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Datasheet for the decision of 11 December 2015

Case Number: T 2015/14 - 3.2.07

Application Number: 09164785.9

Publication Number: 2106860

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Language of the proceedings: EN

Title of invention:
Compact heated air manifolds for adhesive application

Applicant:
Nordson Corporation

Headword:

Relevant legal provisions:
EPC Art. 76(1)

Keyword:
Divisional application - subject-
matter extends beyond content of earlier application (no)

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Catchword:

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Case Number: T 2015/14 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 11 December 2015

Appellant: (Applicant)	Nordson Corporation 28601 Clemens Road Westlake, OH 44145-1119 (US)
Representative:	Eisenführ Speiser Patentanwälte Rechtsanwälte PartGmbB Postfach 10 60 78 28060 Bremen (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 26 May 2014 refusing European patent application No. 09164785.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	H. Meinders
Members:	V. Bevilacqua
	C. Brandt

Summary of Facts and Submissions

I. The appeal lies against the decision refusing European patent divisional application 09 164 785.9.

II. The Examining Division found that none of the requests submitted by the appellant (main request, first to third auxiliary requests) complied with the requirements of Article 76(1) EPC.

III. The parent application, also referred to in the appealed decision, is European patent application 03 000 838.7.

IV. With the statement of grounds of appeal the appellant re-submitted the requests on the basis of which the appealed decision was taken, together with two further sets of claims (fourth and fifth auxiliary request).

The appellant requested to set aside the decision under appeal and to grant the patent on the basis of one of these requests.

V. In a communication annexed to the summons to oral proceedings the Board communicated its provisional opinion that none of the requests on file appeared to comply with the requirements of Article 76(1) EPC.

VI. With a letter dated 11 November 2015 the appellant withdrew all previous requests and submitted three new sets of claims (main request, first and second auxiliary request).

VII. Oral proceeding took place on 11 December 2015.

During oral proceedings the compliance of the subject-matter of claims 1 and 4 of the main request with the requirements pursuant to Article 76(1) EPC was discussed. Thereafter the appellant filed an amended main request and requested that the decision under appeal be set aside and that a patent be granted on the basis of this main request, or alternatively, on the basis of one of the first or second auxiliary requests filed with the letter dated 11 November 2015.

The decision was pronounced at the end of the oral proceedings.

VIII. The text of **claim 1** of the main request is as follows:

"A process air-assisted hot melt adhesive liquid dispensing system for dispensing heated hot melt adhesive liquid streams onto a substrate moving relative to the streams, the dispensing system comprising:

a heated hot melt adhesive liquid manifold (52) capable of supplying the heated hot melt adhesive liquid;

a first dispensing module (50) connected with said heated hot melt adhesive liquid manifold (52) and configured to receive the heated hot melt adhesive liquid from the heated hot melt adhesive liquid manifold (52) and to dispense the heated hot melt adhesive liquid as a stream onto the substrate moving relative to the stream and to dispense heated process air to impart a motion to the dispensed heated hot melt adhesive liquid stream;

a second dispensing module (50) connected with said heated hot melt adhesive liquid manifold (52) and positioned in a side-by-side relationship with said first dispensing module across the width of the dispensing system, said second dispensing module (50) configured to receive the heated hot melt adhesive liquid from the heated hot melt adhesive liquid manifold (52) and to dispense the heated hot melt adhesive liquid as a stream onto the substrate moving relative to the stream and to dispense heated process air to impart a motion to the dispensed heated hot melt adhesive liquid stream;

a first hot air manifold (34) for receiving process air from a process air supply (41) and for providing heated process air to said first dispensing module (50), and a second hot air manifold (34) for receiving process air from said process air supply (41) and for providing heated process air to said second dispensing module(50);

characterized by

a first flow control device (46) positioned on the air inlet of said first hot air manifold (34) operative to individually control a pressure and/or flow rate of the process air supplied to said first dispensing module (50); and a second flow control device (46) positioned on the air inlet of said second hot air manifold (34) operative to individually control a pressure and/or flow rate of the process air supplied to said second dispensing module (50) so that the pressure and/or flow rate of the process air supplied to said first dispensing module (50) differs from the pressure and/or flow rate of the process air supplied to said second dispensing module (50)."

