

Internal distribution code:

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

**Datasheet for the decision
of 26 November 2025**

Case Number: T 0237/23 - 3.3.07

Application Number: 17783482.7

Publication Number: 3528900

IPC: A61Q5/06, A61K8/04, B05B7/04,
B05B1/34, B65D83/62, B65D83/14

Language of the proceedings: EN

Title of invention:
COMPRESSED HAIR SPRAY

Patent Proprietor:
Unilever IP Holdings B.V.
Unilever Global IP Limited

Opponent:
L'OREAL

Headword:
COMPRESSED HAIR SPRAY/L'OREAL

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (yes)



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 0237/23 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 26 November 2025

Appellant: Unilever IP Holdings B.V.
(Patent Proprietor 1) Bronland 14
6708 WH Wageningen (NL)

Appellant: Unilever Global IP Limited
(Patent Proprietor 2) Port Sunlight
Wirral, Merseyside CH62 4ZD (GB)

Representative: Mathai, Neenu Grace
Unilever Patent Group
Bronland 14
6708 WH Wageningen (NL)

Respondent: L'OREAL
(Opponent) 14 rue Royale
75008 Paris (FR)

Representative: Casalonga
Bayerstraße 71/73
80335 München (DE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 9 December 2022
revoking European patent No. 3528900 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman A. Usuelli
Members: D. Boulois
 A. Jimenez

Summary of Facts and Submissions

I. European patent No. 3 528 900 B1 was granted on the basis of a set of 14 claims.

Independent claim 1 as granted read as follows:

"1. An aerosol hairspray product, which comprises:

- a) a pressurisable container comprising
 - i) a container wall which encloses a reservoir for storing a hairstyling formulation, and
 - ii) a propellant;

- b) a hairstyling formulation comprising:
 - (iii) from 20 wt % to 75 wt % alcohol, by total weight of the hairstyling formulation and propellant; and
 - (iv) from 1.0 wt % to 15 wt % hairstyling polymer, by total weight of the hairstyling formulation and propellant; and

- c) a spraying device attached to the container for dispensing the hairstyling formulation from the reservoir of the container, which comprises a valve and an actuator,

wherein the valve comprises a valve body, said valve body comprising a stem and a spring means; and wherein the valve comprises a restricted tail piece (RTP) of diameter 0.1 mm to 2.5 mm, and a vapour phase tap (VPT) of diameter 0.1 mm to 1.5 mm;

wherein the actuator comprises a main spray channel and communicates with an insert, said insert comprising an exit orifice and from 1 to 8 sub-spray channels;
wherein said channels are tangentially disposed about the exit orifice;
wherein the exit orifice is capable of being in liquid communication with the hairstyling formulation in the reservoir;
characterised in that the exit orifice has a diameter of from 0.01 to 2 mm; and an orifice thickness of from 0.1 to 1.5 mm;
and wherein the sub-spray channels have a height of from 0.1 to 0.8 mm and a length of from 0.1 to 0.5 mm."

- II. An opposition was filed under Article 100 (a) and (b) EPC against the granted patent on the grounds that the subject-matter of the granted patent lacked novelty and inventive step, and was not sufficiently disclosed.
- III. The appeal lies from the decision of the opposition division to revoke the patent. The decision was based on the claims as granted as main request and on auxiliary requests 1-2 filed on 8 July 2021.
- IV. The documents cited during the opposition proceedings included the following:
 - D1: US 2009/0057447 A1
 - D2: Catalogue Coster
 - D3: US 3,137,416
 - D4: EP 2 583 756 A1
 - D5: EP 2 415 690 B1
 - D8: WO 91/10420 A1
- V. According to the decision under appeal, D1 was not novelty-destroying for the claimed subject-matter.

Document D8 was considered more valid than D1-D3 as promising springboard for the assessment of inventive step. Since there were no technical data at hand showing a technical effect achieved by the claimed invention, the technical problem when starting from Figure 1 in document D8 was the provision of an aerosol hairspray product with an alternative actuator. The claimed solution was not inventive in view of D2.

