BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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File No.: T 293/91 - 3.2.4

Application No.: 84 302 248.4

Publication No.: 0 134 064

Classification: B65H 20/20

Title of invention: Web loading and feeding system, related web construction and method and apparatus for making web

D E C I S I O N
of 24 June 1993

Applicant: -

Proprietor of the patent: Gerber Scientific Products, Inc.

Opponent: 01) Jackstädt GmbH
02) X-Film Selbstklebefolien GmbH
03) Grafityp N.V.

Headword: -

EPC: Article 56

Keyword: "Inventive step (yes)"

Headnote
Catchwords

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 293/91 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 24 June 1993

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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office dated 17 January 1991, and issued in written form on 3 April 1991, concerning maintenance of European patent No. 0 134 064 in amended form.**

Composition of the Board:

Chairman: C. Andries
Members: S. Crane
J.-C. de Preter

Summary of Facts and Submissions

I. European patent No. 0 134 064 was granted on 10 August 1988 on the basis of European patent application No. 84 302 248.4.

II. The patent was opposed by the Appellants (Opponents 1 to 3) on the grounds that its subject-matter was not novel and/or lacked inventive step with regard to the state of the art (Article 100(a) EPC).

Among the large number of pre-published documents referred to by the Appellants particular reliance was placed on the following:

(E1) GB-A-632 590
(E2) GB-A-625 945
(E3) DE-A-1 946 643
(E4) US-A-1 944 387
(E5) US-A-2 305 988
(E6) US-A-3 809 410

III. By its decision taken at oral proceedings on 17 January 1991 and issued in written form on 3 April 1991 the Opposition Division found that the patent was to be maintained in amended form.

IV. Appeals against this decision were filed on 8 April 1991 (Opponents 1), 28 May 1991 (Opponents 3) and 3 June 1991 (Opponents 2), the appeal fee being paid in each case on the same day as the appeal was filed. Statements of Grounds of Appeal were received on 18 July 1991 (Opponents 2), 30 July 1991 (Opponents 3) and 13 August 1991 (Opponents 1).

The Appellants requested that the decision of the Opposition Division be set aside and the patent revoked in its entirety.

V. With a letter received on 2 March 1993 the first Appellants (Opponents 1) referred to a further state of the art document, viz:

(E8) US-A-1 144 414

VI. In a communication pursuant to Article 11(2) RPBA dated 13 April 1993 the Board expressed the provisional opinion that in view of the admitted public prior use of the sign-making apparatus and sign-making web disclosed in the Respondents' (Proprietors of the patent) earlier application EP-A-101 814 (E7) this state of the art represented the most appropriate starting point for evaluation of the inventive step of the claimed subject-matter.

VII. Oral proceedings were held on 24 June 1993.

At the oral proceedings the Respondents submitted a new set of Claims 1 to 20 on the basis of which, together with the amended description filed with letter dated 13 December 1990 and Figures 1 to 10 of the drawings as granted, maintenance of the patent in amended form was requested (Main request).

The Appellants restricted their attack to independent Claim 13 arguing that this had the broadest ambit and that at least the other independent claims would fall automatically with it.

The wording of Claim 13 is as follows:

"A web for use in a web loading and feeding system comprising a pair of web feed sprockets (15, 16) spaced from one another along a common axis (18) of rotation and supported for driven rotation in unison about said axis, each of said sprockets having a series of radially outwardly extending feed pins (30, 32; 66, 68) uniformly spaced from one another circumferentially of the sprocket, the spacing of the pins on one of said sprockets being identical to the spacing of the pins on the other of said sprockets, said web (12) being adapted to be loaded onto and fed by said two sprockets and having a length many times greater than its width, and having longitudinally extending side edges and at each side edge a plurality of feed holes uniformly spaced along the entire length of the web, said feed holes comprising a first row of first holes (44) in one side edge portion (40) of the web and a second row of second holes (48) in the other side edge portion (42) of the web, said first holes being located on a first line (46) parallel to said side edges, and said second holes being located on a second line (50) parallel to said side edges, and said web having a work area provided by an elongated piece of sign-making stock located between said side edge portions, the web (12) comprising an elongated sheet-like member for use in making signs and consisting of an adhesive-backed layer of first material (60) supported on a layer of release material (64) with its adhesive backed face (62) in engagement with the layer of release material, both said layer of first material and said layer of release material extending uninterruptedly the full length of said web, said first holes (44) being uniformly spaced from one another along the length of said web and said second holes (48) being likewise uniformly spaced from one another along the length of said web, each of said first holes (44) having a corresponding one of said second holes (48) located at least approximately on the same line extending

