

Veröffentlichung im Amtsblatt	Ja/Nein
Publication in the Official Journal	Yes/No
Publication au Journal Officiel	Oui/Non

Aktenzeichen / Case Number / N° du recours : T 404/87 - 3.2.1

Anmeldenummer / Filing No / N° de la demande : 81 302 262.1

Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 040 960

Bezeichnung der Erfindung: Label feed control system

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : B65C 9/42, B65C 9/18

ENTSCHEIDUNG / DECISION

vom / of / du 24 January 1990

Anmelder / Applicant / Demandeur : TOKYO ELECTRIC CO. LTD.

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56

Schlagwort / Keyword / Mot clé : "Inventive step (yes)"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

European Patent
Office

Office européen
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 404/87 - 3.2.1



D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 24 January 1990

Appellant : TOKYO ELECTRIC CO. LTD.
2-6-13 Nakameguro Meguro
Tokyo (JP)

Representative : Evans, David Charles et al,
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Decision under appeal : Decision of Examining Division 080
of the European Patent Office
dated 12 June 1987 refusing European
patent application No. 81 302 262.1
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : F. Gumbel
Members : F. Brösamle
F. Benussi

Summary of Facts and Submissions

- I. European patent application 81 302 262.1 filed on 21 May 1981, and published on 2 December 1981 under publication No. 0 040 960, was refused by decision of the Examining Division dated 12 June 1987. That decision was based on Claims 1 to 11 filed with letter of 11 December 1986.

The reason given for the refusal was that in the light of

(D1) US-A-3 321 105

(D2) EP-A-0 000 657

the subject-matter of Claim 1 did not involve an inventive step within the meaning of Article 56 EPC.

Applicant's attention was drawn to the fact that Claim 1 as agreed upon in the personal consultation, i.e. Claim 2 filed with letter of 11 December 1986, could have been granted. This suggestion was, however, not accepted by the Applicant so that the application had to be refused.

- II. On 8 July 1987 a notice of appeal was filed and the appeal fee was paid in due time by the Appellant (Applicant). The Statement of Grounds of Appeal was filed on 9 October 1987, together with new Claims 1 to 12.

The Appellant argues that there is no direct lead from the prior art as reflected by D1, D2 and Figures 1 to 4 of the present application to the subject-matter of Claim 1, since the mechanical switch according to D1 had to be replaced by an electronic sensor and the markings on the carrier tape following the teaching of D2 had to be avoided, respectively, and the two sensors used in the state of the

art according to Figures 1 to 4 of the present application had to be replaced by one sensor only. He argues that the separation of the functions sensing/transporting combined in the labeller according to D1 necessitated a reconstruction of the whole labeller which demanded inventive skill.

- III. In its communication dated 5 August 1988 the Board raised an objection under Article 56 EPC concerning the subject-matter of Claim 1, whereby reference was made to the teachings of D1 and of D3 US-A-2 522 224.

In view of the teaching of D2, the Board felt that Claim 3 did not add inventive matter to the subject-matter of Claim 1.

- IV. In reply to the above mentioned communication of the Board the Appellant filed with letter of 19 December 1988 a new Claim 1 and dependent Claims 2 to 5, which were amended as agreed by telephone on 23 January 1990.

Claim 1 now reads as follows:

"1. A label feed control system comprising a driver means (7) for driving a feed means (3) which transports a paper base ribbon (1) with labels (2) stuck thereon, a separator means (5) for peeling said label off said base ribbon, a label detector (22) disposed in the vicinity of said separator means and spaced from said labels to detect the peeled-off label and incremental feed means adapted to control operation of said driver means in response to said label detector means, such that said base ribbon is fed for a predetermined increment, characterized in that the label detector (22) is contactless, and is arranged to detect the front edge (21) of the peeled off label, and to provide an

electronic signal controlling the incremental feed means (25,27) to drive the label any selected amount preset into said incremental feed means, said electronic signal being dependent on the count of a series of impulses synchronised with the driver means and started by detection of said front edge (21)."

