

COMMISSIONER'S DECISION

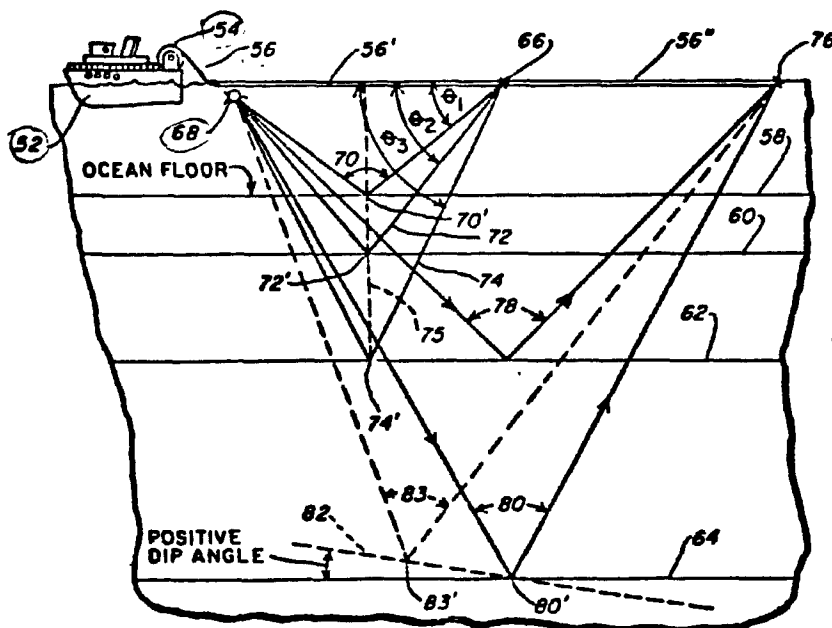
Sec. 2, 36(1) & Rule 60 - SEISMIC METHOD

Additional disclosure pages submitted in response to the Final Action are considered acceptable thereby overcoming the Sec. 36(1) rejection and satisfying the requirements of Sec. 2. Claims were altered to comply with Rule 60.

Final Action: Modified - amendment overcomes objections.

Patent application 252025 (Class 349-10), was filed on May 7, 1976 for an invention entitled "SEISMIC METHOD AND SYSTEM OF IMPROVED RESOLUTION AND DISCRIMINATION." The inventor is Carl H. Savit, assignor to Western Geophysical Company of America. The Examiner in charge of the application took a Final Action on August 27, 1979 refusing to allow it to proceed to patent.

The subject matter of this application relates to seismic systems in marine or land surveys. An impulse such as an explosive shot is initiated and a record is made of the impulses received at sensors or detectors at spaced locations along a seismic cable extending from the shot point. Figures 1, 9 and 12 are shown below.



Marine seismic cable 56 is unreeled from cable reel 54 mounted on exploration ship 52. Shot 68 is detonated near the ship and reflected waves are sensed at various pick up points along the cable 56.

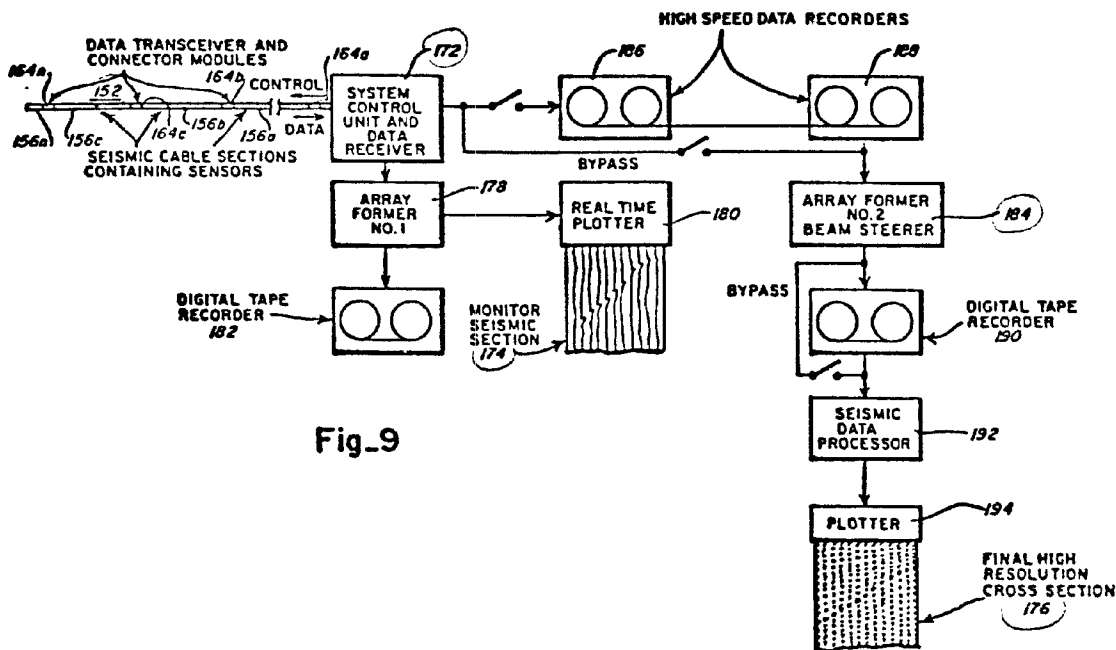


Fig. 9

Output from the sensors in cable assembly 152 is routed to the data receiver control 172 from where it may be processed to monitor seismic section 174 for use by the survey crew and to produce a high resolution cross section 176 for study by geologists.

