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Patent Appeal No. 8376

IN THE MATTER OF THE APPLICATION OF
GARY R. BENSON and ARTHUR C. TABBOT
CONVERSION OF NUMERICAL INFORMATION

BRIEF FOR THE COMMISSIONER OF PATENTS

S. Wm. COCHRAN, *Acting Solicitor*
United States Patent Office

JERE W. SEARS,
Of Counsel

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INTRODUCTION

This is an appeal from the decision by the Board of Appeals (R-136) affirming the examiner's rejection of claims 8 and 13 (R-142 and 143), all the claims remaining in appellants' application Serial No. 315,050, filed October 9, 1963, for "Conversion of Numerical Information."

Appellants' "Statement of the Case" (Br-1 and 2) and discussion of their "Invention" (Br-5 to 11) are adequate for the most part. However, exception is taken to appellants' suggestion that claim 8 "is directed to the practice of the inventive method on particular apparatus." The Board noted with regard

to claim 8 that "storing signals in a 'shift register' . . . requires no more than the writing of the symbols constituting the augend on a piece of paper as an aid to one's memory since the paper can be shifted right or left any number of intervals so as to align the augend with a fixed position of the addend" (R-140, bottom). The Board also noted "particularly that claim 13 is so broad as to read on the mental activity alone of a mathematician," and that use of memory aids, "such as pencil and paper or other conventional computational apparatus, does not change the basic character of the process from its being an intangible, abstract line of reasoning" (R-139). The principal rejection, of course, is that "[c]laims 8 and 13 stand rejected as for subject matter not embraced by 35 U.S.C. 101 in that they set forth 'mental processes' and 'mathematical steps,' neither being an 'art' . . ." (R-137).

For stated reasons (Br-25 and 26), "appellants have no alternative but to consider a rejection under Section 112 as having been raised and requiring a response" (Br-26). This acknowledgment is consistent with their second reason of appeal, wherein appellants contended as follows (R-142):

"2. The Board of Appeals erred in sustaining the Examiner's rejection of claims 8 and 13 as failing to point out the subject matter which appellants regard as their invention under 35 U.S.C. 112 in that the claims are so broad and indistinct as to embrace within their terms subject matter that can not be patented under 35 U.S.C. 101."

A rejection under 35 U.S.C. 112, 2nd paragraph, would thus also appear to present.¹

Appellants' general analysis of the Board's position (at Br-28) appears to be correct, as far as it goes. The Board also stated as follows (R-140; emphasis added):

“Thus it is to be seen that denying to the mathematician, as the appealed claims would do, access to the usual tools of his profession, such as pencil and paper *or a programmable computer*, is to deny him an opportunity to understand appellants' mathematical algorithm. Such denial is a restriction on mental process and is tantamount to granting a patent thereon. It is not seen how such restriction on mental processes could promote science or the useful arts.”

Thus, even if claims 8 and 13 actually required use of a programmed digital computer, the Board would apparently hold their recited methods non-statutory. A like view was expressed by the examiner (R-135, bottom). Hence, the prime issue appellants appar-

¹ Appellants deplore that “the vagaries of prosecution leave some of the basic issues in doubt” (Br-26) and subsequently contend that this “undue breadth” rejection “raised only inferentially by the Board of Appeals, is not deemed to have been appropriately raised . . .” (Br-29). However, these qualms come late. Within the thirty day period in which appellants might have requested the Board to clarify its decision, particularly as to acknowledgment of any new ground of rejection, appellants elected instead to file their notice of appeal including the quoted reason 2 (R-142). As one option under Rule 196(b), “The applicant may waive reconsideration by the Board of Appeals and treat the decision, including the added grounds for rejection given by the Board of Appeals, as a final decision in the case.”

ently desired is present, but certainly not “in as clear and uncluttered a fashion as possible” (R-51). However, the Court may not have to reach that issue.

