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**D E C I S I O N**  
**of 4 April 1995**

**Case Number:** T 0753/92 - 3.2.3

**Application Number:** 81303164.8

**Publication Number:** 0044676

**IPC:** B05B 5/02

**Language of the proceedings:** EN

**Title of invention:**

Low capacitance airless spray apparatus

**Patentee:**

Nordson Corporation

**Opponent:**

- (OI) ITW Oberflächentechnik GmbH  
(OII) SKM  
(OIII) Wagner International AG

**Headword:**

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**Relevant legal provisions:**

EPC Art. 56, 113

EPC R. 67

**Keyword:**

"Inventive step (denied): obvious combination of documents,  
common general knowledge"

"Reimbursement of the appeal fee (refused): no substantial  
procedural violation"

"Request for apportionment of costs (refused): late filed  
document highly relevant"

**Decisions cited:**

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**Catchword:**

-

**Case Number:** T 0753/92 - 3.2.3

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.3**  
**of 4 April 1995**

**Appellant:** Nordson Corporation  
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**Decision under appeal:** Decision of the Opposition Division of the European Patent Office dated 28 April 1992, posted on 6 July 1992, revoking European patent No. 0 044 676 pursuant to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** C. T. Wilson  
**Members:** F. Brösamle  
H. Andrä  
W. Moser  
B. Schachenmann

## Summary of Facts and Submissions

I. In the oral proceedings held on 28 April 1992 the Opposition Division revoked the European patent No. 0 044 676 in the light of the following documents

(D1) US-A-3 737 099 and

(E22) FR-A-2 036 770.

In the written decision dated 6 July 1992 the Opposition Division argued that Claim 1 underlying its decision did not comprise inventive subject-matter in the sense of Article 56 EPC.

II. The Appellant (Proprietor), on 31 July 1992, lodged an appeal against the above decision of the Opposition Division, paying the appeal fee on the same day and filing the Statement of Grounds of Appeal on 13 November 1992.

III. Following the Communication pursuant to Article 11(2) RPBA of the Board oral proceedings took place on 4 April 1995 in which the Appellant requested to set aside the impugned decision and to maintain the patent on the basis of a Claim 1 submitted during the oral proceedings.

IV. This claim reads as follows:

"1. An airless electrostatic spray apparatus comprising an elongated body of insulating material having first and second passages therethrough, the first passage being adapted to be connected with a supply of liquid coating material under sufficient pressure to effect

airless atomization of the liquid coating material, valve means for controlling the flow of liquid coating material through the first passage, electrical circuit means in the second passage adapted to be connected to a source of electric potential, an electrically insulative nozzle mounting ring having an axial passage therethrough, the axial passage of the nozzle mounting ring being coaxially aligned with the first passage of the elongated body, an electrically conductive nozzle assembly and an electrode mounted within the nozzle mounting ring and electrically insulated from the nozzle assembly, the electrode being electrically connected to the electrical circuit means and a non conductive sealing means positioned between the elongated body and the nozzle assembly so that the nozzle assembly is isolated from the body, characterised in that the electrical circuit means include electrical resistor means and a washer (48) formed from a Teflon material containing 15 % to 25 % of carbon or graphite, the electrode (20) having a rearward end in contact with the washer (48) and a forward free end; in that the valve means is so positioned within the elongated body (26) that a portion of that body separates the valve means from the non conductive sealing means (33) and in that the mass and surface area of the nozzle assembly and hence its effective capacity are so small that normal electric current in the electrical circuit means does not arc between the electrode and the nozzle assembly (30, 31)."

- V. Further requests of the Appellant were to refund the appeal fee and that the Respondent I (Opponent I) be charged the costs for the first oral proceedings held

on 9 November 1988 or alternatively for the second oral proceedings held on 28 April 1992.

VI. In the oral proceedings before the Board, of the Respondents only Respondent I (Opponent I) was represented. His requests were:

- (a) dismissal of the appeal and
- (b) apportionment of costs according to his request submitted on 4 March 1993, point 8.