The Appellant pointed to the fact that in new Claim 1 the feature has been introduced that the electronic signal is determined by a count of pulses which are in synchronism with movement of the main driver means so that intermediate parts or the end of the label can be detected without reference to the label itself. In his opinion the use of a train of pulses is not obviously derivable from the available prior art. With reference to D2 it is emphasised that markings on the labels or on their backing strip are indispensable for synchronisation purposes.

He requests by implication to set aside the impugned decision and to grant a patent on the basis of new Claims 1 to 5 in their amended form.

Reasons for the Decision

1. The appeal is admissible.
2. Claim 1 is not open to formal objections under Articles 123(2) and Rule 29(1) EPC.
 - 2.1 Claim 1 combines the features of Claims 1, 4 (preselection of incremental feed), 6 (spacing between the label detector and the labels), 7 and 8 (electronic signal being dependent on the count of a series of impulses synchronised with the driver means and started by detection of the label front edge) as well as page 10, last paragraph and Figures 5, 7 and 9 as originally filed (contactless label detection).

Claim 2 is covered by Figures 7 and 9 and pages 9 to 13, line 4 as originally filed and Claims 3 to 5 correspond to original Claims 6, 2 and 3, respectively.

2.2 Claim 1 is not open to an objection under Rule 29(1) EPC since it is correctly delimited over the nearest prior art D1. From D1 the following features are not known:

- (a) the label detector is contactless
- (b) the label detector detects the front edge of the peeled off label
- (c) the label detector provides an electronic signal controlling the incremental feed means
- (d) said electronic signal is dependent on the count of a series of impulses synchronised with the driver means
- (e) said electronic signal is started by detection of the front edge of the label.

3. The subject-matter of Claim 1 is novel in view of the prior art label feed control systems disclosed in D1 to D3 and Figures 1 to 4 of the present application basically due to the fact that the features of the characterising clause of Claim 1 according to which an electronic signal is dependent on the count of a series of impulses synchronised with the driver means and started by detection of the front edge of the label, is missing in the prior art to be considered.

EP-A-0 033 609 concerning a prior art according to Article 54(3) EPC is not novelty-destroying either. It has

to be disregarded regarding the following examination of inventive step, Article 56 EPC.

Novelty was not disputed by the Examining Division or the Board, so that no further argument is necessary in this respect.

4. The examination of the subject-matter of Claim 1 in view of an inventive step leads to the following result:

4.1 Starting point of the invention is D1 from which document a package labelling device of an essentially mechanical nature is known, see sensing roller "52" in Figures 1 and 2 of D1 which has a double function to fulfill, firstly to record the presence of the label and secondly to act as an incremental feed means to feed out a desired length of label "L". The sensing roller of D1 is in its unsupported length in contact with the adhesive of the label so that the label can easily wrap around the sensing roller if the label is not made substantially stiff or its adhesive is low tack. Stiff labels are, however, disadvantageous since they are not suited to be applied to curved surfaces of goods. In D1, the whole length of the label is in contact with the sensing roller and the point of sensing is not necessarily the front edge of the label.

The objective problem to be solved by the feed control system of present Claim 1 vis-à-vis this prior art appears, therefore, to improve the known device in the sense that it works without directly contacting the label and provides a reliable and exact positioning signal of the label irrespective of particularities such as stiffness, light transmissivity or marking of the label and the base ribbon, and without the use of a second sensor for sensing the end of the label.

