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**Datasheet for the decision  
of 28 March 2007**

**Case Number:** T 0633/05 - 3.5.02

**Application Number:** 97830520.9

**Publication Number:** 0909922

**IPC:** F23N 5/12

**Language of the proceedings:** EN

**Title of invention:**

Combined gas-air control system for controlling combustion in gas fired boilers

**Patentee:**

Riello S.p.A.

**Opponent:**

Stiebel Eltron GmbH & Co.KG

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54, 56, 104(1)

**Keyword:**

"Novelty and inventive step - yes (main request)"  
"Apportionment of costs - no"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 0633/05 - 3.5.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.02  
of 28 March 2007

**Appellant:** Stiebel Eltron GmbH & Co.KG  
(Opponent) D-37601 Holtz Minden (DE)

**Representative:** -

**Respondent:** Riello S.p.A.  
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I-37045 Legnago (VR) (IT)

**Representative:** Franzolin, Luigi  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 21 March 2005  
rejecting the opposition filed against European  
patent No. 0909922 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** W. J. L. Wheeler  
**Members:** M. Rognoni  
C. Holtz

## Summary of Facts and Submissions

I. The opponent (appellant) appealed against the decision of the opposition division rejecting the opposition filed against European patent No. 0 909 922.

II. In the decision under appeal, the opposition division held that the subject-matter of claim 1 of the patent in suit involved an inventive step within the meaning of Article 56 EPC, having regard, *inter alia*, to the following prior art documents:

E6: EP-A-0 770 824,

E7: EP-A-0 614 046.

III. In the statement the grounds of appeal, the appellant referred additionally to the following document which is cited in the European search report but was not considered in the opposition proceedings:

E8: DE-C-196 18 573.

IV. In reply to a communication from the Board summoning the parties to oral proceedings, the patent proprietor (respondent) submitted, with letter dated 28 February 2007, three new sets of claims by way of auxiliary requests 1 to 3.

V. Oral proceedings were held before the Board on 28 March 2007.

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

VII. The respondent requested that the appeal be dismissed and the patent be maintained as granted, or, failing that, that the patent be maintained according to one of the auxiliary requests 1 to 3. Furthermore, the respondent requested an apportionment of costs.

VIII. Claim 1 of the patent as granted reads as follows:

"Combined gas - air control system for a gas fired boiler (B) heated by a burner (2) in a combustion chamber (1) including:

- microcontroller ( $\mu\text{C}$ ) with memory means,
- selector means ( $R_h, R_s$ ) for predetermining set point temperatures  $T_{rh}$  and  $T_{rs}$  of the heating and sanitary water respectively,
- measuring means (18, 19, 20, 21) providing signals  $T_h, T_s, P_a$  and  $V_{ion}$  corresponding to the temperature of the heating and sanitary water, the air pressure in the combustion chamber (1) and the ionisation voltage in the flame area of the burner (2), respectively and for communicating said signals back to the microcontroller ( $\mu\text{C}$ ),
- a thermostat (27) for monitoring operation of the burner and for preventing its overheating,
- a fan (6) operated by a variable-speed motor (FM) for controlling the flow rate  $Q_a$  of air supplied to the combustion chamber (1),
- an electrically controlled modulating valve (MV) for modulating the flow rate  $Q_g$  of gas supplied to the burner (2),

characterized in that said microcontroller ( $\mu\text{C}$ ) comprises:

- first controlling means (22) for producing a corrective action in response to an error signal  $E(T) = T_{rh} - T_h$  or  $E(T) = T_{rs} - T_s$  and for giving an output signal  $P_{ac}$  corresponding to a corrected value of air pressure in the combustion chamber (1),
- second controlling means (23) for producing a corrective action in response to an error signal  $E(P) = P_{ac} - P_a$  and for adjusting the control voltage  $V_f$  applied to the variable-speed motor (FM),
- processing means (24,25) for calculating theoretical optimal values of the ionisation voltage and the modulating valve current in response to the output signal  $P_{ac}$  from said first controlling means (22) and for producing said theoretical values as output signals  $V_{ion(th)}$  and  $I_{mod(th)}$  respectively,
- third controlling means (26) for producing a corrective action in response to an error signal  $E(V) = V_{ion(th)} - V_{ion}$  and for giving an output signal  $I_{modc}$  corresponding to a corrected value of the modulating valve current, said output signal  $I_{modc}$  from said third controlling means (26) being added to the output signal  $I_{mod(th)}$  from said processing means (25) and the resulting sum signal  $I_{mods} = I_{modc} + I_{mod(th)}$  being applied to the modulating valve (MV)."