perpendicular to the side edges of said web, characterised in that additional holes (54, 46) are formed in said web whereby improper loading of the web onto said feed sprockets (14, 16) with respect to one dimension of the web is inhibited, said additional holes being formed on said first and second lines and constituting indicator holes (54, 56, 90, 92) formed at intervals on said first and second lines to visually distinguish certain of said first and second feed holes from others of said first and second holes, said indicator holes comprising a third row of third holes (54) in said one side edge portion of said web and located on said first line and a fourth row of fourth holes (56) in said other side edge portion of said web and located on said second line, each of said third holes (54) being located between two of said first holes (44) on said first line (46), and each of said fourth holes (56) being located between two of said second holes (48) on said second line (50), each of said third indicator holes having a corresponding one of said fourth indicator holes located at least approximately on the same line perpendicular to the side edges of said web, and each of said third holes being spaced from another thereof along the length of said web and each of said fourth holes also being spaced from another thereof along the length of said web by a distance S = Nd, where S is the space in between said third holes and is also the space in between said fourth holes, d is the space in between said first holes and is also the space in between said second holes, and N is an integer greater than one such that each third indicator hole and its corresponding fourth indicator hole visually indicate and distinguish by their presence an associated pair of first and second feed holes, and said pair of distinguished holes being thus distinguished from adjacent pairs of said first and second holes not having such associated third and fourth indicator holes, and

which distinguished pair of first and second feed holes may be placed on a visually distinguished pair of pins (30, 32; G, H) of said feed sprockets (14, 16) to assure a proper loading of said web onto said feed sprockets with respect to lateral alignment of the web at said opposite lateral sides thereof without the need for a second and longitudinally displaced pair of web feed sprockets to assure such alignment."

VIII. The arguments presented by the Appellants in support of their request for revocation of the patent can be summarised as follows:

Since the Respondents had conceded the public prior use of the sign-making web disclosed in document E7 this provided the proper starting point for evaluating the inventive step of the web claimed in Claim 13. That web was distinguished from the known web by the provision, in the line of feed holes at each side of the web, of additional holes spaced along the web by a distance which was a multiple of the feed hole spacing.

A pair of additional holes at respective sides of the web served to indicate a respective pair of feed holes as lying on a common line perpendicular to the length of the web. By placing the indicated feed hole pair on a correspondingly identified pair of pins on the feed sprockets, misalignment of the web was prevented.

Document E8 had however already proposed the same solution to the same problem. It could be seen in Figures 3 and 4 of this document that additional holes were provided in the line of the feed holes and having a spacing of four times that of the feed holes. The additional holes cooperated with additional projections arranged between spaced adjacent pairs of pins of the feed sprocket. It was self evident that the arrangement

of feed holes, additional holes and feed sprocket would be the same at both sides of the web with the result that any misalignment of the web would be precluded due to the mandatory association of the additional holes in the web with the additional projection on the feed sprockets. The application of the teachings of document E8 to achieve the same effect in a sign-making web of the known form claimed did not require any inventive step from the person skilled in the art.

Document E4 also taught the provision of additional pairs of projections lying between the feed pins of respective web feed sprockets which projections served to ensure proper alignment of the web in a manner equivalent to that claimed.

