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Datasheet for the decision of 22 September 2011

Case Number: T 1765/08 - 3.5.02

Application Number: 01301141.6

Publication Number: 1126430

IPC: G08B 29/04

Language of the proceedings: EN

Title of invention:
Security sensor having disturbance detecting capability

Patentee:
Optex Co. Ltd.

Opponent:
Novar GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 123(3), 69

Relevant legal provisions (EPC 1973):
-

Keyword:
"Extension of protection - yes (main request, first and second auxiliary requests) - no (third auxiliary request)"

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-

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Case Number: T 1765/08 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 22 September 2011

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 12 June 2008 revoking European patent No. 1126430 pursuant to Articles 101(3)(b) EPC.

Composition of the Board:

Chairman: M. Ruggiu
Members: M. Rognoni
P. Mühlens

Summary of Facts and Submissions

I. The patentee (appellant) appealed against the decision of the opposition division revoking European patent No. 1 126 430.

II. In the decision under appeal, the opposition division held that claim 1 of the main request and claim 3 of the first auxiliary request did not meet the requirements of Article 123(3) EPC, and that claim 3 of the second auxiliary request did not meet the requirements of Article 84 EPC.

III. With the statement of grounds of appeal dated 14 August 2008, the appellant filed a new main request and three auxiliary requests.

IV. Oral proceedings were held before the Board on 22 September 2011.

V. The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the main request or on the basis of the first, second or third auxiliary request, all filed with letter of 14 August 2008.

VI. The respondent (opponent) requested that the appeal be dismissed.

VII. Claim 1 according to the appellant's main request reads as follows:

"A security sensor having a disturbance detecting capability, which comprises:

a carrier body (A) having an infrared sensor element (4);

an incident side enclosure (3,5) mounted on the carrier body (A), said incident side enclosure (3,5) comprising a lens (5) that defines at least one detection area for the infrared sensor element (4) or a cover that covers an incident surface area of the infrared sensor element (4);

a light projecting element (11) for projecting a disturbance detecting beam;

a light receiving element (12) for receiving at least a portion of the disturbance detecting beam;

first and second light guide members (8,9) operatively associated with the light projecting element (11) and the light receiving element (12), respectively, said first and second light guide members (8,9) being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure (5) or an outer surface of the carrier body adjacent the incident side enclosure (5) so as to extend between the first and second light guide members (8,9);

a detecting circuit (14) for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element (12); and

surface irregularities formed on a light transmitting surface (8c,9a) which transmits said disturbance detecting beam, or a light reflecting surface (9b) which reflects said disturbance detecting beam, of the first or second light guide member (8,9)

wherein:

in the case when the surface irregularities are formed on the light transmitting surface (8c,9a), the light transmitting surface (8c,9a) having the surface

irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on the light transmitting surface (8a,9a), whereby the detecting circuit (14) is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light transmitting surface (8c, 9a) having said surface irregularities; and

in the case when the surface irregularities are formed on the light reflecting surface (9b), the light reflecting surface (9b) having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light reflecting surface (9b), whereby the detecting circuit is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light reflecting surface (9b) having said surface irregularities".

Claims 2 to 6 are dependent on claim 1.

Claim 1 according to the auxiliary request 1 reads as follows:

"A security sensor having a disturbance detecting capability, which comprises:

a carrier body (A) having an infrared sensor element (4);

an incident side enclosure (3,5) mounted on the carrier body (A), said incident side enclosure (3,5)

comprising a lens (5) that defines at least one detection area for the infrared sensor element (4) or a cover that covers an incident surface area of the infrared sensor element (4);

a light projecting element (11) for projecting a disturbance detecting beam;

a light receiving element (12) for receiving at least a portion of the disturbance detecting beam;

first and second light guide members (8,9) operatively associated with the light projecting element (11) and the light receiving element (12), respectively, said first and second light guide members (8,9) being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure (5) or an outer surface of the carrier body adjacent the incident side enclosure (5) so as to extend between the first and second light guide member (8,9); and

a detecting circuit (14) for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element (12);

wherein surface irregularities are formed on a light transmitting surface (8c,9a) which transmits said disturbance detecting beam, of the first or second light guide member (8,9) and the light transmitting surface (8c,9a) having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on the light transmitting surface (8c,9a), whereby the detecting circuit (14) is arranged to detect the presence or absence of the obstacle when the obstacle is applied to

at least said light transmitting surface (8c, 9a) having said surface irregularities."

