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VISUALISATION ARRANGEMENT

Applicant:
Counterflo AB

Headword:
Visualisation / Counterflo

Relevant legal provisions:
EPC Art. 56, 84

Keyword:
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Case Number: T 0694/15 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 4 June 2020

Appellant: (Applicant)	Counterflo AB Valhallavägen 152 D 4tr 115 24 Stockholm (SE)
Representative:	Valea AB Box 1098 405 23 Göteborg (SE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 12 November 2014 refusing European patent application No. 06716969.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	P. Scriven
Members:	T. Alecu
	R. Winkelhofer

Summary of Facts and Submissions

I. This appeal is against the Examining Division's decision to refuse European patent application 06 716 969.

II. The Examining Division held that the subject-matter of the independent claims then on file lacked inventive step in the sense of Article 56 EPC. They considered that the invention would have been obvious for the skilled person starting from document
D8: US 6147484,
in the light of document
D2: US 2004/022052.

III. The Examining Division also cited the following documents:
D1: US 5917288
D3: WO 2005/052443
D4: US 2004/247262
D5: US 5781015
D6: Gustafsson, *The power-aware cord*,CHI '05 Extended Abstracts on Human Factors in Computing Systems, April 2005 Pages 1423–1426 https://doi.org/10.1145/1056808.1056932
D7: JP 2000 195682
D9: US 5900804
D10: KR 200 225 528

IV. The appellant requested that the decision of the Examining Division be set aside and that a patent be granted on the basis of their main request or one of three auxiliary requests, all filed with the statement of grounds. Arguments supporting the existence of

inventive step with regard to the various documents cited by the Examining Division were put forward.

V. In a communication under Article 15(1) RPBA, the Board agreed with the appellant that the requests contained subject matter which would not have been obvious starting from D8, but raised clarity objections and new inventive step objections. More precisely, the formulations *substantially wire-shaped* and *illumination characteristic* were seen as too vague; and *arranged along said conductor* as unclear regarding the extent of the arrangement. The new inventive step objections considered D5 and D9 as starting points. The Board also introduced document US6347172 (here D11).

VI. In reply to the Board's communication, the appellant filed a new set of claims for the main request and also filed new first to fourth auxiliary requests.

VII. The appellant agreed to the oral proceedings taking place by video conference.

VIII. The appellant filed two more auxiliary requests, fifth and sixth.

IX. Oral proceedings before the Board took place on 4 June 2019 by video conference.

X. The appellant initially maintained all the requests on file. The Board found the claim set of the main request to be allowable. The appellant then withdrew the auxiliary requests.

XI. Claim 1 of the main request reads:

An arrangement (10, 30) for visual indication of an electrical quantity, said electrical quantity being a level of current and/or power consumption of one or several apparatuses, the arrangement comprising a power cable having a conductor (11, 12, 13) for transmitting current to said one or several apparatuses,
wherein the arrangement further comprises a wire shaped illuminator (14, 15, 16) and a controller (34, 40), said controller (34, 40) comprising:
a measuring arrangement (43) for measuring said level of current and/or power consumption;
a processing arrangement (42) for adapting a control signal to control at least one illumination characteristic of said illuminator with respect to said electrical quantity, wherein said at least one illumination characteristic is one or several of intensity, colour or frequency, and
a driver (45a-45c) for driving said illuminator receiving the control signal from said processing arrangement,
wherein said wire shaped illuminator is arranged along said conductor (11, 12, 13).

Reasons for the Decision

Clarity and claim construction

1. Of the three clarity objections raised by the Board, the first two have been rendered moot by amendment, in that the qualification *substantially* has been stricken out, and the *illumination characteristic* has been specified to be *one or several of intensity, colour or frequency,* which the Board finds satisfactory.

2. The Board also objected to the feature of *wherein said wire shaped illuminator is arranged along said conductor* as being unclear, in that the extent of the arrangement is not specified. Must the illuminator be arranged along the full length of the conductor, or was it enough to be arranged on a relatively short portion, perhaps only a few centimeters of a 10m cable?

3. The appellant argued that the feature should not be read in isolation, but rather in conjunction with the claimed objective, which was to provide a visual indication to the user of the device in normal use. In this sense, the feature should be read as meaning *that the arrangement is of a sufficient length for it to provide the visual indication.*

4. The Board considers this reading to be correct and the claim to be clear. It is in line with the principle that a defined purpose imposes structural limitations in terms of physical characteristics on a claimed device (Case Law of the Boards of Appeal, 9th Edition I.C.8.1.5).