- VI. The patent proprietors (hereinafter the appellants) filed an appeal against said decision. With the statement setting out the grounds of appeal dated 27 March 2023, the appellants referred to the claims as granted as main request and to auxiliary requests 1 and 2 on file, i.e. as filed on 8 July 2021.
- VII. With a letter dated 28 July 2023, the opponent (hereinafter the respondent), replied to the statement of grounds of appeal.
- VIII. The Board set out its preliminary opinion in a communication under Article 15(1) RPBA issued on 4 July 2025.
- IX. Oral proceedings took place on 26 November 2025.
- X. The arguments of the appellants may be summarised as follows:

Main request - Inventive step

D8 aimed at providing a hair spray package having a reduced volatile organic compound (VOC) emission. This goal was achieved by reducing the spray/discharge rate of the package i.e. use of less hair spray composition

per application to obtain the same hair styling characteristics. Claim 1 differed from D8 in the presence of an insert with specific features (exit orifice, number of sub-spray channels) in specific arrangement (channels are tangentially disposed about the exit orifice) and respective dimensions (diameter and thickness of the exit orifice, height and length of the sub-spray channels). The claimed aerosol hairspray product was able to achieve an effective spray rate, the desired particle size of the spray being discharged and the preferred cone angle of the spray being discharged. D8 contained no hint or suggestion of the separate differences. The skilled person was given no incentive whatsoever to modify the device of D8 and thus had no incentive to combine D8 with any other document, let alone with D2.

XI. The arguments of the respondent may be summarised as follows

Main request - Inventive step

The device according to claim 1 of the opposed patent was distinguished from the device described in document D8 by the presence of an insert.

The comparative tests in Annex A could not establish that the differences observed between the device defined in claim 1 of the patent and document D8 could lead to any technical effect.

Therefore, given the lack of technical effect arising from the characteristics that distinguished the claimed device from that described in D8, the technical problem over D8 was the provision of an alternative aerosol lacquer products.

Document D2 was a catalogue relating to valves for aerosol products in pressurized containers specifically citing hair spray as an example. This allowed to establish a link between document D8 and document D2.

Document D2 specified on page 17 that the NRKRA valve was used for alcohol-based compositions to produce a fine and uniform spray. This was also specified in the introductions to other valves, notably RTRA (page 25), KSL (page 41).

Document D2 proposed compatible "standard" actuators for each valve. The actuators suggested for the NRKRA valve (see page 18) were standard actuators configured to work with a micromist insert as disclosed from page 118. All micromist inserts listed in the table on page 118 of document D2 disclosed the characteristics of the insert defined in claim 1 of the patent.

Document D2 also proposed, on page 73, specific actuators for sprayed products, including actuators V05-701, V05-2101, V05-2701 (for reduced spray rates), and V05-1801. All these actuators used one of the micromist inserts described on page 118.

As indicated above, based on document D8, the objective technical problem to be solved was to provide an alternative hairspray product. Using one of the insert disclosed in document D2 did not involve an inventive step.

XII. Requests

The appellants requested that the decision under appeal be set aside and the patent be maintained as granted,

or alternatively according to the set of claims filed as auxiliary requests 1-2 on 8 July 2021. The appellants also requested that D15 not be admitted into the appeal proceedings.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Main request - Inventive step

1.1 The claimed invention relates to a compressed aerosol hairspray product provided in a can having reduced amount of hair styling composition yet providing the same number of uses as a non-compressed product. Such products reduce the amount of hair spray composition per consumer use without impacting performance, thus maintaining the same number of consumer uses per can.

1.2 D8 was considered to represent the closest prior art in the decision of the opposition division. This choice is not contested by the appellants and the respondent.