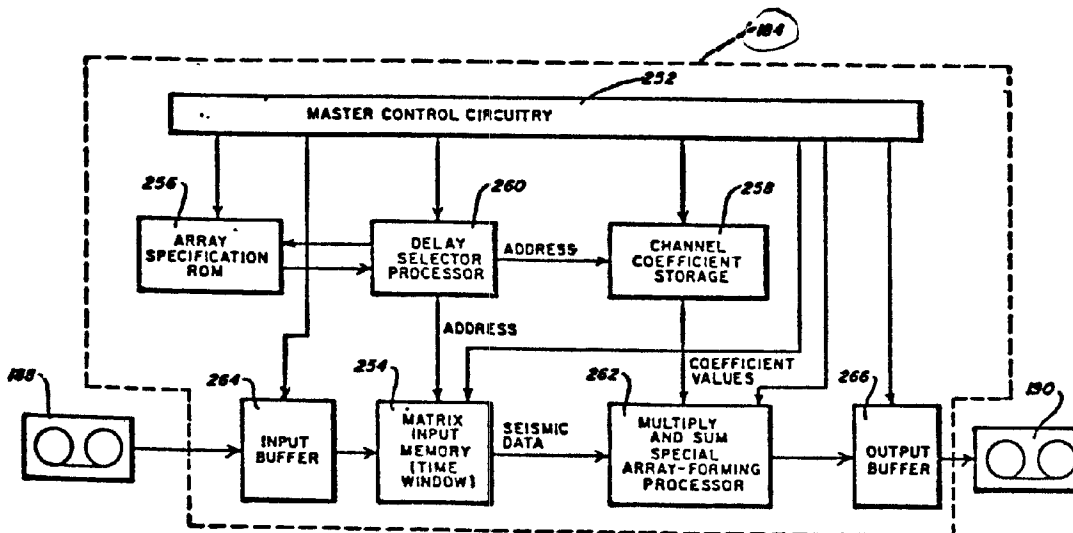


Fig. 12

Components of the array former 184 of figure 9 are shown in detail in figure 12 and are described in detail on pages 39, 39a, 39b and 39c of the disclosure.

In the Final Action the application was rejected as being directed to non-statutory subject matter in view of Section 2 of the Patent Act, and Section 36(1) was applied with respect to Figure 12 for not showing a novel combination. Rule 60 was also applied to the claims. That action stated (in part):

...

The application remains rejected as being directed to non-statutory subject matter in view of the definition of invention in Section 2 of the Patent Act. Also the requirements of Rule 60 set out in the report of November 15, 1978 are not met by the newly submitted set of claims.

...:

Applicant states at the bottom of page 3 of his letter of June 27, 1979: "it is submitted that the invention set out in the revised claims at least falls into categories 4 and 5 of the Commissioner's Decision, page xxvi. The entire block 184 in Figure 12 may be viewed as constituting a computing apparatus programmed in a novel way, wherein it is the apparatus itself that the applicant wishes to protect...". In order to accomplish applicant's wish it is necessary to show that a novel combination has been disclosed in Figure 12. As shown above a novel combination is not disclosed in accordance with Section 36(1). A combination of the components of Figure 12 is not disclosed in accordance with Section 36(1). It is noted from page 35 line 15 that the input to processor 184 is preferably recorded data while the output is also recorded data (on tape 190). Although this data may be gathered by novel apparatus (as disclosed in application 252,022) the processor 184 which applicant designates in his letter as being what applicant wishes to protect by patent coverage has not been shown to be novel wherein the novelty lies in the apparatus rather than in the program or algorithm carried out by the apparatus. The applicant has therefore failed to distinguish the alleged invention from the subject matter refused in the above noted Commissioner's Decision and the application remains rejected in view of Section 2.

...

In response to the Final Action the applicant submitted additional disclosure with regard to figure 12 and amended certain claims. He stated (in part):

...

