of the relatively cheap price of cardboard. On the other hand, a double wall makes the package rigid and sturdy and provides good protection for an article to be packed.

Another factor substantially decreasing the material costs is that the narrower cardboard sheet 1, consumed proportionally more, is narrow enough to be available from marginal wastes cut into certain cardboard widths in the manufacture of cardboard, which wastes have not been effectively exploited in packaging industry.

Claims

1. A cardboard-made packaging bag, whose height exceeds substantially the width thereof and whose one narrow side is open and forms the package mouth with a closing flap (4) extending from one edge of said mouth and being foldable across the mouth over on the other side of a package for sealing the mouth, c h a r a c t e r - i z e d in that one side of the package made of two separate cardboard sheets (1, 2) is comprised of two superposed layers of cardboard, the end zone of one of said layers of cardboard forming said closing flap (4) and side strips (3) of the other layer of cardboard being folded around the high side edges of said package and adhered to the outer surface of the other single-layer side of said package.

2. A method for the fabrication of a package as set forth in claim 1, c h a r a c t e r i z e d by cutting two rectangular cardboard sheets (1, 2), the length of one exceeding more than twice that of the other and the shorter sheet (2) being substantially wider, applying an adhesive to the surfaces of sheets (1, 2) to be placed against each other and superposing the sheets in a manner that longer sheet (1) extends beyond both sides of shorter sheet (2) in a manner that the extent on one side is substantially equal to the length of shorter sheet (2) and the shorter sheet side strips (3) extend beyond both sides of the side edges of longer sheet (1), thereafter double-folding said longer sheet (1) at the edge of shorter sheet (2) along a folding line (5) which builds the bottom for said package, folding the side strips (3) of shorter sheet (2) around the side edges of the folded section of longer sheet (1) followed by adhering them with a glue to the outer surface of the folded section of longer sheet (1).

