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D E C I S I O N
of 19 July 2001

Case Number: T 0442/99 - 3.5.2

Application Number: 91100029.7

Publication Number: 0436488

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Language of the proceedings: EN

Title of invention:
Sleep timer for audio/visual apparatus and method of sleep timer operation

Patentee:
PIONEER ELECTRONIC CORPORATION

Opponent:
Interessengemeinschaft für Rundfunkschutzrechte GmbH Schutzrechtsverwertung Co. KG

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0442/99 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 19 July 2001

Appellant: (Opponent)
Interessengemeinschaft
für Rundfunkschtzrechte GmbH
Schutzrechtsverwertung & Co. KG
Bahnstrasse 62
D-40210 Düsseldorf (DE)

Representative:
Eichstädt, Alfred, Dipl.-Ing.
Maryniok & Partner
Kuhbergstrasse 23
D-96317 Kronach (DE)

Respondent: (Proprietor of the patent)
PIONEER ELECTRONIC CORPORATION
No. 4-1, Meguro 1-chome
Meguro-ku
Tokyo 153 (JP)

Representative:
Reinhard - Skuhra - Weise & Partner
Postfach 44 01 51
D-80750 München (DE)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 12 February 1999 rejecting the opposition filed against European patent No. 0 436 488 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: J. M. Cannard
P. H. Mühlens

Summary of Facts and Submissions

I. The opponent appealed against the decision of the opposition division rejecting the opposition filed against European patent N° 0 436 488.

II. Prior art document:

D1: DE-A-30 03 425

cited in support of the opposition remains relevant to the present appeal.

In addition, documents:

D3: JP-A-60 90 476,

D4: US-A-3 843 929, and

D5: JP-A-60 202 384,

all of which are referred to in the patent in suit, were cited in the statement of grounds of appeal.

III. Independent Claims 1 and 7 of the patent in suit as granted read as follows:

Claim 1:

"A sleep timer for audio/visual apparatuses for turning off source equipment (1, 2, 3, 8 to 11) of audio/visual signals, the sleep timer having a user-operated command-inputting means for inputting a command for a timer, said time being activated in response to said command

characterized by

sleep timer activating means (4) which is operated by a user, said sleep timer activating means (4) outputting a first signal to activate a time operation having a first mode and a second mode, said first mode being a mode wherein said source equipment (1, 2, 3, 8 to 11) is turned off after the source equipment (1, 2, 3, 8 to 11) completes the operation for reproducing a signal, said second mode being a mode wherein source equipment (1, 2, 3, 8 to 11) is turned off after a predetermined length of time;

timer-mode selecting means (6d) responsive to said first signal, said timer-mode selecting means (6d) checking operating conditions of the source equipment and automatically selecting said first mode if at least one of said source equipment is operating, and automatically selecting said second mode if the source equipment (1, 2, 3, 8 to 11) is not operating;

sleep time setting means (6c) which is set to a predetermined length of time by said timer mode selecting means (6d) when said second mode is selected;

time-up-detecting means for outputting a second signal in the first mode when at least one of said source equipment completes an operation thereof, and for outputting a third signal when said predetermined length of time of said sleep time setting means (6c) expires, and power-turn-off means (5) for turning off said source equipment (1, 2, 3, 8 to 11) in response to said second signals or said third signal."

Claim 7:

"A method for turning off source equipment (1, 2, 3, 8 to 11) for audio/visual apparatuses having a sleep timer, wherein said source equipment (1, 2, 3, 8 to 11) comprises at least one audio/visual source of signals,

comprising the following steps:

a sleep timer activating means (4) is outputting (step S_1) a first signal for activating a timer operation upon command by a user, whereat said timer operation has a first mode and a second mode, wherein said source equipment is turned off during said first mode after said source equipment completes the operation for reproducing a signal, while during said second mode said source equipment is turned off after a predetermined length of time; the timer-mode selecting means (6d) is selecting (steps S_5, S_8, S_{9C}) said first mode, if at least one of said audio/visual sources of said source equipment (1, 2, 3, 8 to 11) is operating, while said timer-mode selecting means (6d) is selecting said second mode, if none of said audio/visual sources of said source equipment (1, 2, 3, 8 to 11) is operating (steps S_{3B}, S_7, S_{9A}, S_{9B});

said timer-mode selecting means (6d) is setting a predetermined length of time in a sleep timer setting means (6c), when said second mode is selected (steps S_{11}, S_{16}, S_{21});

a time-up-detecting means is outputting a second signal during the first mode when said source equipment (1, 2, 3, 8 to 11) completes an operation thereof (steps S_5, S_8, S_{9C}, S_{102}, S_{105}, S_{108}, S_{111}), while said time-up-

detecting means is outputting a third signal during the second mode when said predetermined length of time expires (steps S_{12}, S_{17}, S_{22});

a power-turn-off means (5) is turning off said source equipment in response to said second signal or said third signal."

Claims 2 to 6 are dependent on Claim 1 and Claim 8 is dependent on Claim 7.

