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Datasheet for the decision of 1 December 2014

Case Number: T 0345/13 - 3.2.05

Application Number: 07825777.1

Publication Number: 2046673

IPC: B65H 35/08

Language of the proceedings: EN

Title of invention:
Variable sheet-length perforation or cutting system

Applicant:
Kimberly-Clark Worldwide, Inc.

Headword:
-

Relevant legal provisions:
Rule 137(4) EPC as in force from 13 December 2007 until 31 March 2010

Keyword:
Applicability of Rule 137(5) EPC - no
Admissibility of the amended claims under Rule 137(4) EPC as in force before 1 April 2010 - yes
Remittal to the department of first instance

Decisions cited:
T 0274/03, T 1394/04, T 2334/11

Catchword:
-

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Case Number: T 0345/13 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 1 December 2014

Appellant: (Applicant)	Kimberly-Clark Worldwide, Inc. 401 North Lake Street Neenah, WI 54956 (US)
Representative:	Andrew Peter Chiva Dehns St Bride's House 10 Salisbury Square London EC4Y 8JD (GB)
Decision under appeal:	**Decision of the examining division of the European Patent Office posted on 30 October 2012 refusing European patent application No. 07825777.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. Poock
Members:	H. Schram
	W. Ungler

Summary of Facts and Submissions

I. The appellant (applicant) filed a notice of appeal on 7 January 2013 against the decision of the examining division, posted on 30 October 2012, by which European patent application No. 07 825 777.1 was refused on the grounds that the amended claims filed on 24 February 2010 related to unsearched subject-matter which did not combine with the originally claimed invention to form a single general inventive concept (Rule 137(5) EPC). The statement of grounds was filed on 15 January 2013.

II. The appellant requested that the decision under appeal be set aside and that the case be remitted to the first instance in order that the amended claims filed on 24 February 2010 (sole request) be searched and examined.

III. Independent claims 1 and 9 of the sole request read as follows:

"1. A method for intermittently cutting a moving target web (26), comprising:

rotating a knife roll (32) having at least one knife member (44) to provide an operative knife-member speed;

rotating an anvil roll (34) having at least one anvil member (46) to provide an operative anvil-member speed;

positioning the knife roll (32) and anvil roll (34) to provide an operative nip region (30) therebetween;

moving a substantially continuous target web (26) at a web speed through the nip region (30);

coordinating a rotational positioning of the knife member (44) with a rotational positioning of its cooperating anvil member (46) to provide an operative, cutting engagement between the knife member and its

cooperating anvil member to thereby cut the moving web at cut locations (38) which are intermittently spaced along a machine-direction (22) of the web;

characterised by providing a speed difference between the moving knife-member (44) and its co-operating moving anvil-member (46) in the nip region (30).”

“9. An apparatus for intermittently cutting a moving target web (26), comprising:

a knife roll (32) which has at least one knife member (44) and is rotatable to provide an operative knife-member speed;

an anvil roll (34) which has at least one anvil member (46) and is rotatable to provide an operative anvil-member speed, the anvil roll (34) positioned to provide an operative nip region (30) between the anvil roll (34) and the knife roll (32);

a transport system (54) which moves a substantially continuous target web (26) at a web speed through the nip region (30);

a control system (36) which coordinates a rotational positioning of the knife member (44) with a rotational positioning of its cooperating anvil member (46) to provide an operative, cutting engagement between the knife member (44) and its cooperating anvil member (46) to thereby cut the moving web (26) at intermittent locations spaced along a longitudinal, machine-direction (22) of the web (26);

characterised in that said apparatus is configured to provide a speed difference between the moving knife member (44) and its co-operating anvil member (46) in the nip region (30).”

IV. In the examination proceedings the appellant had requested a decision according to the state of the file

with 26 September 2012. The decision under appeal mentioned two communications of the examining division dated 29 June 2010 and 29 February 2012, wherein the applicant was informed that the application did not meet the requirements of the EPC and of the reasons for this finding, and the result of a consultation by telephone between a member of the examining division and the representative of the appellant, which took place on 14 September 2012.

