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D E C I S I O N
of 18 May 1999

Case Number: T 0162/96 - 3.5.1

Application Number: 91202354.6

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Language of the proceedings: EN

Title of invention:

Light mask

Patentee:

Delco Electronics Overseas Corporation

Opponent:

Robert Bosch GmbH
VDO Adolf Schindling AG

Headword:

Light mask/DELCO

Relevant legal provisions:

EPC Art. 52(1), 54, 56, 123(2), 123(3)

Keyword:

"Novelty - no - claim 1 of main request, claim 1 of first
auxiliary request"
"Article 123(2) - not satisfied (claim 14 of second auxiliary
request)"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0162/96 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 18 May 1999

Appellant: Robert Bosch GmbH
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Decision under appeal: Interlocutory decision of the Opposition Division

of the European Patent Office dated 22 December
1995 concerning maintenance of European patent
No. 0 479 358 in amended form.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. Randes
S. C. Perryman

Summary of Facts and Submissions

- I. The appellants (opponents) lodged an appeal against the decision of the opposition division maintaining the present patent in amended form.

In the above-mentioned decision, the opposition division held that the subject-matter of claims 1 to 35 were novel and inventive over all the cited documents. Document D5 (DE-A-31 45 127) was considered to disclose the closest prior art.

The independent claims 1 and 14 as maintained according to the decision under appeal read as follows (the identification of features is as used by the opposition division in the appealed decision, claim 1 being identical to claim 1 as granted, claim 14 resulting from amended claim 14 as granted):

Claim 1

"A method of producing a light mask for balancing light transmitted to a display area (14, 16, 18) of an instrument comprising the steps of

- (a) obtaining an image of an area containing at least part of the display area (14, 16, 18);
- (b) defining an array of image areas, each of which image areas comprises part of the obtained image;
- (c) obtaining at least one illumination value representative of light intensity for each of the image areas;

- (d) selecting a threshold illumination level, image areas having an illumination value or values above the threshold illumination level being selected for masking;
- (e) determining an attenuation value for each of the image areas in dependence upon the obtained illumination value or values and the reference illumination value;
- (f) determining the light attenuation properties of the masking to be used;
- (g) determining the amount of masking required for each of the image areas on the basis of the determined attenuation value and the light attenuation properties of the masking to be used;
- (h) generating masking data for the production of a light mask on the basis of the amount of masking required for each image area; and
- (i) producing a light mask from the masking data."

Claim 14

"Apparatus for producing a light mask for balancing light transmitted to a display area (14, 16, 18) of an instrument comprising

- (a) a camera (52) for obtaining an image of the display area;
- (b) image processing means (54, 56) for forming a

plurality of image areas, each of which image areas comprising part of the image;

- (c) evaluating means (54, 56) for obtaining at least one illumination value representative of light intensity for each of the image areas;
- (d) means (56, 58) for selecting a threshold illumination level, image areas having an illumination value or values above the threshold illumination value being selected for masking;
- (e) a processor (56) for determining an attenuation value for each of the image areas in dependence upon the obtained illumination value or values and the threshold illumination level, and being adapted to determine the amount of masking required for each of the areas on the basis of the attenuation value and the light attenuation properties of the masking used;
- (f) generating means (56) for generating masking data for the production of a light mask from the masking data."

Claim 14 is the result of an amendment to claim 14 as granted in that in feature (d) the word "selecting" replaces the word "obtaining" in claim 14 as granted.

Moreover, the set of claims as maintained according to the decision under appeal included two independent claims (claims 26 and 31) directed to "a coverlay for covering the display area of an instrument".

