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D E C I S I O N
of 19 June 2000

Case Number: T 0882/98 - 3.4.2

Application Number: 93830111.6

Publication Number: 0563016

IPC: G03G 15/08

Language of the proceedings: EN

Title of invention:

Developer supplying container, developing device having same
and process cartridge

Applicant:

CANON KABUSHIKI KAISHA

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Novelty and inventive step (yes, after amendment)"

Decisions cited:

-

Catchword:

-



Case Number: T 0882/98 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 19 June 2000

Appellant:

CANON KABUSHIKI KAISHA
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Ohta-ku
Tokyo (JP)

Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 3 April 1998
refusing European patent application
No. 93 830 111.6 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: A. G. Klein
B. J. Schachenmann

Summary of Facts and Submissions

I. European patent application No. 93 830 111.6 (publication No. 0 563 016) was refused by the Examining Division on the ground that its subject-matter lacked novelty within the meaning of Article 54 EPC in view of the contents of document:

D3: US-A-4 873 549.

II. The appellant (applicant) appealed against the decision refusing the patent application and requested that it be set aside and that a patent be granted on the basis of an amended set of claims of which claims 1, 5 and 9, the independent claims, read as follows:

- "1. A developer supplying container (1) for supplying developer to a developing device for developing an electrostatic latent image, comprising:
- a container body (2) containing the developer and having an opening (4) through which the developer (12) is supplied to said developing device;
 - a flexible film member (5) initially closing said opening (4) and having a first surface (51), a second surface (52) opposed to said first surface (51), and one free end portion (5a), said flexible film member (5) being adapted to be pulled out from an outlet portion (15) to open said opening (4) by pulling said free end portion (5a);
 - an elastic seal member (6) provided at said outlet portion (15) and with which said first surface (51) of said flexible film member (5) being pulled out from said outlet portion (15) is slidably contacted;

- a moving path (P1, P2, P3) of said flexible film member (5) comprising a first path portion (P1) disposed at an upstream side of said elastic seal member (6), a second path portion (P2) contiguous to said first path portion (P1) and along which said first surface (51) of said flexible film member (5) is contacted with said elastic seal member (6), and a third path portion (P3) contiguous to said second path portion (P2) and disposed at a downstream side of said elastic seal member (6);

characterized by:

- a protruded guide portion (43,44) formed contiguous to the elastic seal member (6) having a film guide surface (43) with which said first surface (51) of said flexible film member (5) is contacted in said third path portion (P3), said film guide surface (43) being contacted with said flexible film member (5) at a position offset from an extension line of said first path portion (P1) toward a direction directing from said first surface (51) of said flexible film member (5) to said second surface (52), thereby regulating a moving direction of said flexible film member (5) in said second path portion (P2).

5. A developing device (8) for developing an electrostatic latent image, comprising:
 - a movable developer carrying member (10) for carrying developer and for conveying the developer to a developing station (D) where the developer is applied to the electrostatic latent image;
 - a first container (9) within which said movable developer carrying member (10) is disposed;
 - a second container (2) containing the developer;

- an opening (4) for shifting the developer from said second container (2) to said first container (9);
- a flexible film member (5) initially closing said opening (4) and having a first surface (51), a second surface (52) opposed to said first surface (51), and one free end portion (5a), said flexible film member (5) being adapted to be pulled out from an outlet portion (44) to open said opening (4) by pulling said free end portion (5a);
- an elastic seal member (6) provided at said outlet portion (44) and with which said first surface (51) of said flexible film member (5) being pulled out from said outlet portion (44) is slidably contacted;
- a moving path (P1,P2,P3) of said flexible film member comprising a first path portion (P1) disposed at an upstream side of said elastic seal member (6), a second path portion (P2) contiguous to said first path portion (P1) and along which said first surface (51) of said flexible film member (5) is contacted with said elastic seal member (6), and a third path portion (P3) contiguous to said second path portion (P2) and disposed at a downstream side of said elastic seal member (6);

characterized by:

- a protruded guide portion (43,44) formed contiguous to the elastic seal member (6) having a film guide surface (43) with which said first surface (51) of said flexible film member (5) is contacted in said third path portion (P3), said film guide surface (43) being contacted with said flexible film member (5) at a position offset from an extension line of said first path

portion (P1) toward a direction directing from said first surface (51) of said flexible film member (5) to said second surface (52), thereby regulating a moving direction of said flexible film member (5) in said second path portion (P2).

9. A process cartridge (41) removably mountable within an image forming apparatus (21'), comprising:
- an image bearing member (11);
 - a developing device (8') according to any of claims 5 to 8 for developing an electrostatic latent image formed on said image bearing member (11); and
 - a frame (40) removably engageable by a supporting portion of said image forming apparatus (21') and within which said image bearing member (11) and said developing device (8') are disposed."

III. In support of his request the appellant submitted that the invention generally related to devices comprising a developer supplying container initially closed by a flexible film, which before use had to be pulled out through an outlet portion provided with a compressible elastic seal member so as to prevent the developer from leaking out of the container during withdrawal of the film, and to scrape any developer particles adhered to it.

In order to reduce the load acting on the elastic seal member when pulling out the flexible film through the outlet, the invention essentially proposed that a protruded guide portion be formed contiguous to the elastic seal member so as to adequately regulate the moving direction of the flexible film.

The citations on the file did not address the above technical problem, nor did they show or suggest the claimed solution.

