

Case Number: T 0274/95 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 2 February 1996

Appellant: WH Münzprüfer Dietmar Trenner GmbH
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Decision under appeal: Decision of the Opposition Division of the European Patent Office posted 19 January 1995 rejecting the opposition filed against European patent No. 0 184 393 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: G. D. Paterson
Members: Y. J. F. van Henden
R. K. Shukla

Summary of Facts and Submissions

- I. European patent No. 0 184 393 comprising twenty-two claims was granted to the respondent.

Independent claim 1 of that patent reads as follows:

"1. Apparatus for checking the validity of coins (8), comprising means (2, 6, 22) defining a coin path, electrically powered coin checking circuitry (58, 60) adapted to check the validity of a coin passing along said coin path, a coin impact surface (on 16) arranged to be hit by each coin passing along the coin path, the coin impact surface being on a member (16) which suffers the force imposed by the coin hitting and being deflected by the impact surface, means for generating an electrical signal (36) when a coin arrives for checking, and switching means (56) operable by said electrical signal to power-up the coin checking circuitry (58) whereby to enable the coin checking circuitry to check the validity of said coin, characterised in that said means for generating an electrical signal (36) comprises a piezoelectric element (36, 36a) which is located so as not to suffer said force, but to which vibrations caused by a coin (8) hitting said impact surface are transmitted on a vibration transmission path, whereby the piezoelectric element (36, 36a) generates said electrical signal in response to the vibrations, in that the piezoelectric element is mounted into the apparatus by being secured to a fixed part of the apparatus lying on said vibration transmission path, and in that all other structural components (if any) located along the vibration transmission path also are firmly secured to each

other, whereby the transmission path comprises continuous solid material which is firmly secured at any interfaces along the vibration transmission path."

Claim 22 relates to a coin operated equipment, and includes the coin checking apparatus as claimed in any one of the preceding claims.

Claims 2 to 21 of the patent are dependent upon claim 1.

II. The European patent was opposed on the grounds that
(i) its subject-matter is not patentable in accordance with Articles 52 to 57 EPC having regard to the state of the art disclosed in documents:

- D1: EP-A-0 058 094,
- D2: DE-A-3 415 273,
- D3: CH-A-645 210 and
- D4: US-A-3 776 338,

(ii) the subject-matter of the patent extended beyond the content of the application as filed, because two features of claim 1 of the patent as granted were not disclosed in the application as filed (Article 100(c) EPC).

III. During the procedure before the Opposition Division, the proprietor filed observations in reply to the notice of opposition, in which inter alia the above grounds of opposition were contested. In a communication accompanying a summons to oral proceedings, the Opposition Division inter alia stated its provisional opinion that "the

subject-matter of claim 1 does not go beyond the content of the application as filed", and that "the subject-matter of claim 1 is not obvious in view of the prior art" for the reasons there set out. The communication also stated that document D2 was not part of the state of the art according to Article 54 EPC.

During the oral proceedings which were held on 25 November 1994, according to the minutes the opponent inter alia declared that "the objections raised for addition of subject-matter were now dropped", and accepted that document D2 was not part of the state of the art.

IV. In its decision dated 19 January 1995, the Opposition Division stated in paragraph 4.2 of the "Facts and Submissions" that during the oral proceedings the opponent had stated that the ground of opposition based on an inadmissible extension beyond the content of the original disclosure was no longer maintained, and that he maintained only his request for revocation on the ground of lack of inventive step. No reference is made in the "Reasons for the Decision" to the originally alleged ground of opposition that the subject-matter of claim 1 had been inadmissibly extended beyond the content of the application as filed.

V. The Opposition Division rejected the opposition. In its decision dated 19 January 1995, the Opposition Division reasoned in substance as follows:

The closest prior art is known from document (D1). The apparatus described there exhibits all the features recited

in the pre-characterising part of claim 1 but, instead of a piezoelectric element, comprises an inductive sensor used both for detecting coin arrival and for subsequent coin validation. To a skilled person, it would not be obvious to replace the dual mode sensor by a single mode sensor such as the piezoelectric element (7) or the wire strain gauge provided in a coin checking apparatus according to document (D3). As a matter of fact, contrary to the teachings of the invention, the piezoelectric element (7) of document (D3) is located so as to suffer the force exerted by the coin hitting the impact surface.