Claims 2 to 6 are dependent on claim 1.

In view of the tenor of this decision, there is no need to quote the wording of the independent claims of the auxiliary requests.

IX. The arguments submitted by the appellant in the oral proceedings and in writing can be summarised as follows:

The wording of claim 1 of the patent in suit did not imply a clear functional relationship between the output signals provided by the various measuring means specified in the preamble of the claim and the corresponding physical parameters. Thus, a signal  $P_a$  provided by the measuring means 20 was merely a signal corresponding to the air pressure within the combustion chamber and not necessarily the result of a direct measurement of such pressure by means of a pressure sensor. Similarly, the output signal  $P_{ac}$ , which was a function of the deviation of water temperature from a preset value, was a signal which correlated with the desired value of air pressure in the combustion chamber, or air flow into it, and thus could be used to express the boiler's thermal load. In other words, claim 1 merely related to a system in which the thermal load of a gas-fired boiler was controlled by determining the air flow as a function of the deviation of water temperature from a predetermined value and by adjusting the gas flow as a function of such temperature deviation and of the difference between the output of an ionisation sensor and a preset value.

Document E8 showed a control system which comprised a first control unit 9 for adjusting fan speed, and consequently air pressure in the combustion chamber, as a function of the difference between preset and

measured water temperatures. A second control unit 7 in E8 provided an output signal J for controlling the aperture of the gas valve as a function of the output of the ionisation sensor 5 and of the thermal load expressed in terms of fan speed. Thus, the control system according to E8 comprised a microcontroller, temperature selector means, measuring means, a fan and an electrically controlled modulating valve, as specified in the preamble of claim 1 of the patent in suit. Furthermore, it was implicit to a skilled person that the control system known from E8 had to comprise a thermostat for monitoring the operation of the burner and preventing overheating.

As to the features recited in the characterizing portion of claim 1 of the patent in suit, they specified the function performed by the microcontroller for controlling the air fan and the gas modulation valve on the basis of the difference between desired and measured temperatures and of the ionisation voltage. E8 used the same parameters to perform the same control functions. As to the processing means specified in the contested patent for calculating theoretical values of the ionisation voltage and the modulating valve current in response to a corrected value of air pressure, it was evident that the function of such means was merely to link the gas valve control to the required thermal load. E8 clearly implied that the signal for modulating the gas valve comprised a first component, which depended on the deviation of the ionisation voltage from a preset value, and a second component, which was related to the thermal load expressed in terms of fan speed. Furthermore, E8 disclosed the possibility of modifying the preset

ionisation voltage in response to the rotation speed of the fan, *i.e.* when the thermal load changed.

As all the features recited in claim 1 were known either implicitly or explicitly from E8, the subject-matter of this claim was not new within the meaning of Article 54 EPC.

The opposition division had essentially argued that none of the cited prior art documents disclosed a gas-air control system for a gas fired boiler which comprised processing means for calculating both a reference ionisation voltage and a theoretical value of current for driving the gas valve as a function of the corrected air pressure in the combustion chamber, as specified in claim 1 of the patent in suit. For a person skilled in the art, however, these features were already known from document E6 and the contested patent related merely to details which did not involve an inventive step.

E8 related to a control system that, as far as the above features were concerned, was even closer to the contested patent than E6. In fact, E8 showed a process and a system for controlling a gas boiler and improving combustion under different operating conditions without affecting the boiler's expected performance. As shown in Figure 1, a control unit 7 generated a control current for driving a gas modulating valve as a function of the output of the ionisation sensor and of fan speed. The latter was controlled by a circuit block 9 on the basis of the desired room temperature and/or heating water temperature and outer temperature. As far as the input parameters used in E8 defined the boiler's



thermal load, they corresponded to the "corrected value of air pressure" in the combustion chamber recited in claim 1 of the contested patent. Furthermore, E8 specified that, if a high-calorie gas was used, then, for the same ionisation reference voltage, a smaller control signal for the gas valve was required. When the burner operated at a higher level of thermal output, determined by higher fan speed, the same approach was used. The reference ionisation voltage remained constant while the actual output signal for controlling the gas valve was increased in accordance with the increased power requirement.