5. However, the Board notes that the claim covers arrangements of different lengths, within a range whose boundaries are defined by the minimum length that would provide a minimum visual indication to the user and the maximum cable length.

6. The appellant was of the opinion that, properly construed with reference to the overall disclosure of the application, the claim would not be understood as covering a binary indication, i.e. of whether or not current or power was being consumed, but rather as implying a visual indication of a plurality of non-zero levels with one illuminator. This was because the claim defined the measurement of a level, which implied continuity of the output; and because the claim defined adaptation of a control signal, which could not be taken as covering on and off switching: in such a case, the signal was not adapted but merely provided or not.

7. The Board is not persuaded by this argument. There is no specification in the claim restricting the form of the measurement output, and there is no specification either that adaptation is to be read as providing for a plurality of non-zero levels. The signal received by a light source is the signal that controls it, and switching it between zero and the nominal voltage is *adapting* the control signal so that the light source outputs a desired level.

8. Hence, in the Board's view, the claim does cover a measurement outputting just two levels, one of them being zero, and a corresponding switching of the illuminator on or off.

Inventive step

Starting point in the prior art ("closest" prior art) and the objective technical problem(s)

9. The Examining Division started from document D8. The Board also considered documents D9 and D5 as possible starting points.

10. The appellant disagreed that D5 was the closest prior art, because it only provided, as a visual indication, the switching on or off of an LED, and did not provide for a measurement of a level in the sense of the claim, whereas D9 did.

11. This argument fails in view of the Board's claim construction (point 8, above). But the argument is actually of no relevance to the question of whether D5 can be selected as closest prior art.

12. Having one less feature in common with the claim may mean that it *appears* less likely that the skilled person would arrive in an obvious manner at something falling within the scope of the claim, but it does not mean that the skilled person could not have arrived at such subject manner without hindsight, possibly while looking for a solution to a different objective technical problem.

13. As this Board, in a different composition, has already said (T 405/14 *Self-testing sensor / William L. Smith*), the terminology "closest prior art" is somewhat misleading. It is perhaps preferable to use the terminology "starting point (in the prior art)". It can be economical to start from prior art that is in some sense close to the invention, in the hope that the

consideration of this single starting point will be enough to establish whether the claimed subject matter would have been obvious. However, if this fails, before arriving at the conclusion that the subject matter would not have been obvious, it is necessary to consider other possible starting points, to see whether there are any other paths leading to the invention, that the skilled person would have taken when searching for solutions to technical problems pertinent to that starting point. If such a path exists, then the invention would have been obvious. What is decisive for establishing obviousness is not the closeness of the starting point but the overall likelihood of the path, given the starting point.

14. Some prior art documents may be easily discarded, but this cannot be done merely because there is another "closer" document. It has to be done on the basis of an evaluation of the likelihood of the existence of an obvious path to the claimed subject matter.
In so doing, it may indeed be possible to conclude, for example because the situation is analogous, that starting points that remain to be considered are no more promising that those that already have been considered, and their evaluation can be halted.

15. It is further necessary to investigate all technical problems that could lead to subject matter falling within the scope of the claim. There may be more than one objective technical problem, either because one can ascribe distinct effects to the same differentiating features, in which case it might be possible to consider problems based on any one of them, or because the differentiating features comprise alternatives (or subranges within a broader range) with different associated technical effects. The latter is the case

here, as it will be discussed below.

16. It has to be noted, however, that a problem which is not apparent from the context of the starting point, but which is derived only with knowledge of the invention, is very likely to be the result of hindsight.

Obviousness in the present case

17. In the following, each of the cited documents will be considered as possible starting points.

18. Documents D3 and D6 are not prior art documents in the sense of Article 54(2) EPC.

19. Documents D1, D2, D4, D7, and D11 teach different types of illuminated cable.

20. D1 and D7 (see abstracts) are concerned with providing lighting synchronized with audio output. D4 (see abstract) provides a decorative cable. D11 (see abstract) provides different colours to identify the cables. D2 provides cables which are lit in synchronism with audio (Figures 2 to 5, 7), or for making the cable visible, so that no one trips on it (Figures 6, 8, 9).

