Commissioner's Decision

INSUFFICIENCY, LACKING INVENTION Paper Web Control

Permission to enter a flow chart submitted at the Hearing does overcome the objection based on inexplicitness. Terminology in claims 1 and 5 does not concisely establish the disclosed features.

Final Action: Rejection modified.

Patent application 378,789 was filed on June 1, 1981 for an invention entitled Paper Web Control. The inventors are H.I. Karlsson, I.J. Lundqvist, B.Y. Hardin and T.L. Ostman. It is assigned to SVENSKA TRAFORSKNINGS INSTITUTET. The Examiner in charge of the application took a Final Action on April 17, 1984 refusing to allow it to proceed to patent. A Hearing was held on December 10, 1986 at which the applicant was represented by H. O'Gorman, R. Elliot and K. Sim.

The subject matter of the application relates to manufacture of paper in a paper machine where a method of controlling the web profile is described.

In the Final Action the Examiner refused the application for being directed to an arrangement lacking invention and because the disclosure and claims were indefinite and inexplicit. That action stated (in part):

> In an attempt to find something inventive, the following aspects of the alleged invention have been considered:
>
> Apparatus: No apparatus has been claimed. The disclosed apparatus is said to be old and known. In applicant's arguments any possible novelty in the apparatus has been effectively disclaimed. Thus no patentable inventiveness can be seen to reside in the apparatus.
>
> Method of operating an existing disclaimed apparatus: The disclaimed apparatus is operated in accordance with some allegedly new calculations. The calculations may be performed either "manually" i.e. mentally or "automatically" i.e. by some known computer. It is noted that all of the claimed method steps (measuring..., indicating..., comparing..., calculating..., adding..., utilizing...) are thus performed either mentally or by some unspecified - existing apparatus. The method essentially compares existing results with desired results and adjusts the machine in accordance with some calculations. The granting of a patent to such a method would effectively preclude all the owners and operators of the existing machines from operating the machines in any such best possible manner

which they see fit, namely, by comparing desired and actual performances and adjusting accordingly. The method is therefore held to be unpatentable as being an obvious method of operating an apparatus in a manner in which it lends itself to be operated.

Calculation: Calculations performed in conjunction with new apparatus could be patentable. However such is not the case here. Calculations per se are not patentable. A method of operating a machine which would be obvious except for the calculations cannot be seen to acquire patentable merit by the inclusion of calculations.

Inexplicitness in applicant's calculations: In an effort to find some particular possible merit in applicant's particular specific calculations, one is forced to conclude that it is not even possible to determine what exactly these calculations consist of. The claimed "calculating" (see claim 1) involves mathematical quantities such as

"setting positions"
"responses from setting positions"
"desired cross profile"
"measured cross profile"
"error cross profile"
"calculated degree of agreement"
"cross profile in question"
"mutual relative change in position"
"profile of weights" (see page 6 etc.)
"weights to be attached to a property" (page 6)

All of the above mathematical quantities are found, unfortunately, to be too poorly defined to enable specific mathematical calculations or operations to be performed upon these quantities. In this respect both the disclosure and the claims are held to be indefinite and inexplicit, and failing to define unambiguously neither how the disclosed calculations are to be performed, nor the extent or nature of the claims coverage involving those calculations.

LP and HP Filtrations: Claim 5 and the disclosure are inexplicit and incomprehensible regarding how a "profile" is divided into high-pass and low-pass "filtrations".

In view of the foregoing, it is held that the application contains nothing of an inventive nature. Therefore this application is refused.

In response to the Final Action the applicant stated (in part):

Applicant's invention is a new technique for utilizing responses (as defined in the specification and claims) for controlling the cross profile of a paper web. Thus, the invention is not directed to mathematical calculations per se, but rather to a method of controlling the cross profile of the paper web by utilizing measured values or responses and calculations based on those responses. This method is in no sense obvious, and the invention solves a problem which could not be solved at all in the prior art. It is respectfully submitted that the disclosure in the present application is sufficient for a person of ordinary skill in the art to understand and perform the invention. Performance of the invention does indeed include detailed mathematical calculations. However such calculations are well known in the art and can be handled by conventional computers and data processors.

