

Internal distribution code:

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

**Datasheet for the decision
of 9 February 2021**

Case Number: T 1193/19 - 3.4.02

Application Number: 14742448.5

Publication Number: 2846180

IPC: G02B27/26, G02B27/22, G03B21/28

Language of the proceedings: EN

Title of invention:
STEREOSCOPIIC IMAGING DEVICE

Patent Proprietor:
RealD Inc.

Opponent:
VOLFONI R&D

Headword:

Relevant legal provisions:
EPC R. 99
EPC Art. 100(c), 100(b), 100(a), 56
RPBA Art. 12(4)

Keyword:

Admissibility of appeal - (yes)
Amendments - added subject-matter (no)
Sufficiency of disclosure - (yes)
Inventive step - (yes)

Decisions cited:

T 0331/87

Catchword:



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
Fax +49 (0)89 2399-4465

Case Number: T 1193/19 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 9 February 2021

Appellant: VOLFONI R&D
(Opponent) 361 Avenue du Général de Gaulle
92140 Clamart (FR)

Representative: Guérin, Jean-Philippe
Opilex
32 rue Victor Lagrange
69007 Lyon (FR)

Respondent: RealD Inc.
(Patent Proprietor) 100 North Crescent Drive, Suite 200
Beverly Hills, CA 90210 (US)

Representative: Herr, Jochen
Baker & McKenzie
Theatinerstraße 23
80333 München (DE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 21 February
2019 rejecting the opposition filed against
European patent No. 2846180 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman R. Bekkering
Members: C. Kallinger
G. Decker

Summary of Facts and Submissions

- I. The opposition division decided to reject the opposition against European patent No. 2 846 180.
- II. The appellant (opponent) filed an appeal against the opposition division's decision and requested that the decision under appeal be set aside and that the patent be revoked.
- III. The respondent (patent proprietor) requested as a main request that the appeal be dismissed, or, alternatively, that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the claims according to one of the first to seventh auxiliary requests, all filed with the letter dated 8 November 2019.
- IV. In preparation of the oral proceedings a communication pursuant to Article 15(1) RPBA 2020 setting out the board's preliminary opinion was sent to the parties.
- V. Oral proceedings took place on 9 February 2021.
- VI. The parties final requests are as indicated above under points II and III.
- VII. The following documents will be referred to in this decision:
 - E1 US 7,857,455, cited in paragraph [0007] of the patent specification
 - E2 EP 2 469 336, cited in the Supplementary European Search Report
 - E3 US 6,094,240

- E4 Print-out of a Google image search for the term "chevron"
- E5 Entry in online dictionary LAROUSSE: "chevron"
- E6 Wikipedia entry for the French term "Toit en appentis"
- E7 Wikipedia entry for the French term "Palette à chevrons"

VIII. Claim 1 of the main request, i.e. the patent as granted, reads as follows:

"A stereoscopic image apparatus comprising:

a polarizing beam splitter (21, 22) adapted to receive image light from an image surface (19) and to split the incident image light into (a) a transmitted image light having a first state of polarization, and (b) first and second reflected image lights having a second state of polarization, the second state being different from the first state, wherein the polarizing beam splitter has two plates (21, 22) joined to each other, and a junction of the two plates is located on a path of the incident image light;

first and second reflective members (23, 24) configured to modify paths of the first and the second reflected image lights so that the transmitted image light and the first and the second reflected image lights are projected to form a single image on an image-forming surface,

wherein the single image is formed by superimposing a first image from the transmitted image light and a second image from the first and the second reflected image lights at the substantially same area on the image-forming surface,

first, second and third polarization modulators (27a, 27b, 27c) capable of selectively switching the

polarization states of the transmitted image light and the first and the second reflected image lights between first and second output states of polarization, wherein the first, the second and the third polarization modulators are controlled to selectively switch the polarization states of the transmitted image light and the first and the second reflected image lights to have the same output state of polarization at a given instant, thereby forming a single polarized image on the image-forming surface at the said given instant."