Reasons for the Decision

1. The appeal is admissible.
2. *Allowability of the amendments*

Independent claims 1, 5 and 9 correspond in substance to independent claims 1, 7 and 13 as originally filed, with the additional limitation that the guide portion is now defined as a "protruded" guide portion "formed contiguous to the elastic seal member", as is disclosed on page 13, lines 7 to 17 of the description as originally filed in conjunction with Figures 1, 3 and 5.

Independent claims 1 and 5 have further been casted in the two-part form recommended by Rule 29(1) EPC.

The appendence of certain dependent claims was re-arranged to reduce the total number of the claims, and reference signs were introduced throughout the claims as is recommended by Rule 29(7) EPC.

The description was supplemented with a short summary of the relevant prior art and it was further adapted to the amended version of the claims.

The amendments brought to the application documents thus meet the requirement of Article 123(2) EPC.

3. *Novelty of the subject-matter of claim 1*

None of the citations on the file discloses a device comprising a flexible film member adapted to be pulled out from an outlet portion provided with an elastic seal member **in which a protruded portion is formed contiguous to the elastic seal member in the way set out in the characterizing portion of claim 1**, to regulate a moving direction of the flexible film member when it contacts the elastic seal member:

Documents FR-A-2 304 106 (D1) and Research Disclosure No. 310, page 99 (D2) both disclose a developer supplying container as defined in the preamble of claim 1, which does however not comprise any film guide surface for the flexible film member at a downstream side of the elastic seal member.

Document D3, which in the appealed decision was held to anticipate claim 1 in its then valid version, discloses a process unit for a copying machine, with a developer supplying container as set out in the preamble of claim 1, comprising developer container sections 10a, 10b initially closed by a flexible film member 63 which may be pulled out through an outlet provided with an elastic seal member 67 (see Figure 9 and column 8, lines 31 to 50). The outlet and its elastic seal member are located substantially centrally within the process unit, and the flexible film member is fed directly from the elastic seal member to a slit 3a formed in an upper region of the external casing. Thus the lower edge of the slit 3a - which is the only surface susceptible of being regarded as a "film guide surface" with which the first surface (down side) of the flexible film member may be contacted in the third path portion within the

meaning of claim 1 (i.e. at a downstream side of the elastic seal member) - is formed at a distance from the elastic seal member, not contiguous to it as is now specified in the amended claim 1.

Document EP-A-0 112 278 (D4), the only further citation mentioned in the European Search Report, discloses a developer refill container having an opening initially closed with a flexible film member which is adapted to be pulled out through a guide channel. The device does not comprise any elastic seal member.

Accordingly the subject-matter of claim 1 is novel within the meaning of Article 54 EPC.

4. *Inventive step of the subject-matter of claim 1*

Starting from a developer supplying device as defined in the preamble of claim 1 and illustrated for instance by documents D1 or D2, in which no guide surface is provided for the flexible film member downstream of the elastic seal member, the technical problem solved by the protruded guide portion formed contiguous to the elastic seal member is to reduce a load acting on the elastic seal member when pulling out the flexible film through the outlet, thus preventing the latter from tearing, and avoiding leakage of the developer through the elastic seal member (see page 2 of the description, lines 1 to 6 and 33 to 36).

The documents on the file - of which documents D1 and D2 do not provide any guiding of the flexible film member downstream of the elastic seal member whilst document D4 does not involve any elastic seal member - do not address this technical problem, nor do they in any way show or suggest the claimed solution.

Document D3 for its part only provides a partial anticipation insofar as the lower edge of the exit slit 3a for the flexible film member 63 as formed in an upper region of the external casing 3 of the device, at a distance from the elastic seal member 67, might be considered as a guide surface for the flexible film member, albeit not formed contiguous to the elastic seal member as is required by the claim. However the flexible film member 63 in the path portion downstream of the elastic seal member 67 extends closely along a wall of the overlying developer supplying container 10b, leaving no room there for providing the claimed protruded portion contiguous to the elastic seal member, for any purpose whatever. This document cannot therefore suggest the claimed invention either.

For these reasons, the subject-matter of claim 1 is considered to involve an inventive step within the meaning of Article 56 EPC.

5. The above conclusion also applies to the subject-matter of independent claim 5 which is directed to a developing device which also includes a protruded guide portion formed contiguous to the elastic seal member as set out in claim 1, and to the subject-matter of independent claim 9, which is directed to a process cartridge comprising the developing device of independent claim 5.

The subject-matter of the dependent claims also involves an inventive step within the meaning of Article 56 EPC, by virtue of their appendence to the above independent claims.

6. Since the patent application and the invention to which it relates thus meet the requirements of the Convention, a patent can be granted (Article 97(2) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

Claims: 1 (first portion), 5 (second portion) and 6 to 9 filed with the letter dated 5 May 2000;

1 (second portion), 2 to 4 and 5 (first portion) filed with the letter dated 19 April 2000.

Description: pages 1, 4, 5, 7 to 13, 15 and 16 as originally filed;

pages 2 and 2a filed with the letter dated 12 September 1997;

pages 3 and 3a filed with the letter dated 19 April 2000;

page 3b filed with the letter dated 5 May 2000;

pages 6 and 14 filed with the letter dated 13 November 1996;

the word "adjacent" in line 35 of page 3
being amended to "contiguous", in
accordance with the appellant's request
in the telephone conversion of 9 June
2000.

Drawings: Sheets 1/5 to 5/5 as originally filed.

The Registrar:

The Chairman:

P. Martorana

E. Turrini