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D E C I S I O N
of 20 June 2001

Case Number: T 0296/00 - 3.2.5

Application Number: 93923812.7

Publication Number: 0665781

IPC: B29C 71/04

Language of the proceedings: EN

Title of invention:

Method for electrostatic charging of film

Applicant:

The University of Tennessee Research Corporation

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 54, 123(2)

Keyword:

"Novelty; main request, first auxiliary request (no)"

"Extension; second auxiliary request (yes)"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0296/00 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 20 June 2001

Appellant: The University of Tennessee Research
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415 Communications Building
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Tennessee 37996-0344 (US)

Representative: Pernez, Helga
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted 14 December 1999
refusing European patent application
No. 93 923 812.7 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: W. Moser
Members: W. R. Zellhuber
C. G. F. Biggio

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the Examining Division refusing the application No. 93 923 812.7.

II. The Examining Division refused the application because it did not meet the requirements of Article 82 EPC (lack of unity), Article 54 EPC (lack of novelty) and Article 56 EPC (lack of inventive step) with regard to the prior art as disclosed in documents

D1: US-A 4 375 718 and

D2: US-A 4 592 815.

III. Oral proceedings were held before the Board of Appeal on 20 June 2001.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the following documents submitted during the oral proceedings:

(a) main request: claims 1 to 42 submitted as main request; or

(b) first auxiliary request: claims 1 to 40 submitted as first auxiliary request; or

(c) second auxiliary request: claims 1 to 39 submitted as second auxiliary request.

IV. Claim 25 according to the main request reads as follows:

"An apparatus for electrostatically charging a web or a film, comprising:

Means for inducing, thanks to an electrical field, a charge adjacent the first side of said web or film, and a charge, which polarity is the opposite of the charge adjacent the first side of said web or film, adjacent the second side of said web or film;

characterised by at least:

Additional means for inducing, thanks to an electrical field, charges on both sides of said web or film so that the polarity of the induced charges are the opposite of the polarity of the charges that were present in said web or film to be treated before this new induction step."

Claim 24 according to the first auxiliary request reads as follows:

"An apparatus for electrostatically charging a web or a film, comprising:

Means for inducing, thanks to an electrical field, a charge adjacent the first side of said web or film, and a charge, which polarity is the opposite of the charge adjacent the first side of said web or film, adjacent the second side of said web or film;

characterised by at least:

Additional means for inducing, thanks to an electrical field, charges on both sides of said web or film so that the polarity of the induced charges are the opposite of the polarity of the charges that were present in said web or film to be treated before this new induction step

And the electric fields generating plural dispersed non-arcing electric fields between plural charging means, each having an electrically conductive curved surface, and a corresponding number of single electrodes spaced from the curved surface of the corresponding charging means."

Claim 24 according to the second auxiliary request reads as follows:

"An apparatus for electrostatically charging a web or a film, comprising:

Means for inducing, thanks to an electrical field, a charge adjacent the first side of said web or film, and a charge, which polarity is the opposite of the charge adjacent the first side of said web or film, adjacent the second side of said web or film;

characterised by at least:

Additional means for inducing, thanks to an electrical field, charges on both sides of said web or film so that the polarity of the induced charges are the opposite of the polarity of the charges that were present in said web or film to be treated before this new induction step,

the said additional means consisting in a rotatable charging drum having a bias voltage and an electrically conductive surface in contact with a side of the web or film; and a charging bar located relatively adjacent the charging drum, wherein the web or film passes between the charging drum and the charging bar of opposite polarity and wherein the web or film is substantially in contact with the charging drum."

V. With regard to the subject-matter of the claims mentioned under point IV above, the appellant argued essentially as follows:

- (i) The subject-matter of claim 25 according to the main request was novel with regard to the prior art as disclosed in document D1.