Reasons for the Decision

1. Admissibility of the appeal - Rule 99 EPC

1.1 The respondent argued that the appeal had formal deficiencies and lacked substantiation.

Firstly, the formal requirement under Rule 99(1)(a) EPC was neither met nor remedied in due time because the notice of appeal dated 19 April 2019 did not contain the address of the appellant. By letter dated 13 June 2019 the appellant informed the "Opposition Division" about a change of address and requested that the patent register be updated. This was however not an amendment to the notice of appeal as the letter did not make reference to the appeal. Hence, this letter did not remedy the deficiency of the notice of appeal.

In addition, the appeal was inadmissible due to lack of substantiation because the appellant's "so-called" grounds of appeal read like an opposition and the appellant failed to discuss and deal with the reasoning of the opposition division. Only arguing certain

grounds of opposition was not enough to substantiate an appeal against a reasoned decision.

- 1.2 The respondent's arguments are not convincing for the following reasons.

On 13 June 2019 (i.e. within the two-month time limit after the board's invitation dated 25 April 2019 to remedy a deficiency under Rule 99(1)(a) EPC), the board received a letter from the appellant in which its new address was indicated and where it was requested that the register be updated accordingly. It is clear from the context in terms of time and content (see also the appellant's request to refer to a specific reference different from the one cited in the board's above invitation) that the letter of 13 June 2019 was filed in response to the board's invitation and aimed at remedying the deficiency in question. Therefore, the notice of appeal meets the requirements of Rule 99(1)(a) EPC.

In the grounds of appeal the reasons for revocation of the patent according to Article 100(a), (b) and (c) EPC are detailed and the relevant facts and evidence are indicated. The grounds of appeal therefore specify the legal and factual reasons on which the case for setting aside the decision is based and enables the board and the other party to understand immediately why the decision was alleged to be incorrect and on what facts the appellant bases its arguments. The fact that the points made in the statement of grounds of appeal do not go beyond those made before the opposition division does not detract from the admissibility of an appeal; a requirement that new arguments be submitted to render an appeal admissible would imply that the appealed decision must have been correct (see Case Law of the

Boards of Appeal of the European Patent Office, 9th edition 2019 ("Case Law"), V.A.2.6.6). Therefore, the notice of appeal also meets the requirements of Rule 99(2) EPC.

In conclusion, the appeal is admissible.

2. Main request - Article 100(c) EPC

2.1 Refractive member

In comparison to claim 1 as originally filed, claim 1 as granted no longer comprises "*a refractive member disposed in an advancing direction of light to be incident upon the polarizing beam splitter and adapted to refract the light to be incident upon the polarizing beam splitter*".

2.1.1 The appellant argued that due to the deletion of the above feature relating to the refractive member the subject-matter of the patent extended beyond the content of the application as filed.

In this respect, the appellant referred to the sections "*Technical Solution*" and "*Advantageous Effects*" of the application as filed (see page 4, line 14 to page 6, line 14) which explained the invention and listed down to page 5, line 15 all essential elements of the invention, including in particular the refractive member. Optional elements were presented only later in that section from page 5, line 24 onwards.

The refractive member was introduced in order to solve the inevitable problem of a dimming area due to the introduction of the polarizing beam splitter (see

page 5, lines 12 to 15) and thus was clearly presented as complementary and inseparable from the other elements of the claimed apparatus.

This was also consistent with Figures 5 to 9 and the corresponding parts of the description (starting on page 7, line 22: "*Best mode*") which described embodiments of the stereoscopic imaging apparatus according to the invention.

The appellant argued that Figures 5 and 6, which did not show a refractive member, were not directed at an embodiment of the invention but had to be considered only as a first step in the didactic presentation of the invention and showing a preliminary arrangement. The following Figures 7 to 9 and the corresponding description described not just a further improvement but the final embodiment of the invention as originally intended. These figures clearly showed that the refractive member could not be separated from the rest of the invention as originally intended but was presented as essential in the application as filed.