Given that E8 anticipated all the features of claim 1 of the contested patent which were not disclosed in E7, it could also be argued that the claimed subject-matter resulted from an obvious combination of these two documents (Article 56 EPC).

The fact that E8 had been referred to in the statement of grounds of appeal but not in the opposition proceedings could not have caused any additional costs to the respondent, since this document was already known from the European search report and the respondent must have been aware of its content and relevance. Thus, the respondent's request for apportionment of costs was not justified.

X. The respondent argued essentially as follows:

The signals provided by the measuring means specified in claim 1 of the patent in suit were obtained by actually sensing the corresponding parameters, such as the water temperatures  $T_h$  and  $T_s$  and the air pressure  $P_a$

in the combustion chamber. Similarly, the corrected air pressure  $P_{ac}$  represented the actual air pressure which had to be reached in the combustion chamber for the system to achieve the required thermal output. As E8 used fan speed and not air pressure in the combustion chamber as input variable to the control unit driving the gas valve, it did not disclose a system comprising the measuring means 20 or the first controlling means 22 which generated a corrected value of air pressure  $P_{ac}$  as a function of the temperature difference  $E(T) = T_{rh} - T_h$  (see Figure 2 of the patent specification).

As to the use of a variable reference value for the ionisation voltage, E8 foresaw this possibility only as a measure for maintaining the heating operation when a very low-calorie gas was fed to the burner.

Furthermore, E8 did not show several other features recited in claim 1 of the patent suit. In particular, the control system known from E8 relied on fan speed as an input parameter for the control circuit driving the modulating gas valve, whereas the control system of the present invention comprised measuring means for providing a measurement of air pressure in the combustion chamber. In fact, there was no doubt that the wording used in claim 1 of the patent suit referred to measuring means which provided an actual measurement of air pressure in the combustion chamber. It did not cover the measurement of a different parameter, such as fan speed, which might occasionally be related to air pressure in the combustion chamber but did not exactly correlate with it. Finally, E8 did not disclose a control system comprising processing means for calculating theoretical optimum values of the

ionisation voltage and the modulating valve current in response to the corrected air pressure in the combustion chamber. Thus, the gas-air control system according to claim 1 was new with respect to E8 (Article 54 EPC).

None of the cited documents related to a gas-air control system for a gas fired boiler which relied on air pressure in the combustion chamber as a parameter indicative of the boiler's thermal load. Similarly, none of the prior art documents disclosed a system in which optimum values of ionisation voltage and of modulating valve current were determined in response to a corrected value of air pressure in the combustion chamber, whereby the latter was a function of the error signal between measured and preset water temperatures. Hence, even by combining the different control systems known from E6, E7 and E8 the person skilled in the art would not have arrived at the claimed control system. The subject-matter of claim 1 of the patent in suit thus involved an inventive step within the meaning of Article 56 EPC.

The appellant had never relied on E8 in the opposition proceedings and had not offered any justification for the very late submission of a document which they obviously considered highly relevant. As the assessment of a late filed document and the preparation for a reply to the appellant's new submissions inevitably caused unnecessary costs to the respondent, an apportionment of costs was equitable in the present case.

## Reasons for the Decision

1. The appeal is admissible.
2. The contested patent relates to a combined gas-air control system for gas fired boilers in which the following control loops can be identified (see Figure 2):
  - Loop A for controlling the air pressure  $P_a$  in the combustion chamber as a function of the difference between a desired temperature  $T_{rs}$  and a measured temperature  $T_s$ . This loop comprises the control element 22 for determining the "corrected value of air pressure"  $P_{ac}$  in the combustion chamber as a function of the error signal  $E(T) = T_{rs} - T_s$ , and the control element 23 for adjusting the control voltage  $V_f$  applied to the fan motor FM.
  - Loop B for controlling the gas flow as a function of the corrected value of air pressure  $P_{ac}$ . This loop comprises processing means 25 which outputs a current  $I_{mod(th)}$  to an electrically controlled modulating valve MV.
  - Loop C for adjusting the current applied to the modulating valve MV as a function of the difference between the actual output  $V_{ion}$  of an ionisation electrode arranged in the flame area of the burner and a theoretical value  $V_{ion(th)}$  calculated as a function of the corrected value of air pressure  $P_{ac}$  in the combustion chamber.

