

Internal distribution code:

- (A) Publication in OJ
(B) To Chairmen and Members
(C) To Chairmen
(D) No distribution

**Datasheet for the decision
of 29 June 2010**

Case Number: T 0678/08 - 3.2.05

Application Number: 96935122.0

Publication Number: 0858390

IPC: B29C 65/02

Language of the proceedings: EN

Title of invention:

Method for applying articles to a carton surface

Patentee:

ELOPAK SYSTEMS AG

Opponent:

SIG Technology AG

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Novelty (yes)"
"Inventive step (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0678/08 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 29 June 2010

Appellant I: SIG Technology AG
(Opponent) Laufengasse 18
CH-8212 Neuhausen am Rheinfall (CH)

Representative: Thielmann, Andreas
COHAUSZ & FLORACK
Patent- und Rechtsanwälte
Partnerschaftsgesellschaft
Bleichstrasse 14
D-40211 Düsseldorf (DE)

Respondent: ELOPAK SYSTEMS AG
(Patent Proprietor) Cherstrasse 4
Postfach
CH-8152 Glattbrugg (CH)

Representative: Burrows, Anthony Gregory
Business Centre West
Avenue One, Business Park
Letchworth Garden City
Hertfordshire SG6 2HB (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 25 January 2008
rejecting the opposition filed against European
patent No. 0858390 pursuant to Article 102(2)
EPC 1973.

Composition of the Board:

Chairman: W. Zellhuber
Members: P. Michel
E. Lachacinski

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition filed against European Patent No. 0 858 390.

II. The appellant requests that the decision under appeal be set aside and that the patent in suit be revoked in its entirety.

The respondent (patent proprietor) requests that the appeal be dismissed.

III. Oral proceedings were held on 29 June 2010.

IV. The following documents are referred to in this decision:

D1: US-A-4,507,168

D4: US-A-3,498,868

V. Claims 1 and 7 as granted read as follows:

"1. A method of attaching an article to a carton surface without using hot-melt adhesive and without backing-up the carton surface by a support mechanism, the method comprising the steps of:

providing an article (22);

forming, filling, and sealing a carton (20) comprised of a laminate comprised of a paperboard layer and a thermoplastic layer, said thermoplastic layer providing said carton surface;

heating a thermoplastic portion (26) of the article (22) to a temperature no higher than the melting point of the thermoplastic of said portion (26) of the article (22);

placing that heated portion (26) of the article (22) on a portion of the thermoplastic layer of the formed, filled and sealed carton (20) to heat and thus activate said portion of the thermoplastic layer, said portion (26) of the article (22) being of a thermal capacity higher than that of said portion of the layer; and allowing or causing the heated portions of the article (22) and the layer to cool, to thereby become bonded together."

"7. A method of attaching an article to a carton surface without using hot-melt adhesive and without backing-up the carton surface by a support mechanism, said carton surface being provided by a thermoplastic coating on a paperboard layer of a laminate (20) in the form of a formed, filled and sealed carton (20), the method comprising the steps of:

providing an article (22) in the form of a pour spout fitment (22);

heating a thermoplastic portion (26) of the article (22), said heating being without contact between any heating member and said portion (26) of the article (22);

placing that heated portion (26) of the article (22) on a portion of the thermoplastic coating of the formed, filled and sealed carton (20) to heat and thus activate said portion of the thermoplastic coating, and

allowing or causing the heated portions of said article and said coating to cool, to thereby become bonded together."

VI. In the written and oral proceedings, the appellant has argued substantially as follows:

In the method disclosed in document D1, it would be possible either to heat both components, or just the component having a larger heat capacity. It would be absurd to heat the film on the container which is extremely thin and thus has a small heat capacity. The procedure for heating the faucet and the carton film are described at column 9, lines 46 to 64. Insofar as the carton is heated, this corresponds to the step as claimed in claims 4 and 8 of the patent in suit. The person skilled in the art would avoid heating the resin coating beyond its melting point. It is thus implicitly disclosed in document D1 that the component having a larger heat capacity is heated, which in turn heats and activates the other component.

The subject-matter of claims 1 and 7 thus lacks novelty in view of the disclosure of document D1.

In the event that the subject-matter of claim 1 is regarded as being new, it nevertheless lacks an inventive step.

Document D1 is the closest prior art, since it has the most features in common with claims 1 and 7. The problem to be solved is to avoid distortion of the thermoplastic layer of the carton while obtaining good sealing between the article and the carton.

The solution to this problem as claimed in claims 1 and 7 is known from document D4. This document relates to the same technical field and is concerned with the same problem.

