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EUROPEAN PATENT APPLICATION

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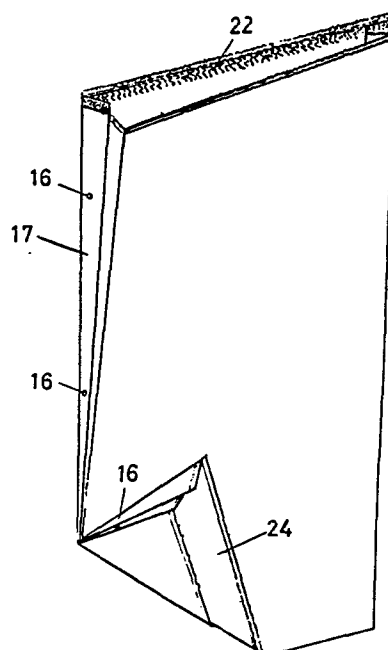
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⑧④ Designated Contracting States: **AT BE CH DE FR GB IT LI LU NL SE**

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⑤④ **Manufacture of gusseted bags.**

⑤⑦ A method of manufacturing a pinch bottomed gusseted sack is provided. Paper is fed into a tuber which forms gussets (17) and an adhesive (16) is applied to the inside edges of the gussets prior to feeding the tubes into the feeder mechanism of a valve bottomer machine in which the manufacture of the sack is completed. The adhesive on the gussets prevents the folds of the gussets from opening when the tubes are picked up by suction cups by a rotary feeder.



MANUFACTURE OF PINCH BOTTOM GUSSETED BAGS

TITLE MODIFIED
see front page

~~FIELD OF THE INVENTION~~

This invention relates to the manufacture of pinch bottom gusseted sacks and also to machinery for such manufacture.

~~BACKGROUND OF THE INVENTION~~

The conventional machinery for pinch bottomed gusseted sacks is fairly complex and, compared to a valve bottomer machine, is relatively slow. This is largely because of the design of the normal feed mechanisms for this type of bottomer. The gussets present an even greater problem in respect of the rotary feed mechanisms of present generation valve bottomers since the gusset is opened by the suction cups and the free portion jams in the feeder. In United States Patent 2 871 771 (Mercer) the application of an adhesive on the inside of the gussets during the forming stage is described. A strip of adhesive is applied between the inside folds of the gusset at the bottom of the sack and the advantage obtained in doing this is that sifting of the packaged commodity from the bottom of the sack is prevented.

~~OBJECT OF THE INVENTION~~

It is an object of the present invention to provide a method for the manufacture of pinch bottom gusseted sacks which will enable them to be produced on a valve bottomer machine or a modified version thereof.

~~THE INVENTION~~

According to the invention a method of manufacturing a pinch bottomed gusseted sack includes the step of applying temporary adhesive means to the inside faces of the gusset prior to feeding it to the feeder mechanism of a valve bottomer machine.

In a preferred form of the invention the valve bottomer machine includes a station for applying an adhesive such as a liquid adhesive, to the sack at the so-called "factory end" which is then folded on itself and compressed to complete the seal. To provide a so-called "customer's end" of the sack, the machine will also include a station for the application of a molten thermoplastic adhesive composition (hot melt).

In a preferred form of the invention the temporary adhesive is applied in the form of a number of spots along the inner faces of the gusset. For most applications three spots will suffice. These spots must

be applied during the "tubing" operation. The spots allow the gusset to be opened by the customer when desired and, in fact the spots may be unbonded during the filling operation of the sack. Preferably the spots are small so that minimal damage to the sack occurs when the gussets are opened.

The feeder mechanism of the valve bottomer machine preferably has a conventional suction feed device which picks up a sack along its gusset by suction. The adhesive inside the folds of the gusset prevents the gusset from opening as it is picked up.

Apparatus for use with a method according to the invention is described by way of example with reference to the accompanying drawings in which:

Figure 1 is a schematic elevation of a sack tuber machine;

Figure 2 is a schematic plan view of a valve bottomer;
and

Figure 3 is a perspective view of a partially formed tube according to the invention.

Referring to the drawings an apparatus for manufacturing pinch bottomed gusseted sack is shown as including a tubing machine 10 and a paper sack bottomer 12.

Paper is fed from rolls into the tube forming section 14 where an endless band of paper is formed as a tube having gussets disposed at either sides. The tube is formed by applying an adhesive in the longitudinal seams of the paper after which pressure is applied. Spaced apart spots of adhesive 16 are applied between the folds of the gusset 17 for temporary fixing. A separating section is incorporated in the station 16 where the tube is parted into predetermined lengths.

The tubes are fed into a rotary double feeder 18 in which each tube is individually picked up by suction cups along the gusseted edge and a thermoplastic adhesive is applied at the station 20 in the form of a band 22 at the customer end of the sack. At the factory end of the bag a band 24 of a liquid adhesive is applied and the bottom is folded over to finish the manufacturing process. The sacks are then fed on a delivery conveyor 26 for despatch.