It is not believed that there is any dispute that geophysical prospecting is in itself a new and useful art as set out in Section 2 of the Patent Act and it is understood that the major thrust behind the final action is a holding that applicant is claiming what is essentially a method of computation not properly subject to patent protection in Canada. Applicant has realized that much improved geophysical survey results can be obtained by providing apparatus in which the directivity of each array signal is varied or, expressed as a method, carrying out the survey by a series of steps which select signals appropriately to give varying directivity to each array. The realization that a more efficient survey would result from using such apparatus or carrying out such steps is not a data processing step nor, is it in any way obvious. No prior art has been cited to show that anyone has used such apparatus or carried out such methods before. Rather, the application stands rejected on the basis of Section 2. The final action refers to many issues other than the rejection based on Section 2 but perhaps the matter is summarized in the last sentence of the second paragraph which stated "The applicant has therefore failed to distinguish the alleged invention from the subject matter refused in the above noted Commissioner's Decision and the application remains rejected in view of Section 2." Although previous office actions have referred to the Examiner's position that the disclosed computations would necessarily be performed by programming a general-purpose computer this holding is not repeated in the final action and is not understood to form a basis for the final action.

It is applicant's position that Figures 9-12 disclose specific apparatus described in detail in the disclosure. Figure 13 shows the operation of this apparatus.

As described and claimed, the invention of this application relates to apparatus, and a related method, for seismic exploration which includes some data processing equipment. Such apparatus is properly capable of patent protection. In the Commissioner's Decision published in the Patent Office Record of August 1, 1978, at page xxv, this point is set out in the following sentence, "It is clear however, that where an invention has been made in 'a process control system', where a program is merely an incidental part of the system, it will not be objectionable" (emphasis in original). That is precisely the situation of the present application. It is clearly a matter of judgement as to whether apparatus is in its essential form simply a new method of calculation or whether it represents a selection of elements which together contribute to an advance in the art.

...

The issue before the Board is whether or not the application describes patentable subject matter within the meaning of Section 2. In addition, the rejections made under Rule 60 and Section 36(1) of the Act will also be considered.

Amendment pages submitted in response to the Final Action containing the last part of claim 8 along with claims 9 to 14 have been entered. Claim 1 reads:

1. In a seismic exploration system for processing reflected seismic signals, including an elongated seismic cable having a plurality of elemental seismic sensor units connected to and located at intervals along the greater part of the length of said cable, each elemental seismic sensor unit including a lesser plurality of electrically interconnected seismic sensors, the improvement comprising:

means for forming a subplurality of seismic array signals by first applying selected relative delays to seismic signals from first selected sets of elemental seismic sensor units, the relative delays being selected to substantially eliminate differential moveout between all the seismic signals within each set, and then by combining said relatively delayed signals;

means for varying the directivity of each said array signal by continuously varying the relative delays as defined by a desired function of reflection time.

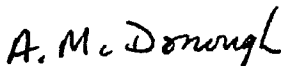
On review of the Final Action we note that the Examiner held that the "applicant has not disclosed a novel combination with respect to the components shown in figure 12." He added that a combination of components of this figure is not disclosed in accordance with Section 36(1) of the Act. Having found that the disclosure did not contain sufficient description of novel apparatus the Examiner concluded that the only novelty found in this application resides in the program or algorithm carried out by the apparatus and refused the application under Section 2 of the Patent Act.

First, considering the rejection under Section 36(1) we find the applicant has responded by supplying additional description in the form of amended page 39 along with additional pages 39(a), 39(b), and 39(c). We have studied the amended description in conjunction with the disclosure as originally filed. We find the amended description does describe apparatus that could be reasonably inferred, as required by Rule 52 of the Patent Rules, and do recommend its entry under Rule 47(3)(c). Since the additional apparatus description is acceptable the objection made in the Final Action under Section 36(1) is overcome and we recommend withdrawal of that rejection.

With respect to the rejection under Section 2 of the Act the applicant argues that the invention lies in assembling known components in a new way to produce a new and previously unattainable result. He states that the "entire block 184 in Figure 12 may be viewed as constituting a computing apparatus programmed in a novel way". Having reached the conclusion that the amended disclosure is acceptable and satisfies the requirements set out by Section 36(1) of the Act, we do not agree with the conclusion reached in the Final Action that the "novelty lies in a program or algorithm". Also, we find this application is not like the Schlumberger vs The Commissioner of Patents decision where it found that "the discovery that by making certain calculations according to certain formulae, useful information could be extracted from certain measurements", was not an invention within the meaning of Section 2. Therefore we recommend withdrawal of the Section 2 rejection.

As we stated earlier the Final Action also applied Rule 60 to the claims. In response to that action the Applicant amended claims 11 and 13 in dependent form and we believe that the requirement of that rule is now met.

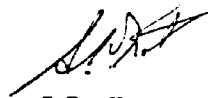
In summary, we recommend entry of pages 39, 39(a), 39(b), 39(c), and that the rejections based on Section 2, Section 36(1) and Rule 60 be withdrawn.



A. McDonough
Chairman
Patent Appeal Board

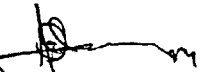


M.G. Brown
Assistant Chairman



S.D. Kot
Member

I concur with the reasoning and findings of the Patent Appeal Board. I withdraw the Final Action and I direct that amended pages 39, 39(a), 39(b) and 39(c) be entered. The application is to be returned to the Examiner for further consideration.



J.H.A. Gariépy
Commissioner of Patents

Agent for Applicant

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Dated at Hull, Quebec

this 5th. day of August, 1983