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D E C I S I O N
of 15 May 2001

Case Number: T 1068/98 - 3.2.6

Application Number: 91830129.2

Publication Number: 0505663

IPC: D05B69/12

Language of the proceedings: EN

Title of invention:

An operation apparatus for a sewing machine

Patentee:

Comelz S.p.A.

Opponent:

Frankl & Kirchner GmbH & Co. KG Fabrik für Elektromotoren u.
elektrische Apparate

Headword:

-

Relevant legal provisions:

EPC Art. 100a, 52(1), 54(1), 56

Keyword:

"Novelty - yes"
"Inventive step - yes"

Decisions cited:

-

Catchword:

-



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D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 15 May 2001

Appellant: Frankl & Kirchner GmbH & Co. KG
(Opponent) Fabrik für Elektromotoren u. elektrische
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Representative: Schneck, Herbert, Dipl.-Phys., Dr.
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Respondent: Comelz S.p.A.
(Proprietor of the patent) Viale Indipendenza 55
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Representative: Siniscalco, Fabio
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 2 October
1998 concerning maintenance of European patent
No. 0 505 663 in amended form.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. C. Kadner
M. J. Vogel

Summary of Facts and Submissions

- I. The mention of grant of European patent No. 0 505 663 in respect of European patent application No. 91 830 129.2 filed on 29 March 1991 was published on 19 July 1995.
- II. Notice of opposition was filed on 29 March 1996 on the grounds of Article 100(a) EPC. The following prior art documents were cited in opposition proceedings:
- D1: Magazine PCIM Europe, July 1989, page 144
- D2: US-A 3 789 783
- D3: FR-B 2 211 021
- III. By decision posted on 2 October 1998 the Opposition Division maintained the European patent in amended form.

Claim 1 as amended in opposition proceedings reads as follows:

"A sewing machine operation apparatus comprising an electric motor (11) for actuating the sewing machine movements and electronic means (26, 37, 42) for operating and controlling the electric motor and sewing machine, characterized in that the electric motor (11) and electronic means (26, 37, 42) are accommodated within a common, heat conductive box type body (10) effective to dissipate heat generated inside said body (10) by the electric motor and the electronic means to

the outside, and in that the box-type body (10) accommodates a cooling fan (24) powered independently, operative to generate an airflow sweeping across the electric motor (11) and the electronic means (26, 37, 42)."

The Opposition Division was of the opinion that the relevant prior art did not contain any lead to the combination comprising a heat conductive box type body accommodating the electric motor, the electronic means and an independently powered cooling fan.

- IV. On 11 November 1998 a notice of appeal was lodged against the decision together with payment of the appeal fee.

The statement of grounds of appeal was filed on 8 December 1998.

- V. In a communication dated 18 October 2000 the Board expressed the provisional opinion that the subject matter of claim 1 appeared to be novel when compared to the disclosure of D3. Discussion in the oral proceedings would therefore essentially be directed to the issue of inventive step.

- VI. Oral proceedings were held on 15 May 2001.

The Appellant (Opponent) requested that the decision under appeal be set aside and that the European patent No. 0 505 663 be revoked.

The Respondent (Patentee) requested that the appeal be dismissed and that the patent be maintained.

VII. In support of its requests the Appellant essentially relied upon the following submissions:

The subject-matter of claim 1 was not novel because all its features were disclosed in D3. The introduction of the description already mentioned mounting the control means close to the electric motor which itself comprised a cooling fan (page 2, lines 17, 18; lines 26, 27). The cap of the motor housing was made from a metal sheet, which was self-evidently heat conductive (page 5, lines 4 to 6). According to page 6, lines 36 to 38, the cooling fan could be powered independently from the electric motor for actuating the sewing machine.

In any case, the claimed subject matter was obvious by a combination of D3 with the teaching of D1. The skilled person was aware of the problem that the heat generated by the electric motor and the controlling means had to be dissipated. The same problem was mentioned in D1, and its solution was a combination of the control means incorporated into the motor casing then using the cooling system of the motor. By applying this teaching to the motor drive means of D3, the skilled person was led to the apparatus of claim 1 without the involvement of an inventive step.

VIII. The submissions of the Respondent are summarised as follows:

The claimed invention was novel because none of the prior art documents disclosed a heat conductive box type body which comprised the electric motor, the electronic means and an independently powered cooling fan.

For the same reason the apparatus of claim 1 was also inventive since the prior art did not comprise any incentive to combine these three components together in one common housing. The casing disclosed in D2 from which the invention started was made of plastic, and none of the other documents contained suggestions leading to the invention.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

No objections concerning the formal requirements of the amended documents were raised by the Appellant or the Board.