Independent claim 3 according to the auxiliary request 1 reads as follows:

"A security sensor having a disturbance detecting capability, which comprises:

a carrier body (A) having an infrared sensor element (4);

an incident side enclosure (3,5) mounted on the carrier body (A), said incident side enclosure (3,5) comprising a lens (5) that defines at least one detection area for the infrared sensor element (4) or a cover that covers an incident surface area of the infrared sensor element (4);

a light projecting element (11) for projecting a disturbance detecting beam;

a light receiving element (12) for receiving at least a portion of the disturbance detecting beam;

first and second light guide members (8,9) operatively associated with the light projecting element (11) and the light receiving element (12), respectively, said first and second light guide members (8,9) being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure (5) or an outer surface of the carrier body adjacent the incident side enclosure (5) so as to extend between the first and second light guide members (8,9); and

a detecting circuit (14) for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element (12);

wherein surface irregularities are formed on a light reflecting surface (9b) of the first or second light guide member (8,9), and the light reflecting surface (9b) having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light reflecting surface (9b), whereby the detecting circuit (14) is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light reflecting surface (9b) having said surface irregularities."

Claims 2 and 4 are dependent on claim 1. Claims 5 to 8 are dependent on one of the preceding claims.

Claim 1 according to the auxiliary request 2 differs from claim 1 of the auxiliary request 1 only in that "with" has replaced "having" in the following feature:

- "the light transmitting surface with said surface irregularities is exposed outwardly at the optical path".

Claim 3 according to the auxiliary request 2 reads as follows:

"A security sensor having a disturbance detecting capability, which comprises:

a carrier body (A) having an infrared sensor element (4);

an incident side enclosure (3,5) mounted on the carrier body (A), said incident side enclosure (3,5)

comprising a lens (5) that defines at least one detection area for the infrared sensor element (4) or a cover that covers an incident surface area of the infrared sensor element (4);

a light projecting element (11) for projecting a disturbance detecting beam;

a light receiving element (12) for receiving at least a portion of the disturbance detecting beam;

first and second light guide members (8,9) operatively associated with the light projecting element (11) and the light receiving element (12), respectively, said first and second light guide members (8,9) being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure (5) or an outer surface of the carrier body adjacent the incident side enclosure (5) so as to extend between the first and second light guide members (8,9); and

a detecting circuit (14) for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element (12);

wherein surface irregularities are formed on a light reflecting surface (9b), which reflects said disturbance detecting beam, of the first or second light guide member (8,9), and the light reflecting surface (9b) with said surface irregularities and a light transmitting surface (8c), which transmits said disturbance detecting beam, of said first or second light guide member (8,9) are both exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said the light reflecting surface (9b) having said surface

irregularities, whereby the detecting circuit (14) is arranged to detect the presence or absence of the obstacle when the obstacle is applied to said light reflecting surface (9b) having said surface irregularities."

Claim 2 and 4 are dependent on claim 1. Claims 5 to 8 are dependent on any one of the preceding claims.

Claim 1 of the auxiliary request 3 reads as follows:

"A security sensor having a disturbance detecting capability, which comprises:

a carrier body (A) having an infrared sensor element (4);

an incident side enclosure (3,5) mounted on the carrier body (A), said incident side enclosure (3,5) comprising a lens (5) that defines at least one detection area for the infrared sensor element (4) or a cover that covers an incident surface area of the infrared sensor element (4);

a light projecting element (11) for projecting a disturbance detecting beam;

a light receiving element (12) for receiving at least a portion of the disturbance detecting beam;

first and second light guide members (8,9) operatively associated with the light projecting element (11) and the light receiving element (12), respectively, said first and second light guide members (8,9) being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure (5) or an outer surface of the carrier body adjacent the incident side enclosure (5)

so as to extend between the first and second light guide members (8,9); and

a detecting circuit (14) for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element (12);

wherein surface irregularities are formed on a light transmitting surface (8c,9a) which transmits said disturbance detecting beam, of the first or second light guide member (8,9), and the light transmitting surface (8c,9a) having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on the light transmitting surface (8c,9a), whereby the detecting circuit (14) is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light transmitting surface (8c, 9a) having said surface irregularities."

