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Bezeichnung der Erfindung: Method of manufacturing a web of plastic bags
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : B 31B

ENTSCHEIDUNG / DECISION
vom / of / du 15 February 1985

Anmelder / Applicant / Demandeur : WAVIN B.V.

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant:

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Art.52(1),56
"Inventive step"

Leitsatz / Headnote / Sommaire

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Case Number: T 181 / 83

DECISION

of the Technical Board of Appeal 3.2.1

of 15 February 1985

Appellant: WAVIN B.V.
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Decision under appeal: Decision of Examining Division 085 of the European Patent Office dated 11 May 1983 refusing European patent application No 80 200 429.1 pursuant to Article 97(1) EPC

Composition of the Board:

Chairman: G. Andersson
Member: K. Schügerl
Member: P. Ford

Summary of facts and submissions

I European patent application No. 80 200 429.1, filed on 11 May 1979 and published under publication No. 0 021 463 on 7 January 1981 was refused by a decision of Examining Division 085 dated 11 May 1983. That decision was based on Claims 1 and 2, filed on 12 February 1982.

II. The reason given for the refusal was that the claimed subject-matter did not involve an inventive step having regard to NL-A-7 800 295.

III. The applicant lodged an appeal against this decision on 30 June 1983 with payment of the fee. A statement setting out the grounds of appeal was filed on 12 September 1983.

IV. In his Statement of Grounds, the appellant stressed the inventiveness of the claimed subject-matter and requested the grant of a patent on the basis of two amended claims.

V. Finally, the appellant submitted, at the invitation of the rapporteur, a new description, a new single claim and a new Figure 1 of the drawings and requested deletion of Figure 6 of the drawings. The new claim reads as follows:

"Method of producing a web of a plurality of interconnected plastics bags (27) with gusset folds, comprising a central (4, 4a) and two outer longitudinal gusset fold edges (2, 3; 2a, 3a) which limit a first and a second gusset fold part (5, 6, 5a, 6a) by providing a

continuously supplied plastics foil by heat-sealing in a first sealing station at both sides of the foil with two first fold part seals (8, 9;, 10, 11), whereby each first fold part seal (8, 9;, 10, 11) always connects an outer foil layer (1a, 1b) with an opposite gusset fold part (5, 6; 5a, 6a) and moving the foil over a predetermined distance (A) to another sealing station and providing the foil with a first transverse bottom seal (12) which extends across the entire width of the tubular foil, characterised in that

(a) in the first sealing station the foil is provided at both sides with bottom fold part seals (21, 22;, 23, 24), each bottom fold part seal being obtained by heatsealing a gusset fold part 5, 6, 5a, 6a) to the opposite outer foil layer (1a, 1b), said bottom fold part seals extending from an outer gusset fold edge (2, 3; 2a, 3a) to the nearest central gusset fold edge (4, 4a);

(b) subsequently the foil as obtained under step (a) is moved over the predetermined distance (A) and immediately after having reached the second sealing station the transversee bottom seal is formed by simultaneously heatsealing the opposite foil layers (1a, 1b) extending between the central gusset fold edges (4, 4a) and the still heated opposite bottom fold part seals (21, 22; 23, 24) to each other.

Reasons for the decision

1. The appeal complies with Articles 106 to 108 and with Rule 64 EPC and is, therefore, admissible.

2. The amended claim and the amended description do not contain subject matter which extends beyond the content of the application as filed (Article 123(2) EPC). The procedure can therefore be continued on the basis of these amendments.

3. The precharacterising part of the claim reflects the state of the art according to NL-A-7 800 295.

According to the procedure known from that document, the first transverse bottom seal (12, fig. 1) which extends over the entire width of the tubular foil, is produced in the second sealing station. This means that four layers in the two outer regions and two layers in the inner region have to be welded together. The method according to the new claim differs from this procedure only in that the bottom seal 12 is produced in two steps; the first step takes place in the first sealing station, where in the two outer regions each of the gusset fold layers are welded to the adjacent outer layer; the second step is accomplished in the second sealing station, where in the inner region two layers and in the two outer regions the remaining gusset fold layers are welded together.

4. The prior document refers also to a second transverse bottom seal (19, Fig. 5), which serves as closure after the filling operation. As stated in the description (p. 5, l. 33) difficulties may arise in some cases from the fact that in the two outer regions four layers and in the inner region only two layers have to be welded together, as would be the case in heatsealing the bag over its entire width (see also p. 3, l. 24).

It cannot be derived from the document with certainty that these difficulties stem solely from thermal problems, especially also in view of the fact that the first transverse bottom seal is produced in such a way that partly four and partly two layers are welded together. Clearly, the welding procedure is much easier in the flattened state of the tubular foil than in the filled state, where the welding takes place immediately above the filled-in content of the bag, so that the layers have first, by suitable flexing, to be brought into the proper position, a step which, especially in the outer regions with four layers, is possibly difficult to control.

5. The document proposes to overcome the difficulties- not specified in detail - by producing a part of the second bottom seal in the two outer regions already in the course of the production of the bag, either by welding four layers together or by welding each of the gusset fold layers to the adjacent outer layer. No further details are given as the execution of these steps.

As to the first-mentioned method, one could assume that the final heat-sealing takes place in the inner region only, which is of little interest in the present connection, or, alternatively, that the final heatsealing extends over the entire width of the filled bag, so that the heat fed into the two outer regions is lost. According to the second-mentioned method, this heat serves to weld the two innermost layers together, but even then the heat supply is taken up by a cold material, partly four and partly two layers thick.

6. Starting from thse indications, the skilled person had to recognise first that the first transverse seal exhibits deficiencies due to thermal problems in connection with a particular production method which, according to the teachings of the document, should be avoided in the case of the second transverse seal. It is well within the capacity of the skilled person to appreciate this; the remedy, however, is a departure from the method hitherto used, viz. the supply of heat to cold layers. According to the application, heat is supplied in two stages and separated by such a short time interval that some of the heat from the first stage is utilised in the second stage. Thus, the theoretically required amount of heat, which, of course, differs according to the number of layers to be welded together, is attained with a certain degree of approximation.

7. As a consequence, the total amount of heat required is reduced and hence also the time required for a proper cooling before further processing the web. Even though saving of costs and energy is a general desideratum in mass production, this alone does not lead the skilled person to the idea applied in the present case (two-stage heat supply in a short time interval).

8. Also the fact that the twofold supply of heat is accomplished in the known device with two stations, cannot speak against the invention. That with a small modification only the known device takes over an additional function (twofold supply) giving the results referred to above, is certainly an indication of inventiveness.

9. Hence, a two-stage process for a single seal, each stage being accomplished on cold material (NL-A-

7 800 295) could not lead the skilled man to the invention. The subject-matter of the new claim is, therefore, based on an inventive step (Article 56 EPC); the claim is thus allowable (Article 52(1) EPC).

10. The amendments to the description and the drawings take into account the wording of the new claim and the restricted scope of the description, further, they aim at removing some errors and linguistic deficiencies. They are likewise allowable.

ORDER

For these reasons

it is decided that

1. The decision of the Examining Division is set aside.

2. The case is remitted to the first instance with the order to grant a patent on the following basis:

- Claim, description and Fig. 1 of the drawings, received on 26 January 1985

- Figs. 2-5 as originally filed.

P.F.