II. In the grounds of appeal which were filed in time the appellants contested the decision and requested it to be reversed. After a response from the respondents who defended the decision of the opposition division and a further letter each from the appellants and the respondents the Rapporteur on behalf of the Board in a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal expressed the opinion that the decision of the opposition division possibly was not correct. It was agreed in that communication that claim 1 stated that a threshold level had to be "**selected**", but it was also observed that the claim involved the possibility to choose a threshold level corresponding to the least lit part. It was pointed out that the expression "least lit part" as used in the patent (considered as a whole) had a specific meaning. From the description of the patent, the impression arose that the threshold level should be selected so that it equalled the level of the least lit part of the display area of interest. That area of interest was apparently the area where there were graphic symbols. Thus it appeared that according to the present patent the intention was to select the said reference or threshold level in the way that the display area of interest was evenly illuminated, for which purpose the least lit part of said area of interest was chosen as the reference area. This, however, meant that parts of the display which did not contain graphic symbols were discarded by the operator and not considered for the selection of the threshold level, because such parts were covered by an opaque layer and no light could penetrate therethrough. It would, therefore, be obvious for a skilled person having regard to D5 not to consider parts of the display covered by an opaque

layer.

Since the opposition division had considered that mainly this step of selecting the threshold level contributed to the inventive step of claim 1, the Board expressed the preliminary opinion that on the above arguments the method according to claim 1 appeared rather to be obvious to a skilled person. Also the subject-matter of the corresponding apparatus claim 14 was considered to be obvious to a skilled man.

III. With a letter filed on 11 May 1998 the respondents filed five auxiliary requests, each of which was based on a set of different claims. In the letter the respondents criticized the language in the Board's communication which appeared to indicate that a final decision had already been taken. The Rapporteur's comments appeared to be nothing more than an attempt to discredit the opinion reached by the opposition division and it appeared that the rapporteur had totally ignored the respondent's arguments.

IV. In the oral proceedings, held before the Board on 16 June 1998, the respondents in addition to the claims of the Main request (the amended claims as maintained by the opposition division) put forward further amended claims 1 and 14 according to appendix 4, filed on 11 May 1998, as the basis of a First auxiliary request and, moreover, filed claims 1 and 14 of a Second auxiliary request.

IV.1 The first part of **claim 1 of the First auxiliary request** (the introductory sentence of the claim and the features a to c) is identical to claim 1 of the main

request (see under I above), the features d to i read as follows (words in bold are additions and words within parentheses are deletions in comparison with the corresponding features of claim 1 of the main request):

- (d) selecting a threshold illumination level, **selecting** image areas having an illumination value or values above the threshold illumination value (being selected for masking);
- (e) determining an attenuation value for each of the **selected** image areas in dependence upon the obtained illumination value or values and the **threshold** (reference) illumination value;
- (f) determining the light attenuation properties of the masking to be used;
- (g) determining the amount of masking required for each of the **selected** image areas on the basis of the determined attenuation value and the light attenuation properties of the masking to be used;
- (h) generating masking data for the production of a light mask on the basis of the amount of masking required for each **selected** image area; and
- (i) producing a light mask from the masking data.

Claim 1 of the Second auxiliary request is distinguished from claim 1 of the First auxiliary request in that in the beginning of the claim it is made clear that the claim is directed to

A method for producing a coverlay for covering a display area (14,16,18) of an instrument comprising (the steps...).

At the end of this claim (after feature i of claim 1 of the first auxiliary request) the following features are added:

- providing a coverlay including a substantially translucent sheet (28) and one or more graphic symbols (26) on a first surface of the sheet; covering the areas of the sheet not covered by graphic symbols with a layer of opaque material; and
- applying the light mask to the coverlay

Claim 14 of the Second auxiliary request is in comparison with claim 14 of the Main request directed to an

Apparatus for producing a coverlay for covering a display area (14,16,18) of an instrument comprising....

Features a to c of this claim are identical to the corresponding ones of claim 1 of the Main request. Features d to f and an additional feature m are worded as follows (words in bold are additions and words within parentheses are deletions in comparison with the corresponding text of claim 14 of the Main request):

- (d) means (56,58) for selecting a threshold illumination level, **means for selecting** image areas having an illumination value or values above

the threshold illumination **level** (value being selected for masking);

- (e) a processor for determining an attenuation value for each of the **selected** image areas in dependence upon the obtained illumination value or values and the threshold illumination level, and being adapted to determine the amount of masking required for each of the **selected image** areas on the basis of the attenuation value and the light attenuation properties of the masking used;
- (f) generating means (56) for generating masking data for the production of a light mask from the masking data; and
- (m) **light mask applying means for applying the light mask to the coverlay.**