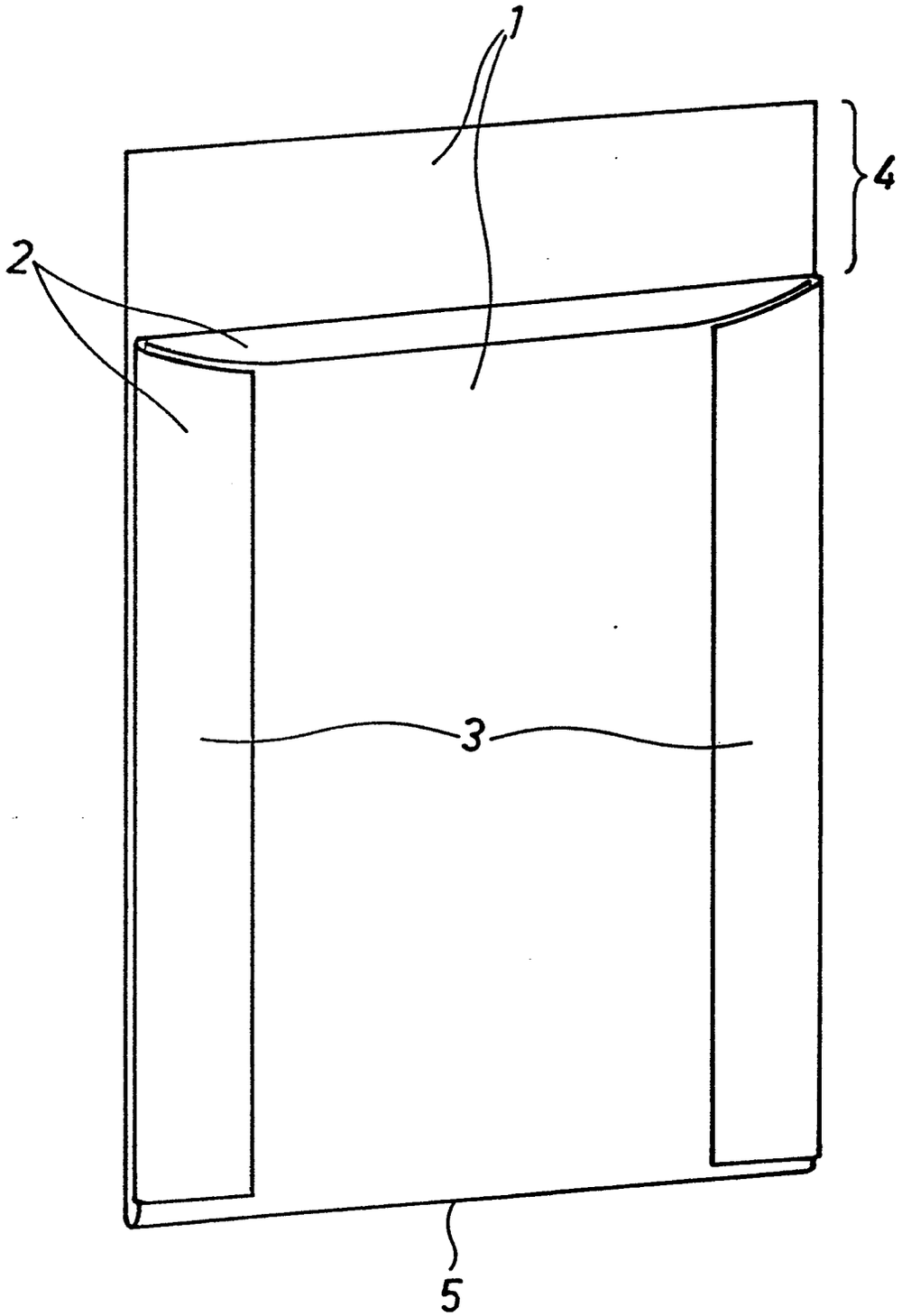

Fig. 1

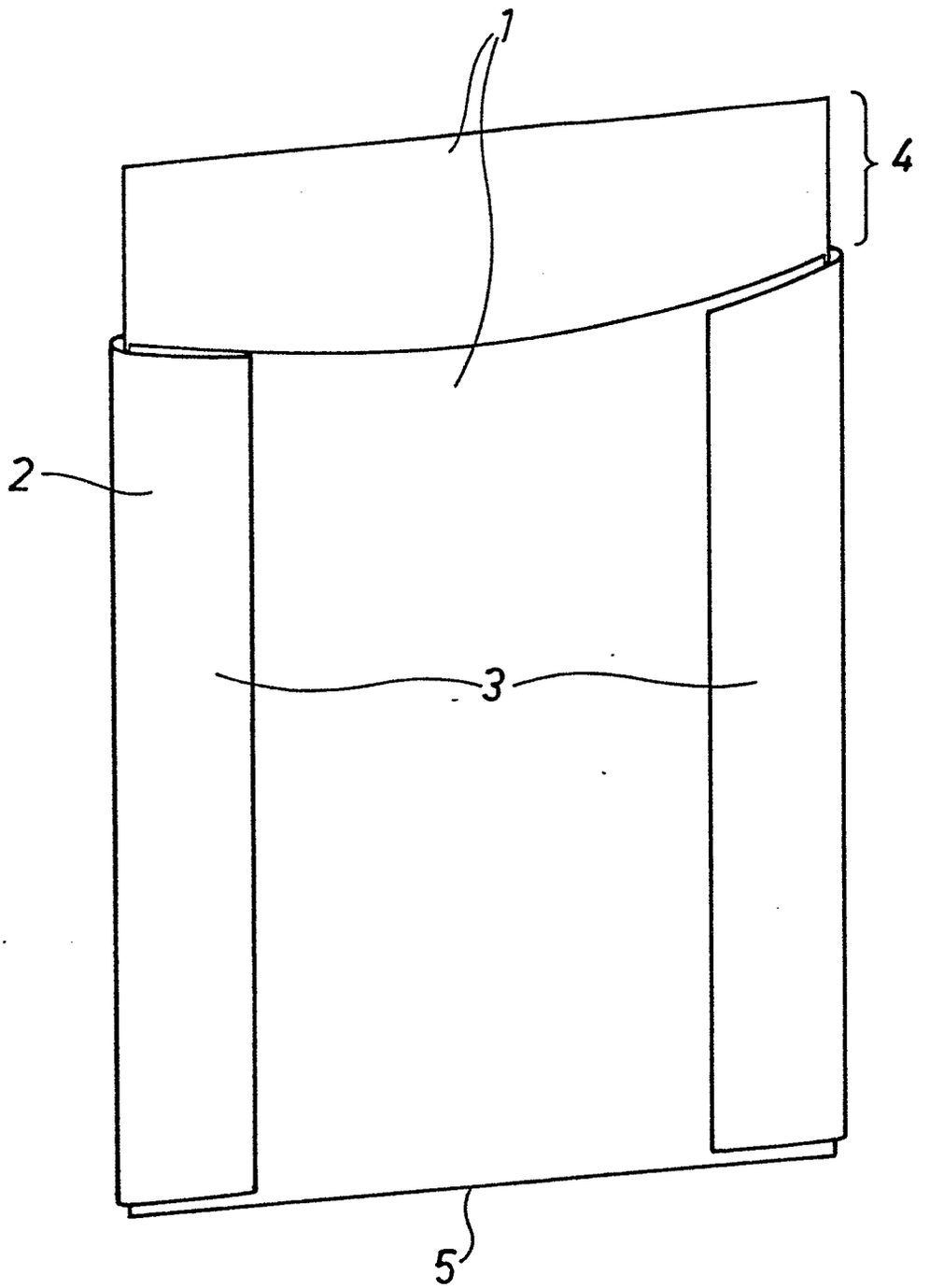

Fig. 2

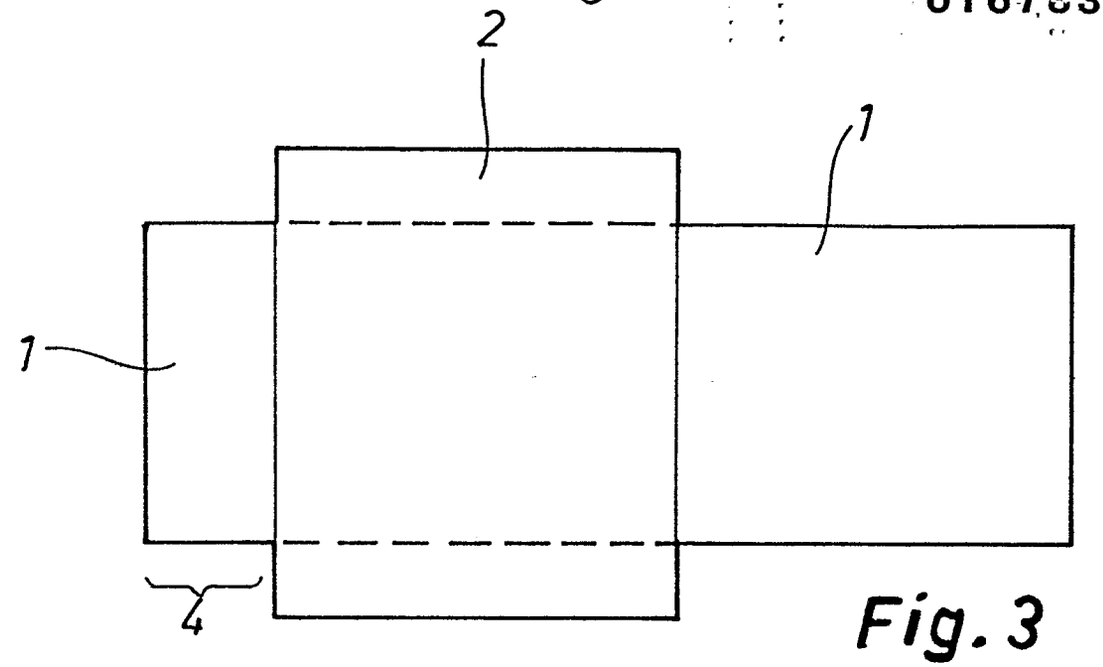