The text of **claim 4** of the main request is as follows:

"A method of dispensing heated hot melt adhesive liquid from a process air assisted hot melt adhesive liquid dispensing system including a first dispensing module, a second dispensing module positioned in a side-by-side relationship with the first dispensing module across the width of the hot melt adhesive liquid dispensing system (58), and, a heated hot melt adhesive liquid manifold to which the first and second dispensing modules are connected,

first and second hot air manifolds (34) for receiving process air from a process air supply (41) and for providing heated process air to said first and second dispensing modules (50), and a first and second flow control device (46) respectively positioned on the air inlet of said first and second hot air manifolds, the method comprising:

heating the hot melt adhesive liquid in the heated hot melt adhesive manifold; supplying the heated hot melt adhesive liquid from the heated hot melt adhesive liquid manifold to the first and second dispensing modules; supplying process air to the first and second flow control devices (46), supplying the process air from the first and second flow control devices (46), respectively, to the first and second hot air manifolds (34),supplying heated process air from the first and second hot air manifolds (34) to the first and second dispensing modules (50), dispensing the heated hot melt adhesive liquid from each of the first and second dispensing modules as a stream; dispensing heated process air from each of the first and second dispensing modules to impart a motion to the respective

dispensed heated hot melt adhesive liquid stream; and individually controlling the pressure and/or flow rate of the process air supplied to the first and second dispensing module so that the pressure and/or flow rate of the heated process air supplied to the first dispensing module (6250) is different from the pressure and/or flow rate of the heated process air supplied to the second dispensing module."

IX. Insofar as relevant to the present decision the appellant argued essentially as follows:

The application is focused on achieving different pressures and flow rates of the process air dispensed respectively by the first and second dispensing modules, by controlling the flow.

The main request is admissible as it is a reaction to the discussion which took place during the written as well as the oral proceedings.

All the objections raised in relation to Article 76(1) EPC have been dealt with. The subject-matter of claim 1 of the main request does not cover embodiments in which a flow control device can be positioned for instance at the exit of the hot air manifold, inside the dispensing modules or even at the air outlet of the air source, embodiments in which the process air is cold, or in which each dispensing module is connected to different sources of process air.

The subject-matter of claim 1 of the main request does not therefore extend beyond the content of the parent application as filed (Article 76(1) EPC).

Claim 4 has been amended by adding the structural limitations also incorporated in claim 1 and by limiting the method to the exact sequence of steps shown for the preferred embodiment as disclosed in the parent application. As a consequence of these amendments also claim 4 no longer covers embodiments which lie outside of what is disclosed in the parent application.

Reasons for the Decision

1. Admissibility of the main request

The Board noted, in its preliminary opinion, that the originally filed documents mention air flow control only upstream of the air plenum or hot air manifold, and that the process air is heated. The hot air manifolds connect each dispensing module to a source of process air.

During oral proceedings a further discussion on the features "a process air supply" and "flow control device positioned upstream" took place.

The amendments made to the claims 1 and 4 of the main request clearly represent an attempt to overcome the objections raised by the Board in its preliminary opinion, as well as those raised during oral proceedings.

As a consequence, the Board sees no reason not to admit the main request into the proceedings.

2. Claim 1 of the main request

2.1 Claim 1 of the main request is directed towards an adhesive dispenser where two dispensing modules dispense the adhesive as well as process air, and, for each dispensing module there is a flow control device which individually controls a pressure and/or flow rate of the process air dispensed by said dispensing module.

2.2 The parent application discusses such air flow control devices at page 8, lines 10-25.

2.2.1 This passage refers to a process air-assisted hot melt adhesive liquid dispensing system for dispensing heated hot melt adhesive liquid streams with a a conventional (and therefore heated) adhesive liquid manifold (see lines 11, 17) capable of supplying the heated hot melt adhesive liquid.

At page 8 of the parent application there is no explicit disclosure that dispensing is done onto a substrate moving relative to the streams.

This feature of claim 1 is, however, mentioned at page 2, line 13 in the introductory part of the description of the parent application which concerns the invention. It is therefore implicitly present, since it is normally present in such industrial adhesive dispensing systems.

At page 8, lines 12 and 15 of the parent application a plurality of (and therefore at least a first and a second) dispensing modules is mentioned, which are connected with said heated hot melt adhesive liquid manifold and which are configured to receive the heated hot melt adhesive liquid from the respective heated hot

melt adhesive liquid manifold and to dispense the heated hot melt adhesive liquid as well as heated process air so as to impart a motion to the dispensed heated hot melt adhesive liquid stream (see line 12).

This passage also describes a first hot air manifold (line 21) for receiving process air from a process air supply (lines 22 and 23) and for providing heated process air to said first dispensing module, and a second hot air manifold for receiving process air from the same (see lines 22 and 23) process air supply and for providing heated process air to said second dispensing module.