Furthermore, the described advantages (see page 4, lines 10 to 13) could only be achieved by an arrangement comprising in particular the polarizing beam splitter and a refractive member (see page 12, lines 15 to 16). The person skilled in the field of 3D cinematographic image projection was particularly sensitive to image brightness issues. Therefore, they would not consider a solution as shown in Figure 5, which included a dimming area. Instead, the skilled person learnt from the application as a whole that the presence of a refractive member was essential in order to provide the necessary image brightness.

This was also consistent with the disclosure of Figures 10 to 17. Figure 10 showed for the first time the application of the basic structure of the invention as shown in Figure 9 to a stereoscopic image apparatus as claimed. Figures 11 to 17 illustrated further modifications which all included a refractive member. Thus, all parts of the description and all drawings which showed stereoscopic imaging apparatuses supported the presence of a refractive member.

In conclusion, all embodiments described and illustrated included a refractive member except for the illustrations in Figure 5 and its enlargement in Figure 6. These two figures were however described as disadvantageous and therefore clearly as not belonging to the invention as originally intended. Realising a stereoscopic image apparatus without a refractive member was therefore neither intended by the originally filed application nor derivable by the relevant skilled person from the application as a whole as it was against the application's explicit and the skilled person's general aim to increase the brightness in 3D projectors.

Claiming a stereoscopic imaging device without a refractive member therefore presented new technical information, i.e. information which was not present in the application as filed, and therefore did not meet the *"gold standard"*.

For the same reasons, the deletion of the feature did not meet the so-called *"three-point test"* as defined in T 331/87, according to which *"[t]he replacement or removal of a feature from a claim may not violate Article 123(2) EPC provided the skilled person would directly and unambiguously recognise that*

(1) the feature was not explained as essential in the disclosure,
(2) it is not, as such, indispensable for the function of the invention in the light of the technical problem it serves to solve, and
(3) the replacement or removal requires no real modification of other features to compensate for the change." (see T 331/87, headnote).

The appellant argued that conditions (1) and (2) were not met because the refractive member was explained as essential and was not indispensable for the function of the invention in the light of the technical problem it served to solve.

In conclusion, the subject-matter of the granted patent extended beyond the content of the application as filed.

2.1.2 The appellant's arguments are not convincing for the following reasons.

The description refers to Figure 5 as "*showing the basic structure of a stereoscopic image apparatus according to the present invention*" (see page 6, lines 22 to 24 and page 7, lines 26 to 28). The embodiment shown in Figure 5 comprises a polarizing beam splitter with two plates joined to each other but no refractive member(s). This is also the case for Figure 6. The board is of the opinion that Figures 5 and 6 show exemplary embodiments of the invention and are not to be seen as preliminary, partial views in a didactic presentation of the invention as alleged by the appellant.

Therefore, the application as originally filed provides a clear and unambiguous basis for the claimed stereoscopic image apparatus lacking a refractive member and the omission of the refractive member from claim 1 does not introduce new technical information. The "gold standard" is therefore met.

This conclusion is also confirmed by the "three-point-test" invoked by the appellant, which can be used as an aid in assessing the allowability of amendments (see Case Law, II.E.1.4.2 and II.E.1.4.4 b)). With respect to the three conditions defined in T 331/87 (see headnote), the board is of the following opinion:

- (1) The refractive member is not explained as essential in the application as filed.

The section "*Background Art*" explains that the state of the art causes certain geometric issues (see page 1, line 6 to page 4, line 7 and Figure 1 to 4). In order to solve this problem, the application teaches (and the patent claims) the use of two polarizing beam splitters instead of one (page 4, line 29 to page 5, line 11 and Figure 5). As discussed above, the embodiment of Figure 5 is explicitly disclosed as "*according to the invention*". Only in a further step, a problem caused by the introduction of the two polarizing beam splitters is described (see Figure 6 and corresponding description). In order to mitigate this problem, a refractive member is added to the stereoscopic image apparatus (see Figure 7 and corresponding description). Figure 7 is referred to as "*showing a path of light in a case in which refractive members are added to the stereoscopic image apparatus according to the present invention*"

(see page 6, lines 28 to 30, emphasis added). The fact that the refractive member(s) is/are "added" to an embodiment of the invention clearly shows that these features are not inextricably linked to each other. In addition, the refractive member, although present in claim 1 as originally filed, is not necessary to carry out the invention (as now claimed) but is an additional, non-essential feature which can be used to further improve the design of the invention.