Document D1 disclosed an apparatus for charging a web comprising charging means in the form of a plurality of corona discharging units arranged on both sides of the web. The web was on both sides in contact with conductive contact webs. The corona discharge units were independent from each other and there was, in particular, no specific relationship between discharging units located, opposite to each other, on both sides of the web.

Furthermore, document D1 did, at least in a large number of examples, not disclose an apparatus comprising a first pair of electrodes of opposite polarity and located opposite to each other on both sides of the web, and a second pair of electrodes directly following the

first pair and having their polarity reversed with regard to precedent pair of electrodes.

The apparatus as claimed in claim 25 according to the main request, however, comprised means for inducing charges of opposite polarity on both sides of the web thanks to an electrical field, which had to be construed as meaning that the charges were produced solely by induction due to the electric field generated between two charging means of opposite polarity, between which the web was passed through. A corona discharge might occur in the vicinity of the charging means but had no impact on the process of generating the charges in the web. An important point had to be seen in that the apparatus according to the application in suit comprised additional means for inducing charges having polarities opposite to those of the previously induced charges.

The apparatus disclosed in document D1 was thus different from the apparatus as claimed in claim 25 according to the main request.

- (ii) The subject-matter of claim 24 according to the first auxiliary request further differed from the apparatus disclosed in document D1 in that a plurality of dispersed electric fields were generated. The term "dispersed" indicated that there was a distance between the electric fields generated between a first pair of electrodes and a subsequent pair of electrodes so that the web passed a section wherein it was not exposed to an electric field.

This would not be the case in the apparatus as disclosed in document D1. The close vicinity of the electrodes and the use of contact webs would give rise to the web being exposed to a varying but constantly present electric field.

- (iii) The subject-matter of claim 24 according to the second auxiliary request was based on the claims of the application as filed. According to these claims the charging means might comprise a charging drum and charging bar wherein the web or film was in contact with the charging drum. These claims thus included the possibility that the additional, second charging means comprised such a charging drum and a charging bar as now claimed in claim 24 of the second auxiliary request. Claim 24 was not drafted in such a way that only the additional charging means comprised a charging drum and a charging bar.

Therefore, the subject-matter of claim 24 did not extend beyond the content of the application as filed.

Reasons for the Decision

- 1. Main request
- 1.1 Allowability (Article 123(2) EPC)

Support for the subject-matter of claim 25 can be found on page 3, line 16 to page 4, line 22 of the application as filed.

The apparatus disclosed therein comprises first charging means for inducing a negative charge on a first side of a web and a positive charge on a second side of the web, and at least second charging means for inducing a positive charge on the first side of the web and a negative charge on the second side of the web, cf., in particular, page 4, lines 5 to 12 of the application as filed. Thereby, the web is subjected to electric fields generated between the electrodes of the respective charging means, cf. in particular page 3, lines 30 to 32.

An apparatus comprising means for inducing charges, thanks to an electric field, wherein the charges induced by the second charging means are of opposite polarity with regard to the charges that were present in the web or film before this induction step as claimed in claim 25 is therefore disclosed in the application as filed.

Accordingly, the subject-matter of claim 25 meets the requirements of Article 123(2) EPC.

1.2 Novelty

The subject-matter of claim 25, however, is not novel with regard to the prior art as disclosed in document D1.

Document D1 discloses an apparatus for electrostatically charging a web (cf. abstract and Figure 2). The apparatus comprises means (corona discharge bars 18, 19, 18', 19') for forming charged particles which migrate to the contact web 17 and induce a charge to the web (cf. col. 2, lines 36 to

42). The bars 18 and 18', which are on the same side of the web, may have the same charge or an opposite charge. The bars 19, 19' on the opposite side of the web must have opposing charges (cf. col. 4, lines 47 to 56).

Example 17 (cf. col. 8) of document D1 explicitly refers to a "configuration No. 3", according to which the first upper bar (bar 18) was positively charged and the second upper bar (bar 18') was negatively charged, whereas the lower bars (bars 19, 19') were charged to the opposite polarity of the bars on the opposite side of the web. In this example, the charge was 18 kV on all bars, and the spacing of opposing bars was 6.35 cm (2,5 inches) and that of adjacent bars 14,1 cm (5 and 9/16 inches).