IX. The arguments presented by the Respondents in reply were essentially as follows:

Document E8 was concerned with preventing the surreptitious use of an inflammable cinematic film by means of specially formed pins on a feed sprocket for the film that required a matching special form of the feed holes in the film. To achieve this end only one of the feed sprockets had to be of the special form shown. This document had nothing to do with preventing no intentional misalignment of the film and in any case such misalignment could hardly occur in practice given the relatively narrow width of the film. This was not the case with the type of stock-making web claimed where a misalignment by one sprocket feed pin resulted in a deviation from the proper path of the web by merely 2° which was hardly discernible to the naked eye.

In document E4 the additional projections referred to by the Appellants served as stops for the end of the web as it was inserted into the machine and served properly to

align the feed holes in the web for subsequent engagement by the sprocket feed pins. Correct alignment of the web with the feeding direction was achieved by longitudinal guides. These guides precluded that the web could be inserted into the machine in such a way that feed holes in the web which were not on the same transverse line could be engaged by the sprocket feed pins.

Thus neither of the documents E4 and E8 could lead the person skilled in the art to the claimed solution of the technical problem involved. This solution was extremely simple and avoided the use of supplementary guides or the like which would encumber the operation of changing the sign-making web. It also retained the full width between the lines of feed holes as a useful working area for the making of the signs.

Reasons for the Decision

1. The appeals comply with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. They are therefore admissible.

2. *Formal allowability of the amended documents*

Each of the present independent Claims 1, 13, 18, 19 and 20 has been limited with respect to the equivalent granted claims (Claims 1, 13, 19, 20 and 21 respectively) by the addition of the features defining the structure of the web as set out in granted Claim 15. Furthermore, in present Claim 13 it is specified that in the equation S=Nd, where S is the space between the additional holes and d the space between feed holes, N must be an integer greater than one, this limitation corresponding to that to be found in granted Claim 1. In

present Claim 20 it is now specified that the controlling means are adapted to operate in a particular way rather than as previously being merely "operable". In addition the two-part form of Claims 1 and 13 has been adjusted to reflect the closest state of the art.

None of these amendments extend the scope of the claims and they are accordingly not objectionable under Article 123(3) EPC.

Equally, no objection to the present claims exists under Article 123(2) EPC as all of these amendments find full and clear support in the original disclosure. As this question has not been at issue in the proceedings further elucidations are unnecessary.

3. *State of the art*

3.1 The content of Document E7, which was published after the relevant priority date of the contested patent, had, as conceded by the Respondents, been made available to the public by prior use before that date. The document relates to apparatus for making signs from a stock material comprising an adhesive backed layer of a first material supported on a layer of release material by means of a computer-controlled knife that cuts through the first material only. The web of stock material is provided in a conventional manner with feed holes along its side edges which are engaged by feed sprockets of the machine for longitudinal movement of the web. This longitudinal movement is co-ordinated with transverse movement and rotation of the knife to produce the outline of the derived sign.

3.2 Documents E1 and E2 both relate to web feeding mechanisms for intermittently advancing a web comprising a series of interconnected stationery forms. The web is

provided along each side edge with a line of feed holes which are engaged by corresponding feed sprockets. In order better to distribute the strain on the forms at the start of each advancing movement there is provided adjacent and inwardly of the feed holes at the head of each form a respective additional hole which is engaged by an additional feed pin arranged on the drive shaft for the feed sprockets.

3.3 Document D3 discloses an endless web in which periodically along the length of the web the feed holes are enlarged so as to have a greater diameter than the pins of the feed sprocket. This arrangement can help to overcome difficulties associated with irregular feed hole spaces arising from dimensional instability of the web.