Fig. 3

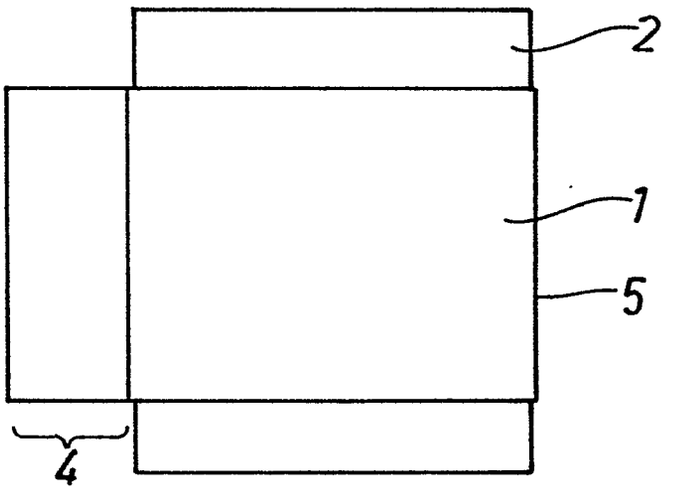

Fig. 4

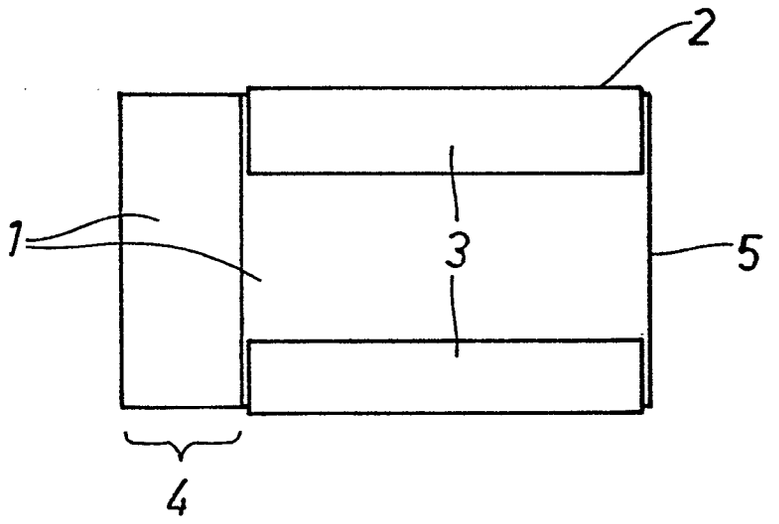

Fig. 5