

COMMISSIONER'S DECISION

SECTION 2: Programmable Phototypesetter

The fact that a human operator must provide a control function in a claimed process does not per se render it unpatentable. Method claims which might be interpreted as covering mental steps were amended by the agent. No objection was made to the apparatus claims.

Rejection: Modified

Patent application 269,230 (Cl.95/Sub.Cl.16), was filed on January 06, 1977 for an invention entitled "Inexpensive and Reliable Custom Programmable Phototypesetter." The inventor is Peter Robert Ebner (assignor to Itek Corporation). The Examiner in charge of the application took a Final Action on April 15, 1980 refusing to allow it to proceed to patent. In reviewing the rejection, the Patent Appeal Board held a Hearing on May 27, 1981, at which the Applicant was represented by Mr. R. McFadden.

The claims at issue in the application are directed to a method of controlling the operation of an optical element control system of a phototypesetter.

In the Final Action the Examiner refused method claims 15 to 24 because, in his view, they "are directed to non-statutory subject matter not within the meaning of invention under Section 2 of the Patent Act". The apparatus claims 1 to 14 were not objected to. In that action the Examiner stated (in part):

For example in claim 15 the above noted steps (c) and (e) are performed by the operator not the machine. Hence claim 15 accomplishes a result by means of a person's interpretive or judgmental reasoning. The other method claims, 16 to 24, also have similar procedural steps. Applicant's argument on pages 2 and 3 of his letter of October 22, 1979 are not persuasive that the rejected claims do not depend upon interpretive reasoning on the part of the operator. The disclosure at page 22 disclosing that these steps may be carried out by an unskilled operator is not helpful. The disclosure at page 22 merely discloses that an operator with only minimal skill can carry out the method. The question is not one of how little skill is necessary on the part of the operator. The question is whether or not there is any necessary interpretive or judgmental reasoning performed by the operator. Clearly the examining and re-examining steps are necessary to carry out

the method of claims 15 to 24. In these steps the operator must make judgments as to whether or not the images are sharply focused and then do something else dependent on the particular judgment.

Applicant's letter of February 19, 1980 argues that the examiner's action of November 19, 1979 rejected claimed 15 to 24 by relying on chapter 12.03.01(c) of the Manual of Patent Office Practice. Such was not the intent of the examiner's action rejection. Applicant is referred to the first two lines of paragraph four of said report wherein claims 15 to 24 were clearly refused as not within the meaning of invention in Section 2 of the Patent Act. The second last sentence of this paragraph was intended for information purposes only and was included to particularize the reason for the refusal for the benefit of the applicant. It is agreed that this Manual cannot be used as an authority for rejecting claims.

In response to the Final Action the Applicant had, inter alia, this to say:

The Examiner's reasons for rejecting the method claims are well detailed in his Final Action of April 15, 1980, and it is not necessary that they be repeated here, and it is sufficient to say that the Examiner considers that steps (c) and (e) of claim 15 are performed by the operator, not the machine, with the result that claim 15 accomplishes a result by means of a person's interpretive or judgemental reasoning. The steps as recited in broad claim 15 are representative of similar but further characterized steps recited in the remaining method claims and it is appreciated that any determination made by the Board in respect of claim 15 is applicable to the remaining of the method claims under consideration.

The actual structure of applicant's novel phototypesetter is well detailed in the disclosure and drawings and it is not believed that any detailed clarification of the apparatus involved is necessary at this time.

However, the claims under consideration are directed toward a customized method of programming an optical element control system of an individual phototypesetter and some comments concerning these claims are now presented for consideration. The method as defined is a method which is performed by an employee of applicant company during assembly of a phototypesetter to ensure that the positioning of the optical elements involved result in a sharply focused image so that repeated reproductions on photosensitive tape are as sharp and as clear as possible. As explained in the disclosure, the method involved is quite simple and straightforward but at the same time is one which provides a distinct advance in the art, and applicant believes that they are entitled to the protection of the method claims.

Applicant's novel phototypesetter is assembled and the various optical elements are initially positioned at their theoretically correct positioning which would result in a very sharply focused image if all components and lenses in the system were perfect, but this theoretically perfect imaging apparatus is difficult if not impossible to achieve because of differences in manufacturing tolerances. Thus, if applicant's phototypesetter were assembled and sold on a theoretically correct basis, in practice the results might not be as sharp as possible.

The method as detailed in the claims is one which is practised by applicant during manufacture to provide a precisely tuned system which need never again be altered (or programmed) during the life of the machine. We wish to point out that the programming as detailed in the claims is not one which is practised by the purchaser and user of the machine but is the method followed by applicant to ensure that each individual machine performs to maximum advantage so that no coding changes are necessary by eventual end users of the apparatus.