Whilst document D4 refers to temperatures above the melting point at column 2, line 70 to column 3, line 6 and column 4, lines 2 to 6, this refers to the surface of the heating element which is only in contact with the flange for a short time, so that the plastics material itself is not heated above its melting point. The person skilled in the art would appreciate that it is not desirable to heat the materials above their melting points. The "fusion temperature" referred to at column 2, line 8 is the same as the activation temperature.

The subject-matter of claims 1 and 7 thus lacks an inventive step.

VII. In the written and oral proceedings, the respondent has argued substantially as follows:

The subject-matter of claim 1 is distinguished from the disclosure of document D1 by the following features:

- (i) heating a thermoplastic portion of the article to a temperature no higher than the melting point of the thermoplastic of said portion of the article;
- (ii) placing the heated portion of the article on a portion of the thermoplastic layer of the formed, filled and sealed carton to heat and thus activate said portion of the thermoplastic layer; and

(iii) said portion of the article having a thermal capacity higher than that of said portion of the layer.

The subject-matter of claim 7 is distinguished from the disclosure of document D1 by the feature of placing a heated portion of the article on a portion of the thermoplastic layer of the formed, filled and sealed carton to heat and thus activate said portion of the thermoplastic layer.

As shown in Figure 19 of document D1, and described at column 2, lines 25 to 32, the carton (A) is heated by means of a heating element (177) and the article (B) is heated by means of a second heating element (172). Since the materials of the faucet and container film could be the same, the same heating conditions could be appropriate for both.

According to document D1, column 1, lines 39 to 47, the resin coating on the container must be molten. There is no disclosure of the temperature and physical state of the faucet. The sentence at column 1, lines 57 and 58 indicates that an adhesive may be used. The passage of document D1 at column 2, lines 1 to 24, states that the invention is concerned with the problems associated with mounting a faucet on a gable-top container. This problem is solved by tilting the container during heating.

The subject-matter of claim 1 is thus new.

Document D1 is concerned with the problem of avoiding the use of a hot melt adhesive. There are a number of alternative solutions to this problem, including

melting the resin coating, as proposed in document D1, using an adhesive on the flange, high frequency welding, resistance heating and using an adhesive washer.

Document D1 discloses a method in which both the resin coating on the carton and the article to be attached thereto are heated and the resin coating is made molten.

It would involve a jump to adopt the teaching of document D4 into that of document D1, and other alternatives could be adopted. The problem to be solved is to attach an article to a filled and sealed carton. Document D4 is not concerned with such a method, and requires the use of a plunger as shown in Figure 7. In addition, the method of document D4 requires special measures to be adopted, including providing a thickened portion of the flange. The person skilled in the art would thus ignore the teaching of this document.

If, nevertheless, the teaching of document D4 was to be taken into account, the flange of the article would be heated to a temperature well above the melting point of polyethylene (see column 4, lines 2 to 4, and claim 2 of document D4).

The question further arises as to how to combine documents D1 and D4. The combination of documents D1 and D4 would result in a method involving heating to above the melting point of the foil coating of the carton and making contact between the heating element and the flange.

The subject-matter of claims 1 and 7 thus also involves an inventive step.

Reasons for the Decision

1. Novelty

In the method of attaching an article to a carton surface disclosed in document D1, a heater (86) is placed between the article and the container which heats both the thermoplastic coating of the container and the article (see column 9, lines 46 to 64). There is no indication in document D1 that, when the article is placed on the container, any heat transfer occurs either from the article to the container or vice versa.

The subject-matter of claims 1 and 7 is thus distinguished over the disclosure of document D1 at least by virtue of the feature that placing the heated portion of the article on a portion of the thermoplastic coating of the formed, filled and sealed carton heats and thus activates said portion of the thermoplastic coating.

The subject-matter of claims 1 and 7 is thus new.

2. Inventive step

2.1 Claim 1

2.1.1 Closest prior art

Document D1 relates to the same technical field as the patent in suit and is concerned with the problems surrounding the attachment of an article, such as a pouring spout, to a filled and sealed carton. It was

pointed out on behalf of the respondent that the invention with which document D1 is concerned relates to a method in which the container is tilted during attachment of the article, so that the liquid in the container does not cool the lower side of the opening to which the article is to be attached, so that uniform heating is obtained (column 2, lines 1 to 32). This does not, however, detract from the disclosure of document D1 as a whole being considered as representing the closest prior art.

Document D1 is thus regarded as representing the closest prior art. This document discloses a method of attaching an article to a carton surface without using hot-melt adhesive and without backing-up the carton surface with a support mechanism. It was not disputed between the parties, and the Board accepts, that the method disclosed in document D1 comprises the steps of providing an article; forming, filling, and sealing a carton comprised of a laminate comprised of a paperboard layer and a thermoplastic layer, said thermoplastic layer providing said carton surface; heating a thermoplastic portion of the article; placing that heated portion of the article on a portion of the thermoplastic layer of the formed, filled and sealed carton; and allowing or causing the heated portions of the article and the layer to cool, to thereby become bonded together.