Document D8 relates to the field of spray packages for hairspray composition (see page 1, lines 5 to 7) and aims to provide less composition to the hair over a unit period of time, through the use of a delayed delivery rate valve and an actuator button which discharges the hair spray composition at a rate comprised between **0.20 g/s and 0.38 g/s** (see D8, page page 4, line 10). Thus, document D8 pursues essentially the same objective as the contested patent, namely reducing the spray flow rate while maintaining satisfactory drying and sensory properties.

Document D8 discloses, from page 7, line 27 to page 8, line 7, and in Figure 1 a dispensing package (1) for a hair spray comprising a lower container (2) containing a hair spray composition (3). The dispensing package comprises a cup (5) attached to the open end of the lower container (2) and a valve (6) mounted on said cup. The valve (6) comprises a stem support (9) and a hollow stem (7) bearing on a spring (10) mounted in said valve body. The stem support (9) extends through a valve body (11) comprising, in its lower portion, a tailpiece (12) having an orifice (13). The valve body further comprises a radial vapour phase flow orifice (15). An actuator (16) is mounted on the upper end of the stem (7) and comprises a flow channel (16A) in fluid communication with the stem (7) and an outlet orifice (17) connected to said flow channel. Document D8 specifies that it is known to use a diameter of the orifice (13) of the end piece between 0.33 mm and 0.41 mm and a diameter of the VPT orifice between 0.14 mm and 0.30 mm (see page 8, lines 25 to 28).

The styling formulation disclosed in D8 contains:

- 1.0% to 10% by weight of styling polymers (see page 13, lines 9 to 11);
- a propellant;
- a solvent consisting of C2-C4 alcohols, mixed or not with water, the water being less than 10% by weight (see page 4, lines 33-35 and page 6 lines 15 to 30).

The aerosol hairspray product according to claim 1 of the opposed patent differs from the device described in document D8 by the presence of an actuator having **an insert** with specific features, namely **the spatial arrangement of the channels** (tangentially disposed around the exit orifice), **the presence of one or more sub-spray channels**; and **the height and length of the**

sub-spray channels. The distinguishing features are defined in claim 1 as follows:

"wherein the actuator comprises a main spray channel and communicates with an insert, said insert comprising an exit orifice and from 1 to 8 sub-spray channels; wherein said channels are tangentially disposed about the exit orifice; wherein the exit orifice is capable of being in liquid communication with the hairstyling formulation in the reservoir; characterised in that the exit orifice has a diameter of from 0.01 to 2 mm; and an orifice thickness of from 0.1 to 1.5 mm; and wherein the sub-spray channels have a height of from 0.1 to 0.8 mm and a length of from 0.1 to 0.5 mm".

The parties were in agreement regarding the identification of the distinguishing features.

- 1.3 The opposition division defined the problem over D8 as the provision of an aerosol hairspray product with an alternative actuator. The respondent proposed essentially the same definition of the problem.

The appellant defines the problem over D8 as the provision of a device achieving (a) an effective spray rate, (b) the desired particle size of the spray being discharged and (c) the preferred cone angle of the spray being discharged, while also achieving the primary aim of the invention, addressing environmental sustainability.

- 1.4 The appellant relies mainly on the description, *inter alia* paragraphs [10], [12] and [13], the example and Figures 1 and 2 of the patent, as well as on Annex A, in support of a technical effect (cf. statement of grounds of appeal on page 5).

However, most of the passages cited by the appellant merely reiterates the properties of the claimed spray product, without demonstrating any advantage or effect over the closest prior art D8, which appears to present essentially the same properties. The same conclusion applies to the experiments of the example of the patent, since the conventional comparative hairspray used in these experiments does not correspond to the hairspray disclosed in D8 and therefore cannot serve for a direct comparison with the closest prior art.

