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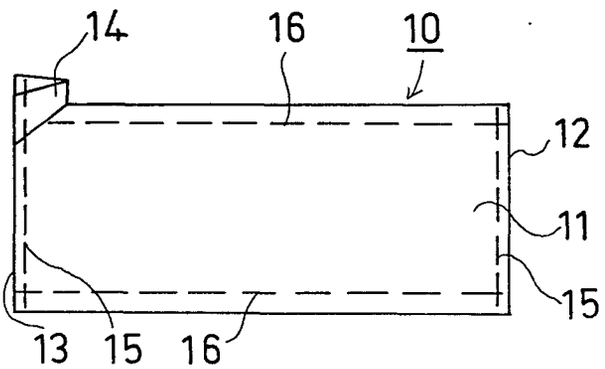
(54) Procedure for manufacturing paper bags.

(57) The invention concerns a procedure for manufacturing paper bags. The paper bags (10) have been provided at both ends with a sewn seam (15) and the paper bag (10) has in its corner a valve aperture fitted with a collar. With a view to avoiding the cutting of separate collar blanks which has to be done manually, and their fitting, the valve aperture and the repeated running of the paper bag blanks through the production line, the procedure of the invention teaches to affix collar blanks to a full width paper web with a given spacing. Hereafter, the full width paper web is run to assume tubular form and cut in fixed lengths whereby the paper bag in tubular form comprises a shell with both ends open and carrying in its corner a collar blank. Finally on the paper bags in tubular form is performed folding of the corner and sewing of both open ends, whereby a finished paper bag (10) is obtained. It is advantageous for collar blank to use a collar blank, furnished with an incision, a collar blank from which a substantially segment-shaped piece has been removed or a collar blank from which a substantially triangular piece has been removed. On the edge of the collar blanks preferably an oblique cut has been made.



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Procedure for manufacturing paper bags

Procedure for manufacturing paper bags which at both ends are provided with a sewn seam and which have on the corner of the paper bag a valve aperture provided with a collar.

In some applications of paper bags the valve aperture of the paper bag is required to be comparatively well sealing. An example are toxic chemical substances to be packaged in paper bags. In order to achieve good sealing in the valve aperture of a paper bag has been fitted a collar which is closed by inverting the collar after filling the paper bag. Both ends of the paper bags are provided with sewn seams.

The paper bag of prior art described above has to date been manufactured using the following manufacturing procedure. Full width paper web is run in a hose form of desired dimensions, the paper bag now in tubular form comprising a shell part in which both ends are open. In the next step of the method one open end of the tubular paper bag is closed by sewing and the valve aperture corner is folded. Thereafter the tubular paper bags are taken off the production line and separate collars are manually mounted on the valve aperture. Next, the tubular paper bags are returned to the production line and the sewing of the valve aperture end is carried out in order to produce a finished paper bag.

This procedure of prior art is encumbered by several drawbacks. The procedure requires the cutting of separate collar blanks and the manual placing into the valve aperture which is a cumbersome step and in which costs are incurred. Moreover, the paper bag blanks have to be run twice through the production line, with the result that production efficient enough cannot be achieved.

The object of the invention is to achieve an improvement of the procedure of prior art. A more detailed object of the invention is to provide a method in which the awkward manual step and the

running of the paper bag blanks twice through the production line is avoided.

The objects of the invention are achieved by means of a procedure, characterized mainly on that in a full width paper web collar elements are affixed with a given spacing, that the full width paper web is run to acquire tubular shape and cut in fixed lengths, whereby the paper bag of tubular form comprises a shell with both ends open and having in one corner a collar blank, and that on the paper bags in tubular shape the corner is pleated and both open ends are sewn, whereby is produced a finished paper bag. The other characteristic features of the procedure of the invention are stated in claims 2-5.

By the procedure of the invention are gained several significant advantages. In the procedure of the invention the cumbersome and costs involving manual step and the double run through the production line are completely avoided. In the procedure of the invention, furthermore, less material is used for the collar blanks, whereby savings are achieved also in material consumption.

The invention is described in detail by referring to certain advantageous embodiments of the invention presented in the Figs of the attached drawing, but to which the invention is not intended to be exclusively confined.

Fig. 1 presents a paper bag known in the art, viewed from above.

Fig. 2 presents schematically that step of the procedure of the invention wherein the collar blanks are affixed to the full width paper web.

Fig. 3 presents schematically that step of the procedure of the invention in which the paper bags are in tubular shape, with the collar affixed to the valve aperture.