At line 20 (first and second) flow control devices are mentioned, positioned on the air inlet of the respective hot air manifold operative to individually control a pressure and/or flow rate of the process air supplied to the respective dispensing module.

2.2.2 There is no disclosure, at page 8, of the feature that the second dispensing module is positioned in a side-by-side relationship with the first dispensing module across the width of the dispensing system.

Figure 4 of the parent application clearly shows a dispensing system where dispensing modules (62 and 63) are positioned in a side-by-side relationship.

The Board considers that in this particular situation, the side-by-side disposition of the dispensing modules shown at figure 4 may be extracted from this embodiment and combined with the features disclosed in the more general context of page 8 without resulting in an objectionable intermediate generalisation.

This is because, according to lines 9-10, the position of the dispensing modules is only dictated by the parameters of the dispensing application.

As a consequence, there is no functional relation to other aspects of this embodiment (how process air is conveyed and controlled before it reaches the dispensing modules), which implies that the disclosure relating to figure 4 justifies the isolation of this detail.

This feature can also, if the particular dispensing application requires it, be directly applied to the embodiment of figure 8, where the disposition of the dispensing modules is not specified in detail, without interfering with any of its features.

The Board comes therefore to the conclusion that the subject-matter of claim 1 of the main request does not extend beyond the content of the parent application as originally filed and therefore complies with the requirements of Article 76(1) EPC.

3. *Claim 4 of the main request*

The passage at page 8, lines 10-25 of the parent application does not only disclose a dispensing system, but also a method of dispensing heated hot melt adhesive liquid from said process air assisted hot melt adhesive liquid dispensing system.

3.1.1 The first and a second dispensing modules, and a heated hot melt adhesive liquid manifold to which the first and second dispensing modules are connected are mentioned at lines 15-17.

The first and a second hot air manifolds for receiving process air from a process air supply and for providing heated process air to said first and second dispensing modules, and a first and second flow control device respectively positioned on the air inlet of said first and second hot air manifolds are mentioned at lines 19-23.

The steps of heating the hot melt adhesive liquid in the heated hot melt adhesive manifold and supplying the heated hot melt adhesive liquid from the heated hot melt adhesive liquid manifold to the first and second dispensing modules, as well as dispensing the heated hot melt adhesive liquid from each of the first and second dispensing modules as a stream, are implicitly disclosed by the expression (see line 11) "conventional hot air manifold".

The steps of supplying process air to the first and second flow control devices, supplying the process air from the first and second flow control devices, respectively, to the first and second hot air manifolds, and supplying heated process air from the first and second hot air manifolds to the first and second dispensing modules are derivable from lines 19-23.

The step of dispensing heated process air from each of the first and second dispensing modules to impart a motion to the respective dispensed heated hot melt adhesive liquid stream, and individually controlling the pressure and/or flow rate of the process air supplied to the first and second dispensing module so that the pressure and/or flow rate of the heated process air supplied to the first dispensing module is different from the pressure and/or flow rate of the

heated process air supplied to the second dispensing module are derivable from lines 13-19.

3.1.2 As already discussed in relation to claim 1 of the main request no extension beyond the content of the parent application is present, if the feature that the second dispensing module is positioned in a side-by-side relationship with the first dispensing module across the width of the hot melt adhesive liquid dispensing system is extracted from the embodiment shown in figure 4, and used in combination with the features of page 8.

Claim 4 of the main request therefore also complies with the requirements of Article 76(1) EPC.

4. Dependent claims

The additional features of dependent claims 2, 3 and 5 relate to modular adhesive manifolds, comprising a plurality of segments, and have been disclosed in the context of the embodiment of figure 4, see in particular page 19, lines 4-16 of the parent application.

This passage at page 19 explains that modular adhesive manifolds comprising these features may be an element of the embodiment of figure 4, but that they are are also known outside of the context of the embodiment of figure 4 (as explained at page 19, lines 4-6, referring to prior art documents), and belong to the "background of the invention" (see, for example, page 3, line 23).

These features only relate to the distribution of the adhesive, allow the construction of a compact adhesive manifold (see page 19, lines 23 and 24) and have no effect on the control and distribution of process air.

These modular adhesive manifolds are **mentioned** in the embodiment of page 8 (see line 16).

As a consequence also the dependent claims of the main request comply with the requirements of Article 76(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division for further prosecution on the basis of the claims of the main request as filed during the oral proceedings of 11 December 2015.

The Registrar: The Chairman:

G. Nachtigall H. Meinders

Decision electronically authenticated