Respondent II (Opponent II) was silent in the appeal proceedings and his only request was to be informed about the proceedings.

Respondent III (Opponent III) requested to dismiss the appeal without giving detailed reasons for his request.

VII. The essential arguments brought forward by the Appellant and the Respondent I can be summarized as follows:

- (a) Appellant
  - the general background of the claimed invention is seen in the provision of an airless electrostatic spray gun which can be operated in an explosive atmosphere without a safety risk;
  - the claimed solution to this background is based on the separation of the electrode and the spray nozzle, furthermore on the fact that the capacitance of the complete spray gun, including



the valve in the support line of the liquid to be sprayed, is reduced so as to diminish the tendency of the gun to spark be it between the electrode and the spraying nozzle or be it between these parts and the article to be coated;

- from the prior art a skilled person would not get useful information in the sense of the teaching according to Claim 1, since in Figure 3 of (E22) a gun is disclosed which embraces two electrodes both being arranged too closely to the spray nozzle so that sparking occurs and the known gun did not work;
- apart from (E22) the prior art teaches away from the claimed gun, since in the prior art the safety risk is overcome by contacting the electrode and the spray nozzle; the use of a resistor to reduce the charge and to enhance the situation when the spray gun comes into contact with the grounded article to be coated is seen as a first means in the right direction of minimizing the safety risk of electrostatic spray guns without already solving all problems existent essentially in explosive atmospheres;
- concerning the requests to charge Respondent I with the costs of the first or the second oral proceedings before the Opposition Division it was argued that (E22), the introduction of which into the first oral proceedings caused the continuation of the opposition proceedings in writing and the subsequent appointment of the

second oral proceedings, was not easy to understand and that even an expert such as Mr Scarbrough needed time to understand this document, whereby (E22) could have been produced by Respondent I in due time, since this document originates from him; since (E22) is the key document of the present case the Appellant had to defend the attacked patent on a completely new basis without giving him sufficient warning; these circumstances had caused extra costs to the Appellant which should be paid by Respondent I;

- the appeal fee should be refunded due to a substantial procedural violation of the Opposition Division who allowed the late cited document (E22) into the procedure and did not give sufficient information to the Appellant that a combination of (E22) and (D1) is seen as depriving Claim 1 of inventive step; due to the multitude of documents cited in the present case it was not possible to deal with all combinations of them and the Opposition Division should have pointed out the reasons for their findings before deciding to give the Appellant a reasonable chance to react.

(b) Respondent I:

- the alternative according to Figure 3 of (E22) is not seen only as a **theoretical** possibility of an electrostatic spray gun but as a reliable gun construction which has its counterpart in a still further prior art document, namely

US-A-3 677 470, in which again there is no electrical contact between the nozzle "22" and the electrode "16", since the holder "13" is fabricated from a suitably electrically insulating material, see column 3, lines 15 to 17;

- starting from a spray gun in which the metallic parts in form of the nozzle and the electrode are without an electrical contact a skilled person is aware from US-A-3 815 820, see column 1, lines 50 to 60, that not only the small physical area but also the appropriate configuration of the electrode means and the nozzle are the means for minimizing the "effective capacitance" to such a value that the charge stored in these parts of the gun is insufficient to cause objectionable discharge;
- reducing the size of the nozzle and the electrode for positively influencing the "effective capacitance" of the spray apparatus is **common general knowledge** in the technical field of electrostatic spray guns, see for example (D1), column 3, lines 39 to 41 or US-A-3 815 820, column 1, lines 54 to 60;
- a skilled person would also assume the presence of a resistor in the embodiment shown in Figure 3 of (E22) though a resistor is not specifically described or shown in the drawings thereof, since a resistor acts as a **safety element** i.e. keeps the electrical current at low values in case of sparking;

