Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 24 September 2014

Case Number: T 1910/12 - 3.2.05

Application Number: 07111842.6

Publication Number: 1880964

IPC: B65H54/28, B65H54/38

Language of the proceedings: EN

Title of invention:
High-frequency thread-guide device for the production of bobbins with modulated traversing

Patent Proprietor:
Savio Macchine Tessili S.p.A.

Opponent:
SSM Schärer Schweiter Mettler AG

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:

Catchword:

Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 1910/12 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 24 September 2014

Appellant: (Opponent)	SSM Schärer Schweiter Mettler AG Neugasse 10 8812 Horgen (CH)
Representative:	Hans-Christian Seifert Kohler Schmid Möbus Patentanwälte Ruppmannstraße 27 70565 Stuttgart (DE)
Respondent: (Patent Proprietor)	Savio Macchine Tessili S.p.A. Via Udine 105 33170 Pordenone (IT)
Representative:	Marco Mitola Jacobacci & Partners S.p.A. Via Berchet 9 35131 Padova (IT)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 6 July 2012 rejecting the opposition filed against European patent No. 1880964 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	M. Poock
Members:	O. Randl
	W. Ungler

Summary of Facts and Submissions

I. The present appeal was filed against the decision of the opposition division rejecting the opposition against European patent No. 1 880 964.

The opposition had been filed against the patent as a whole based on Article 100(a) EPC (lack of inventive step, Article 56 EPC 1973).

II. The appellant (opponent) requested that the decision under appeal be set aside and the European patent No. 1 880 964 be revoked in its entirety. The respondent (patent proprietor) requested the appeal to be dismissed.

III. Claim 1 as granted reads as follows (the subdivision of the claim is the one used during the opposition proceedings):

M1) An individual thread-guide device (18) for the collection of yarns on a bobbin (10), wherein the yarn (F) is distributed on the surface of the bobbin by a thread-guide (15) which moves with a back-and-forth movement parallel to the axis of the supporting roll (12) of the bobbin (10),

M2) and the thread-guide device (18) is driven with a back-and-forth movement by means of a flexible element (19), to which the thread-guide (15) is fixed, the flexible element (19) being moved between two driving pulleys (20a, 20b) which move with an alternating clockwise/anticlockwise movement by the activation of an electric motor piloted by a control unit, the flexible elements (19) forming a closed circuit,

M3) the pulleys (20a, 20b) being activated by at least two electric motors (21a, 21b) each pulley (20a, 20b) being each activated by its own electric motor (21a, 21b), the motors (21a, 21b) being controlled by at least one position detector and piloted by said control unit, which coordinates the piloting of said motors (21a, 21b) to produce the desired traversing movement,

characterized in that

M4.1) elastic elements for the accumulation of elastic energy, to be returned in the movement inversion points, are inserted between the fixed structure of each motor (21a, 21b) and the corresponding moving parts of the motor itself,

M4.2) and in that said elastic elements are torsion springs (25a, 25b), each of which is constrained with one of its ends (26a, 26b) to the driving shaft (28a, 28b) and with the other end (27a, 27b) to the fixed structure of the motor itself (21a, 21 b).

IV. The following documents are referred to in the present decision:

D2: DE 199 63 232 A1;
D4: US 6 311 919;
D5: EP 0 453 622 A1;
D9: "Das Fachwissen des Ingenieurs: Verbindungselemente", Carl Hanser Verlag, München, 1963, page 333;

D10: DIN-Taschenbuch 29, DIN Deutsches Institut für Normen (ed.): Federn, Beuth Verlag GmbH, Berlin 1996, pages 43 to 48.

V. In its decision the opposition division considered document D2 to be the closest prior art. Claim 1 of the patent as granted differed from document D2 by the two features M4.1 and M4.2. The opposition division defined the objective technical problem as the provision of means to further increase the acceleration of the thread guide in the reversal points.