V. The examining division was of the opinion (see the communication dated 29 June 2010, point 3.1) that the subject-matter of claims 1 and 14 as filed was known from the prior art and the problem of avoiding poor cutting/perforation quality via coordinating the rotational positioning of the knife member and anvil member was already solved by the prior art. The problem the invention as filed sought to solve was to provide a method and apparatus for intermittently cutting a moving target web allowing different spacings, cf page 2, lines 7 to 13, of the published version of the application as filed ("*It has also been cumbersome and time-consuming to reconfigure conventional systems to produce different spacings between the desired cut locations along the lengthwise movement direction of the target web. As a result, there has been a continued need for improved cutting systems that provide improved reliability and versatility, along with an improved and more reliable definition of the perforation line.*"). This problem was solved by the subject-matter of claims 1 and 14 as filed, in particular by altering the web speed relative to the speed of the cooperating anvil and knife. Consequently, the search had been directed to the problem of cutting a moving web at different spacings.

Method claims 1 and 9 filed on 24 February 2010 contained (see the characterising parts of said claims) an additional feature taken from the description. A speed difference between the knife-member and the anvil-member did not affect the spacing of the cut locations in any way, and therefore was of no importance for the problem to be solved by the application as filed. The amended claims solved a different problem, namely to provide a more reliable and more consistent cutting operation (see said communication, point 3.2). The amended claims related to unsearched subject-matter which did not combine with the originally claimed invention to form a single general inventive concept (Rule 137(5) EPC).

In the communication dated 29 February 2012 (see points 1.3 and 1.4) the examining division reiterated that claims 1 and 14 as filed lacked novelty. Consequently, a lack of unity "a posteriori" had to be applied according to the April 2010 Guidelines for Examination C-VI, 5.2(ii), second paragraph. The first inventive concept underlying the main claim and its dependent claims as filed was defined in the passage on page 2, lines 7 to 13, of the application as filed. The effect of the second inventive concept (less wear of the anvil and knife blade and/or improved cutting performance) was unrelated to the effect of the first inventive concept (different spacing and/or sheet length).

VI. In support of its request, the appellant submitted the following:

The present case was one wherein an additional search ought to be conducted in accordance with the April 2010 Guidelines for Examination C-VI, 5.2(ii). According to the last part of the first paragraph of this section,

an objection to an unsearched feature originally disclosed in the description, which was added to an originally filed claim in order to meet an objection, should not be made under Rule 137(5) EPC. In this case, however, an additional search may be required. An objection under Rule 137(5) EPC may be raised if an amendment related to a general inventive concept distinct from the general inventive concept of the main claim and its dependent claims (see the second paragraph of said section). However, this was not the case in the present application.

The problem addressed by original claim 1 was that high web processing speeds required high knife speeds, which resulted in high impact forces between the knife blades and the stationary anvil, cf paragraph [0003] of the application as filed. In order to control the impact force and reduce the wear that this caused, it was conventional for the interference between the knife blades and the anvil to be set to a relatively small value so as to reduce the wear, but this had resulted in poor quality perforations. In contrast to the conventional arrangement, wherein the anvil roll was stationary, the original independent claims required that both the knife roll and anvil roll rotated. Paragraph [0006] of the application as filed recited (see page 3, lines 6 to 9) that "*the method and apparatus can provide better control of the relative speeds at which the co-operating anvil members and knife members contact or otherwise engage each other in the nip region between the knife and anvil rolls*". It was therefore clear that the general inventive concept of original claim 1 was to rotate both the anvil roll and knife roll so that the web cutting operation could be performed at high speed whilst still controlling the relative speeds between the anvil roll and knife roll,

so that the impact forces were not so high that they caused excessive wear and not too low to reliably cut the web.