IV. Oral proceedings were held on 19 July 2001.

V. The arguments of the appellant/opponent can be summarised as follows:

The sleep timer according to Claim 1 differed from the timer according to D1 merely in that the timer-mode selecting means in D1 did not check operating conditions of the source equipment to automatically select the first timer mode if at least one of the source apparatuses in the equipment was operating, and to automatically select the second timer mode if the source equipment was not operating. D1 did, however, disclose a first mode in which the source equipment was turned off after completion of the operation for reproducing a signal, and a second mode in which a timer turned off the source equipment after a predetermined length of time; the source equipment was turned off by signals provided by the control centre (5) in response to a signal from a source equipment apparatus indicating that a reproduction had finished or in response to a signal from the timer (see: Figure 2; page 6, lines 1 to 2, lines 8 to 11, lines 22 to 25; page 8, lines 7 to 11; page 10, lines 26 to 30).

The appellant argued that the skilled man starting from D1 would take account of the wishes of a user. Accordingly, the skilled person would have naturally considered the automatic selection of the first mode if a source apparatus was active, because a user always wished to listen to his favourite pieces of music until the end, and the selection of a conventional sleep time mode in the other cases. The use of priority rules was a matter of common practice (see D1: page 9, lines 26 to 31) and their implementation made obvious by the microprocessor included in the control centre (D1: page 11, lines 1 to 6).

The technical problem of providing a sleep timer which was easy to operate was not solved by the claimed sleep timer which failed to teach the use of a single key to select the timer modes.

Documents D3 and D4 disclosed a device for automatically shutting-off a television set after television broadcasting had ended; D4 and D5 disclosed a sleep timer for an audio/visual apparatus. The sleep timer according to Claim 1 was a mere juxtaposition of said prior art devices.

The method according to Claim 7 lacked an inventive step for the same reasons.

VI. The arguments of the respondent/proprietor can be summarised as follows:

The control centre (5) disclosed in D1 comprised a timer which was programmable by means of keys (20 to 22) on the remote control unit (18). This remote control unit merely transmitted the information set by

the keys (20 to 22) and included no key for selecting a first mode or a second mode of time operation. In D1 the record player and the cassette deck merely turned off the preamplifier when they turned themselves off after they had completed the reproduction of a signal. The turning off of the source equipment could only be performed by pressing the stop-keys of the apparatuses of the equipment or by pressing the stand-by keys on the control centre or on the remote control unit (18). D1 thus did not teach sleep timer activating means outputting a first signal for activating said time operation and the first and second modes according to Claim 1. Nor did it disclose or suggest timer-mode selecting means for checking the operating conditions of the source equipment and for automatically selecting the first and the second mode accordingly.

In D1 the time input by the keys (20 to 22) was not a sleep time, i.e. a predetermined length of time after which a piece of equipment was to be turned off. It was an absolute time, expressed in hours, minutes and seconds, at which the switching-over from one audio apparatus to another was performed. D1 did not disclose the time setting means, time-up detecting means and power-turn-off means recited in Claim 1.

The features of the characterizing part of Claim 1 were neither disclosed in nor suggested by D1. The appellant’s arguments, especially those based on the alleged wishes of a user, resulted from an ex-post-facto analysis.

VII. The appellant requested that the decision under appeal be set aside and the patent be revoked.

VIII. The respondent requested that the appeal be dismissed and the patent maintained.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*

The novelty of the subject-matter of the independent Claims 1 and 7 of the patent in suit has not been disputed.

3. *Closest prior art - Problem*

3.1 D1, the undisputed closest prior art, discloses a control device for controlling the operation of audio apparatuses forming source equipment. More specifically, said device comprises a control centre (5) for turning off selectively each of the audio apparatuses or the whole source equipment (page 10, lines 26 to 30), and a remote control unit (18) which has user-operated command-inputting means (Figure 2) for controlling all the functions provided by the control device (page 6, lines 1 to 2). The control centre and remote control unit (18) include a programmable timer.

3.2 Neither a reference to a "sleep timer" nor a precise description of the programmable timer can be found in D1. D1 merely explains that this timer corresponds functionally to the timer provided in a modern Hi-Fi tower (page 6, lines 8 to 11), performs the switching-over from one apparatus to another and is programmable

in hours, minutes and seconds (Figure 2; page 6, lines 22 to 25). Since timers are used for starting or stopping the operation of a device at specific times, the other functions performed by the timer in D1 should merely be understood as switching on (into an operating state) or off (into a standby state) the source equipment (see page 7, lines 22), and especially the recording mode of the cassette deck, at specific absolute times. Moreover, there is no need for programming the predetermined length of time of a sleep time in seconds and no reason for using a sleep timer to switch over from one apparatus to another at the end of a sleep time. Accordingly the appellant has not shown that D1 discloses a sleep timer having a mode of time operation wherein the source equipment is turned off after a predetermined length of time, or sleep time setting means for setting a predetermined length of time, as recited in Claim 1.