Furthermore, according to (D3), vibrations are undesirable and suppressed by the elastic material of the snubber (4) and shock absorbers (8, 9). Likewise, document (D4) discloses an apparatus in which the force of the coin impact acts upon a piezoelectric sensor, which apparatus is actually a coin counter. Besides, the object of the invention disclosed in document (D4) is not to decrease power consumption, since it is also envisaged there to use a magnetostrictive device.

The skilled person was consequently given no incentive to provide a piezoelectric sensor isolated from the impact of the falling coin and only subjected to vibrations resulting therefrom and transmitted along a path comprising solid material and firm connections.

VI. The opponent lodged an appeal against the decision of the Opposition Division, and requested revocation of the patent.

In its Statement of Grounds of Appeal, the opponent submitted again that the subject-matter of claim 1 extended beyond the content of the application as filed and cited further documents DE-A-2 908 580 (D5) and DE-C-3 342 558 (D6) in support of the ground of lack of inventive step. In reply, the proprietor submitted that the ground of "additional subject-matter" (Article 100(c) EPC) had been abandoned during the Opposition Division proceedings, and should not be re-introduced into the appeal proceedings

VII. In a communication accompanying a summons to oral proceedings, the Board expressed its provisional opinion as follows:

- (a) the ground of opposition under Article 100(c) EPC had not been maintained by the opponent during the proceedings before the Opposition Division, and was not of sufficient relevance that it should be considered during the appeal proceedings.
- (b) The ground of lack of inventive step was unlikely to prejudice maintenance of the patent as granted. The newly cited documents D5 and D6 did not appear to be sufficiently relevant to be admissible in the appeal proceedings.

VIII. Oral proceedings were held on 2 February 1996.

In support of its request, the opponent argued in writing and orally essentially as follows:

The purpose of the invention, i.e. lowering the power consumption in a coin checking apparatus in its quiescent state, is also achieved in the apparatus known from document (D1), by using a signal from a coil for switching on the power when a coin is inserted. The skilled person attempting to further reduce the power consumption will consequently investigate the suitability of other available sensors. Document (D3) teaches him to use a piezoelectric element as a switching sensor, which is arranged in such a way that the impact of a falling coin is detected and the movement of the coin is disturbed as little as possible. These considerations lead directly to the solution of the problem addressed in the opposed patent.

Obviously, the further features mentioned in claim 1 are provided to prevent the falling coin from damaging the piezoelectric sensor. However, stating that the piezoelectric element (36, 36a) is "located so as not to suffer said force" - namely: "the force imposed by the coin hitting and being deflected by the impact surface" - renders the claim unclear. Besides, this feature is not disclosed in the application as filed, where the word "force" does not appear. The subject-matter of claim 1 thus extends beyond the content of the application as filed. Furthermore, it may not be asserted that the piezoelectric element (36, 36a) is "isolated from the impact", since the physical system receiving an impulse from the falling coin also comprises the snubber (16), the screw (18) and the frame portion (6). The impact communicates energy to the whole mass of that system, whereby vibrations are produced and transmitted to the piezoelectric element along a path. The same, however, applies to the physical system described

in document (D3) and formed by the plate (4), the lever (12), the dampers (8, 9), the piezoelectric element (7) and the base (10). There too, more or less dampened vibrations caused by the fall of a coin are sensed by the piezoelectric element. Therefore, combination of the teachings of documents (D1) and (D3) renders the invention obvious.

The dependent claims 2 to 21 also lacked inventive step for reasons set out in the grounds of appeal.

IX. In support of its request, the proprietor argued in writing and orally substantially as follows:

- (a) In connection with the ground for the opposition under Article 100(c) EPC, this ground was abandoned at the oral proceedings before the Opposition Division, and it should not be allowed to be re-introduced at the appeal stage. In accordance with Opinion G 10/91, OJ EPO 1993, 420, at paragraph 18, a fresh ground of opposition may be considered in appeal proceedings only with the approval of the patentee, and the proprietor does not give such approval in the present case. The opponent should therefore not be allowed even to argue the point during the oral proceedings. Furthermore, in accordance with paragraph 18 of Opinion G 10/91, in the event that the Board was to allow this ground to be raised in the appeal, the case should be remitted to the first instance to decide this point; all the more so since by abandoning this ground before the Opposition Division, the opponent had denied the

proprietor a first instance hearing on the ground in question.