- even from (D1) a skilled person is not exclusively taught that the nozzle and the electrode have to be in mutual contact, since the possibility to separate them is clearly discussed in (D1), see column 2, lines 62 to 65 or column 4, lines 52 to 55;
- materials with a poor conductivity in combination with electrostatic spray guns are well known in the art, see US-A-3 815 820 column 9, lines 17 to 19 which discloses a plastic material impregnated with graphite or see US-A-3 677 470 column 4, lines 12 to 14 and Figure 3;
- electrostatic spray guns being based on the principle laid down in Figure 3 of (E22) were on the market before the claimed invention and consequently must have passed national security tests; the approach of the Appellant that these guns failed in tests is therefore strictly rejected;
- summarising the above arguments, inventive merit cannot be seen in the spray gun according to Claim 1, since it was sufficient to apply common general knowledge from the field of electrostatic spray guns in combination with a constructional principle laid down in Figure 3 of (E22);
- the cost request of the Appellant is rejected as (E22) is seen as a short document which could have been studied in the break of the first oral

proceedings before the Opposition Division; since interpreters for English and French were available in these oral proceedings, the Appellant could have reacted so that the following written proceedings and the second oral proceedings before the Opposition Division would have been superfluous; the Appellant himself has caused costs so that they cannot be charged to the Respondent I.

### **Reasons for the Decision**

1. The appeal is admissible.

2. *Patentability*

2.1 Novelty

The subject-matter of Claim 1 is novel, since (E22) as the nearest prior art document at least does not disclose a washer composed of Teflon material containing 15% to 25% of carbon or graphite. Since novelty was not disputed in the oral proceedings before the Board this issue needs no further argument.

2.2 Inventive step

2.2.1 Nearest prior art document is without any doubt document (E22) and the alternative disclosed in its Figure 3 and described on page 3.

A skilled person derives therefrom an airless electrostatic spray apparatus with resistor means

(general technical knowledge) and a conductive washer which is in contact with a rearward end of the electrode, whereby the mass and the surface area of the nozzle assembly and hence its effective capacity are so small that normal electric current in the electrical circuit means does not arc between the electrode and the nozzle, since otherwise the known spray apparatus would not work.

2.2.2 As set out above it is **common general knowledge** in the technical field of electrostatic spraying that **for safety reasons** resistors are incorporated in the electrical circuit means and that the effective capacitance has to be kept so small that harmful arcing is prevented with the gun when in use.

2.2.3 Without knowing the claimed invention a skilled person would derive this technical information from Figure 3 of (E22) though not every detail in this respect is explicitly drawn or described therein.

The feature of the position of the valve means of Claim 1 within the gun per se can be seen as distinguishing feature, which has an influence on the "effective capacitance" of the gun. Since this parameter has to be duly considered in any gun construction the valve position can only be seen as a further parameter for a globally known technical teaching, i.e. maintaining the value of the "effective capacitance" at a low value. Since the patent in suit is silent about any advantages of the valve means position this feature is of little significance.

From the minutes of the (first) oral proceedings held on 9 November 1988, see pages 3 and 4, it can be seen that document FR-A-2 419 112 was discussed; from this document a valve means position as claimed in Claim 1 can be seen, see Figure 1 and reference signs "4, 4A, 6" so that its influence on the "effective capacitance" of a spray gun was not unknown to the skilled person.

2.2.4 Starting from the embodiment laid down in Figure 3 of (E22) the technical problem to be solved by the invention according to Claim 1 has to be derived in an **objective way** in order to avoid an "incorrect" problem-solution-approach when assessing the issue of inventive step.

2.2.5 The Board is convinced that a gun according to the technical teaching of Figure 3 of (E22) works when carried out by a person who is aware of the **common general knowledge** in the field of airless electrostatic spray apparatus. Appellant's arguments that the gaps between the electrodes and the nozzle according to (E22) are so small that such a gun would not function have therefore to be rejected.

What remains to be done by a skilled person when starting from (E22) is to find a proper material for the washer and possibly to study the influence of the valve means on the "effective capacitance" i.e. this would constitute "the objective problem to be solved by the invention" according to the problem-solution-approach for assessing the inventive merit of the subject-matter of Claim 1.