The opposition division considered it to be doubtful that the skilled person would refer to document D5 because this document was presented as problematic prior art in document D2. Document D2 already provided a solution and taught away from using the solution of document D5. Moreover, document D5 did not disclose the features M4.1 and M4.2. In document D5 there was only a single pulley and neither the elastic elements nor the torsion rods were inserted between the fixed structure of each motor and its moving parts. Document D5 would not prompt the skilled person to replace the torsion rods with torsion springs and to omit the couplings disclosed in the document. Furthermore, document D5 did not give any indication how to adapt the energy buffer to a structure with two driving motors.

The opposition division also found combinations of document D2 with documents D4 and D9 unpersuasive. The traversing device of document D4 was of a different type and the springs were not torsion springs, no were they constrained as in claim 1. The skilled person would not be prompted to connect linear springs in such a way.

Another attack based on document D1 as closest prior art was also dismissed because this document had even less features in common with claim 1 of the patent.

VI. Before the board, the appellant argued as follows:

The skilled person reading document D2 and faced with the objective technical problem is expressly taught that a solution has been offered in document D5, i.e. to provide elastic elements. He would not be deterred by the statement that the device according to document D5 is complex and prone to disruption because he is aware that this is always the case when a device is provided with additional functions; even the solution according to the impugned patent is more complex than the device of document D2. He would consider the drawback mentioned in document D2 as a challenge to improve the teaching of document D5.

When studying document D5, the skilled person would realise that the disclosed embodiment was very complex but also that the teaching of D5 was more general (see claim 16) and that torsion rods were not mandatory. The "spirit" or core statement of document D5 was that an electric motor the acceleration of which was unsatisfactory could be assisted during the high acceleration phase by coupling it to a spring element.

The opposition division was wrong to consider that the one motor-device of document D5 would lead the skilled person away from the teaching of D2 because D2 also presented solutions where only one motor was active at a time.

The objection that a combination of documents D2 and D5 would lead to a device with greater inertia was

misguided because the spring of the device according to the impugned patent had this effect, too.

Based on his general knowledge and motivated by his desire to overcome the disadvantages of the embodiment of D5, the skilled person would look for other suitable elastic elements, such as those disclosed in documents D9 and D10.

D5 taught to establish a force-locked (*kraftschlüssig*) connection between the drive and at least one spring. It was obvious for the skilled person that the spring could only work properly if its other end was connected to a non-moving part of the device. Thus the skilled person would abandon the gear and use a spring, one end of which was connected to the drive shaft and the other end to a non-moving part of the motor. The insertion between the fixed structure of each motor and the corresponding moving parts of the motor itself was an obvious choice. Thus the skilled person would reach a configuration according to feature M4.1.

Document D10 showed that it was well known to the skilled person to constrain torsion springs to a driving shaft (*cf*. the connection to a mandrel in Figure 6) and to fixed structures (*cf*. the connection in Figure 5). Thus the skilled person would also be led to feature M4.2 of claim 1.

The appellant also argued that claim 1 was obvious with respect to a combination of documents D2 and D4. Figure 1 of document D4 taught to provide elastic elements between the housing of the motor and its moving parts. The elastic elements 20 and 21 were explicitly referred to as torsion springs (column 5, lines 52-53 and column 7, lines 28-31). The springs were fixed both to moving

parts and to the mounts 20' and 21', which qualified as part of the fixed structure of the motor. The skilled person would provide each motor of document D2 with a torsion spring element according to document D4 and thus reach an arrangement covered by claim 1 of the patent under consideration.

VII. The respondent pointed out that the appellant had used an *ex post facto* analysis reasoning by combining arbitrarily isolated elements taken from the prior art.

Document D2 had the same purpose as the impugned patent. It explicitly taught not to use an energy buffer according to document D5, the teaching of which contradicted the need to reduce the inertia of the moving organs. The present case was one of the rare cases where it is clear what the skilled person would think of a particular document because this document is explicitly appraised in document D2. Thus the skilled person would not further look for a solution to the objective technical problem in document D5.

Document D2 teaches to reduce inertia by using two electric motors, whereas document D5 discloses only one motor. Also, document D5 disclosed the use of torsion bars and not torsion springs. There was no disclosure whatsoever in document D5 of torsion springs having one end fixed to the shaft and the other end to the body of the electric motor. Document D5 as a whole was directed at piloting the motor current while using a complex clutch system allowing to vary the free length of the torsion bars.