In any event, the feature of the claimed apparatus according to which structural components are firmly secured to each other along a vibration transmission path was disclosed in the application as originally filed, especially in the paragraph bridging pages 9 and 10.

- (b) In connection with the ground of lack of inventive step, having regard to the disclosure in document (D3), the impact of a coin on a receiving surface creates a signal having a "direct" component which depends upon the weight and speed of said coin, and a vibrating component depending upon the hardness of the coin and that of the surface of impact. The teaching of the invention is to detect a coin by making use of the vibrational component only. Document (D3) teaches exactly the opposite, because it determines the mass of a coin by measuring its speed and the force it exerts. For this purpose, the vibrational component is undesirable since it can even swamp the direct component indicative of the coin's mass. Accordingly, document (D3) teaches to absorb the vibrating component by providing shock absorbers. The opponent's submission that the skilled person would incorporate the teaching of document D3 in the apparatus of document D1, is therefore based on hindsight. Finally, documents (D5) and (D6) do not relate to the field of coin validation machinery and are irrelevant. Furthermore, since no valid reason

was given for their late citation, an apportionment of costs is requested.

(c) The opponent's contentions concerning the invalidity of the dependent claims go beyond the substantiation set out in the notice of opposition, and are inadmissible.

X. During the oral proceedings, oral argument concerning the ground of opposition under Article 100(c) EPC was heard from both parties. At the conclusion of the oral proceedings, the decision was announced that the appeal is dismissed, and the request for an apportionment of costs is rejected.

Reasons for the Decision

1. Admissibility of the ground of opposition under Article 100(c) EPC sought to be re-introduced into the appeal proceedings.

(a) This ground of opposition was raised and fully substantiated in the notice of opposition, and was contested fully in writing by the proprietor in paragraphs 2.1 to 2.18 of the observation in reply to the notice of opposition which are set out in a letter dated 26 July 1994. At the oral proceedings before the Opposition Division, this ground of opposition was not maintained, as recorded in the minutes and the decision of the Opposition Division,

and as accepted by the opponent during the oral proceedings before the Board of Appeal.

In these circumstances, the decision of the Opposition Division understandably does not deal with this ground of opposition as part of the "Reasons for the Decision", especially as it had previously given its provisional opinion (in the light of the parties' written arguments) in the communication accompanying the summons to oral proceedings, to the effect that this ground of opposition did not prejudice the patent. If a properly substantiated ground of opposition is not maintained by the opponent during the procedure before the Opposition Division (for example, as in the present case, a statement to that effect is made by the representative of the opponent during oral proceedings), the Opposition Division is under no obligation to consider this ground further, or to deal with such ground of opposition in its reasoned decision, unless the ground is sufficiently relevant to be likely to prejudice maintenance of the patent. This follows from the principles set out in paragraphs 15 and 16 of Opinion G 10/91.

- (b) Paragraph 18 of Opinion G 10/91 is concerned with the application of Article 114(1) EPC in the context of opposition appeal procedure, when a "fresh ground of opposition" is raised for the first time during appeal proceedings. It is clear from paragraph 16 of G 10/91, for example, that the Enlarged Board was essentially concerned with the circumstances in which "a ground of opposition not covered by the statement

pursuant to Rule 55(c) EPC" could be considered and decided in proceedings before an Opposition Division (paragraphs 15 and 16) or before a Board of Appeal (paragraphs 17 and 18).

In the present case, as summarised in (a) above, the ground of opposition raised by the opponent under Article 100(c) EPC was fully substantiated in the opponent's statement pursuant to Rule 55(c) EPC, and furthermore was fully answered in writing by the proprietor in his letter dated 26 July 1994.

In the Board's view, therefore, the ground of opposition under Article 100(c) EPC which is sought to be introduced by the opponent in these appeal proceedings is not a "fresh ground of opposition" within the meaning of Opinion G 10/91. Consequently this ground of opposition may be considered and decided by the Board of Appeal in the present case without the agreement of the proprietor, in the exercise of its discretion.