- (2) The refractive member is not indispensable for the function of the invention. As discussed above, the invention aims at reducing the deterioration of image quality towards the edges of large screens due to geometric issues of the prior art (see Figures 1 to 4 and corresponding description). The refractive member is not described as being essential for the solution of this technical problem but as a means to mitigate a distinct side effect arising in the "*basic structure of a stereoscopic image apparatus according to the present invention*" (see page 6, lines 22 to 24 and page 7, lines 26 to 28) disclosed in Figure 5. The problem referred to in the passage cited by the appellant (page 12, lines 17 and 18) is the additional problem caused by the refraction inside the two polarizing beam splitters in the vicinity of the junction, which is solved by the "*correction method*" shown in Figure 7 (see page 12, lines 15 to 18) which involves the refractive member. This is however not the problem solved by the basic structure of the invention as described in Figure 5. The board agrees with the respondent's line of argument that the embodiment according to Figure 5 may not be perfect under all circumstances

but it certainly solves the problem of constructing a smaller device in comparison to a conventional stereoscopic image apparatus as shown in Figure 2 (see page 11, lines 1 to 8) and avoiding the geometry-related image distortions towards the edges of large screens present in such prior art devices (see page 2, line 20 to page 4, line 7). Therefore, the refractive member is not, as such, indispensable for the function of the invention in the light of the technical problem it serves to solve.

- (3) The removal of the feature requires no real modification of other features to compensate for the change. The skilled person recognises that the omission of the refractive member from any embodiment having such a member does not require any modifications of other features to compensate for this change. This was not contested by the appellant.

In conclusion, the removal of the feature relating to the refractive member from claim 1 as originally filed does not cause the subject-matter of the patent to extend beyond the content of the application as filed.

2.2 Chevron shaped

Claim 2 of the granted patent defines that "*the first polarizing beam splitter (21) and the second polarizing beam splitter (22) joined to each other to have chevron shape*". Claim 3 of the granted patent also refers to "*the chevron shape of the combination of the first polarizing beam splitter (21) and the second polarizing beam splitter (22)*".

2.2.1 The appellant argued that the term "chevron shape" did not have any explicit support in the patent application as originally filed. The description of the shape of the polarizing beam splitter in the application as filed was obscure or even contradictory. With reference to documents E4 through E7 the appellant argued that the term "chevron" referred to numerous shapes, which were now all included in the scope of claims 2 and 3 but not originally disclosed.

2.2.2 The appellant's arguments are not convincing for the following reasons.

The board acknowledges that the term "*chevron shape*" is not explicitly disclosed in the application as filed. The board is however of the opinion that this expression finds a basis in the shape of the beam splitter as presented in the Figures (Figures 5, 6, 7 and 9 to 17) and described in the description (see page 8, lines 15 to 25). The shape disclosed therein falls under the general understanding of the expression "*chevron shaped*" as relating to a figure, pattern, or object having the shape of a "V" or an inverted "V". The board is therefore of the opinion that the feature is directly and unambiguously disclosed in the application as originally filed.

The appellant's arguments with respect to documents E4 through E7 and based on calligraphic considerations with respect to the cursive letter "V", the meaning of the French word "*chevron*" or the meaning of this term in the area of roof construction are not persuasive as they do not change the skilled person's interpretation of the term "*chevron shape*" in the current context.

In conclusion, the board is of the opinion that the introduction of the feature "*chevron shape*" in claims 2 and 3 does not cause the subject-matter of the patent to extend beyond the content of the application as filed.

2.3 Modulators

2.3.1 The appellant argued that the introduction of first to third polarization modulators without a refractive member being present constituted an unallowable intermediate generalisation.