Paragraphs [0012], [0013] and [0027] of the specification state however that the claimed aerosol hairspray product sprays at a delivery rate of 80 to 20%, most preferably from 60 to 40%, of the conventional spray rate of 0.5 to 1.5 g/s. This is confirmed by the example of the contested patent which shows a comparison between a conventional hair spray and an inventive hair spray and demonstrates that an inventive hairspray provides a 50% spray rate in comparison to a conventional hair spray. It is also further confirmed by Figure 2 of Annex A which shows that the hairspray product according to the present invention provides an effective spray rate of less than 0.4 g/s. The data of Annex A or of the example do not provide any evidence of improvement over the spray product of Figure 1 of D8. They do however indicate that the spray rate is comparable to that of the device disclosed in D8 and is reduced relative to the typical spray rates (see paragraph [0010] of the patent). The correct spray characteristics are achieved by the combination of a valve to control the spray rate to achieve compression with an optimised insert (see par. [0013]).

Under these circumstances, the Board does not see any reason to deviate from the technical problem defined by the opposition division in its decision. The problem over D8 is therefore the provision of an aerosol hairspray product with an alternative actuator. The term "alternative actuator" indicates that the actuator essentially retains the functional properties of the actuator used in the hairspray disclosed in D8.

- 1.5 The claimed solution is a hairspray, distinguished by an actuator that includes an insert as defined in claim 1. This insert is characterized by the spatial arrangement of the channels, namely tangentially disposed around the exit orifice, the presence of one or more sub-spray channels; and the height and length of the sub-spray channels, and which provides in particular the same effective spray rate than the hairspray of D8.
- 1.6 With regard to obviousness, the parties mentioned D8 and document D2. The respondent mentioned in particular pages 7, 17, 18, 73, 118, and 124-127 of D2.
- 1.6.1 Since the problem has been defined as the provision of an aerosol hairspray product with an alternative actuator, the claimed solution can only be considered obvious if an alternative actuator is known for the same or a closely related application, and is recognized as exhibiting properties essentially equivalent to those of the actuator disclosed in D8. **Specifically, it must be known that the alternative actuator provides a reduced spray rate, comparable to the one obtainable with the device of D8.**

The opposition division stated in its decision that the question to be answered for the assessment of inventive

step is whether the skilled artisan, in the expectation of solving the problem, i.e. of providing an aerosol hairspray product with an alternative actuator exhibiting **equal or better performance**, starting from Figure 1 of D8, would have modified the teaching in the closest prior art document in the light of other teachings in the prior art so as to arrive at the claimed invention (see the decision point 1.2.5). The opposition division did however not take in account the reduced spray rate and the use of less hairspray composition per application, while these properties were its main criteria for selecting D8 as closest prior art (see point 1.2.1 in particular page 13 of the decision).

The present situation differs from a case in which the claimed hair spray product is assumed to lack any technically useful property or effect. In this case, it could be considered that the technical problem solved by the claimed product would be a more minimalist one, namely **the mere provision of further hair spray product**, irrespective of any useful properties. In such situation, it would be sufficient for the actuator to be known, regardless of its characteristics, in order to render the claimed solution obvious.

- 1.6.2 Document D2 is a catalogue from Coster, a company that also manufactures the insert used in the "Inventive Hair Spray 1" of the example of the patent (see paragraphs [0066] and [0053]). The catalogue comprises 248 pages and discloses a broad range of valves, actuators and pumps (see Table of content on page 3). D2 states on page 2 that the most common applications of the aerosol valves include, *inter alia*, , hair sprays, as well as deodorants, insecticides, household and food products, decoration and technical products.

On page 17, D2 discloses the short stroke continuous valve NRKRA adapted for *inter alia* highly inflammable products, such as hair sprays, which guarantees a perfect atomization of particles, thus producing a very fine and uniform spray that reduces the inflammable properties of the product. The valve NRKRA exhibits a fast filling housing featuring a gas orifice (VPH) and a product orifice (RTP) of various dimensions. This valve appears to be the valve specifically used in the claimed invention; this valve was highlighted in the decision of the opposition division and by the respondent in its submissions.