The independent claims refused by the examining division required that there was a speed difference between the rotating knife member and the rotating anvil member in the nip region, cf paragraph [0006], page 3, lines 9 to 13. Paragraph [0006] further recited (see page 3, lines 14 to 16) that "*[impact] loads between the knife member and its cooperating anvil member can be more efficiently and effectively controlled to provide a method and apparatus that can require less maintenance and provide greater reliability*", see also paragraph [0030]. The general inventive concept of the claims refused by the examining division was therefore to rotate the knife and anvil rolls so that the web cutting operation can be performed at high speed whilst still controlling the relative speeds between the anvil and knife rolls so that the impact forces were not so high that they caused excessive wear and not too low to reliably cut the web. The inventive concept of these claims was therefore the same as for original claim 1 and was not distinct from the general inventive concept of original claim 1. Accordingly, an additional search ought to have been performed by the examining division, as required by the April 2010 Guidelines for Examination, C-VI, 5.2(ii).

In the communication of the examining division dated 29 February 2012 it was explained that the lack of unity "a posteriori" approach has been applied. However, this has not been applied correctly. The examining division objected that "*the arguments of the applicant, that claims 1 and 14 are directed to the problem of*

providing a more reliable cutting operation cannot be followed, because claims 1 and 14 are not new over the prior art / general knowledge and therefore there was no objective problem when applying the unity a posteriori approach". According to decision T 1394/04, which was referred to in the relevant part of the Guidelines cited above, the fact that a prior art document destroyed the novelty of the subject matter of original claim 1 was not sufficient reason to establish lack of unity ("a posteriori"), see point 6 of the reasons, first paragraph. This paragraph went on to state that "*In fact, as decision T 274/03 clearly demonstrates, if it is assumed, as is usually the case, that the original main claim contains at least in very broad terms the general inventive concept of the invention as set out further in the dependent claims, if any, and in the description, then it is certainly possible to determine whether later amendments form part of said general inventive concept, quite independently of the question whether the subject-matter of the main claim lacks novelty*".

The examining division's approach therefore went against the reasoning in decision T 1394/04, because the general inventive concept common to original claim 1 and pending claim 1 (and which was described in the description) had been ignored on the basis that original claim 1 was considered to lack novelty and solved no objective problem. This was in contradiction to decision T 1394/04, which essentially stated that the assessment of a common general inventive concept should be performed independently of a review of the prior art. It was for this reason that lack of unity and unsearched subject matter objections were to be found "very rarely in practice" according to T 1394/04,

point 6, second paragraph. The present case was not one of these very rare situations.

Reasons for the Decision

1. The appeal is admissible.

2. *Relevant legal provisions*

The application was refused on the grounds that the amended claims filed on 24 February 2010 related to unsearched subject-matter which did not combine with the originally claimed invention to form a single general inventive concept. Reference was made to Rule 137(5) EPC.

With respect to the legal provision mentioned in the decision under appeal it is noted that according to Article 2(2) of the Decision of the Administrative Council of 25 March 2009 amending the Implementing Regulations to the European Patent Convention (OJ EPO 2009, 299) Rule 137 EPC as amended by Article 1, paragraph 7, of said decision shall apply to European patent applications for which the European search report or the supplementary European search report is drawn up on or after 1 April 2010. For these applications Rule 137 EPC as amended entered into force on 1 April 2010, according to Article 2(1) of said decision. However, since the international search report for the present application was drawn up by the European Patent Office as International Search Authority on 6 February 2008, the applicable law is Rule 137(4) EPC as in force from 13 December 2007 until 31 March 2010 (henceforth referred to as Rule 137(4) EPC as in force before 1 April 2010).

The wording of Rule 137(4) EPC as in force before 1 April 2010 is the same as that of Rule 137(5) EPC, first sentence, as in force from 1 April 2010 and reads "*Amended claims may not relate to unsearched subject-matter which does not combine with the originally claimed invention or group of inventions to form a single general inventive concept*".