Claims 2 to 6 are directly or indirectly dependent on claim 1.

VIII. The arguments submitted by the appellant at the oral proceedings and in writing can be summarised as follows:

In the decision under appeal, the opposition division apparently did not consider the independent claim as granted to include an embodiment shown in the drawings (cf. Figure 5) and stated to be an embodiment of the invention. In particular, the opposition division took the view that the granted claim 1 implied that the light transmitting surface was always present, was exposed outwardly and was capable of scattering the

disturbance detecting beam and reducing said scattering when paint was deposited on it.

However, it was very obvious to the skilled reader of the patent that in the embodiment of Figure 5 neither of the relevant light transmitting surfaces exposed outwardly (*i.e.* the surfaces 8c and 9a) was capable of scattering the disturbance detecting beam and of reducing scattering when paint was deposited. Rather for the skilled reader the light reflecting surface 9b of Figure 5 performed the scattering function and achieved the reduction of scattering when paint was applied to it, as described in paragraph [0029] of the patent specification.

With hindsight it could be seen that the wording of claim 1 as granted was not ideal. However, the expert reader of the whole of the patent as granted understood that under Article 69 EPC claim 1 had to be interpreted in the light of the description so as to include within its scope the embodiment of Figure 5 and also to make technical sense of the claim. Thus, the expert reader readily understood that in claim 1 the surface having surface irregularities was also the surface exposed outwardly. It was furthermore the surface that provided the effect of scattering the disturbance detecting beam passing therethrough and of reducing scattering of the disturbance detecting beam when paint as the obstacle was deposited on the light transmitting surface or on the light reflecting surface of the first or second light guide members. This was therefore also the surface referred to by the wording: *"the light transmitting surface or the light reflecting surface of the first or second light guide members"*.

Support for this interpretation of claim 1 was given in paragraph [0010] which explained the invention.

The expert reader also detected that the wording at column 14, line 12 of the patent specification (*"the light transmitting surface ...."*) erroneously did not include the necessary alternative *"or light reflecting surface"* which, when added mentally by the expert reader, made proper sense of the various alternative expressions in the claim and made properly clear that the embodiment of Figure 5 was undoubtedly within the intended scope of the claim as stated to be in the description. The amendments in the requests now put forward were meant to overcome all the objections raised by the opponents and the opposition division.

Article 123(3) EPC was not breached because claim 1 of the main request did not include within its scope an embodiment which was outside the scope of claim 1 of the patent as granted. In fact, for the skilled reader, the contested patent included within its scope the case of the final paragraph of claim 1 of the present main request.

The auxiliary request 1 was of the same overall claim scope as the main request, but was put forward as an alternative way of restricting and clarifying the claims as granted. Claim 1 was here restricted to the first of the two alternatives of claim 1 of the main request in which the surface irregularities were on the light transmitting surface. Claim 3 was a new independent claim, directed at the second alternative, in which the surface irregularities were on a light reflecting surface.

The auxiliary request 2 had the same claim structure as the auxiliary request 1, but its claim 3 was limited by the feature that both the light reflecting surface having the surface irregularities and the light transmitting surface were exposed outwardly. This combination of features of claim 3 was present in the embodiment of Figure 5 which thus provided basis for it.

Claim 1 of the auxiliary request 3 included the embodiment of Figure 3 in its scope.