3.4 In document E4 there is disclosed apparatus for printing shipping tags or the like. The tags to be printed are in the form of a continuous strip in which each tag is joined to the preceding one by two narrow uncut webs located near the sides of the strip substantially in the line of respective rows of feed holes. A feed roll is provided near its ends with two rows of feed pins for engaging the feed holes in the strip and also with additional pins which are longer and sharper than the feed pins. The additional pins in each row are spaced from each other by a distance equal to three times the spacing of the feed pins. The strip is inserted into the apparatus via longitudinal guides until the end of the strip engages a pair of additional pins which thereby bring the feed holes into register with the adjacent feed pins. On operation of the apparatus the additional pins then serve to sever the webs between adjacent tags and to separate them.

3.5 Document E6 relates to a continuous assembly of tabulating cards wherein each card is detachably connected to marginal stripe provided with uniformely spaced feed holes and also detachably connected to narrow strip portions extending across the assembly and separating successive cards. A line of spaced groups of perforations is provided along the join between each narrow strip portion and the adjacent card. To improve folding of the assembly corresponding groups of perforations are provided in the marginal strips.

3.6 Document E8 is directed to means for preventing the unauthorised use of conventional inflammable film in motion picture apparatus. To this end the feed sprocket pins and the feed holes in the film are given a special matching configuration so that the use of film with conventional feed holes is precluded. In the embodiment shown in Figures 3 and 4 alternate pairs of feed sprocket pins are joined by a narrow intermediate web. In the line of feed holes at the edge of the film every alternate pair of feed holes is connected by an intermediate slit corresponding to and for receiving the intermediate webs.

3.7 Document E5, which was not referred to by the Appelants in the course of the appeal proceedings, as well the remaining documents introduced into the opposition proceedings but not individually identified in the decision under appeal are less relevant than the state of the art described above and do not need to be considered further.

4. *Novelty*

As can be seen from the foregoing the subject-matter of Claim 13 is novel. It is distinguished from the prior used web of the structure disclosed in document E7 by

the features specified in the characterising clause of the claim. None of the other state of the art documents disclose a web having the structure defined in the preamble of the claim.

Both the system as defined in Claim 1 and the method as defined in Claim 18 require the use of a web as this is defined in Claim 13, whereas the method and apparatus for making the web as defined in independent Claims 19 and 20 are subordinated on the form of the web to be produced. It follows therefore that the subject-matter of these claims is also novel.

5. *Inventive step*

5.1 In commercial use of the sign-making apparatus disclosed in document E7 it was found that the cutting knife did not always return exactly to its starting point after it should have cut a closed loop. This made the "weeding" of those parts of the sign-making web which were to be discarded difficult as they were still joined by small bridges to the sign character that had been produced and resulted in sign characters with unacceptable steps in their outline. The reason for this was found to lie in the fact that the web had been inadvertently mounted by the operator in a slightly misaligned fashion with respect to the feed sprockets of the sign-making apparatus.

The claimed invention sets out to solve this technical problem and proposes as a solution the identification, by means of the additional holes in the web specified in the characterising clause of Claim 13, of pairs of feed holes in respective side edges of the web which lie on the same line perpendicular to these side edges. The operator can therefore on this basis establish which two feed holes should be engaged with respective feed pins

of the feed sprockets, the pair of feed pins being suitably visually distinguished as lying in the same plane including the axis of the feed sprockets. The visual distinction of this pair of feed pins can take the form of an intrinsically different appearance, e.g. colour, or the provision of additional pins on the sprockets which engage the additional holes in the web.

On the basis of the evidence submitted by the Respondents the Board is satisfied that misalignment of the web was a genuine technical problem that needed to be solved and that the claimed invention is a genuine technical proposal to solve it. It cannot be accepted, as at least intimated by the Appellants, that the above considerations are merely a pretext for modifying the web in such a way that the Respondents can monopolise the supply of sign-making web to customers who have purchased their sign-making machines. In this respect it has to be noted that the positioning of the additional holes in the line of feed holes is not an arbitrary measure without any technical justification but retains the whole working area of the web and enables the claimed web to be produced without any significant physical modifications of the manufacturing process and apparatus.