ARGUMENT

Appellants state that the rejection “rests on the assumption that the terms of appellants’ claims can be construed to apply to an implementation in which a human being makes pencil notations on a piece of paper and manipulates the meaning of these notations by intellectual effort (mental steps),” and then contend that their “steps cannot, however, be reasonably construed so as to include the very paper and pencil process described by the Board of Appeals” (Br-15; also note Br-28, bottom). Hence, appellants tacitly admit that a paper and pencil implementation of their process is beyond that which they presently regard as their invention. If claims 8 and 13 read upon or cover a paper and pencil implementation, the rejection under 35 U.S.C. 112 should be affirmed. In *re Prater and Wei* 56 CCPA —, — F.2d —, 162 USPQ —.

At one point, appellants note that other ways of conducting their method are readily apparent, and that “one such other way was disclosed by appellants (R-39) in overcoming a rejection based on inherent function (R-29)” (Br-9). The “inherent function” rejection first appeared in the examiner’s action of March 18, 1966, where claims 1, 3, 6 and 7 were rejected as “drawn to the inherent operation of the apparatus as claimed,” inasmuch as “[t]he method cannot be carried out by hand or by a substantially

different machine" (R-18, paragraph 6). In response to this rejection, appellants represented that "the method represented by these claims can also be carried out by hand, the shifting and adding operations being manual," and gave an example thereof (R-23). Moreover, in responding to a rejection of claim 8 *inter alia* as non-statutory, appellants represented that the method thereof "can even be practiced by hand" (R-25, top).²

In his next action of August 23, 1966, the examiner rejected claims 8 and 13 *inter alia* "since they are drawn to the inherent function of the apparatus" (R-29). In reply, appellants stated that "[i]n the previous amendment, applicants attempted to demonstrate how this method might be practiced using a pencil and a piece of paper" (sentence bridging R-34 and 35). The examiner subsequently challenged the pertinency of appellants' "manual" method, on the supposition that separate additions were employed therein whereas claims 11-13 contemplated a single step of addition, the latter being held to be new matter (R-42, paragraph 6 considered in conjunction with paragraph 5). Appellants successfully argued against the new matter rejection (R-46 and 47, vindicated by withdrawal of that rejection *inter alia* at R-119), and contended that the examiner's criticism

² In the same response, appellants amended claim 8 to include a masking step (to obviate another rejection at R-17, paragraph 5) and also added claim 13 (R-18 and 19). Claim 8 has not been subsequently amended. Also, the only proposed amendment to claim 13 (R-134) was not entered (R-135). Ultimate versions of claims 1, 6 and 7 appear at R-78 and 79, incorporating minor amendments at R-18, 31 and 44.

of appellants' "manual" method was really the "obverse" of his new matter rejection and moot in view of his withdrawal of the inherent function rejection (R-47, bottom, and R-48, top).

The foregoing should serve to illustrate the pertinent state of the record as considered by the Board. Appellants had clearly represented the methods of claims 8 and 13 as capable of being performed manually with pencil and paper. Appellants' briefs before the Board (R-51, 122) appear to have been silent on that possibility, pro or con. Hence, the remarks by the Board concerning pencil and paper practice of appellants' method (R-139 to 141) were certainly consistent with appellants' position up to that time. Now, however, without having requested any reconsideration by the Board, appellants contend that their claimed steps "cannot . . . be reasonably construed so as to include the very paper and pencil process described by the Board of Appeals" (Br-15). Appellants' inconsistency is manifest.

With apparent reference to any pencil and paper implementation of the process defined by claim 8, appellants now contend that "it is far from clear that the steps involved answer to the claim language and clearly do not realize the advantage of the claimed steps" (Br-17). However, appellants' specification contains a clear portrayal of how the method of claim 8 can be carried out with the use of pencil and paper (R-8, first through third full paragraphs). There, in order to convert a binary coded decimal version of 53 into true binary representation, the binary coded decimal signals or pencil marks are first strung out