In order to reach the claimed subject-matter, the skilled person considering a combination of documents D2 and D5 would have to disregard the clutch system and

gears of the device according to document D5, which increase the inertia of the system. It was not clear either how the clutch system could be adapted to a torsion spring. The claimed invention was a non-obvious simplification of the devices disclosed beforehand.

Claim 16 being linked to claims 14 and 15, its feature could not be isolated as a general teaching. Also, in the embodiment of document D5, the elastic element has a fixed end, but the other end is not constrained to the shaft.

The respondent also stated that a combination of documents D2 and D4 was unnatural because they disclosed mutually exclusive approaches: document D4 teaches direct coupling between the thread guide instead of indirect coupling, as in document D2. Also, as the springs connected to the same motor were wound in opposite directions, the sum of their energy was close to zero, whereas each of the springs of the opposed patent alternatively accumulated and released energy to the motor to which it was connected. The respondent pointed out that the torsion springs according to document D4 could not be combined with features M1 to M3 of claim 1.

Reasons for the Decision

1. The application under consideration was filed on 5 July 2007; therefore, according to Article 7 of the Act revising the EPC of 29 November 2000 (Special edition No. 4 OJ EPO, 217) and the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act

revising the EPC of 29 November 2000 (Special edition No. 4 OJ EPO, 219), Article 56 EPC 1973 applies in the present case.

2. The only issue that has to be decided by the board is whether the subject-matter of the claims as granted involves an inventive step (Article 56 EPC 1973).

3. There was agreement between the opposition division and the parties that document D2 qualified as closest prior art. The board does not see any good reason not to adopt this finding.

4. The parties also agreed that claim 1 differed from document D2 by the characterising features, which the opposition division and the parties referred to as features M4.1 and M4.2 (see point 4 above), and the board has no reason to deviate from this finding.

There was also agreement that the distinguishing features solved the objective technical problem of further increasing the acceleration of the thread guide in the reversal points.

5. Therefore, the only question to be decided by the board is whether the skilled person starting with a thread-guide device according to document D2 and faced with the need to further increase the acceleration of the thread guide in the reversal point would seek and find a solution to this problem in the documents D4 or D5, respectively, corresponding to subject-matter encompassed by claim 1.

6. Combination of documents D2 and D4

6.1 It is doubtful that the skilled person starting with a thread-guide device according to document D2 and faced with the need to further increase the acceleration of the thread guide in the reversal point would turn to document D4. This document discloses a structurally different thread-guide device where the thread guide is directly actuated by a motor, whereas document D2 discloses a device where the thread guide is moved by means of a belt that is actuated by motorised pulleys.

6.2 If the skilled person nevertheless considered document D4, it appears unlikely that he would understand that the use of energy storing means according to document D4 would allow him to increase the acceleration of the thread guide, because document D4 presents this feature as a means to relieve the drive mechanism (column 5, line 35 et seq.). But even if he did and tried to implement the teaching of document D4 in a device according to document D2, he would be led to use a spiral spring of the kind represented in figure 1 of document D4 (references 20 and 21) and not a torsional spring within the meaning of claim 1 of the opposed patent.

It is true that document D4 also uses the expression "torsion spring" (column 5, line 53), but the document as a whole makes it clear that the springs 20 and 21 are considered to be torsion springs (column 7, line 27), which means that the skilled person is not led to consider torsion springs within the meaning of claim 1 under consideration.

Therefore, the board reaches the conclusion that the appellant has not established that the skilled person faced with the problem of accelerating the thread guide

in the reversal point would seek and find a solution to this problem in document D4.

7. Combination of documents D2 and D5

7.1 The board has doubts whether the skilled person would seek a solution to the objective technical problem in document D5, because this very document is cited as prior art in the introduction of document D2 (column 1, lines 8-28) where the teaching of document D5 to use spring elements in the form of torsion rods is discussed ; the device according to D5 is criticised as "relatively laborious and, therefore, also prone to disruption (*störanfällig*)". The invention according to document D2 is based on the need to improve and simplify the device of document D5 (column 1, third paragraph). As a consequence, it appears rather unlikely that the skilled person starting from document D2 would turn to document D5 in order to further increase the acceleration of the thread guide of document D2.