- 2.2.6 The solution to this objective problem is set forth in Claim 1 and is inter alia based on a Teflon material containing 15% to 25% of carbon or graphite and by a valve means which is arranged well apart from the nonconductive sealing means.
- 2.2.7 The arrangement of the valve means distant from the sealing means per se is known from FR-A-2 419 112, see Figure 1 in particular and above remark 2.2.3. This feature did not play a substantial role in the documents as originally filed, since the valve means does not even bear a reference sign, see Figure 2 thereof, and these documents do not stress the importance of the location of the valve means, since no description of this feature is contained in the originally filed documents.

On the other hand the global effect of the "effective capacitance" is well known in the art so that consideration of the valve means location is only a possible further contribution to this parameter which does not demand a new principle of spray gun construction but only an optimisation thereof.

- 2.2.8 Similar considerations have to be applied to the Teflon material containing carbon or graphite. Background of this feature is the endeavour to make the plastic material in the form of Teflon material **conductive**. The prior art documents contain sufficient information of how this can be achieved in an advantageous way, see for example US-A-3 815 820, column 9, lines 17 to 19 (graphite) or US-A-3 737 099, see column 3, lines 33 to 38 (silver), so that this feature has to be seen as an



equivalent feature according to (E22) and its conductive washer "10".

2.2.9 Summarising the above considerations, it is evident that, when starting from the embodiment according to Figure 3 of (E22), the subject-matter of Claim 1 only makes use of teachings well known in the art of electrostatic airless spray guns and this in combination with properties and effects which are foreseeable. Consequently, the subject-matter of Claim 1 does not involve an inventive step within the meaning of Article 56 EPC and this claim is thus not allowable.

2.3 Appellant's findings cannot be followed by the Board:

- spray guns applicable in explosive atmospheres are known in the art, see DE-A-1 291 659, column 6, lines 8 to 20, which document was dealt with in the oral proceedings before the Board;
- it is not true that the only way to solve the safety problems of electrostatic spray guns in the prior art was contacting the nozzle and the electrode, since (E22) and US-A-3 677 470 clearly teach against this;
- a skilled person studying Figure 3 of (E22) is in a position to carry out its teaching and to build a gun which is industrially applicable i.e. meets the safety conditions of different countries and functions in its use;

- the assertion that the gaps in (E22) are so small that arcs are caused and that the gun does not function is not in agreement with the knowledge of a skilled person in the technical field of electrostatic airless spray guns since it must be accepted that identical technical means achieve identical technical effects.

2.4 Under these circumstances the European patent No. 0 044 676 is not valid and the impugned decision cannot be set aside; rather the appeal has to be dismissed.

3. *Requests for apportionment of costs*

3.1 Respondent I is adversely affected by the decision under appeal only in so far as his request for apportionment of costs has been rejected. If the Respondent I had lodged an appeal against this decision, the appeal, with the apportionment of costs as its sole subject, would have been inadmissible under Article 106(4) EPC. The fact that the Respondent I submitted the request for apportionment of costs merely as a party to the appeal proceedings as of right (Article 107 EPC) cannot, in the Board's judgement, render such a request admissible without contravening the principle of equal treatment. This request has therefore to be rejected as inadmissible.

3.2 As regards the Appellant's request for apportionment of costs, the Board takes the view that there are no reasons of equity which would justify a different apportionment of costs within the meaning of Article 104(1) EPC. Document (E22), comprising three

pages of description, one page of claims and one figure sheet, is a very short document drawn up in one of the official languages of the EPO, which could have been studied during the break of two hours in the first oral proceedings before the Opposition Division, particularly since interpreters for English and French were available during these proceedings. Consequently, the Appellant's request for apportionment of costs has to be refused.

4. Since the Board does not deem the appeal to be allowable, the request for reimbursement of the appeal fee has to be refused (cf. Rule 67 EPC).

**Order**

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

1. The appeal is dismissed.
2. The Appellant's requests for reimbursement of the appeal fee and for apportionment of costs are refused.
3. The Respondent's I request for apportionment of costs is rejected as inadmissible.

The Registrar:

The Chairman:

N. Maslin

C. T. Wilson