IV.2 In the oral proceedings the parties argued as follows:

Respondents:

In order to understand the advantages of the invention it is necessary to know something of the way the light masks were produced before using computers as according to the invention. In fact the process had been manual in the sense that light intensity measurements had been made and thereafter a provisional mask had been made up manually by an operator who covered parts of a translucent sheet with an opaque paint to reduce light penetration. This process had been repeated as many times as necessary to get an acceptable light mask for the display. The time needed for such a process had

been up to two weeks. The production of the light mask according to the patent on the other hand only took two to three minutes.

The reasoning under the second point in the communication of the rapporteur concerning the selection of the "threshold illumination level" was not fair, since it related to the embodiment in the description and did not take into account the wording of claim 1, which in fact made clear that the selection was a "free selection" of the threshold level and did not relate to the least lit part of the display area concerned. Also, the description of the patent specification supported the "free selection". In particular it is stated (cf. page 4, lines 49 to 51 in the present patent) that it is possible to "amend the chosen threshold level, if necessary, so that it matches the level of illumination of this least lit part". This teaching is different from the one of D5, wherein there is no free choice of area to be masked and no "free selection" of the threshold level. According to this document the whole display area is masked. D5 discloses a gap between the light mask 7 and the display area 10 (Figure 1) which requires balancing of the whole display. Thus, D5 teaches that under all circumstances the least lit part of the whole display should be used as the threshold level. This is different from the teaching of the patent which teaches that the threshold level is selected according to preference and does not need to be equal to the level of the least lit part of the display area.

Appellants:

The wording of claim 1, feature (a), is such that it also covers the possibility of obtaining an image of an area containing the whole display area, because the expression "at least part of the display area" clearly involves this possibility. However, also D5 discloses this possibility. Moreover, also feature (d) according to claim 1 is disclosed by D5, since D5 teaches that a selection has to be made among the image areas (pixels) to find the least lit part of the display area. This is, as claimed by the present patent, also a selection according to preference.

Claim 14 corresponds to claim 1. It is obvious for a skilled person having regard to D5 to use a TV camera for obtaining an image of the display area. It is, moreover, pointed out that D4 (US-A-4 889 425, see e.g. abstract) discloses the fact that a TV camera can be used for indicating light intensity of an image area.

Claims 1 and 14 of the First auxiliary request do not meet the requirements of Article 123 in that they no longer state that the image areas are selected "for masking" (feature d). Also the second auxiliary request does not meet these requirements, since the features added to the claims in comparison to the claims of the main request, i.e. the last feature "applying the light mask to the coverlay" according to claim 1 and "light mask applying means" according to claim 14 are not disclosed in the patent.

Respondents:

The view of the appellants that the teaching of D5 could be read onto claim 1 is contested. D5 does not

show that only part of the display area can be used for obtaining an image of an area. It discloses that the whole area is considered. According to the invention the selection is free, i.e. the operator can always select exactly the threshold level he considers to be suitable and is not bound to the least lit image area (e.g. pixel). None of the cited documents discloses this special "selecting feature" of the invention and the patent, therefore, has an inventive step.

The claims of the first alternative are clear, since it is clear from the wording of the claims as a whole that the said image areas are selected for masking. No comments on the claims of the second auxiliary request are made.

The party to the proceedings as of right:

The argumentation of the appellants is in principle supported.

IV.3 The appellants requested that the decision under appeal be set aside and that the European patent be revoked.

The respondents requested that the appeal be dismissed (main request), subsidiarily to set aside the decision under appeal and to maintain the patent in accordance with the decision under appeal but as amended according to appendix 4 filed on 11 May 1998 (First auxiliary request) or as amended according to appendix 6 submitted in the oral proceedings before the Board (Second auxiliary request).

IV.4 After deliberation by the Board the Chairman gave the

following decision:

The debate is closed. For the time being no further submissions will be accepted. The decision is reserved.