- (c) In the light of the above considerations the Board was prepared to hear further argument directed to this ground of opposition during the oral proceedings held on 2 February 1996, before deciding whether the ground was sufficiently relevant to justify its re-introduction into the proceedings. Having heard such further argument, the Board still has the same view which was set out in its communication accompanying the summons to oral proceedings (and which was also set out in the Opposition Division's communication

accompanying its summons to oral proceedings), namely that this ground is not sufficiently relevant to prejudice maintenance of the patent. While this view would justify the rejection of the ground as inadmissible, nevertheless, in order to avoid too formalistic an approach to these proceedings, and having regard to the limited extent of this ground, the Board has decided to admit the ground and to reject it on the substantive reasons set out below.

- (d) Of course, if the Board had decided that this ground of opposition was sufficiently relevant to be likely to prejudice maintenance of the patent, consideration would have been given to the proprietor's submissions to the effect that, by abandoning the ground during the Opposition Division proceedings, the opponent had denied the proprietor a first instance oral hearing and decision on this point, and therefore, if the ground was to be re-introduced the case should be remitted to the first instance, with an apportionment of costs, if appropriate. However, having regard to what is set out in (c) above, these points do not need further consideration.

2. Alleged extension of subject-matter - Article 100(c) EPC.

The opponent submitted in its notice of opposition that the application as filed did not disclose the following features of claim 1 as granted:

- (a) "the piezoelectric element is located so as not to suffer the force imposed by the coin hitting the impact surface", and that
- (b) "all the other structural components (if any) are firmly secured to each other along the vibration transmission path".

The Board, however, cannot agree with the above submissions for the following reasons:

- 2.1 In the application as filed, it is stated that the snubber (16) itself may be made of piezoelectric material - see the last paragraph of the description. In this preferred embodiment, the piezoelectric element would admittedly suffer the force imposed by the coin hitting the impact surface. Nevertheless, it is also stated in the application that "preferably, the apparatus comprises a coin impact surface arranged to be hit by a coin passing along the coin path, there being a vibration transmission path from said coin impact surface to the piezoelectric element" - see page 4, lines 4 to 7. Besides, such is unquestionably the case in all embodiments of the invention described in the application. In these embodiments, the piezoelectric element is thus subjected only to the vibrations in some elastic member induced by the fall of a coin and, notwithstanding the absence of the word "force" in the application as filed, "does not suffer the force imposed by the coin hitting the impact surface".
- 2.2 Concerning feature (b), the application as filed discloses embodiments of the invention in which the piezoelectric

element is directly secured to the snubber (16), i.e. embodiments not comprising any other "structural component located along the vibration transmission path than the snubber itself" - see page 15, lines 1 to 4 and 16 to 19. It also discloses an embodiment in which "the transmission path is through continuous solid material owing to the firm contact which is maintained between the snubber (16), its mounting to the lid (6), the lid (6) and its junction with said (piezoelectric) element (36)" - see page 9, lines 14 to 23. As compared to the preceding embodiments wherein the piezoelectric element is directly secured to the snubber, this latter embodiment thus comprises "other structural components located along the vibration transmission path and firmly secured to each other", as stated in claim 1 of the patent in suit. Furthermore, the adverbial complement "whereby the transmission path comprises continuous solid material which is firmly secured at any interfaces along the vibration transmission path" makes clear that the "other structural components" previously mentioned in that claim transmit vibrations to the piezoelectric element (36), hence that they are constituent parts of said path. Therefore, feature (b) too is to be considered as disclosed in the application as filed.

2.3 In the Board's judgement, therefore, the subject-matter of claim 1 does not extend beyond the content of the application as filed.

3. *Inventive step*

3.1 Document (D1) relates to an apparatus for checking the validity of coins - see the title. This apparatus comprises

a coin track (4) and an energy dissipating device (3) which is designed to absorb the impact energy of a falling coin without causing the coin to rebound or bounce - see Figure 1 and column 11, lines 38 to 49. The surface of the energy dissipating device (3) is thus "a coin impact surface arranged to be hit by each coin passing along the coin path (4)", which impact surface is "on a member (3) which suffers the force imposed by the coin hitting and being deflected by the impact surface". The apparatus furthermore comprises an electrically powered coin checking circuitry, means (316) for generating an electrical signal when a coin arrives for checking, and switching means (307, 308) operable by said electrical signal to power-up the coin checking circuitry to check the validity of said coin - see: Figures 3 and 4; column 10, lines 31 to 35; column 14, lines 16 to 20; from line 55 of column 14 to column 15, line 13; column 30, lines 17 to 35. However, document (D1) does not mention the possibility of using a piezoelectric element for detecting the arrival of a coin to be checked, nor the presence of any vibration transmission path since; on the contrary, an energy dissipating device (3) is provided.