In summary, it is submitted that the present method claims are patentable inasmuch as:

1. The method as defined is a useful art which results in an improved vendable product and which involves operator involvement that is clearly defined and precise and which can otherwise be performed by apparatus;
2. The disclosure contains quite sufficient teachings of the human intervention so that the inventive process is successfully operative when performed by any user;
3. The method satisfies the test of operability inasmuch as it can be carried out with complete success by any one to whom the specification is addressed; and
4. The method involved is a useful art as distinct from a fine art.

The issue before the Board is whether or not claims 15 to 24 fail to comply with Section 2 of the Patent Act. Claim 15 reads:

A customized method of programming an optical element control system of an individual phototypesetter wherein at least one lens device thereof is positioned along an optical axis to produce sharply focused images at an imaging station comprising the steps of:

- a. providing at least one focusing lens device for producing character images at said imaging station and which are supported by at least one movable lens carriage having positions along said optical axis which are a function of the sizes of the characters to be phototypeset;
- b. positioning said lens carriage in accordance with a set of initial positioning codes along said optical axis at positions which would produce a sharply focused image at said imaging station of said phototypesetter if said lens device had the theoretically correct focal lengths;
- c. examining the resulting images to determine the degree of defocusing due to variations in the theoretically correct focal lengths of said lens device;
- d. altering the initial positioning codes corresponding to the theoretically correct focal lengths stored within said control system by a given incremental amount;
- e. re-examining the defocused images and again altering the altered positioning codes if necessary until the images are sharply focused, and thereafter;
- f. employing the finally altered positioning codes generated for each character size for positioning said lens carriage in z during subsequent operation of the phototypesetter.

Steps (c), (d) and (e) are the steps which were objected to by the Examiner.

At the Hearing Mr. McFadden argued that in his view the claims clearly satisfy the requirements of Section 2 of the Patent Act.

The Examiner in the Final Action refers to human mental reasoning or judgement i.e. mental steps. A mental step in the sense in which the term is employed in patent language is a step in a process, the performance of which is ascertained or controlled by the dictates of the human mind, which step may be performed manually or by mechanical, electrical or chemical means. A mental step which is judgmental or interpretive (purely mental) is definitive of a process the result of which depends on the intelligence and reasoning of the human mind. It seems settled that it is only this latter type of mental step which renders a process unpatentable. The mere fact that a human operator must provide a control function in a claimed process does not per se render it unpatentable.

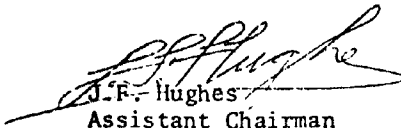
We are therefore satisfied that any method or step in a method which can be manually performed and requires the use of the human eyes for detection or determination of any condition such as temperature, pressure, time, etc., and/or the use of the hands for the purpose of manipulating, such as turning off or on or regulating a given device in a certain manner or at a certain time, etc., to produce a certain result necessarily involves the human mind and hence can be classed as a mental step. Such steps, however, are not purely mental or interpretive mental steps and are not the kind which are prohibited by the decisions relating to purely mental steps.

In summary therefore a process which includes a mental step involving the ascertaining and sensing facilities is patentable (provided all other attributes of patentability are present), since

the effect of the mental step is precise and predictable no matter how skillfully it is performed. On the other hand, a process which includes a mental step, the nature of which is dependent upon the intelligence and reasoning of the human mind cannot satisfy the requirements of operability since the effect of the human feedback or response is neither predictable nor precise whenever the process is worked by its users. The specific question then is whether or not the steps involving human responses are of the type that require subjective interpretive or judgemental considerations, or whether they are responses that are clearly defined and precise, and for example, can be performed otherwise by apparatus.

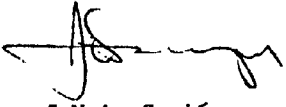
At the Hearing Mr. McFadden emphatically stated that the process satisfied the test of operability because, it can be carried out with complete success by anyone skilled in the particular art. This then takes it out of the field which requires subjective interpretation or judgemental consideration. He also assured the Board that the steps referred to could be carried out by machine, and that he was willing to supply an affidavit to that effect if it was deemed necessary.

We are concerned however that the existing claims might be interpreted as covering mental steps. Consequently, we discussed our concern with Mr. McFadden. He subsequently amended the claims to overcome that objection.


J.F. Hughes
Assistant Chairman
Patent Appeal Board, Canada

I concur with the reasoning and findings of the Patent Appeal Board.

Accordingly, I direct that prosecution should proceed on the basis
of the amended claims.



J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec

this 29th day of October, 1981

Agent for Applicant

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