Fig. 4a presents an advantageous embodiment of the collar blank of

the invention.

Fig. 4b presents another advantageous embodiment of the collar blank of the invention.

Fig. 4c presents a third advantageous embodiment of the collar blank of the invention.

Fig. 5 presents part of a paper bag in tubular form made by the procedure of the invention, viewed from one side.

Fig. 6 presents a paper bag in tubular form made by the procedure of the invention, viewed from one end.

The paper bag known in prior art, depicted in Fig. 1, has been generally indicated by the reference numeral 10. The paper bag 10 comprises a shell part 11, a bottom part 12 and a top part 13. In the corner of the top part 13 a valve aperture has been provided, fitted with a collar 14 to close the valve aperture after the bag 10 has been filled. Both ends 12 and 13 of the paper bag 10 have been provided with a sewn seam 15. The pleats of the paper bag 10 are indicated by the reference numeral 16. The shell 11 of the paper bag 10 usually consists of several material layers, for instance of the 6-fold material thickness.

In the procedure of the invention, as shown in Fig. 2, to the full width paper web 20 are affixed by glueing or in another equivalent manner collar blanks 24 with a given spacing. Hereafter the full width paper web 20 is run to tubular form and cut in fixed lengths, as shown in Fig. 3. Thereby the paper bag in tubular form 20a,20b, etc. comprises a shell 21, with both ends open and having on its corner a collar blank 24. The paper bags in tubular form 20a,20b etc., depicted in Fig. 3, have pleats indicated with a dotted line 26. Next, the paper bag 20a,20b,etc. in tubular form are folded in one corner and both open ends are sewn with a seam 15, whereby the finished paper bag 10, depicted in Fig. 1, is obtained. In Figs 5 and 6 the glueing line of the collar 21 is indicated by the

reference numeral 29 and the incision, made in the collar 24, by the reference numeral 27.

In Fig. 4a has been presented an advantageous embodiment of the collar blank 24a of the invention. In this embodiment the collar blank 24a has been provided with an incision 27a, whereby folding the valve aperture by machine means is reliably managed. It should be noted that the incision 27a is made in the first step of the procedure of the invention, at which the full width paper web 20 collar blanks 24a are glued with a given spacing. In addition, in the collar blank 24a has been made an oblique cut 28a, whereby the folded collar 24a can be better opened in the finished paper bag.

The collar blanks 24b shown in Fig. 4b is in other respects the same as the collar blank 24a of Fig. 4a, but in the collar blank 24b of Fig. 4b therefrom has been removed, instead of the incision 27a, a segmentally shaped piece 27b. The collar blank 24b also has an oblique cut 28b.

In the case of the collar blank 24c, depicted in Fig. 4c, from the collar blank 24c has been removed a substantially triangular piece 27c and an oblique cut 28c has been made in the collar blank 24c.

In the foregoing only certain advantageous embodiments of the invention have been presented and it is obvious to a person skilled in the art that numerous modifications thereof can be made within the scope of the inventive idea presented in the claims following hereinbelow.

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Claims

1. Procedure for manufacturing paper bags, said paper bags (10) being provided at both ends with a sewn seam (15) and having in the corner of the paper bag (10) a valve aperture provided with a collar (14), characterized in that on a full width paper web (20) are affixed collar blanks (24,24a,24b,24c) with a given spacing, that the full width paper web (20) is run to assume tubular form and cut in fixed lengths, whereby the paper bag in tubular form (20a,20b,etc.) comprises a shell (21), with both ends open and carrying on its corner a collar blank (24,24a,24b, 24c, etc.), and that on the paper bags in tubular form (20a,20b,etc.) is performed folding of the corner and sewing of both open ends, whereby a finished paper bag (10) is obtained.

2. Procedure according to claim 1, characterized in that for collar blank (24,24a) is used a collar blank (24,24a) furnished with an incision (27,27a), and that the incision (27,27a) is made in that step of the procedure at which to the full width paper web (20) are glued collar blanks (24) with a given spacing.

3. Procedure according to claim 1, characterized in that for collar blank (24) is used a collar blank (24b) from which has been removed a substantially segment-shaped piece (27b), and that removal of the segment-shaped piece (27b) is carried out in that step of the procedure at which to the full width paper web (20) are fixed collar blanks (24) with a given spacing.