IX. The respondent's arguments relevant to this decision can be summarized as follows:

Claim 1 of the appellant's main request specified that the light reflecting surface was such as to scatter the disturbance detecting beam passing therethrough. According to paragraph [0029], the disturbance detecting beam was diffused as it was reflected by the light reflecting surface. In the application as originally filed therefore it was not disclosed that the disturbance detecting beam was scattered as it passed through a light reflecting surface. As correctly observed in the decision of the opposition division, claim 1 as granted was limited to some of the embodiments of the application as filed and, in particular, did not include the embodiment shown in Figure 5.

As a matter of fact, the appellant appeared to assume that a granted claim should be interpreted so as to include subject-matter which might be disclosed in the

application as filed but which was undoubtedly excluded from its scope. Any attempt to amend the wording of the granted claim so as to introduce this subject-matter and, in particular, the embodiment of Figure 5 violated Article 123(3) EPC. Even if it was allowed under Article 69 EPC to interpret the claims with reference to the description and the drawings, the provisions of Article 84 and Article 69 (first sentence) EPC excluded the possibility that the wording of a claim could be interpreted so as to extend the scope of protection to other embodiments, even if these embodiments might have been disclosed in the application as filed. In particular, there was no justification for the appellant's assumption that the skilled reader of the granted claim 1 would mentally add features to make proper sense of the various alternative expressions in the claim wording.

In summary, the appellant's main request and auxiliary requests 1 and 2 were not admissible under Article 123(3) EPC, because they sought to extend the protection conferred by claim 1 as granted to embodiments of the invention having a light reflecting surface with surface irregularities so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint was deposited on it.

On the other hand, claim 1 according to the auxiliary request 3 comprised subject-matter which extended beyond the content of the application as filed. (Article 123(2) EPC).

Reasons for the Decision

1. The appeal is admissible.

2. The essential question to be considered in this appeal is whether any of the appellant's requests to maintain the contested patent in amended form is in compliance with Article 123(3) EPC.

Main request

3.1 Claim 1 of the granted patent relates to a *"security sensor having a disturbance detecting capability"* which comprises the following features:

a) a carrier body having an infrared sensor element;

b) an incident side enclosure mounted on the carrier body, said incident side enclosure comprising
- a lens that defines at least one detection area for the infrared sensor element or
- a cover that covers an incident surface area of the infrared sensor element;

c) a light projecting element for projecting a disturbance detecting beam;

d) a light receiving element for receiving at least a portion of the disturbance detecting beam;

e) first and second light guide members operatively associated with the light projecting element and the light receiving element, respectively,

f) said first and second light guide members being cooperative with each other to define an optical path along and adjacent an outer surface of the incident side enclosure or an outer surface of the carrier body adjacent the incident side enclosure so as to extend between the first and second light guide members;

g) a detecting circuit for detecting a presence or absence of an obstacle, based on an amount of light received by the light receiving element; and

h) surface irregularities formed on a light transmitting surface or a light reflecting surface of the first or second light guide members

i) the light transmitting surface is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light transmitting surface or the light reflecting surface of the first or second light guide members (8,9) surface,

j) whereby the detecting circuit is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least one of said first and second light guide members.

3.2 As far as features a) to g) are concerned, the wordings of claim 1 of the main request and of claim 1 as granted are identical.

The remaining features of claim 1 of the main request read as follows (additions and deletions with respect to the granted claim 1 are underlined and displayed with a strike-through double line, respectively):

h') surface irregularities formed on a light transmitting surface which transmits said disturbance detecting beam, or a light reflecting surface which reflects said disturbance detecting beam of the first or second light guide member~~s~~

i') in the case when the surface irregularities are formed on the light transmitting surface, the light transmitting surface having the surface irregularities ~~the light transmitting surface~~ is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on the light transmitting surface, ~~or the light reflecting surface of the first or second light guide members surface,~~

j') whereby the detecting circuit is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light transmitting surface having said surface irregularities ~~one of said first and second light guide members~~; and

i'') in the case when the surface irregularities are formed on the light reflecting surface, the light reflecting surface having said surface irregularities is exposed outwardly at the optical

path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light reflecting surface,

j'') whereby the detecting circuit is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light reflecting surface having said surface irregularities ~~one of said first and second light guide members~~.