The valve NRKRA is one of several press-down valves disclosed in the catalogue, which also includes the KPM valves, the RKRA valves, the NKPM valves and the NKR valves (see table of contents of D2 on page 3 or pages 9-20).

In addition to press down valves, D2 also discloses other type of valves, such as *inter alia* tilt-action valves, soft touch valves, special valves or bag on valves.

As discussed by the parties, among the other disclosed press-down valves, the valves RKRA (page 13), RTRA (page 25), or the special valve KSL (page 41)) are also adapted for the spraying of inflammable products such as the claimed hair sprays. In the same context, the opposition division also mentioned the valve NRKERA (page 31) and the valve RKENRA (page 37). All these valves are equipped with a fast filling housing in which the gas orifice (VPH) and the product orifice (RTP) can be of various dimensions corresponding to the claimed dimensions of 0.1 to 1.5 mm (VPT) and 0.1 to

2.5 mm (RPT) , which guarantees a perfect atomization of particles, thus producing a very fine and uniform spray that reduces the inflammable properties of the product.

These valves can be combined with various type of actuators. Accordingly, on page 18, D2 discloses that the NRKRA valves can be used with the actuators of series 500, series 700, series 800, series 1800 and series 2100. Page 18 also discloses that these actuators can be used with micromist inserts (series 500, 700, 800, 1800 and 2100), with directional inserts (series 500, 700, 1800) and with tube (series 700); this is confirmed by the information relating to the actuators provided on pages 124-126 of D2.

The same applies for the other valves. As a matter of example, the valve RKRA can be combined with actuators without insert, with micromist inserts, with directional inserts , with special inserts or with tube (see page 13-14), while the valve RTRA can be combined with actuators without insert, with micromist insert, with a vertical spray or with a tube (see page 26) .

Document D2 also proposes, on page 73, specific actuators for sprayed products, including the actuators V05-701, V05-2101, V05-2701 (for reduced spray rates) and V05-1801. All these actuators use one of the micromist inserts proposed on page 118. The Board notes however that this passage relates to "bag on valves", i.e. valves used for packaging systems in which the product is contained in a flexible bag (see page 63 of D2). These spray systems differ from the spray systems used in the invention and in D8. Thus, the skilled person would have no reason to modify the hairspray of

D8 by incorporating the actuators disclosed on page 73 of D2.

D2 discloses on page 118 a table listing "micromist" inserts and a second table listing the directional inserts. All the micromist inserts listed in the table on page 118 of document D2 present the characteristics of the insert defined in claim 1 of the opposing patent, in particular with regard to the number and dimensions of sub-spray channels and the dimensions of their exit orifice. Figures 4A and 4B of the patent at issue are exact reproductions of the first two figures located on the left-hand side of page 2.0.02 of document D2 (page 118 of the pdf document).

- 1.6.3 However, D2 provides no indication that any of the actuators or inserts disclosed therein are capable of retaining the properties of the device of D8, namely achieving a reduced spray rate and enabling the use of less hairspray composition per application.

Given the extensive range of actuators, valves, and inserts disclosed in D2, arriving at the claimed solution would require multiple selections among the numerous possibilities and a comprehensive testing program. Such an outcome cannot be achieved without hindsight knowledge of the invention as suggested by the information provided in paragraph [0053] and in the figures of the contested patent.

- 1.6.4 Moreover, as argued by the appellant, D8 contemplates altering the flow rate issued from the package described therein through the modification of sizes of certain orifices (page 8, lines 19 to 33) and by the combination of two or more hair fixative polymers (see page 5, lines 19-30). D8 does not hint or suggest to

modify the structure of the actuator to achieve the effect. The skilled person, from consultation of D8 would not be motivated to seek to modify the valve described therein.

1.6.5 Consequently, the claimed solution is not obvious over D8 alone or in combination with D2, and the claimed subject-matter is inventive.

1.7 The main request meets the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is maintained as granted.

The Registrar:

The Chairman:



A. Vottner

A. Uselli

Decision electronically authenticated