The argument that the skilled person would disregard the criticism of document D5 in the closest prior art or even take this criticism as a challenge to be met appears to be rather artificial and triggered by *ex-post-facto* considerations.

It is true, however, that the criticism of document D5 in document does not present it as unsuitable for solving the objective technical problem of further increasing the acceleration of the thread guide in the reversal points. The skilled person who is aware of the drawbacks of the device disclosed in document D5 might consider that these drawbacks can be accepted to some extent in exchange for an improvement of the acceleration of the thread guide.

Therefore, the board reaches the conclusion that although the skilled person is unlikely to combine documents D2 and D5, such a combination cannot be excluded outright.

7.2 It is undisputed that the skilled person considering document D5 would realise that the disclosed embodiment is quite complex.

It can hardly be said that the "spirit" or "core statement" of document D5 is that an electric motor the acceleration of which is unsatisfactory can be assisted during the high acceleration phase by coupling it to a spring element. As a matter of fact, document D5 presents itself as a solution to the problem of providing a method and device for bobbin-winding that offers great liberty to the operator (see column 1, lines 37 et seq.). One would also expect the core teaching of a patent application to be reflected in the features of its independent claims, whereas the use of spring elements is only claimed in the fifth dependent method claim (claim 6) and the second to fourth dependent device claims (claims 16-18).

That being said, it is undisputed that document D5 contains the statement that "[a]s a consequence of the increase of the current, and thus of the motor torque, as well as the effect of the spring element, the retard (*Verzögerung*) and the acceleration of the thread guide 3 in the vicinity of the reversal point is very fast" (column 5, lines 12-17). This is directly related to the objective technical problem to be solved.

The skilled person looking for a solution to the objective technical problem in document D5 would, therefore, learn that it is possible to further

increase the acceleration of the thread guide in the reversal points by increasing the motor torque and providing a spring element.

The only spring elements disclosed in document D5 are torsion rods. It is undisputed that the use of such spring elements in a device according to document D2 would not result in subject-matter that is covered by the independent claims on file.

The appellant argued that the skilled person would understand that the embodiment of document D5 was too complex and in need of simplification. This may be true, but this need would most likely bring the skilled person back to document D2, which presents itself as a simplification of the teaching of document D5. In other words, the skilled person would either accept the complexity for the sake of greater acceleration or realise that document D5 did not provide a suitable teaching for improving the device of document D2.

In any case, in order to reach subject-matter covered by claim 1 of the patent-in-suit, the skilled person would have to realise:

(a) that the solution offered by document D5 needed improvement;

(b) that it was via a change of the elastic elements that the device of document D5 was to be improved;

(c) that the required improvement could be obtained by eliminating the elastic elements of the only embodiment presented in document D5 (torsion rods) and reverting to the more general teaching (spring elements) presented in some claims;

(d) that of all possible spring elements the appropriate spring elements for improving the device of document D5 would be torsion springs;

(e) that these torsion springs should be constrained with one of their ends to the driving shaft and with the other end to the fixed structure of the motor.

The board considers that the great number of steps to be taken by the skilled person in order to reach subject-matter covered by claim 1 as granted is an indication that the claimed subject-matter is not obvious to the skilled person.

The mere fact that the skilled person is aware of the existence of torsion springs and of the fact that such springs can be constrained to motor shafts (Figure 6 of document D10) is not sufficient for establishing that the skilled person aiming at a simplification of the teaching of document D5 would chose torsion springs and constrain them in the particular way that is claimed.

7.3 Having considered the above findings, i.e. that:

(i) the skilled person is unlikely to combine documents D2 and D5 and

(ii) even when such a combination is considered, the skilled person still has to make several choices for which there is no incentive in the documents cited,

the board has reached the conclusion that it has not been established that the skilled person starting from

document D2 and faced with the objective technical problem is more likely than not to be led to a solution encompassed by claim 1 of document D5.

8. Therefore, the board judges that, having regard to the cited state of the art, the subject-matter of claim 1 as granted has to be considered as involving an inventive step within the meaning of Article 56 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth M. Poock

Decision electronically authenticated