Reasons for the Decision

1. The appeal is admissible.

Main Request

2. It is common ground that the teaching of document D5 represents the closest prior art, since this document discloses most of the features of claim 1. In fact, in the proceedings before the opposition division as well as before the Board only features (a) and (d) have been the key features which have been differently interpreted and the importance of which has been differently evaluated during the various stages of the proceedings.

The opposition division came to the conclusion that D5 neither disclosed the selection of a part of a display as expressed by feature (a) of claim 1, nor the selection of a threshold illumination level and the succeeding selection of image areas having an illumination value or values above the threshold for masking as expressed by feature (d) of claim 1.

3. In their argumentation before the Board the appellants expressed the opinion that the wording of claim 1 was such that feature (a),

"obtaining an image of an area containing at least part of the display area",

also covered the case of the whole display area being contained in the said "image of an area". Therefore, in fact, feature (a) could be read onto the teaching of D5 which disclosed that an illumination distribution and an "image of an area" for the whole display area was obtained. The Board agrees with this interpretation of the wording. Also the respondents appeared to agree to this. They, however, were of the opinion that this special case of the feature should not be regarded in isolation but had to be seen in the context of the whole feature, which provided the possibility to obtain an area containing any part of the whole display area, including the whole area. Nevertheless, the Board is of the opinion that where feature (a) of claim 1 reads onto the method taught in D5 of obtaining an image of an area containing the whole display area, it does not avoid lack of novelty that feature (a) also covers embodiments not disclosed in D5.

4. The appellants, moreover, in their argumentation suggested that feature (d),

"selecting a threshold illumination level, image areas having an illumination value or values above the threshold illumination level being selected for masking",

also read onto the teaching of D5. The appellants submitted that the illumination threshold level according to D5 was always chosen to be the illumination level of the least lit part. However, this choice also implied the selection of a threshold level from all the pixels on the display and the preference value to be selected was the illumination level of the least lit part of the display.

5. The Board is of the opinion that the interpretation made by the appellants is correct, since the wording of claim 1 does not make clear that "selecting a threshold illumination level" according to feature (d) necessarily means a "free selection" of the threshold level as has been argued by the respondents during the proceedings before the Board, i.e. that the illumination level necessarily must be chosen to lie between the maximum and the minimum illumination levels occurring across the part of the display area selected under feature (a), but even if so, it covers also choosing an illumination level corresponding to the least lit part of the display.

Since the Board also agrees to the arguments of the appellants regarding the other features of claim 1 (see decision of the opposition division, page 9 to 11 to features b, c and e to i), it appears that claim 1 can be read onto document D5 in the case that the whole display is chosen under feature (a), which is a preferable choice according to the description of the patent (cf. page 2, lines 46 to 49), and the illumination level of the least lit part of the display is selected as threshold under feature (d). The Board, therefore, is of the opinion that claim 1 does not meet

the requirements of Articles 54(2) EPC, in that one possible embodiment covered by claim 1 is disclosed by document D5.

It is noted that the opposition division too acknowledged that claim 1 covered the possibility of the threshold level being equal to the illumination level of the least lit part and that in a case in which additionally the whole display was chosen under feature (a) a light mask as such as identified in claim 1 might be anticipated by D5. The opposition division, however, pointed out that claim 1 referred to "A method of producing a light mask" and not the light mask as such. The method of claim 1 was considered to be novel having regard to the teaching of D5 because according to claim 1 the threshold level resulted from a **selection step** which was not disclosed in D5 and because the illumination level of the least lit portion in D5 was not a **selectable** threshold. In the appealed decision the opposition division stated:

"Even in the special case in which the resulting products of the method of claim 1 and D5 are equal and in which the selected threshold level is equal to the minimum illumination level, the method of claim 1 is regarded as being novel because the resulting product is obtained by a method which comprises the selection steps as specified in features (a) and (d) which are not disclosed in D5".

The Board cannot agree to this view. On the contrary it feels that in this special case the method disclosed in D5 falls within the scope of claim 1, i.e. protection is sought for something that is disclosed by the prior

art. The Board considers that claim 1 in fact claims protection for a bundle of parallel methods, which are distinguished from each other by the choice of the "part of the display area"

and the selectable "threshold illumination level". This broad bundle of alternative methods, however, also includes, like the method according to document D5, the one of obtaining an image of an area containing the whole display area according to feature (a) and selecting as threshold the illumination level of the least lit part of the display area according to feature (d). Thus, the teaching of D5 destroys the novelty of the subject-matter of claim 1.