21. None of them teaches the provision of information as to power or current consumption, or mentions that problem. However, this is a necessary part of any objective technical problem that could lead to the invention. In the context of these documents, it is hard to see that this is a problem that the skilled person would have

formulated.

22. It appears therefore unlikely that the skilled person reading these documents would have arrived at the claimed subject matter without hindsight.

23. Documents D5, D8 and D9 all teach power distributors with visual indicators of power consumption. Considering the Board's claim construction, the invention differs from each by the following two features:

wherein the arrangement further comprises a wire shaped illuminator (14, 15, 16)
[...]
wherein said wire shaped illuminator is arranged along said conductor (11, 12, 13).

24. This accords with the position of the appellant as well, apart from the claim construction issue discussed above.

25. Document D8 teaches a device that measures, to a good degree of accuracy, the power used and displays it on a screen (display, Figure 5).

26. The Board agrees with the technical problem formulated by the Examining Division, which is to increase the visibility of the information provided (see also below).

27. However, the cable of figure 6 in D2, cited by the Examining Division, does not convey information as to the quantity of power or current, but only makes the cable visible. There is actually no teaching, in any of the cited documents of illuminator cables that would allow the translation of accurately-measured power

information to a corresponding level of illumination, without substantial further adaptation. Hence the skilled person would not consider that D1, D2, D4, D7 or D11 provide solutions compatible with D8.

28. Documents D5 or D9 do not suffer from this compatibility problem. They both use LED indicators to display the level of consumed power. These indicators are placed on housings at the end of the cables (see Figure 1 in both documents).

29. Given that the claimed arrangement does not necessarily improve the visibility of the visual indication, because the length may be minimal (see point 5 above), the appellant was of the opinion that the objective technical problem should be that of providing an alternative to the LED indicators for the purpose of displaying the power consumption.

30. It has to be further noted, however, that the claim also covers subject matter which provides for the technical effect of improved visibility. It can be said that the claim de facto covers two alternatives, one in which the length is small, so that no improved visibility is achieved, and one, where the length is large enough so that improved visibility is obtained.

31. It is enough for one of the alternatives to have been obvious for the claim to fail under Article 56 EPC. Hence both objective technical problems need to be considered.

32. The appellant argued that the skilled person, reading D5 or D9, was skilled in the art of power cables and power distribution. They would not consult D1, D4, D7 or D11, which were not in the same technical field; or

D2, which was not understandable and not enabling. However, even if they did consider one of those documents, they would put the illuminator cables on the housing to replace the LEDs. In fact, there was no reason to consider illuminator cables at all. The obvious solution to improving visibility was to use more powerful LEDs or bigger displays in or on the housings.

33. Regarding the first objective technical problem, that of providing an alternative to LEDs, the appellant is correct that the modification was too complex for the skilled person to have implemented it in the context of D5 or D9 without the expectation of some other advantage.

34. Considering the objective technical problem of improving visibility, the complexity issue can be offset by the expected advantage.

35. While the fact that one obvious solution exists (e.g. a more powerful LED) does not mean that another solution is not obvious, it must be acknowledged that before considering one of D1, D2, D4, D7 or D11, at least one extra step needs to have been taken by the skilled person, which is to look for display possibilities outside the housing.

36. It is also true that the documents on file do not describe illuminator cables for the purpose of increasing the visibility of information that would otherwise be displayed using LEDs or similar devices, let alone for the specific purpose of displaying power measurements. They are thus not described as being a solution to the posed problem.

37. D2 does teach that the cables can be used for various purposes, among others for indicating an incoming call or showing the position of a power cable, which might lead the skilled person to consider them for other analogous uses, such as displaying power information. But D2 is indeed a rather unclear document.

38. This accumulation of uncertainties in the different steps that the skilled person would need to have taken reduces the likelihood of the whole chain of action happening. None of the steps is immediately obvious, but it is the accumulation of uncertainties that persuades the Board that the claimed subject matter would not have been obvious. A reasonable possibility that the skilled person would have taken the needed step exists (they *could* have) but no high enough probability (they *would* not have).

39. For the sake of completeness, it is noted that the document D10 (see abstract), which has not been discussed with the appellant, is very similar to D9, at least in the aspects pertinent to the case. Reasoning by analogy leads to the same conclusion as starting from D9.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division with the order to grant a patent on the basis of the claims of the main request, the drawings as originally filed and the description to be adapted as necessary.

The Registrar: The Chair:

D. Meyfarth P. Scriven

Decision electronically authenticated