An advantage of the invention is that temporary fixing of the folds of the gusset enables pinch bottom sacks to be manufactured on conventional paper sack valve bottomer machines at a much higher speed than was possible in the prior art.

CLAIMS:

1.

A method of manufacturing a pinch bottomed gusseted sack characterised in including the step of applying temporary adhesive means to the inside edges of the gusset prior to feeding it to the feeder mechanism of a valve bottomer machine.

2.

A method according to claim 1 characterised in that the temporary adhesive is applied in the form of a number of spaced apart spots along one inner edge of the gusset during the tubing stage of manufacture of the sack.

3.

A method according to claim 1 or claim 2 characterised in that the valve bottomer machine includes a feeder for picking up the tubes by suction cups along a gusseted edge, a station for applying a liquid adhesive to the sack at the so-called "factory end" and folding it on itself, and applying a thermoplastic adhesive composition at the so-called "customer's end" of the sack.

4.

A method of manufacturing a pinch bottomed gusseted sack characterised in including the steps of applying temporary adhesive in the form of a number of spaced apart spots along one inner edge of the gusset during the tubing stage of manufacture of the sack, feeding the tube into the feeder mechanism of a valve bottomer machine having a feeder for picking up the tube by suction cups along the gusseted edge, and applying an adhesive at one or both free ends of the tube.