3. *Novelty*

- 3.1 The Appellant argued that the apparatus of claim 1 lacked novelty because all of its features were mentioned in D3.

Considering the Appellant's argumentation it is to be noted that D3 describes two different combinations of features. The first of them (page 2) relates to a prior art arrangement from which the solution proposed in D3 starts. This prior art apparatus for actuating an electric sewing machine comprises an electric motor and a cooling fan which is directly driven by the axle of the electric motor, as well as control means which are mounted close to the motor.

The solution to the problem to be solved by D3, relating to the avoidance of overheating of the drive means is indicated on page 4 and following. In the proposed solution an independent cooling fan, which is positioned in a housing away from the electric motor and supplying cooling air to it by means of a duct, is applied. Insofar as control means are addressed in this arrangement only a needle position sensor is positioned in the housing together with the drive means.

However, this position sensor has a very different function when compared to the control means of the motor and the sewing machine, and is therefore not comparable with the control means mentioned in relation to the prior art arrangement. Such control means are not present in the housing incorporating the drive means in the embodiment of the solution of D3. In any case, the indication according to which the control means are positioned close to the motor neither implies that they are contained in a common housing nor that they are *electronic* control means.

Consequently the feature that the electric motor and electronic control means are accommodated in a common housing is not present in D3. Furthermore a separately driven fan contained in the same housing is also not derivable from D3 because the cooling fan is remote from the drive means and contained in its own housing.

- 3.2 D1 discloses electronic control means which can be directly combined with an electric motor simultaneously utilising the cooling system of the motor. However, neither an independently operated cooling fan nor a common housing is disclosed.

3.3 The apparatus for actuating a sewing machine according to D2 has a casing made of plastic in which the electric motor and the electronic means are contained. The fan is mounted on the shaft of the motor. Obviously this plastic housing is not made of heat-conductive material as required by claim 1 of the amended patent.

3.4 Since none of the documents D1 to D3 discloses a heat-conductive housing which contains an electric motor, electronic control means and a separately operable cooling fan the subject-matter of claim 1 complies with the requirement of novelty (Article 54(1) EPC).

4. *Inventive step*

4.1 The closest prior art is represented by a sewing machine operation apparatus disclosed in D2, which comprises the features of the preamble of claim 1. The problem underlying the patent (column 2, lines 27 to 44) is to obviate the drawbacks of the prior art i.e. to avoid overheating of the drive assembly and to construct it in such a way as not to restrict the legroom of the operator.

This problem is solved by an apparatus comprising the features of claim 1.

4.2 The housing 16, 18 of the device according to D2 is preferably formed of an insulating material such as molded synthetic plastic material or the like (column 3, lines 64 to 66) which does not have good heat conducting properties. This document does not contain any indication to substitute the material of the housing for a heat-conductive one.

4.3 According to left column, 5th paragraph of D1, electronic drive means may be combined with the motor casing, but this does not evidently mean that there is a housing of heat-conducting material which contains the motor (with its own casing) and the electronic driver. Usually a skilled person would mount the casing of the drive circuitry on the motor casing. This document is also silent about a cooling fan powered independently from the electric motor, it is only mentioned that the driver can utilise the cooling system of the motor. Therefore by combining the teachings of D2 and D1 a skilled person would not be led to the provision of an independently driven cooling fan mounted inside a common housing of the motor and the control means.

4.4 The problem underlying the apparatus of D3 is comparable with that of the patent, i.e. avoidance of overheating of the motor and control means. In order to solve the problem an independent powered cooling fan is provided which is situated away from the motor housing and connected to it via an air conduct 26. The motor is positioned between two caps 13, 14, through which the cooling air is guided.

Applying the solution of D3 to the arrangement of D2 would lead to a construction with a separately powered cooling fan mounted remote from the motor housing and connected to it by an air conduct. Consequently this combination cannot lead to the integration of these parts based on a common, heat conductive box type body.

4.5 Additionally, contrary to the opinion expressed by the Appellant, the cap 20 made of a metal sheet disclosed in D3 is not the housing of the apparatus but only part

of it. In fact the caps 13, 14 together with cap 20 form the housing of the device. There is no mention of from which material parts 13, 14 are made. Even if the skilled person would assume that such flange-shaped parts usually are made of metal, no suggestion is derivable of using a heat conductive box type body with an independent fan supplying cooling air.

Consequently the claimed combination of the features of claim 1 does not result in an obvious manner from the cited prior art.

5. In view of the above findings the Board comes to the conclusion that the proposed solution of the technical problem underlying the patent in suit defined in the independent claim 1 is novel and inventive and that this claim as well as its dependent claims 2 to 14 relating to particular embodiments of the invention comply with the criteria of patentability (Article 52(1) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau