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D E C I S I O N
of 24 February 1994

Case Number: T 0172/92 - 3.2.5

Application Number: 83307524.5

Publication Number: 0114473

IPC: B23K 9/12

Language of the proceedings: EN

Title of invention:
Method of, and apparatus for, electric arc welding

Patentee:
Kemppi Oy

Opponent:
ESAB Aktiebolag

Headword:
Arc welding/KEMPPI

Relevant legal norms:
EPC Art. 100(b)

Keyword:
"Sufficient disclosure (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0172/92 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 24 February 1994

Appellant: (Opponent)
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Representative:
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Respondent: (Proprietor of the patent)
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Representative:
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office dated 9 December 1991 rejecting the opposition filed against European patent No. 0 114 473 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: C.V. Payraudeau
Members: M.H.M. Liscourt
H.P. Ostertag

Summary of Facts and Submissions

I. The opposition filed by the Appellants against the European patent No. 0 114 473, on the ground that it did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC), was rejected by the contested decision of the Opposition Division.

II. The independent claims of the patent in suit read as follows:

"1. A method of electric arc welding in which a welding wire (5) is fed to a workpiece (10) by a welding gun (9), characterised in that a parameter related to the value of the voltage across the free length (10) of the wire (5) between the gun (9) and the workpiece (10) is measured during a time in each short-circuit bead-forming period, the measured value being used to control the gun (9) to maintain said free wire length (10) substantially constant.

9. Apparatus for carrying out a method as claimed in Claim 1, characterised by a comparator (13) to which the welding voltage is supplied and responsive to beginning of a short-circuit bead-forming period; delay means (14, 15) triggered by response of said comparator (13); a switch (16) operated by said delay means (14, 15) and arranged to supply the welding voltage to a control signal generator means (17) which in response to receipt of the welding voltage functions to produce a control signal operative to effect said control."

III. The Appellants submitted, in their Statement of Grounds, that the teaching of the claims of the patent in suit was not clear and that the person skilled in the art

could not derive from the claims, the description and the drawings the information that is necessary for carrying out the invention.

IV. According to the Appellants, who filed oscillograms in support of their assertions, the rate of change of the voltage differs considerably and uncontrollably from one short-circuit period to the subsequent one. Moreover, the rate of change of the voltage varies considerably within periods of some tenth of a millisecond and the control of the movement of the gun for maintaining the free length of the electrode substantially constant is certainly too slow to follow these quick changes. The person skilled in the art is thus not in a position, with the information given in the patent, to carry out the invention, that is, to maintain the length of the wire substantially constant on the basis of a parameter of the voltage.

V. In their answer, the Respondents recognised that there can be effectively spurious variations in the parameter related to the value of the voltage between one short-circuit period and another and that the relatively slow response time of the gun does not allow an immediate response to the variations of the said parameter. They submitted, however, that it was obvious for the person skilled in the art that it is not the individual signals within each short-circuit period but the general trend of the signal which is used to dictate the position of the gun and that the slow response time of the gun inherently dampens the spurious variations of the parameter. For theses reasons, the person skilled in the art would not have any difficulty to carry out the invention.

VI. The Board of Appeal expressed, in a communication according to Article 110(2) EPC, the provisional opinion

that the expression "in each short-circuit bead-forming period", in Claim 1 of the patent in suit could only be interpreted as meaning an elementary cycle, as submitted by the Appellants. However, it was clear that, due to its slow response time, the gun dampens out the spurious readings so that it is the general trend of the parameter which dictates the position of the gun head above the work surface, as explained by the Respondents.

VII. The parties did not file any substantive comments on this communication.

Reasons for the Decision

1. The only ground for opposition submitted by the Appellants in support of their opposition and appeal is that the European patent in suit does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

2. The Appellants did not produce any evidence that a method or an apparatus carried out or constructed as disclosed did not give the claimed results but have argued that the parameter which, according to the patent, should be used to control the free length of the welding wire did vary considerably independently from the free length of the wire and could not therefore be considered as a parameter usable to control said free length.

Moreover, the response time of the gun was too slow to allow the movement of the gun to be controlled by the measured value of the parameter.

3. The Respondents have submitted that the dampening effect of the gun due to its relatively slow response averages out any spurious readings and that the person skilled in the art will be aware of it and will interpret the patent specification accordingly and will therefore be capable of carrying out the invention.

4. The Board of Appeal agrees with the Respondents that the person skilled in the art will know that the gun has a relatively slow response time and that it necessarily will average the received signals, thus dampening the eventual spurious signals.

5. The Respondents have therefore credibly demonstrated that the information given in the patent in suit, correctly interpreted, were sufficient for the person skilled in the art to carry out the invention.

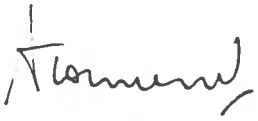
6. Since the Appellants have not submitted any evidence that the method and apparatus according to the patent in suit so interpreted does not permit to maintain the free length of the welding wire substantially constant, the Board finds that the Appellants have not established that the grounds for revocation of the patent under Article 100(b) did prejudice the maintenance of the European patent.

Order

For these reasons, it is decided that:

The appeal is rejected.

The Registrar: The Chairman:



A. Townend C. Payraudeau