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Datasheet for the decision of 15 March 2007

Case Number: T 1249/04 - 3.2.01

Application Number: 96110130.0

Publication Number: 0771693

IPC: B60R 16/02

Language of the proceedings: EN

Title of invention:
Combination switch apparatus equipped with rotary connector

Patentee:
Niles Parts Co., Ltd.

Opponent:
Valeo Schalter und Sensoren GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1249/04 **-** 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 15 March 2007

Appellant: (Opponent)
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Representative:
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Respondent: (Patent Proprietor)
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Representative:
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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 15 October 2004 concerning maintenance of European patent No. 0771693 in amended form.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
G. Weiss

Summary of Facts and Submissions

I. The opponent's appeal is directed against the decision posted 15 October 2004 according to which it was found that, account being taken of the amendments made by the patent proprietor during the opposition proceedings, the patent and the invention to which it relates meet the requirements of the EPC.

II. The appellant cited *inter alia* the following evidence of state of the art:

D7: US-A-5 429 517

D11: DE-A-43 22 443.

III. At oral proceedings held 15 March 2007 the appellant requested that the decision under appeal be set aside and the patent revoked. The respondent requested that the appeal be dismissed.

IV. Claim 1 held allowable by the opposition division reads as follows:

"A combination switch apparatus, comprising: a combination switch (1) fitted to a steering column (3) of a vehicle, said combination switch comprising a main body (10) to which a rotor housing (24) provided on a steering wheel of the vehicle is rotatably connected, said main body housing a plurality of switches (11, 12) for operating various loads in the vehicle, and a rotary connector (2) having first and second terminals (21,22) for electrically connecting circuits on a chassis of the vehicle with circuits on the

steering wheel, said rotary connector comprising a connection member (26), said connection member (26) being placed in an accommodation space (23) integrally formed in said main body (10), said rotor housing (24) covering said connection member, and said rotary connector (2) being equipped with a rotor attachment (25) fitted to said rotor housing (24) and rotatably supporting said rotor housing (24) with respect to said main body (10) of said combination switch (1), characterized in that said combination switch (1) includes a switch (12) with a pawl (122) for automatically canceling a turn signal, and said rotor attachment (25) has a cancel cam (251) to be engaged with said pawl (122)."

V. The appellant's submissions in as far as they are relevant to the present decision may be summarised as follows:

The closest state of the art for consideration of inventive step is known from D11. This discloses all features of claim 1 except that the rotor housing top cover is rotatable. The problem to be solved is to simplify the assembly by reducing the number of parts. This same problem is addressed in D7 which offers the same solution as the present patent by connecting the rotor housing top cover to the inner wall. The non-circular form of the rotor housing top cover of D11 would not be an obstacle to the skilled person wishing to modify it according to the teaching of D7 because this is merely a detail which is provided for certain installations and is not relevant to the function. In D11 the wall of the central aperture which carries the

indicator cancelling cam acts also as a rotor attachment within the meaning of the present patent.

VI. The respondent countered essentially as follows:

The subject-matter of claim 1 is a combination switch assembly including a rotary connector. These are not merely aggregated because the cancel cam for a switch is provided on the rotor attachment of the connector. This feature does not result from a combination of D11 and D7. Anyway, the skilled person would not attempt to modify the assembly according to D11 in accordance with the teaching of D7 because the former is a special construction which has been used to achieve particular benefits. Making the connector housing top cover rotatable as disclosed in D7 and suggested by the appellant would result in the abandonment of those construction principles. In particular, the axial fixation of the connector housing top cover would be lost and it would be no longer possible for the housing to be opened to gain access to the connection member. Also, the setting pin which temporarily locks the rotatable inner wall to the non-rotatable remainder of the housing could no longer be used. Furthermore, the respective constructions for connecting rotatable and non-rotatable parts in D11 and D7 are quite different so that there is no rational basis for the skilled person to combine the two teachings. Since in D11 the non-rotatable part is not circular it would not even be possible to provide a rotatable cover for it. Moreover, even if the skilled person would modify the connector housing top cover of D11 to be rotatable, the number of parts would not be reduced because an additional part,

designated in the present claim as 'rotor attachment', would be needed.

Reasons for the Decision

1. The patent relates to a combination switch apparatus for use at the upper end of a motor vehicle steering column, which commonly provides switches for direction indicators and lights or screen wipers and supplies an electrical connection to the steering wheel. The direction indicator switch conventionally is provided with an arrangement for cancelling the signal when the steering wheel is rotated away from the turn position. This arrangement comprises a cancelling cam which is rotatable with the steering wheel to engage a pawl and move the switch to the off position. It is also common to have electrical components such as switches or a firing squib for an air bag inflator on the steering wheel. A reliable electrical connection between the stationary body of the combination switch and the rotatable steering wheel is achievable by means of a rotary connector having a coiled conductor ("connection member" in claim 1).