3. *Unsearched subject-matter and non-unity of invention*

3.1 In the international examination report issued by the International Bureau on 3 February 2009, which referred to the written opinion drafted by the ISA, the claims were variously considered to lack either novelty or inventive step, but no objection of lack of unity was raised.

3.2 The preambles of claims 1 and 9 of the sole request correspond to claims 1 and 14 as filed. The characterising parts of claims 1 and 9, viz "*by providing a speed difference between the moving knife-member (44) and its co-operating moving anvil-member (46) in the nip region (30)*" and "*in that said apparatus is configured to provide a speed difference between the moving knife member (44) and its co-operating anvil member (46) in the nip region (30)*", respectively, constitute the amendments that were objected to by the examining division.

A basis for the amendment is the passage on page 3, lines 9 to 13, of the application as filed (published version), which reads "*In desired arrangements, the method and apparatus can help provide selected speed differences or differentials between the moving web, the moving knife member and its cooperating, moving*

anvil member in the nip region to help provide a more reliable and more consistent bonding, perforating or other cutting operation".

The amended claims therefore meet the requirements of Article 123(2) EPC.

3.3 An *a priori* understanding of claims 1 and 14 as filed for a person skilled in the art is that each of the three speeds mentioned therein, viz a knife-member speed, an anvil-member speed and a web speed, may have different magnitudes, but not necessarily so.

The amendment (cf the characterising parts of claims 1 and 9), which is a limitation to the corresponding claims as filed, has the effect that the special case, whereby the knife-member speed and the anvil-member speed have the same magnitude, is excluded.

From the statement in the passage referred to in point 3.2 above, it is immediately clear that the case that a speed difference between the knife-member speed and the anvil-member speed is provided, is a preferred further development of the invention as originally filed. Further passages in the application as filed that relate to a speed differential between the knife-member and the anvil member include page 3, lines 6 to 9; page 7, line 29 to page 8, line 9; page 18, lines 22 to 27; page 20, lines 3 and 4; page 23, lines 19 to 21 ("differential speed between the two rolls", ie the knife roll and anvil roll); and page 24, lines 20 and 21. It may be noticed that in the last passage the symbols V_1, V_2 and ΔV stand for the knife-member speed, the anvil member speed and the speed difference between the two speeds (cf page 17, lines 17 and 18, and page 22, lines 24 to 28).

A speed difference between the knife-member speed and the anvil-member speed is also present in each of the two examples of the application as filed, cf tables 2 and 2A on pages 29 and 30, respectively.

Lastly, dependent claim 10 as filed ("*the anvil-member speed is at least about 70% of the knife-member speed*") and dependent claim 11 as filed ("*the anvil-member speed is up to about 130% of the knife-member speed*"), which refers back to claim 10 as filed, clearly indicate that the knife-member speed and the anvil-member speed do not need to be the same. The additional feature of claim 10 is also found in independent claim 13 as filed (cf last feature), dependent claim 19 as filed and independent claim 20 as filed (cf last feature).

3.4 The search should be made on the basis of the claims, with due regard to the description and any drawings (Article 92 EPC), and with particular emphasis on the inventive concept. In principle, the search should cover the entire subject-matter to which the claims are directed or to which they might reasonably be expected to be directed after they have been amended. It is noted that the above principles are also contained in the Guidelines, B-IV, 1.1 and B-III, 3.5).

It follows from these principles that in the present case the subject-matter of the amended claims should have been covered by the search, and is thus deemed to be searched for the purpose of applying Rule 137(4) EPC as in force before 1 April 2010.

The board does therefore not follow the examining division's application of Rule 137(5) EPC [Rule 137(4)

EPC as in force before 1 April 2010], since a prerequisite for applying this Rule, ie that the amended claims relate to unsearched subject-matter, is not fulfilled. For this reason alone the impugned decision must be set aside.

3.5 For completeness' sake, the following is noted with respect to the second prerequisite for applying Rule 137(4) EPC as in force before 1 April 2010, ie that the subject-matter of the amended claims do not combine with the originally claimed invention to form a single general inventive concept.