Features i') and j') relate to embodiments of the invention where the light transmitting surface has surface irregularities which interact with the detecting beam and allow detection of paint sprayed on said surface (cf. Figures 2, 3, 8 and 9).

Features i'') and j'') relate to embodiments of the invention where the light reflecting surface has surface irregularities which interact with the disturbance detecting beam and allow detection of paint sprayed on said surface (cf. Figure 5).

4.1 According to the appellant, the skilled person reading the patent as a whole understood that claim 1 as granted was intended to cover all the embodiments described in the application as originally filed and, in particular, the embodiment of Figure 5 in which the *"reflecting surface"* was provided with surface irregularities so as to scatter the disturbance detecting beam. The amendments to the granted claim 1 which resulted in claim 1 of the main request merely

aimed at clarifying the alternative embodiments of the invention already covered by the granted patent. Thus, such amendments complied with Article 123(3) EPC.

4.2 The respondent has, however, stressed that the EPC did not allow interpretations of the claims directed to extending the protection determined by the claim wording. In the present case, there could be no doubt that claim 1 of the granted patent did not cover the embodiment shown in Figure 5. Any attempt to modify the wording of claim 1 as granted so as to include such embodiment was in breach of Article 123(3) EPC.

5.1 The patent specification (paragraph [0001]) relates to a security sensor *"having a disturbance detecting capability for detecting the presence or absence of an obstacle such as, for example, a transparent paint applied to the sensor casing to disable the security sensor."*

The gist of the invention consists essentially in forming *"surface irregularities"* on a light transmitting surface or a light reflecting surface of the first or second light guide member guiding a disturbance detecting beam from the light projecting element 11 to the light receiving element 12. As explained in paragraph [0010] of the patent specification, *"when the transparent paint is applied to the outer surface of the incident side enclosure and the applied transparent paint deposits in at least some of the surface irregularities, such irregularities are filled up to define a substantially flat surface and, therefore, the amount of light incident on the light receiving element increases. Also, in the event that a*

black-colored paint is applied to the outer surface of the incident side enclosure and the applied black-colored paint deposits on the light transmitting or reflective surfaces of the first or second light guide member, the amount of light incident on the light receiving element decreases. Accordingly, the presence of the obstacle such as the transparent paint or the black-colored paint intercepting the far infrared light, but transmitting the disturbance detecting light can be assuredly detected" (emphasis added).

As shown in Figures 2 and 3, the first embodiment of the invention comprises a "projector-side light guide member" and a "receiver-side light guide member". "*The light exit surface 8c of the projector-side light guide member 8 and the light incident surface (one of the light transmitting surfaces) 9a of the receiver-side light guide member 9 that is exposed to the outside and confronts with the light exit surface 8c are ground, that is, formed with fine surface irregularities generally similar to those found on a ground glass*" (*ibid. p*aragraph [0020], column 7, lines 5 to 11 - emphasis added).

In a second embodiment shown in Figure 5, the *"receiver-side light guide member 9",* has a reflecting surface 9b which presents surface irregularities. (*ibid.* paragraph [0028]).

In a third embodiment (Figure 6) and in a fourth embodiment (Figure 7), one *"or more surfaces of the light reflecting surface 8b and light exit surface 8c of the projector-side light guide member 8 and the light incident surface 8a and light reflecting surface*

9b of the receiver-side light guide member 9 is ground to provide surface irregularities similar to those found in a ground glass" (*ibid.* paragraph [0032]). However, the surfaces on which the surface irregularities are formed are not visible in Figures 6 and 7.

The fifth embodiment according to Figures 8 and 9 has a projector-side light guide member 8 with a ground light exit surface 8c and a receiver-side light guide member 9 with a ground light incident surface 9a similar to the ones of the embodiment of Figure 2.

5.2 Claim 1 of the granted patent specifies in its preamble that surface irregularities are formed *"on a light transmitting surface or a light reflecting surface of the first or second light guide members"*.