4. Procedure according to claim 1, characterized in that for collar blank (24) is used a collar blank (24c) from which has been removed a substantially triangular piece (27c), and that the removal of the substantially triangular piece (27c) is carried out in that step of the procedure at which to the full width paper web (20) are affixed collar blanks (24) with a given spacing.

5. Procedure according to any one of claims 1-4, characterized in that for collar blanks (24a,24b,24c) are used collar blanks, in the edge of which an oblique cut (28a,28b,28c) has been made.

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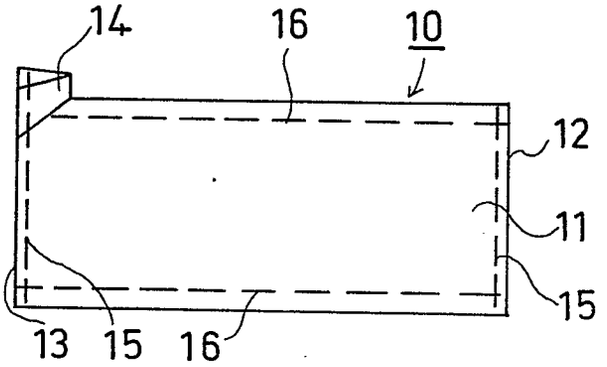

FIG. 1

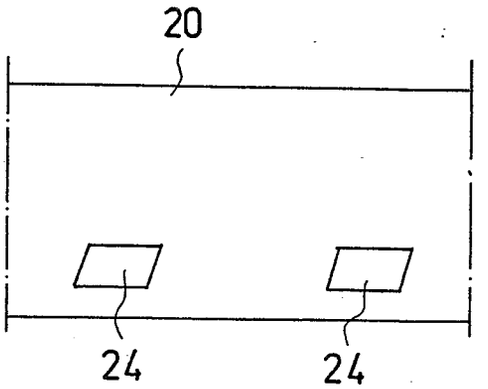

FIG. 2

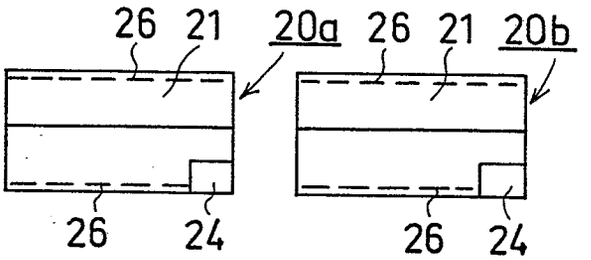

FIG. 3

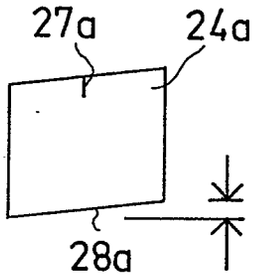

FIG. 4a

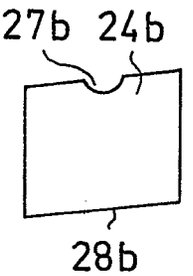

FIG. 4b

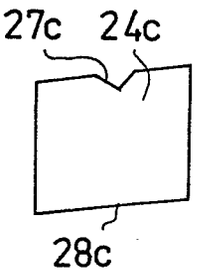

FIG. 4c

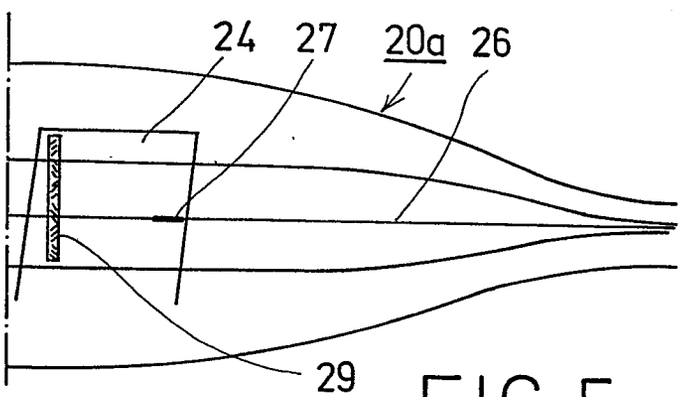

FIG. 5

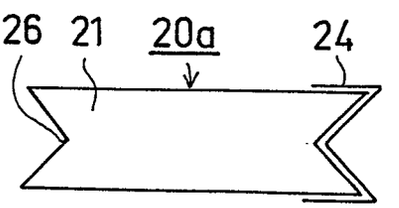

FIG. 6