- The essential function of loops A and B is to control the boiler's gas and air flow rates in order to keep the water temperature at a desired value, while loop C is directed to improving combustion and reducing emission of harmful combustion products.

*Novelty*

3.1 E8 (Figure 1) shows a combined gas-air control system for a gas burner comprising a first control element 9 for controlling the speed of the fan motor 2 as a function of a signal generated by a unit 8 and dependent on the desired room temperature and/or heater flow temperature and/or heater return temperature and outside temperature (see Figure 1 and column 2, lines 10 to 21). A second control element 7 drives a gas modulating valve 4 as a function of the output  $U_i$  of an ionisation detector 5 and of the speed of the air fan 2.

The gas control system known from E8 comprises therefore a first control loop for controlling fan speed, *i.e.* the air flow into the combustion chamber, as a function of room and/or water temperatures. This control loop, which includes the control units 8 and 9 and the fan motor 2, has essentially the same function as loop A identified in the claimed gas control system.

In E8 combustion and thus emissions are controlled by a unit 7 which drives the gas modulating valve 4 as a function of the ionisation voltage  $U_i$  and of fan speed, whereby the latter can be regarded as a parameter indicative of the required thermal load. As pointed out

in the description and illustrated in Figures 3 and 5b of E8 (column 3, lines 10 to 41 and column 5, lines 30 to 48), the control unit 7 generates a signal for driving the gas valve so as to keep the output voltage of the ionisation sensor within given boundaries. Additionally, this unit monitors fan speed or determines the load from the position of the gas valve, and increases the input signal to the gas valve for a given reference ionisation voltage, in order to allow for an increase in the desired thermal output of the burner. The control loop constituted by the control unit 7, the ionisation sensor 5 and the modulating gas valve 4 is thus comparable to the control loops B and C of the invention insofar as both control systems generate a control signal for the gas valve which is dependent on the ionisation voltage and on the desired thermal output of the burner.

- 3.2 In the control system according to claim 1 of the contested patent "*optimal values of the ionisation voltage*" are provided by processing means 24 in response to the desired thermal load expressed in terms of the "*corrected value of air pressure*"  $P_{ac}$ . According to the description (patent specification, paragraph [0020]), the processing element 24 embodies a memory in which the optimal relationships between the voltage across the ionisation electrode and the air pressure in the combustion chamber are stored. This implies that the preset value of the ionisation for achieving an optimal air/gas mix can be changed as a function of the corrected value of air pressure  $P_{ac}$  in the combustion chamber. This direct link between a parameter indicative of the required thermal load and the reference value for a parameter indicative of the state

of the combustion (*i.e.* the ionisation voltage) should contribute to optimizing the burner's operation by reducing harmful emissions and increasing efficiency.

3.3 In the control system of E8, the only operating conditions that lead to a change in the preset value of the ionisation voltage are described in column 6, lines 16 to 26. If the burner is supplied with a very low-calorie gas (which would require less air to burn effectively) and the fan speed cannot be reduced enough to maintain the full-load operation, even with the gas valve fully open, it may happen that the combustion will be switched off. To avoid this, *i.e.* to maintain the heating operation, a higher value of the air to gas ratio (*i.e.* a higher than optimal lambda value) is permitted for a limited time. The control circuit will correspondingly reduce the ionisation voltage set point  $U_{is}$ . Thus, the purpose for this change in the ionisation voltage is to prevent the burner from switching off when low emission combustion cannot be maintained.

3.4 Summarizing, an essential difference between the claimed control system and the system known from E8 is that the former comprises processing means which determine the reference ionisation voltage in response to thermal load, in order to maintain the desired optimal air/gas mix under different load conditions, whereas in the latter the ionisation reference voltage is changed only to avoid the automatic shut-off of the burner when the operating conditions do not allow optimal combustion.

This feature of the claimed control system suffices to establish the novelty of the subject-matter of claim 1 of the patent in suit with respect to E8 (Article 54 EPC).