- 4.2 This object of the invention is to the Board's conviction solved by the features (a) to (e) of the characterising clause of Claim 1.
- 4.3 With this label feed control system it is possible to detect with a great degree of certainty the leading edge of the label and since the incremental feed means can be pre-programmed, the label can be fed with a great degree of certainty without the use of a second detector for the trailing edge of the label, even if labels are irregularly disposed on the carrier tape. The labeller according to Claim 1 also avoids the problems encountered when using differential light-transmissivity to detect labels. Moreover, the difficulties caused by direct contact between the sensing means and the label are overcome.
- 4.4 D1 is of no relevance for the finding of the claimed solution to the object of the invention, since there - as already mentioned - a label feed construction system is taught which basically is characterised by a mechanical sensing roller and the double function of the latter as far as sensing and feeding functions are concerned. The claimed labeller follows, however, a completely differing idea, since it makes use of a contactless sensor which provides electronic signals to the incremental feed means. Since a contactless sensor cannot be used as a feed means, the invention had to separate the functions of sensing and feeding, whereby these two functions were allotted to two distinct systems, firstly to a contactless sensor and secondly to an incremental feed system controlled by the signals derived from the contactless sensor.

Furthermore, the teaching of Claim 1 is such that only the signal indicating the front edge of the label is used, whereas the length of the label is not measured, but is represented by an electronic signal being dependent on a

count of impulses synchronised with the driver means and started by detection of the front edge of the label in that this count of impulses is fed to the incremental feed means. The length of the labels easily can be fed into the control unit of the labeller and a second label sensor is not necessary any longer. No suggestion is derivable from D1 in this respect.

- 4.5 The teaching of the prior art according to Figures 1 to 4 of the present application is different from the teaching of Claim 1, not only since there two sensors are used to detect the label, but since these sensors are photoelectric sensors depending on the light-transmissivity of the system label-base ribbon. A count of impulses reflecting the length of the label is not used in this prior art so that a person skilled in the art is not led to the teaching of Claim 1.
- 4.6 Document D2 makes use of optical or mechanical or magnetic sensors which sense specific markings on the label or the base ribbon so that it is necessary to apply such markings on the label or the base ribbon prior to the use of the label strip. This causes additional provisions which are superfluous if the teaching of Claim 1 is followed. According to page 9, lines 19 to 25 of D2, the motor is actuated as long as the next marking is detected by the sensor so that no count of impulses which reflects the label length is used as in Claim 1. D2 is, therefore, only helpful for the question how a mechanical sensing roller according to D1 can be avoided, but beyond that D2 does not disclose or render obvious the principles followed in Claim 1.

The basic features of Claim 1, i.e. features (d) and (e) according to 2.2 above, cannot be seen from D3 either. Again a contactless sensor is used there for detecting the

front edge of the label in its peeled off position. However, an electronic signal being dependent on the count of a series of impulses in the sense of features (d) and (e) of Claim 1 is not existent in the labeller of D3. This document is, therefore, of no greater relevance than D2 and its contribution to the prior art can, therefore, be summarised as teaching the use of a contactless sensor for the front edge of a labeller. How a label can be moved a preset amount of its length following the detection of its front edge without permanently detecting the label can, however, not be derived from D3 or from D2 so that even a combination of D1 to D3 and the prior art reflected by Figures 1 to 4 of the present application does not lead a skilled person to the solution of present Claim 1.

- 4.7 Consequently, the subject-matter of Claim 1 cannot be derived in an obvious manner from the available art and hence is considered to be based on an inventive step according to Article 56 EPC. This claim is thus allowable.

The dependent Claims 2 to 5 describe further embodiments of the invention and are not open to objections either.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a European patent on the basis of Claims 1 to 5, filed with letter of 19 December 1988, with the amendments

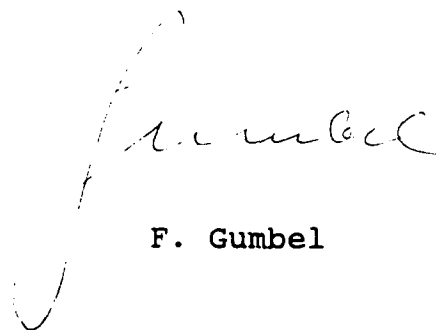
as agreed by telephone on 23 January 1990, after having brought the description into conformity with the requirements of the EPC.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

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