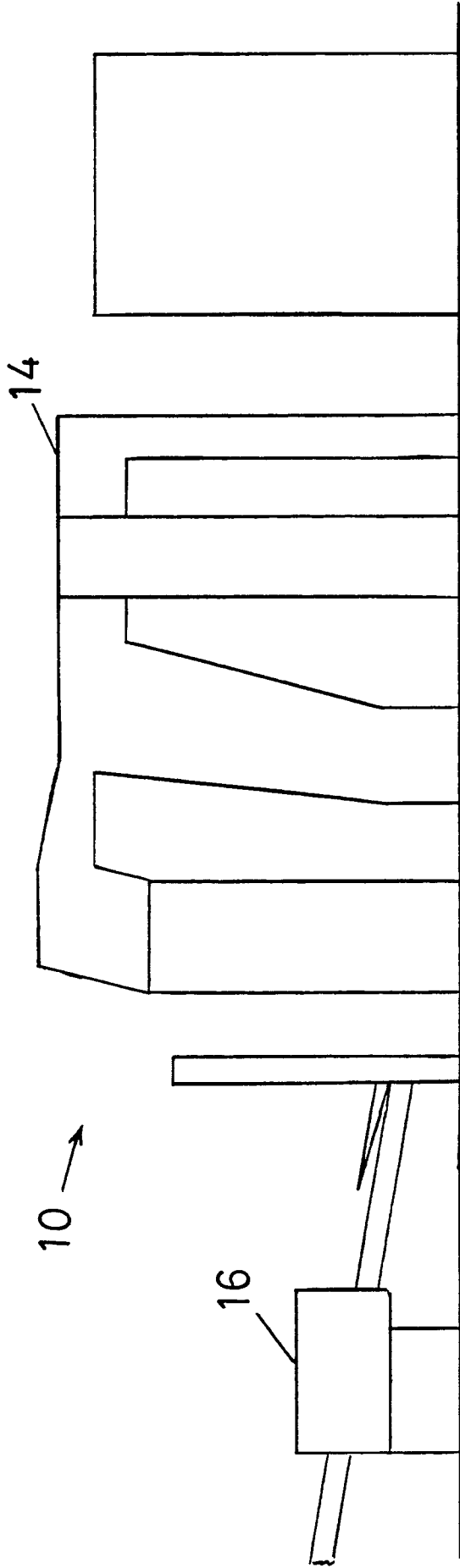


FIG. 1

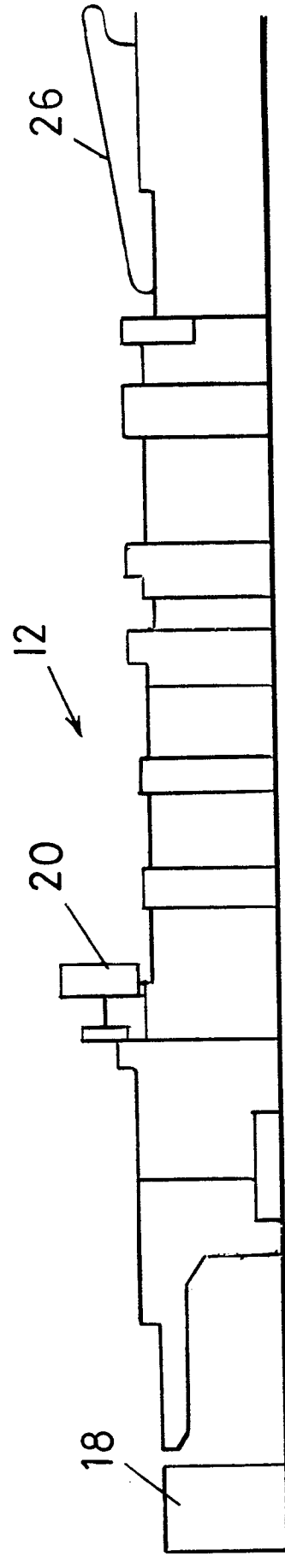
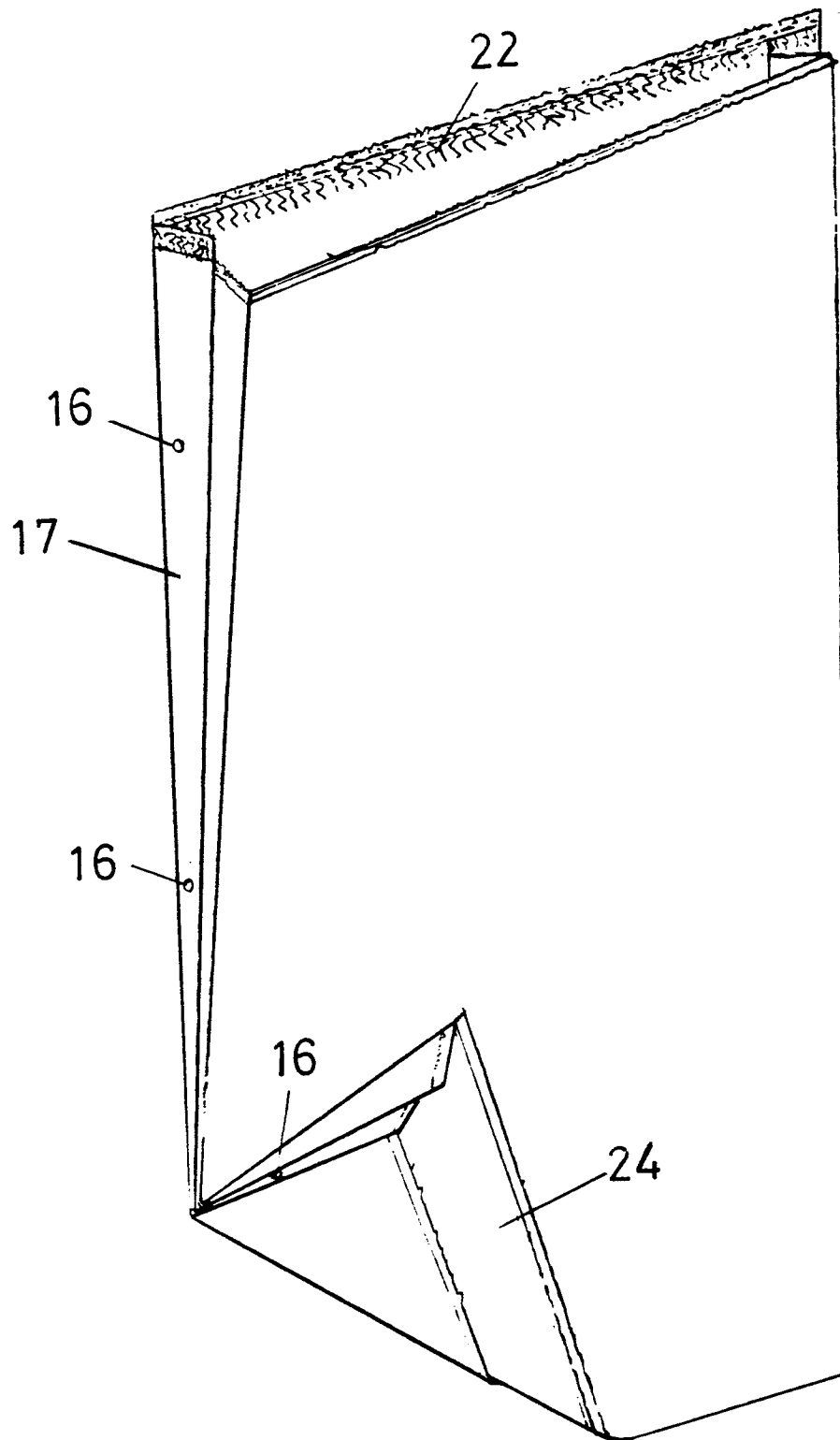


FIG. 2

FIG. 3



European Patent
Office

EUROPEAN SEARCH REPORT

0155100

Application number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 85301157.5
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	DE - A1 3 043 491 (NATRONAG) * Claims 1-4; fig. 1 *	1-4	B 31 B 21/60 B 31 B 31/60
Y	--	3-4	
Y	GB - A - 1 239 906 (ROBINSON LTD) * Fig. 1-5; specification page 1, lines 63-66 *	3-4	
D,A	US - A - 2 871 771 (L.P. MERCER) * Fig. 1-5; specification column 4, lines 34-41 *	1-4	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 31 B
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 13-05-1985	Examiner SÜNDERMANN
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			