It is, however, disputed between the parties as to whether or not the remaining features of claim 1 are disclosed in document D1.

As regards the feature of the heated portion of the article being of a thermal capacity higher than that of said portion of the layer, this feature is regarded as being implicitly disclosed in document D1. It is clear to the skilled reader of document D1 that the flange (7) of the article has a thermal capacity higher than that of the portion of the thin thermoplastic layer on the outside of the carton underlying the flange, since the flange is many times thicker than the layer.

As regards the feature of heating a thermoplastic portion of the article to a temperature no higher than the melting point of the thermoplastic of said portion of the article, there is no explicit teaching in document D1 of a maximum temperature to which the article should be heated. In addition, there is no suggestion in document D1 that any disadvantage could occur as a result of heating the article to a temperature above its melting point.

Finally, as regards the feature of placing the heated portion of the article on a portion of the thermoplastic layer of the formed, filled and sealed carton to heat and thus activate said portion of the thermoplastic layer, this is not suggested in document D1. Rather, as mentioned above under point 1, both the article and the container are heated before being brought into contact, as disclosed in document D1 at column 9, lines 46 to 64 with reference to Figure 12 and at column 14, lines 26 to 56 with reference to Figure 19.

2.1.2 Problem to be solved

The problem to be solved is to provide a method of attaching a thermoplastic article to the surface of a filled and sealed carton without using hot-melt adhesive and without backing-up the carton surface by a support mechanism, whilst avoiding the risk of distortion of the article, and ensuring a seal between the article and the carton.

2.1.3 Solution

Document D4 offers a solution to this problem, as stated at column 1, lines 38 to 69, that is, to utilize a portion of the article as a heat reservoir, whereby a portion of the thermoplastic layer is heated and thus activated when the heated portion of the article is placed thereon. The pressure required to join the components is sufficiently light, that no distortion of either of the parts to be joined will occur.

In particular, document D4 discloses a method of attaching a thermoplastic article, such as a pouring spout, to a bag formed from a two-ply thin gauge plastic film. As shown in Figure 5, a flange of the spout is heated by means of a heating element (27), before the flange is brought into contact with the plastic film. The flange, including a thickened portion (18), acts as a heat reservoir to supply heat to enable the flange and the film to be fused together (see column 1, lines 38 to 56).

Whilst document D4 refers at column 2, line 70 to column 3, line 6 and at column 4, lines 2 to 6, to

temperatures above the melting point of polyethylene, these passages relate to the temperature of the heating element itself and teach that the contact of the element with the plastic should only be of a short duration. Thus, there is no suggestion that the material of the article should be heated to a temperature above its melting point. Rather, as set out in claim 1, the heat of the article is such that heat of less than the fusion temperature of the film is applied to the film.

It is pointed out in the decision under appeal, under point 3, and also by the respondent, that document D4 is concerned with attaching an article to a plastic film rather than a laminate having a paperboard layer. However, the present invention is concerned with a problem associated with attaching an article to a thermoplastic film (i.e. distortion) and it is not relevant whether the film is a layer of a laminate having a paperboard layer or a multilayer plastics film (see document D4, column 1, lines 38 to 48).

Whilst Figure 7 of document D4 shows the flange of the spout being supported by a plunger, this is not necessary for the performance of the invention as disclosed at column 1, lines 38 to 69 and as claimed in claim 1.

Thus, the arguments to the effect that document D4 relates to a different technical field from that of document D1 cannot be accepted, and the Board is of the opinion that the person skilled in the art would consider the teaching of this document as being

relevant to overcoming the problem associated with the method of document D1.

The subject-matter of claim 1 of the patent in suit thus does not involve an inventive step.

2.2 Claim 7

Claim 7 differs from claim 1 in that it is specified that the article is in the form of a pour spout fitment and that heating of the thermoplastic portion of the article takes place without contact between any heating member and the heated portion of the article.

These features are, however, known from the document representing the closest prior art, document D1. Figure 1 shows the pour spout fitment and Figure 19 shows the heating element (172) heating the flange of the pour spout (B) without contact.

For the reasons set out under points 2.1.2 and 2.1.3 above, it does not involve an inventive step to modify the method disclosed in document D1 so that a portion of the thermoplastic layer is heated and thus activated by placing the heated portion of the article on the portion of the thermoplastic layer.

Whilst document D4 discloses heating of the article by contact between the heating element and the article, the problem to be solved, as set out under point 2.1.2 above, does not suggest that the arrangement of document D1 should be modified by arranging for the heating element to be brought into contact with the article.

The subject-matter of claim 7 of the patent in suit thus also does not involve an inventive step.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar:

The Chairman:

D. Meyfarth

W. Zellhuber