In the characterising portion, it is referred to the possibility that paint as an obstacle may be deposited *"on the light transmitting surface or the light reflecting surface of the first or second light guide members"* and that the detecting circuit is arranged to detect the presence or absence of the obstacle *"when the obstacle is applied to at least one of said first and second light guide members".*

However, the result to be achieved in the presence of paint deposited on the light transmitting surface or on the light reflecting surface (*"so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam"*) appears to be linked only to the outwardly exposed *"light transmitting surface"*.

5.3 In this respect, the appellant has argued that, when reading the granted claim 1 as a whole, there could be no doubt that the effect of scattering the disturbance detecting beam was due to surface irregularities which could be formed on a light transmitting surface or on a light reflecting surface of the first or second light guide members. Hence, the wording of the granted claim did not exclude any of the embodiments of the invention disclosed in the application as filed.

Furthermore, the arrows pointing out of the reflecting surface 9b in the embodiment of Figure 5 showed that surface irregularities scattered light out of this surface. It was implicit that light scattering was reduced when these surface irregularities were filled up by paint.

5.4 In the opinion of the Board the appellant's interpretation of the claim wording and in particular of features h) and i) does not find clear support in the patent specification.

In paragraph [0021] (from line 19 of column 7) of the patent specification, the optical path of the disturbance detecting beam and its interaction with the transmitting and reflecting surfaces, in the absence of any paint on such surfaces, is explained as follows (underlining added):

"The disturbance detecting beam L1 entering the projector-side light guide member 8 travels in part towards a light reflecting surface 8b [in the example without "surface irregularities"] *of the projector-side*

light guide member 8, which is exposed to the outside of the projector-side light guide member 8, and in part towards the light exit surface 8c thereof without being reflected by the light reflecting surface 8b. That portion of the disturbance detecting beam L1 reaching the light reflecting surface 8c [it should read *"8b"*] *is in part reflected thereby so as to travel towards the light exit surface 8c* [in the example "with surface irregularities"] a*nd in part transmitted through the light reflecting surface 8b to the outside of the projector-side light guide element 8. In any event, the light emerging outwardly from the light exit surface 8c of the projector-side light guide member 8 is in turn scattered outwardly as shown by the single-dotted chain line and a portion thereof subsequently enters the receiver-side light guide member 9 through the light incident surface 9a. The light incident on the light incident surface 9a* [with "surface irregularities"] *is scattered and a portion thereof is then reflected by a light reflecting surface (a portion of an outer surface) 9b* [without "surface irregularities"] *of the receiver-side light guide member 9 that is exposed to the outside and is defined by an inclined surface confronting the light incident surface 9a of the receiver-side light guide member 9, so that the reflected incident light can be received by the light receiving element 12 through the light exit surface (one of the light transmitting surfaces) 9c of the receiver-side light guide member 9. The amount of the light so received by the light receiving element 12 in this way represents a reference incident light amount that is normal in the absence of any obstacle applied to an outer surface of the lens 5. Consequently, an output voltage V from an incident light amount*

detecting circuit 14 at this time represents a value V0 of a substantially low level as shown in Fig. 4A."

The effect produced by paint sprayed on the outer transmitting surfaces of the light guide members is explained in the following paragraphs [0022] and [0023]:

[0022] However, in the event that the obstacle such as, for example, a transparent paint of a kind capable of intercepting far infrared rays of light, but allowing light ranging from a near infrared wavelength region to a visible wavelength region to pass therethrough is applied to the outer surface of the lens 5 shown in Fig. 3, the obstacle so applied deposits on the light exit surface 8c of the projector-side light guide member 8 and the light incident surface 9a of the receiver-side light guide member 9 to fill up surface irregularities to thereby render the light exit surface 8c and the light incident surface 9a to be flat.
Therefore, scattering of the disturbance detecting beam L1 emerging outwardly from the light exit surface 8c of the projector-side light guide member 8 is reduced, resulting in increase of the amount of the disturbance detecting beam L1 incident on the light incident surface 9a of the receiver-side light guide member 9, and also the scattering of the light at the light incident surface 9a is reduced. Consequently, the amount of the disturbance detecting beam L1 incident on the light receiving element 12 increases...." (emphasis added).