*Inventive step*

4.1 As to the remaining features recited in claim 1 of the contested patent, the appellant has essentially argued that, given the broadness of the claim wording, they were all explicitly or implicitly disclosed in E8.

4.2 According to the preamble of claim 1 the combined gas-air control system of the present invention comprises "measuring means (18, 19, 20, 21) providing signals  $T_h$ ,  $T_s$ ,  $P_a$  and  $V_{ion}$  corresponding to the temperature of the heating and sanitary water, the air pressure in the combustion chamber (1) and the ionisation voltage in the flame area of the burner (2), respectively and for communicating said signals back to the microcontroller ( $\mu C$ )". Though it is true, as stressed by the appellant, that the expression "providing signals ...corresponding to" certain parameters does not necessarily mean that the parameters are directly measured, the reference in the characterising portion of the claim to controlling means which produce a corrective action in response to error signals corresponding to the difference between said parameters and preset or calculated values imply a direct correspondence between the signals provided by the measuring means and the actual physical parameters (water temperature, air pressure and ionisation voltage) used to control the claimed system. It is indeed implicit to a person skilled in the art that only a direct measurement of these parameters could ensure the



"optimal operation of the burner in any condition of thermal load" which the control system of the invention seeks to achieve (patent specification, column 1, lines 16 to 17).

Furthermore, any possible doubts concerning the actual signals provided by the measuring means are readily dispelled by the description which specifies the following:

*"Feedback informations [sic] relating to the heating water and sanitary water temperatures, the air pressure in the combustion chamber 1 and the combustion process conditions in the burner 2 are sensed by appropriate sensors and transmitted to the microcontroller  $\mu C$ . To accomplish this, temperature measuring means 18, 19 embodying standard temperature sensors are provided for measuring the heating water and the sanitary water temperatures, respectively, air pressure measuring means 20 embodying a standard pressure sensor are provided for measuring the air pressure in the combustion chamber, and an ionisation electrode 21 arranged in the flame area of the burner is provided for measuring the voltage across the ionisation electrode as a function of the ionisation current through the ionisation electrode depending on the combustion process conditions of the burner 2". (Patent specification: column 3, line 43 to column 4, line 1; emphasis added).*

- 4.3 As to the monitoring of the combustion process, the control system known from E8 (see Figures 1 and 3, column 3, lines 10 to 52) comprises an ionisation sensor 5, which provides an ionisation current  $U_1$  to a

control unit 7. Figure 3 shows the curve of the ionisation voltage output as a function of the air to gas ratio expressed in terms of "lambda values", whereby a lambda value equal to 1 corresponds to a stoichiometric air/gas mix and values greater or smaller than 1 indicate an excess of air or gas, respectively. A lambda set point greater than 1, e.g. 1.15, is desired for low-emission combustion. This lambda set point A corresponds to a reference ionisation voltage  $U_{is}$ . A permissible range of control RB with an upper limit value  $U_{io}$  and a lower limit value  $U_{iu}$  is preset for the ionisation voltage in the control circuit 7. It is evident that this control loop is only supposed to control the air to gas ratio in order to guarantee low emission combustion, and that the relationship between the lambda values and the ionisation voltage is assumed to be independent of thermal load.

If the burner is to be operated at a higher power output level by increasing fan speed, the value of the parameter which controls the current operating the gas valve has to be increased while the ionisation set point  $U_{is}$  remains unchanged. In other words, it is assumed in E8 that there is a direct correlation between the desired lambda value and the preset value of the ionisation voltage, while the latter remains independent of thermal load.

- 4.4 Hence, the features which reflect the essential difference between the claimed control system and the one known from E8 are the use of the "*corrected value of air pressure*" in the combustion chamber as a variable indicative of thermal load and of a reference

value for the ionisation voltage which is a function of the corrected air pressure in the combustion chamber.

- 5.1 Document E7 relates to an automatic control system for controlling gas and air flow rates in a gas fired boiler. As pointed out in column 2, lines 2 to 11, it is known to control gas pressure as a function of air pressure in order to feed the desired gas/air mix to the burner, and to use air pressure to set the operating point (*i.e.* desired water temperature) of the burner.