Accordingly, the apparatus according to configuration No. 3 comprises first means for inducing, thanks to the electric field generated between the upper and lower bars 18 and 19, charges of opposite polarity on each side of the web, and second means for inducing, thanks to the electric field generated between the upper and lower bars 18', 19', charges on each side of the web, wherein the polarity of the charges induced by the second means are the opposite of the polarity of the charges induced by the first means.

Consequently, the subject-matter of claim 25 is not novel and, therefore, the requirements of Article 54 EPC are not met.

1.3 The main request therefore is thus not allowable.

2. *First auxiliary request*

Compared with claim 25 according to the main request, claim 24 according to the first auxiliary request additionally comprises the features that the apparatus comprises means for generating plural dispersed non-arcing electric fields between plural charging means, wherein each charging means has an electrically conductive curved surface and a single electrode spaced from the curved surface.

2.1 Allowability (Article 123(2) EPC)

Support for the subject-matter of claim 24, in particular, support for the additional features can be found on page 5, lines 25 to 28 and the embodiment described on pages 8 to 10 and shown in Figure 1 of the application as filed. Therefore, claim 24 meets the requirements of Article 123(2) EPC.

2.2 Novelty

Document D1 shows in Figure 2 an apparatus comprising a plurality of charging means, each comprising two electrodes spaced from each other. The electrodes are charging bars having a substantially circular cross section, thus comprising, at least partly, an electrically conductive curved surface.

According to column 4, lines 48 to 50 of document D1, "the bars on the same side of the web should be spaced apart a sufficient distance so that there is no arcing between adjacent bars." Accordingly, the electric fields generated by adjacent pairs of upper and lower charging bars are dispersed in the sense that they are separated from each other.

Finally, it is self-evident that the apparatus disclosed in document D1 has to be designed in such a way that the electric fields generated between the plural charging means are non-arcing fields in order to avoid the creation of pinholes in the web which would make the web unsuitable for being used as filtration medium.

Thus, the subject-matter of claim 24 is not novel with regard to the prior art as disclosed in document D1.

2.3 Therefore, the requirements of Article 54 EPC are not met and the first auxiliary request also is not allowable.

3. *Second auxiliary request*

Claim 24 comprises subject-matter which extends beyond the content of the application as filed.

Claim 24 concerns an apparatus comprising first means for inducing charges on both sides of a web and additional, second means for inducing charges of opposite polarity, wherein the additional means consists of a charging bar and a rotatable charging drum, the latter being in contact with the web.

The application as filed discloses an apparatus comprising first means for inducing charges on both sides of a web and additional second means for inducing charges of opposite polarity, cf. claim 19 of the application as filed. The application as filed further discloses an apparatus comprising charging means consisting of a rotatable charging drum and a charging bar, cf. claim 25 of the application as filed. The

application as filed further discloses an embodiment of an apparatus with first and second charging means each comprising a charging drum and a charging bar, cf. Figure 1.

Claim 24 comprises the specification that it is **the additional charging means** which consists of a charging drum and a charging bar. That specification is not disclosed in the application as filed. It constitutes a selection and new matter because the application as filed does not disclose that, in particular, the additional means should comprise a rotatable charging drum, whereas the first charging means may be of the same or any other type.

The fact that an embodiment or a selection might be included within the scope of the claims of an application as filed cannot form a basis for a claim particularly directed to that embodiment or selection, if that embodiment or selection is not disclosed as such in the application as filed.

Therefore, the subject-matter of claim 24 does not meet the requirements of Article 123(2) EPC.

Consequently, the second auxiliary request also is not allowable.

4. Since none of the requests submitted by the appellant are allowable, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Dainese

W. Moser