[0023] On the other hand, in the event that the obstacle such as, for example, a black-colored paint of a kind capable of intercepting not only far infrared rays of light, but also light ranging from a near infrared wavelength region to a visible wavelength region to pass therethrough is so applied to the outer surface of the lens 5 as to deposit on at least one of the light reflecting surface (a portion of the outer surface) 8b [in the example without surface irregularities] *and the light exit surface 8c* [in the example with surface irregularities] *of the projector-side light guide member 8, the disturbance detecting beam L1 may be absorbed by such obstacle and, therefore, the amount of the disturbance detecting beam L1 emerging outwardly from the light exit surface 8c of the projector-side light guide member 8 decreases. Even when the black-colored paint deposits on at least one of the light incident surface 9a and the light reflecting surface 9b of the receiver-side light guide member 9, the amount of the light received by the light guide element 12 through the receiver-side light guide member 9 similarly decreases"* (emphasis added).

In other words, it is explicitly stated in the description that a light transmitting surface provided with surface irregularities scatters the disturbance detecting beam passing through it and that transparent paint deposited on such surface reduces the light scattering effect.

On the other hand, the effect of paint sprayed on a light reflecting surface provided with surface irregularities is described in paragraph [0029] of the patent specification as follows:

"According to the second preferred embodiment, the amount of the disturbance detecting beam L1 emerging outwardly from the light exit surface 8c of the projector-side light guide member 8 and subsequently entering the receiver-side light guide member 9 is larger than that in the previously described first embodiment. However, since the disturbance detecting beam L1 entering the receiver-side light guide member 9 is diffused as it is reflected by the light reflecting surface 9b [provided with surface irregularities according to Figure 5] *of the receiver-side light guide member 9, the amount of the disturbance detecting beam L1 received by the light receiving element 12 decreases down to a value about equal to that in the previously described first embodiment.*
In the event that the transparent paint is applied and deposits on the light reflecting surface 9b of the receiver-side light guide member 9, the surface irregularities of the light reflecting surface 9b are filled up by the transparent paint to represent a flat smooth surface and, as a result thereof, the amount of the light reflected by the light reflecting surface 9b increases, resulting in increase of the amount of the light received by the light receiving element 12. Also, in the event of the black-colored paint applied, the amount of the light received by the light receiving element 12 decreases as is the case with that described in connection with the first embodiment and, therefore, the presence of the obstacle can be detected in the manner described hereinbefore" (emphasis added).

Hence, the effects of a transparent paint filling up the surfaces irregularities of a light transmitting or

of a light reflecting surface disclosed in the contested patent can be summarized as follows:

- in the case of a light transmitting surface, the scattering of the disturbance detecting beam is reduced;

- in the case of a light reflecting surface, the amount of light reflected is increased.

5.5 In the Board's opinion, the cited passages of the description and, in particular, the use of the word *"scattering"* only in conjunction with a light transmitting surface confirm that the wording of feature i) of claim 1 as granted is meant to establish a link both between the surface irregularities of a light transmitting surface and the scattering of the disturbance detecting beam and between paint filling surface irregularities formed on such light transmitting surface and the resulting reduced scattering of the disturbance detecting beam.

Consequently, the Board finds that claim 1 of the granted patent covers only embodiments of the invention comprising a light transmitting surface exposed outwardly at the optical path and provided with surface irregularities, so as to scatter the disturbance detecting beam.

5.6 As pointed out above, claim 1 according to the appellant's main requests comprises a first alternative specified by features i') and j') and covering the embodiments of Figures 2, 3, 8 and 9, and a second

alternative specified by features i'') and j'') and covering Figure 5.

5.7 According to Article 69 EPC, the extend of protection conferred by a European patent is determined by the claims. As correctly pointed out by the appellant, it is nevertheless possible under Article 69 EPC to use the description and the drawings to interpret the claims.

However, the Board considers that interpretation of a patent claim pursuant to Article 69 EPC cannot be used to resolve possible discrepancies between the subject-matter defined by the claim wording and embodiments which, albeit disclosed in the corresponding application, do not appear to the skilled reader to fall within the terms of the claim.