According to the embodiment of Figure 1, a temperature control element R sets the speed of the fan motor  $M_G$ , and thus the air pressure  $P_A$  in the air supply line VL, as a function of the difference between a measured temperature  $T_{Rist}$  and a desired temperature  $T_{Ksoll}$ . The air pressure  $P_A$  is used to control the speed of the motor fan and adjust the gas pressure  $P_F$  in the gas supply line via a valve V. Thus, the gas-air control system known from E7 comprises a first control loop for adjusting air pressure in the corresponding air supply line as a function of a temperature difference and a second control loop for controlling gas pressure as a function of the air pressure  $P_A$ . These two loops perform essentially the functions of loops A and B which can be identified in the control system of the present invention (see point 2 above). The known control system and loops A and B, however, differ essentially in the choice of the parameter for driving the gas valve: in the former it is the air pressure in the air supply line, while in the latter it is the "*corrected value of air pressure*"  $P_{ac}$  in the combustion chamber.

- E7 does not hint at the possibility of adding a further control loop for adjusting the gas flow as a function of the output of an ionisation sensor in order to improve combustion and reduce emission of harmful combustion products.
- 5.3 Document E6 relates to a gas-air control system for adjusting the speed of the fan motor and/or the gas valve as a function of the difference between the output of an ionisation electrode and a predetermined value in order to control the gas/air mix in the combustion chamber of a gas fired boiler (see Figure 1 and column 3, lines 11 to 23). In the control system known from E6 the reference ionisation voltage corresponding to a preset lambda value is changed only as a result of a different functional relationship between lambda values and output of the ionisation sensor which is determined by means of a calibration routine (see E6, column 5, line 51 to column 6, line 56, in particular column 6, lines 52 to 56).
- 6.1 It could be argued that a person skilled in the art, starting for instance from document E7 and wishing to improve the known combined gas/air control system by monitoring the combustion process, would consider adding an ionisation electrode and a corresponding control loop, as known from E8. However, none of the cited prior art documents suggests varying the reference value for the ionisation voltage as a function of a desired air pressure (*i.e.* "a corrected value of air pressure") in the combustion chamber, or even using a target air pressure inside the combustion chamber as a parameter for setting the thermal load of the burner.

6.2 In the result, the Board comes to the conclusion that, in the light of the cited prior art, it was not obvious to a person skilled in the art to arrive at a combined gas/air control system for a gas fired boiler falling within the terms of claim 1 of the patent in suit. Consequently, the subject-matter of this claim involves an inventive step within the meaning of Article 56 EPC.

7. As none of the objections raised by the appellant against the patentability of the claimed subject-matter prejudices the maintenance of the granted patent, the appeal has to be dismissed.

Under these circumstances, the respondent's auxiliary requests 1 to 3 need not be considered.

*Apportionment of costs*

8.1 Under Article 104(1) EPC, each party to opposition proceedings must, as a rule, meet the costs it has incurred. However, the opposition division or board of appeal may, for reasons of equity, order a different apportionment of costs incurred during taking of evidence or in oral proceedings.

8.2 In the present case, the appellant referred for the first time in the statement of grounds of appeal to a document, E8, which had been cited in the European search report but not considered in the opposition proceedings.

According to the respondent the appellant had no apparent reason for delaying the submission of a

document which they evidently regarded as highly relevant and which had already been known from the examination file.

- 8.3 As it appears from the statement of grounds of appeal, E8 was cited by the appellant mainly to refute the finding of the opposition division that certain features of claim 1 of the contested patent were new over the prior art represent by document E6. In other words, the appellant sought to provide new evidence in support of a line of argument already put forward in the opposition proceedings, namely the fact that certain features of the present invention were known in the art. As E8 was cited in the statement of grounds of appeal and was anyway part of the examination file, the respondent had ample time to study the content of this fairly short document and prepare a rebuttal against the appellant's allegation that it disclosed some key features of the contested patent.

Thus, the Board has no reason to suspect that the appellant's late filing of E8 may have been aimed at delaying the appeal proceedings, or that it resulted in the respondent being burdened with unreasonable additional costs.

- 8.4 In the result, the Board comes to the conclusion that the circumstances of the present case do not justify an apportionment of costs.

**Order**

**For these reasons it is decided that:**

1. The appeal is dismissed.
2. The respondent's request for apportionment of costs is refused.

The Registrar:

The Chairman:

U. Bultmann

W. J. L. Wheeler