5.2 At the oral proceedings, the Appellants relied essentially on two documents as showing that equivalent proposals for preventing misalignment of a web belonged to the state of the art and that it would have been obvious to apply these proposals to a sign-making web of the structure defined in the preamble of Claim 13. These two documents are E4 and E8.

However, in document E8 there is no suggestion that what is being described there is being done to prevent misalignment of the cinematic film with the drive

sprockets. Indeed, as convincingly argued by the Respondents, cinematic film is of such narrow width and of such stiffness that an inadvertent misalignment of the film with respect to the drive sprockets is hardly feasible and in any case would result in such a large divergence of the film from its proper path that the incorrect installation of the film would immediately be noticeable. Furthermore, the stated purpose of the arrangement disclosed in document E8 of preventing unauthorised use of conventional inflammable film is clearly achieved by giving only one of the feed sprockets and the corresponding side edge of the film the disclosed special form so that it is at least questionable whether, as argued by the Appellants, the person skilled in the art would implicitly understand that the other drive sprocket and other side edge of the film, which are not shown or mentioned in document E8, would have the same form. Thus there is no clear teaching in document E8 of the provision of pairs of additional holes (even if the longitudinal slits connecting alternate pairs of feed holes could be considered as holes) arranged in the manner specified in the characterising clause of Claim 13.

The additional holes required by Claim 13 are also clearly not present in the web disclosed in document E4. The feed sprockets are indeed provided with additional pins which serve, as the web is inserted into the machine, to ensure alignment between the normal feed pins and the feed holes in the web, but they achieve this by engaging the straight end of the web and not by any additional holes provided therein. Thereafter the additional pins serve to cut individual tags from the web. The correct alignment of the web with respect to the direction of feed through the machine is, as clearly described and shown, achieved by means of guides extending parallel to that direction.

The Board can therefore find nothing in the document E4 and E8 which could lead the person skilled in the art faced with the technical problem discussed above to apply the measures set out in the characterising clause of Claim 13 to the known sign-making web.

The same is true of the other state of the art documents discussed in point 3 above. Thus, although it could be argued that the additional feed holes disclosed in documents E1 and E2 could assist an operator in avoiding misalignment of the web with respect to the feed sprockets, these additional holes are not in the line of the normal feed holes and to place them there would run contrary to the whole purpose of their provision which is to distribute the starting strain on the web better. Again, it could be argued that according to document E3 pairs of feed holes on respective side edges of the web can be visually identified by virtue of their different shape with respect to the normal feed holes and that this could assist in preventing misalignment of the web. These differently shaped holes are not, however, additional holes within the meaning of Claim 13. Furthermore, their presence would interfere with the necessary correct positioning of the web under all working conditions. Lastly, although the perforations provided in the marginal feed strips of the continuous card assembly disclosed in document E6 could indeed be considered as "additional holes" they are however provided for the completely different purpose of facilitating proper folding of the assembly and have nothing to do with preventing misalignment with respect to the feed sprockets, such misalignment, given the structure of the assembly being in any case precluded.

5.3 The Board accordingly comes to the conclusion that the subject-matter of Claim 13 cannot be derived in an obvious manner from the state of the art and therefore

involves an inventive step (Article 56 EPC). For reasons analogous to those given in point 4 above this conclusion also applies to the subject-matter of the other independent Claims 1, 18, 19 and 20.

6. At the end of the oral proceedings, the parties had an opportunity to comment on the amendments submitted by the Respondent. Therefore, it is not necessary to issue a communication pursuant to Rule 58(4) EPC.

Order

For the above 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 that the further procedure i.e. the maintenance of the patent in amended form be based on the following text:

Claims: 1 to 20 of the main request presented during the oral proceedings.

Description: columns 1 to 10 filed with letter dated 13 December 1990.

Drawings: 1 to 10 as granted.

The Registrar: The Chairman:

M. Maslin C. Andries