Applicant notes that in corresponding applications in other countries where similar standards of disclosure and patentability apply, no objections of the same nature as the objections raised in the present application have been

> encountered. Indeed the European Patent Office has allowed the corresponding European application with claims similar to those on file in the subject application.
>
> With reference to the expressions "LP and HP filtrations" as referred to in page 2 of the Final Action, it should be noted that a web profile can be regarded as a type of signal, and general signal theory is applicable, as will be appreciated by persons skilled in art. LP filtration gives prominence to the blunted portions of the profile, while HP filtration gives prominence to the sharp portions.
>
> In summary, applicant believes that the method set forth in the rejected claims does indeed represent a patentable invention, and further that the disclosure is fully sufficient to enable persons of ordinary skill in the art to practice the invention. Accordingly it is believed that the Final Action should be withdrawn and the application returned to normal prosecution.

The issue before the Board is whether or not the application does describe and claim an inventive arrangement. Claim 1 reads:

> 1. A method of controlling a cross profile of properties of a paper web across a feed direction thereof in a paper machine, wherein said cross profile can be affected by several setting positions across the web in such a manner that a definite change in a setting position brings about a corresponding change in said cross profile, comprising the steps of:
>
> measuring a cross profile in question and comparing with a desired cross profile;
>
> indicating a deviation between the cross profile in question and the desired cross profile in the form of a first error cross profile;
>
> comparing each of the responses from the setting positions with the first error cross profile whereby a calculated degree of agreement indicates the necessary mutual relative change in each setting position;
>
> calculating the necessary change in each setting position by the assistance of the responses from the setting positions, the desired cross profile and the measured cross profile in question and determining thereafter a corresponding change;
>
> adding the corresponding thus determined change to the measured cross profile in question and comparing with the desired cross profile, and
>
> utilizing the calculated necessary change in each setting position for adjustment in the setting positions.

At the Hearing Mr. O'Gorman indicated that the disclosure contains numerous terms which are peculiar to the paper making art and emphasized that a man skilled in that art would understand the invention. Accordingly he feels that the disclosure is technically sufficient to meet the requirements of the Act even though it is far from being exhaustive.

On the other hand the Examiner maintains that the granting of a patent to the claimed method steps would effectively preclude all the owners and operators of the existing machines from operating the machines in any such best possible manner which they see fit, namely, by comparing desired and actual performance and adjusting accordingly.

A signed declaration by John Wieslander, a process control engineer was submitted by the applicant on September 18, 1986. That declaration states that to someone who is experienced in paper making equipment and the technology involved would, solely on the basis of the specification and his own background knowledge, be able to give effect to the invention.

To provide more information with respect to the applicant's arrangement Mr. O'Gorman presented a flow chart with descriptive comments explaining the steps according to the claimed invention. This flow chart sets out response parameters that interact with the setting means to obtain individual adjustments in the setting positions to attain the desired web cross profile. Mr. O'Gorman pointed out that the flow chart does not add any new material to the disclosure and indicated that it could be added to the specification if it would help to overcome the objection made in the Final Action. The Examiner stated that the flow chart and the descriptive comments therein would assist in the understanding of the invention. We do not find any objection to bar entry of the flow chart into the specification.

As stated in the Wieslander affidavit, the expressions and technical nomenclature used in the specification are well known in the art enabling a person of ordinary skill in this art to carry out the invention. In our view, the application does describe a combination formed by component elements to permit changes of flow by means of individual setting positions of the nozzle orifice adjusting members.

The claims were rejected for being inexplicit and indefinite. At the Hearing there was considerable discussion with respect to claims 1 and 5. It was agreed that some of the terminology found in these claims should be replaced or deleted to clearly and concisely establish the disclosed features and

parameters of the combination. We believe that the additional detail to be added by the flow chart entry into the disclosure will provide the basis for distinct and explicit terminology in the claims.

In summary, we recommend withdrawal of Final Action with respect to refusal of the application and we recommend that the applicant be given permission to enter the flow chart submitted at the Hearing to form part of the disclosure.

M.G. Brown
A/Chairman
Patent Appeal Board

S.D. Kot
Member

I concur with the findings and recommendations of the Patent Appeal Board. Accordingly, I remand the application for prosecution consistent with the recommendation.

J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec
this 10th day of June 1987

Fetherstonhaugh & Co.
Box 2999, Station D
Ottawa, Ontario
K1P 5Y6