and temporarily stored in an eight place register or row, as shown by 0101 0011.² The second step of the claim calls for a shift of the signals or marks at least three places to the right, until a binary “1” appears in the second position from the right. This is shown in the example as yielding 0110 1010, the three marks 011 on the right in the initial array of marks having been bumped off and reentered in the register on the left. Masking the second position of the register eliminates the current binary “1” occupying that position, yielding the indicated 0110 1000. Adding a binary “1” to the first or right end position of the register or row yields 0110 1001. The execution of the remaining steps with pencil and paper should now be clear from appellants’ example, bearing in mind the rules for binary addition and carrying to the left (R-35). In short, it is quite clear that the method of claim 8 can be performed with pencil and paper, even though such execution be cumbersome and unappealing. There can be no question that the “advantage of the claimed steps” is achieved, i.e. the intermediate conversion result. As for claim 13, the feasibility of pencil and paper performance is even more apparent, particularly where appellants other example (at R-23) is followed.

Neither claim makes reference to any particular context or mode of operation. The setting might be academic (e.g. note the Board’s reference to a mathe-

² Webster’s Third New International Dictionary—register—
n. 1: a written record containing regular entries of items or details 4: an entry in a register 13: a range or row esp. when one of a series

matician's study of appellants' algorithm at R-140), commercial (e.g. processing accounts and billing), or industrial (e.g. telephone dialing referred to at R-7). Also, no language appears in the claims that would either require performance of the method by machine or at least preclude the foregoing pencil and paper interpretation. There is certainly no dearth of possible language that might have been employed to that end, notwithstanding appellants' despair to the contrary (Br-16). It is not apparent how use of adequate claim language could possibly impair compliance with the requirements of the first paragraph of 35 U.S.C. 112. However, it should be apparent at this point that appellants' failure to include language in their claims which would assure particular and distinct definition of what they now regard as their invention has resulted in lack of compliance with the second paragraph of 35 U.S.C. 112.

Appellants note "that no legal precedent has been cited by the Examiner or the Board in support of the proposition that claims reading on nonstatutory as well as statutory subject matter thereby fail to meet the requirements of the second paragraph of Section 112" (Br-26). It is submitted that *Graver v. Linde*, 336 U.S. 271, 80 USPQ 451 (1949), is precedent for the Board's position. In that case, patent claims which embraced or read upon inoperative species were held invalid, for overclaiming. Lack of requisite utility is not the only reason why overclaimed subject matter may fall under the condemnation of the statute. Here, inordinately broad method claims, which embrace or read upon non-statutory

mental operations, similarly fail to “particularly point out and distinctly claim” the invention. Claims should at least not exceed that which may be patented under 35 U.S.C. 101.³

The actual workstuff of appellants’ method are mere mathematical abstractions, viz. numbers. As noted by the Board, appellants’ method is one of “manipulating mental concepts and not of physical things.” None of the decisions cited and discussed by appellants holds or suggests that such a method should be patentable; indeed, some appear to indicate the contrary, including those relied upon by the examiner and the Board (R-121, 137 and 138). Not even the stated holding from the original *Prater* and *Wei* opinion (Br-27) would have favored appellants, the process of claims 8 and 13 not being directed to any industrial technology. It is common to use aids in carrying out mathematical processes, such as pencil and paper, slide rule, desk calculator and programmable computer. These tools of the mind merely serve to extend mental capacity; their use does not really alter the basic mental character of the performed method. As suggested by the Board (R-140), a mathematician should not be denied access to such tools in freely appraising or even adopting appellants’ mathematical algorithm. Appellants’ claimed process, it is submitted, does not come within the purview of 35 U.S.C. 101.

³ This question was present in the *Prater* and *Wei* appeal, but resolution thereof was not necessary to the Court’s ultimate decision in that case. The question is also present in Mahony Appeal No. 8216, yet to be heard.

CONCLUSION

The examiner and Board of Appeals, it is submitted, were correct in refusing appellants' claims 8 and 13. Affirmance of the Board's decision is solicited.

Respectfully submitted,

S. WM. COCHRAN, *Acting Solicitor*
United States Patent Office

JERE W. SEARS,
Of Counsel

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