6. Thus the main request in its entirety has to be refused.

First Auxiliary Request

7. The Board considers that the subject-matter of claim 1 of the first auxiliary request (see under IV.1 and I in Facts and Submissions) is identical in substance to the subject-matter of claim 1 of the main request and, therefore, this claim should be rejected for the same reasons as the one of the main request.
8. The consequence of this is that the first auxiliary request has to be refused in its entirety

Second Auxiliary Request

9. The appellants in the oral proceedings pointed out that

the last feature of the method claim 1 of the second auxiliary request and that of the apparatus claim 14 of the same request, i.e. "**applying the light mask to the coverlay**" and "**light mask applying means for applying the light mask to the coverlay**", respectively, did not meet the requirements of Article 123(2) EPC as no such step or feature was mentioned in the description and claims originally filed. The respondents stated that they did not have any comments in respect of this issue.

The light mask as such is described on page 3, lines 48 to 52 of the disputed patent. It is made clear therein that the **light mask** is the third layer 34 of the **coverlay** shown in Figure 3. In the first complete paragraph on page 4 of the patent specification it is stated:

"The light mask is screen-printed from a stencil which is produced photographically from artworks of the type shown in Figures 6 and 7. Methods such as this are well known and will not be described in detail here".

At line 19 on page 6 it is stated:

"At the host 60, the data in the output file is used to create an artwork which is then used to produce the light masks 34 in known manner".

Moreover, the identical characterizing feature of the granted claims 28 and 33, which are directed to a coverlay reads as follows:

"wherein the or each masking layer (34) is provided on

a surface of the sheet opposite to the first surface".

All the quoted passages mentioned in this paragraph (reason 9) are identical to corresponding passages in the original application. The only other references in the text of the original application relating to the application of the light mask to the coverlay are in the introduction in connection with the prior art. No apparatus is described for achieving this provision. The Board cannot find any teaching in the patent that teaches how the light mask (or the masking layer) 34 is applied to the coverlay, except possibly the implication that the same steps are used as in the prior art.

10. While it might possibly be accepted that there is an implicit basis for the general expression of claim 1 of the second auxiliary request, "applying the light mask to the coverlay" (Figure 3 shows the mask on the coverlay), the last feature of claim 14 of the second auxiliary request, i.e. "light mask applying means for applying the light mask to the coverlay", is not acceptable. There does not exist any information in the original application text about such "light mask applying means". Also, as has been pointed out above the respondents did not give any explanation on this matter, e.g. by referring to general knowledge and/or demonstrating that such means were common in the art. In the oral proceedings the respondents only stated that in the prior art the masking was done manually. This is in line with the introductory part of the present description (page 1, lines 25 to 28) in which it has been stated that "masking paint, of semi-opaque material, is then applied to the coverlay, behind the

appropriate over-lit symbols". The Board, therefore, agrees with the appellants that the said last feature of claim 14 of the second auxiliary request does not meet the requirements of Article 123(2) EPC.

11. The Board in passing notes that the patent as granted did not contain any claims for protection of "a method of producing a coverlay" or an "apparatus for producing a coverlay", although the patent contained two claims to the product "coverlay". Instead, the patent claimed a "method of producing a light mask" and an "apparatus for producing a light mask". It appears to the Board that this change of the claimed subject-matter arguably contravenes Article 123(3) EPC, since the subject-matter of the new claims appears to be outside the scope of the subject-matter of the claims as granted. Thus, in addition to the claimed coverlay now also a method and apparatus for producing it are claimed, or: instead of claiming a method and an apparatus for producing a light mask (as according to the granted patent claims) now a method and apparatus for producing a coverlay are claimed.

However, the Board does not need to investigate and finally assess this issue, since the second auxiliary request must in any case be refused as its claim 14 does not meet the requirements of Article 123(2) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

M. Kiehl

P. J. K. van den Berg