5.8 As far as it covers embodiments in which a light reflecting surface is provided with surface irregularities so as to scatter the disturbance detecting beam passing therethrough, claim 1 according to the main request extends the protection conferred by claim 1 as granted and thus violates Article 123(3) EPC.

Auxiliary request 1

6.1 Claim 3 of the auxiliary request 1 is directed to a *"security sensor having a disturbance detecting capability"* which comprises features a) to g) of claim 1 as granted and feature i'') and j'') of claim 1 of the main request, whereby feature i'') includes the following minor amendments (additions and deletions

with respect to the main request are underlined and displayed with a strike-through line, respectively):

i'') wherein ~~in the case when the~~ surface irregularities are formed on ~~the~~ a light reflecting surface of the first or second light guide member and the light reflecting surface having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light reflecting surface.

6.2 Thus, claim 3 is intended to cover essentially the same subject-matter defined by the second alternative of claim 1 and, in particular, the embodiment according to Figure 5.

6.3 As shown above, this embodiment is not covered by claim 1 as granted. Hence, claim 3 extends the protection conferred by the patent and thus infringes Article 123(3) EPC.

Auxiliary request 2

7.1 Claim 3 according to the auxiliary request 2 differs from claim 3 of the auxiliary request 1 only in that feature i'') reads as follows (additions and deletions with respect to the auxiliary request 1 are underlined and displayed with a strike-through line, respectively):

i'') wherein surface irregularities are formed on a light reflecting surface, which reflects said disturbance detecting beam, of the first or second light guide member, and the light reflecting surface with ~~having~~ said surface irregularities ~~is~~ and a light transmitting surface, which transmits said disturbance detecting beam, of said first or second light guide member are both exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on said light reflecting surface having said surface iregularities.

Hence, claim 3 is directed to a security sensor comprising surface irregularities formed on a light reflecting surface (cf. Figure 5 of the patent specification).

7.2 As shown above, claim 1 as granted covers only those embodiments of the invention comprising a light transmitting surface with surface irregularities which scatter a disturbance detecting beam passing through such light transmitting surface.

Thus, as far as it covers security sensors in which only a light reflecting surface is provided with surface irregularities, so as to scatter the disturbance detecting beam passing therethrough, claim 3 according to the auxiliary request 2 extends the protection conferred by claim 1 as granted (Article 123(3) EPC).

Auxiliary request 3

8.1 Claim 1 according to the auxiliary request 3 differs from claim 1 as granted only in that features h), i) and j) read as follows (additions and deletions with respect to the granted claim are underlined and displayed with a strike-through line, respectively) :

h) wherein surface irregularities are formed on a light transmitting surface, ~~or a light reflecting surface~~ which transmits said disturbance detecting beam, of the first or second light guide member~~s~~,

i) and the light transmitting surface having said surface irregularities is exposed outwardly at the optical path, so as to scatter the disturbance detecting beam passing therethrough and to reduce scattering of the disturbance detecting beam when paint as the obstacle is deposited on the light transmitting surface ~~or the light reflecting surface of the first and second light guide members surface~~,

j) whereby the detecting circuit is arranged to detect the presence or absence of the obstacle when the obstacle is applied to at least said light transmitting surface having said surface irregularities ~~one of said first and second light guide members~~.

8.2 The Board is satisfied that the above amendments are merely directed at removing some incongruities from the wording of the granted claim 1. As they do not extend

the protection conferred by the patent as granted, they are admissible under Article 123(3) EPC.

9.1. At the oral proceedings, the respondent raised some objections under Article 100(c) EPC against claim 1 of the auxiliary request 3. The appellant, however, gave no permission for this new ground of opposition to be discussed in the course of this appeal.

9.2 Under these circumstances and in view of the fact that novelty and inventive step were not addressed in the contested decision, the Board considers it appropriate to exercise its power under Article 111(1) EPC and remit the case to the department of first instance for further prosecution.

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 for further prosecution.

The Registrar: The Chairman:

C. Moser M. Ruggiu