2. The board is in agreement with the parties that the closest state of the art for consideration of inventive step is known from D11. This discloses a combination switch and rotary connector as described above. The conductor is contained in an annular housing of which the base and outer wall are formed in the main body of the switch assembly. The top cover of the housing is attached by clips at its outer periphery to the outer wall and the assembly is non-rotatable. The inner wall

of the housing, on the other hand, is rotatable together with the steering wheel and is in the form of a sleeve which carries a cancel cam. In order to ensure that the conductor is not rotated from its 'central' position before assembly to the steering column a setting pin is provided on the inner wall which locks the rotatable and non-rotatable parts together and which is intended to be removed when the assembly is fitted. Upon subsequent removal of the steering wheel a further, spring-loaded pin serves to inter-engage the rotatable and non-rotatable parts.

2.1 The subject-matter of claim 1 differs from the disclosure of D11 in that:

- a rotor housing is rotatably connected to the main body;

- a rotor attachment is fitted to the rotor housing and rotatably supports it with respect to the main body; and

- the cancel cam is provided on the rotor attachment.

The practical effect of implementing these differentiating features in the state of the art according to D11 would be that the top cover of the connector housing becomes rotatable and connected not to the outer wall but to the inner wall. Since the inner wall anyway is rotatable with respect to the main base and the outer wall the effect is that the inner wall and the top cover can be a single part, thereby reducing the total number of components.

3. D7 relates to a rotary connector for mounting between the top of a steering column and a steering wheel. D7 in its introduction acknowledges a series of earlier prior art documents and aims to solve a corresponding series of problems. It explains that rotary connectors generally were assembled from at least three components but that this was disadvantageous due to the resultant cost of manufacture and assembly. The solution offered is to provide a rotary connector in which the connector housing comprises a first component forming a stationary base and outer wall and a second component forming a rotor housing consisting of the inner wall and top cover. The two component parts are connected by a series of clips on the lower end of the inner wall. Manual and automatic rotor locking means are provided to ensure that the connector remains 'centered' before assembly and to enable selective locking thereafter respectively.

4. The skilled person faced with the problem of reducing the cost of the D11 assembly would find an appropriate solution in D7. D11 provides the stationary base as part of the main body of the combination switch. By combining the top cover and inner wall of D11 in accordance with the teaching of D7 the skilled person would create a rotor housing which is rotatably connected to the main body within the meaning of present claim 1. The attachment clips according to D7 when used in the D11 arrangement would serve to attach the rotor to the main body and thereby form a rotor attachment which carries the cancel cam. D11 does teach that the arrangement having a non-rotatable housing cover is advantageous in as far as it minimises the number of rotating parts of the connector housing.

However, the skilled person commonly needs to choose between conflicting requirements, in this case minimising the number of rotating parts and minimising the number of overall parts, and the mere act of giving preference to one whilst accepting the associated disadvantages is not an indicator of inventive activity.

4.1 The respondent takes the view that a number of detail considerations would prevent the skilled person from creating the subject-matter of present claim 1 from the teachings of D11 and D7.

4.1.1 One argument is that the combination of D11 and D7 does not result in the feature of claim 1 that the rotor attachment has a cancel cam. In this respect the board notes that in the embodiment disclosed in the specification the rotor attachment carrying the cancel cam is additional to the inner wall and the cancel cam therefore does not form part of the rotor housing. To this extent it may be argued that the preferred embodiment does not solve the problem of reducing the number of parts. However, this aspect of the embodiment is not reflected in the wording of claim 1 and, as explained above, the lower portion of the inner wall resulting from a combination of the teachings of D11 and D7 does form a rotor attachment provided with a cancel cam.

4.1.2 Another argument presented by the respondent is that the inner wall according to D11 is axially retained by the upper cover and that if the latter were connected to the former rather than to the stationary outer wall the axial retention would be lost. This is not the case because the rotor housing would be axially fixed by

virtue of the clip retention to the main body of the switch assembly. It is also not the case that access to the conductor would be lost because this would be possible by releasing the retaining clips.

4.1.3 A further argument is that the setting pin of D11 would not be directly transferable to the assembly resulting from the combination of D11 and D7. However, the latter discloses an alternative, corresponding arrangement so this feature would not hinder the skilled person wishing to make the combination.

4.2 A consideration on which the respondent and the opposition division relied in arguing that the skilled person would not combine the teachings of D11 and D7 is that both the outer wall and, correspondingly, the top cover according to the embodiment of D11 are illustrated as having a flat portion (figure 7). The respondent takes the view that the resulting non-circular form renders the parts unsuitable to undergo relative motion as would be the case in the assembly resulting from a combination of D11 and D7. However, whilst the figures do illustrate a flat portion there is no reference to this either in the text or in the claims. Figure 9 of D11 illustrates the interior of the connector housing and the flat portion is there used to provide a location for an electrical connector extending through the base of the housing. Whether the flat portion merely serves to provide a mounting platform for this connector whilst retaining an essentially constant wall thickness or whether it is there for another reason is, in the absence of an explicit teaching, somewhat open to speculation. However, the respondent has provided no evidence that

such a flat portion on the outer wall of the housing is functionally important and the board concludes that the skilled person would not find this feature an obstacle to combining the teachings of D11 and D7. Even if the flat portion were desirable D7 teaches a top cover which extends outside of the outer wall so it would be quite feasible to retain the flat portion of the outer wall in combination with a circular top cover.

5. On the basis of the foregoing the board concludes that the subject-matter of claim 1 does not involve an inventive step (Article 56 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:

A. Vottner S. Crane