2.3.2 The appellant's arguments are not convincing for the following reasons.

The board acknowledges that first, second and third polarization modulators are disclosed in the application documents as originally filed (see claim 9 and Figures 10 and 11) and that originally filed claim 9 (which is dependent on originally filed claim 1) as well as Figures 10 and 11 comprise a "*refractive member*" in addition.

However, as explained above, the board is of the opinion that the removal of the feature relating to a "*refractive member*" from the independent claim does not cause the subject-matter of the patent to extend beyond the content of the application as filed. The question is, therefore, whether the introduction of the modulators into the independent claim necessitates the presence of the refractive member in the definition of the claim.

The board agrees with the opposition division's assessment that the function of the modulators (i.e.

modulating the optical signal to obtain an image on the screen) and the function of the refractive members (avoiding a dimming area in the polarization beam splitter) are not interrelated, neither structurally nor functionally. Therefore, the incorporation of the modulators into the apparatus of claim 1 does not constitute an unallowable intermediate generalisation.

2.4 Polarization and phase retardation

2.4.1 The appellant argued that the introduction of first to third polarization modulators without their respective properties of phase delay constituted an unallowable intermediate generalisation.

2.4.2 The board agrees with the opposition division's and the respondent's reasoning that the introduction of the modulators in claim 1 in absence of the definition of the state of polarization and of the specific retardation values does not amend the patent application in such a way that it contains subject-matter which extends beyond the content of the application as filed.

The function of the modulators is explained in an exemplary way in the description (see page 16, line 21 to page 19, line 4). In the embodiment discussed first, the modulators are configured to obtain a solely circular polarization on the screen. Further embodiments produce a solely P-polarized image or a solely S-polarized image on the screen. As all states of polarization (S, P and circular) are disclosed, this disclosure is sufficient to support the feature of the claim that the output state of polarization of the transmitted and reflected light image is the same at a given instant, thereby forming a single polarized image

on the image forming surface at the said given instant. This is further supported by the basic principle underlying the claimed stereoscopic image apparatus, according to which light in a mixed polarization state is divided and polarized by a polarizing beam splitter, then modulated and finally recombined on a screen in a single polarization state (see page 1, line 1 to page 2, line 19).

The board is therefore of the opinion that the skilled person can directly and unambiguously derive from the application as filed that the invention is not limited to the obtention of a circular polarized image on the screen but also encloses other polarizations as long as the image projected on the screen has a single polarization state at any given instant.

The board is therefore of the opinion that the introduction of the modulators in claim 1 in the absence of the refractive member does not cause the subject-matter of the patent to extend beyond the content of the application as filed.

2.5 In conclusion, the ground for opposition according to Article 100(c) EPC does not prejudice the maintenance of the patent as granted.

3. Main request - Article 100(b) EPC

3.1 The appellant argued that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Due to the absence of a refractive member the person skilled in the art did not know how to obtain the technical effect of increasing luminosity.

- 3.2 The board agrees with the opposition division's and the respondent's reasoning that the European patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

The design to be used in the invention is fully defined in claim 1. In addition, the description discloses an embodiment corresponding to this design (see Figure 5 and the corresponding description). The board cannot see any particular difficulties for the skilled person to realise the invention as claimed. As discussed above, the presence of a refractive member is not necessary to realise the invention as claimed. The absence of such a member does therefore not lead to an insufficient disclosure of the invention.

Accordingly, the ground for opposition according to Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

4. Main request - Articles 100(a) and 56 EPC

- 4.1 Solution to a technical problem

- 4.1.1 The appellant argued that claim 1 lacked an inventive step because the invention did not solve the technical problem as presented in the description (see page 4, lines 10 to 13 of the application as filed) at all or at least not over the entire scope of protection as claimed (see page 12, lines 15 to 16 of the application

as filed) and based this argument on the absence of a refractive member in claim 1.

- 4.1.2 The appellant's argument with respect to the invention not solving a technical problem is not convincing. The invention aims at improving the projected image quality while keeping the advantage of the prior art stereoscopic display apparatus, i.e. avoiding the use of absorbing polarizers (see page 2, line 20 to page 4, line 13 of the application as filed). This is achieved by using the claimed stereoscopic image apparatus comprising *inter alia* a polarization beam splitter constituted of two plates joined to each other and dividing the reflected part of the light into two paths (see page 4, lines 28 to page 5, line 11 of the application as filed).