The Board, therefore, concurs with the Opposition Division and the parties that document (D1) discloses a coin checking apparatus according to the preamble of claim 1, and that the features mentioned in the characterising portion of the claim are not known from this document.

- 3.2 Document (D3) discloses the use of a piezoelectric element (7) for detecting the arrival of a coin (2) in an apparatus for checking the validity of coins. The piezoelectric

element is sandwiched between two shock absorbers (8, 9), a first one (9) of these shock absorbers resting on a base (10), and the piezoelectric element being mechanically biased by means of a spring (14) acting upon a lever (12) of which an arm (11) rests against the second shock absorber (8). The force exerted by a falling coin (2) is transmitted to the piezoelectric element (7) via an impact plate (4) secured to the arm (11) of the lever (12), said arm and the second shock absorber (8) - see Figure and description, from page 2, line 65 of the right hand column, to the foot of the left hand column on page 3.

In the apparatus according to document (D3), the kinetic energy of a coin falling on the impact plate (4) is absorbed by the shock absorbers (8, 9), whereby the maximum intensity of the force exerted upon the piezoelectric element (7) is admittedly reduced and, furthermore, slightly delayed. Nevertheless, it may not be contended that the piezoelectric element would not "suffer" said force. Moreover, the only vibration mentioned in document (D3) is obviously that of the piezoelectric element (7) resulting from the latter's initial deformation - see the right hand column of page 3, lines 11 to 15. Therefore, no vibrations caused by a coin hitting the impact surface of the plate (4) are transmitted to the piezoelectric element (7) on a vibration transmission path. As a matter of fact, no such path ending at the piezoelectric element and "comprising continuous solid material which is firmly secured at any interface" can be provided because of the necessarily limited rigidity of the shock absorbers.

The Board, therefore, takes the view that a skilled person envisaging to use, in a coin checking apparatus, a piezoelectric element for detecting the insertion of a coin into said apparatus would not derive from document (D3) the idea of securing said piezoelectric element to a fixed part of the apparatus which, upon insertion of the coin, provides a transmission path for vibration to the piezoelectric element.

3.3 The latter conclusion also applies to the teachings of document (D4). According to that document, a piezoelectric crystal (40) rests indeed on a block (42) of conductive material and a strip (48) of flexible conducting material transmits to said crystal the force exerted by the impinging coin - see Figure 17 and column 5, lines 7 to 31. The piezoelectric crystal (40) thus suffers the force imposed by the coin hitting and being deflected by the strip (48), as actually confirmed by the statements that the coin strikes the piezoelectric crystal and that a dimple (49) of the strip (48) concentrates the pressure exerted upon said crystal at a given point - see column 5, lines 19 to 23 and 28 to 31.

3.4 Finally, documents (D5) and (D6) respectively relate to ignition devices and music instruments. To a skilled person attempting to reduce power consumption in a coin checking apparatus, it would not have been obvious to seek a solution to that problem in such remote technical fields - see paragraph C.IV.9.7.ii of the Guidelines for Examination in the EPO, which the Board holds to be relevant to the present case. These documents are therefore not

sufficiently relevant to be admissible in these appeal proceedings.

3.5 In the Board's judgement, therefore, claim 1 of the patent in suit involves an inventive step within the meaning of Article 56 EPC. Claim 22, including a coin checking apparatus according to claim 1, also, therefore, involves an inventive step. Similarly, the dependent claims involve an inventive step, and the admissibility of the opponent's objections to these claims (see paragraphs VIII and IX above) does not need to be decided.

4. Therefore, the appeal has to be dismissed.

5. *Costs*

In the Board's judgement, in view of the relatively short reference to documents D5 and D6 in the statement of grounds of appeal, and the minimal subsequent effect of these documents upon the subsequent conduct of this appeal, an apportionment of costs is not justified.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The request for an apportionment of costs is rejected.

The Registrar: The Chairman:

M. Beer

G. D. Paterson