3.3 The record player and the cassette deck referred to in D1 are turned off automatically after they have completed the reproduction of a signal (page 8, lines 7 to 11). Moreover, since the timer is used in D1 for turning off the equipment in a second time mode at a given time, the remote control unit (18) has implicitly a key for activating said time operation (page 6, lines 1 to 2). If said automatic turn-off is considered as the first time mode, said mode is necessarily automatically activated by the same key and at the same time as the activation of the corresponding apparatus, not by the key used to activate the timer, nor at the same time the timer is activated.

3.4 Furthermore, although D1 discloses means for detecting when the record player and the cassette deck have completed a reproduction of a signal, it does not disclose any means for checking whether the source equipment is operating or not. The second time mode is thus never automatically selected when the equipment is not operating, and the first time mode is inevitably selected as a consequence of the selection of the record player or cassette deck to reproduce a signal. In view of this the control centre (5) according to D1 cannot be considered as having a timer-mode selecting means performing the functions specified in Claim 1.

3.5 Even if it is considered to be implicit that the control centre (5) according to D1 has time-up-detecting means for outputting a second signal in the first mode when at least one of the record player and the cassette deck completes an operation and a power-turn-off means for turning off, in response to said second signal, the preamplifier of the source equipment, the other functions of the time-up-detecting means and power-turn-off means recited in Claim 1 are not disclosed in D1.

4. D1 discloses a timer for audio apparatuses for turning off source equipment of audio signals, which has a user-operated command-inputting means as recited in the precharacterizing part of Claim 1 and comprises the following features of the characterizing part of Claim 1:

- a timer activating means (remote control unit 18) operated by a user and outputting a first signal to activate a first mode of time operation wherein

the source equipment is turned off after the source equipment completes the operation for reproducing a signal,

- time-up-detecting means for outputting a second signal in the first mode when one of the source equipment completes an operation thereof, and for outputting a third signal,

- and power-turn-off means for turning off some components of said source equipment in response to said second signal or said third signal.

5. Thus the subject-matter of Claim 1 of the patent in suit differs from the prior art according to D1 by having:

- a sleep timer activating means which outputs a first signal to activate a time operation having the first mode and a second mode in which source equipment is turned off after a predetermined length of time;

- timer-mode selecting means responsive to said first signal, said timer-mode selecting means checking operating conditions of the source equipment and automatically selecting said first mode if at least one of said source equipment is operating, and automatically selecting said second mode if the source equipment is not operating;

- sleep time setting means which is set to a predetermined length of time by said timer mode selecting means when said second mode is selected;

- time-up-detecting means for outputting a third signal when said predetermined length of time of said sleep time setting means expires, and power-turn-off means for turning off the complete source equipment in response to said second signal or said third signal.

6. Starting from D1 the objective problem underlying the present invention can be seen as providing a sleep timer having an auto sleep mode and a conventional sleep timer mode which can be simply operated by a user. This corresponds to the problem mentioned in the patent in suit (column 2, lines 34 to 42). The appellant has alleged that the technical problem is not solved by the features identified in Claim 1. However the claimed subject-matter does provide a sleep timer which can be simply operated. In particular, if the user erroneously selects the first mode when no piece of equipment is operating, the selecting means (6d) automatically corrects this by selecting the second mode.

7. *Inventive step*

7.1 Since the record player and the cassette deck in D1 always turn off themselves and the preamplifier at the end of the reproduction of a signal, the first time mode is always selected unless the complete equipment is turned off by the timer before the end of the reproduction of the signal.

7.2 According to the appellant, the skilled person starting from D1 and wishing to accommodate the alleged needs of the user, would modify the prior art disclosed in D1 in such a way as to arrive at the sleep timer according to Claim 1 of the patent in suit.

7.3 However, it would be necessary to modify the time-up-detecting means and power-turn-off means disclosed in D1 and implement a sleep timer activating means, a timer-mode selecting means and sleep time setting means before it would be possible to arrive at a sleep timer having all the features recited in Claim 1 of the patent in suit. The appellant has not provided any prior art documents to prove that such means, apart from sleep time setting means, were known before the filing date of the patent. D3 and D4 disclose devices for automatically shutting-off a television set after television broadcasting has ended, and D4 and D5 disclose sleep timers for audio/visual apparatus, but timer-mode selecting means checking operating conditions of the source equipment for automatically selecting the first and second modes are neither disclosed nor suggested by these documents. Nor do such means, let alone their function, appear to have been part of the general knowledge of the skilled person in the relevant field at the relevant time. Nor is there any documentation of the alleged wishes of the user.

7.4 Accordingly, the appellant has not convinced the Board that the subject-matter of Claim 1 was obvious to the person skilled in the art at the priority date of the patent. The same is true for Claim 7. The Board therefore concludes that the subject-matter of the independent Claims 1 and 7 involves an inventive step within the meaning of Article 56 EPC.

8. Thus, in the Board’s judgement, the grounds for opposition do not prejudice the maintenance of the patent in suit unamended (Article 102(2)EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The registrar: The Chairman:

L. Martinuzzi W. J. L. Wheeler