As discussed above, the board is of the opinion that the refractive member is not necessary to carry out the invention as claimed but is a further, optional feature which can be used to further improve the design of the invention as claimed.

The board is therefore of the opinion that the invention as claimed solves the problem relating to the geometrical issues as described in the patent (see page 2, line 20 to page 4, line 7 and figures 3 and 4 of the application as filed).

- 4.2 Combination of documents E2 and E3

The appellant argued on lack of inventive step of the subject-matter of claim 1 based on the combination of documents E2 and E3.

The respondent argued that these documents were late-filed and not in the proceedings.

4.2.1 Document E2

Document E2 was cited during the first-instance opposition proceedings for the first time in reply to the summons to oral proceedings before the opposition division. The opposition division considered document E2 to be automatically part of the opposition procedure since it was cited on the cover page of the patent and belonged, in addition, to the same family as document E1, which was cited in the description of the patent as representing the prior art. The opposition division was of the opinion that document E2 thus "*corresponded to*" document E1 and that, therefore, a decision on the admittance of document E2 was not necessary ("*obsolete*", see minutes of the oral proceedings before the opposition division, point 5.5).

The board is of the opinion that the opposition division erred in considering this document to be automatically part of the opposition procedure. The mere fact that a document is cited on the cover page of the patent in suit and belongs to the same patent family as a document cited in the description does not mean that it is *automatically* part of the opposition proceedings. As the opposition division therefore failed to provide any reasons for the admittance of late-filed document E2, the board holds that the opposition division did not properly exercise its discretion when considering this document.

Nonetheless, in the board's view the fact that document E2 belongs to the same family as document E1 which is cited in the opposed patent as prior art (see paragraph

[0007] of the patent) and discussed in the description (see paragraphs [008] to [0014] and Figure 2 of the patent) is of relevance for the admission of the document. In addition, the contents of the documents E1 and E2 are almost identical. The board therefore considers E2 as a relevant prior art document and sees no reason for exercising its own discretion under Article 12(4) RPBA 2007 to hold document E2 inadmissible. Document E2 is therefore taken into account by the board.

The appellant acknowledged that E2 failed to disclose a polarizing beam splitter consisting of two plates connected to each other, the junction of the two plates being located along the path of the incident light and dividing the incident light into a first reflected image beam and a second reflected image beam. Accordingly, the second reflective element was also not disclosed.

The board agrees with this assessment.

4.2.2 Document E3

The opposition division decided not to admit document E3 into the opposition procedure because it was late-filed and *prima facie* not relevant for assessing inventive step of claim 1.

The appellant did not submit any arguments why the opposition division erred in not admitting document E3 or why the board should admit document E3 into the proceedings.

The board is of the opinion that the opposition division has exercised its discretion according to the

right principles and in a reasonable way and sees no reason to overturn the opposition division's discretionary decision not to admit document E3 into the proceedings. Document E3 was filed during the first-instance opposition proceedings in reply to the summons to oral proceedings before the opposition division. E3 is therefore late-filed. The board agrees with the opposition division's assessment that document E3 belongs to a technology (LCD displays) which is completely different from the technology of the present patent (stereoscopic image apparatuses). Document E3 is therefore *prima facie* not relevant for assessing inventive step of claim 1.

For the same reasons, the board does not exercise its own discretion according to Article 12(4) RPBA 2007 to admit the document into the appeal proceedings.

Document E3 is therefore not part of the appeal proceedings and the inventive step argument based on the combination of documents E2 and E3 must fail.

- 4.3 No further arguments have been brought forward by the appellant to challenge inventive step of the subject-matter of claim 1.
- 4.4 The board therefore comes to the conclusion that the subject-matter of the patent involves an inventive step within the meaning of Article 56 EPC and that the ground for opposition according to Articles 100(a) EPC does not prejudice the maintenance of the European patent.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Gabor

R. Bekkering

Decision electronically authenticated