The classical test for assessing unity of invention of an application claiming a group of inventions is to establish whether there is a technical relationship among these inventions involving one or more of the same or corresponding "special technical features", ie features which define a contribution which each of the claimed inventions considered as a whole makes over the prior art. The examining division was of the opinion that the independent claims as filed were known from the prior art (see point V). In such a case where an independent claim lacks novelty, that claim does not have special technical features making a contribution over the prior art, this——if the above test were to be applied——would lead to a finding of non-unity "a posteriori". For the purpose of applying Rule 137(5) EPC Rule [137(4) EPC as in force before 1 April 2010], however, where an original claim is amended by adding a feature, the test is to ascertain whether the added feature can be regarded as falling under the original general inventive concept (cf T 2334/11 mentioned in Case Law of the Boards of Appeal, 7th edition 2013, IV.B.5.4.1).

The original inventive concept is to provide a method and apparatus for intermittently cutting a moving target web, whereby the speed of the moving web, the speed of the knife-member and the speed of the anvil-member can be selected and controlled with a view to produce different spacings between the desired cut locations with improved reliability and versatility, to help provide a more reliable and more consistent bonding, perforating or other operation, and to better control the impact loads between the knife-member and the anvil-member so that less maintenance is required, cf paragraphs [0003], [0006] and [0030] of the application as filed. It may be noticed that in the application as filed the performance of the method and apparatus according to the invention is compared with the performance of conventional methods and apparatuses which include a rotary knife roll and a stationary anvil, cf paragraphs [0002] and [0029] of the application as filed.

In the judgment of the board, the inventive concept underlying the amended claims is the same as that of the claims as filed, the only difference being that the amended claims rule out that the knife-anvil speed difference be configured to be zero, cf page 18, lines 24 to 27, of the application as filed.

3.6 The examining division held that the invention as filed was directed to the problem of cutting a moving web at different spacings, and that this was solved by altering the web speed relative to the speed of the cooperating anvil and knife. It also held that the means and effects of the inventive concept of the amended claims, viz providing a speed difference between the knife-member and the anvil-member for reducing the wear of the anvil and knife blade and for

improving the cutting performance, were not related to the means and effects of the original inventive concept.

The board concurs with the assertion of the examining division that the spacing may be changed by changing the web speed relative to the knife-member speed irrespective of the anvil-member speed. In order to increase the spacing P_s between cut lines for a given pitch distance P_1 between neighbouring knife-members, the web speed V_s can be increased or the knife-member speed V_1 be decreased. These parameters satisfy the equation $P_s = (V_s/V_1)\ P_1$. This relationship belongs to the general technical knowledge of the person skilled in the art of intermittently cutting a moving target web, it cannot be considered as the inventive concept underlying the invention as filed. It may be noted that the anvil-member speed V_2 does not occur in formula for the spacing P_s between cut lines. It may further be noted that in equation 1A on page 25 of the application as filed the parameters P_1 and P_s have been inadvertently interchanged.

The board does not concur with the assertion of the examining division that a speed difference between the knife-member and the anvil-member reduces the wear of the anvil and knife blade and improves the cutting performance. It seems that the impact loads between the knife-member and the anvil-member are smaller when the speed difference is smaller, cf paragraph [0060] of the application as filed. The speed difference between the knife-member and the anvil-member cannot be selected at random, since the ratio of the knife-member speed V_1 and the pitch distance P_1 between neighbouring knife-members must be equal to the ratio of the anvil-member speed V_2

and the pitch distance P_2 between neighbouring anvil-members, cf paragraph [0072] of the application as filed.

3.7 It follows from points 3.4 and 3.5 above that the amended claims filed on 24 February 2010 do not relate to unsearched subject-matter and relates to subject-matter which combines with the originally claimed invention or group of inventions to form a single general inventive concept. Consequently, the amended claims are admissible under Rule 137(4) EPC as in force before 1 April 2010.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chairman:

D. Meyfarth M. Poock

Decision electronically authenticated