

COMMISSIONER'S DECISION

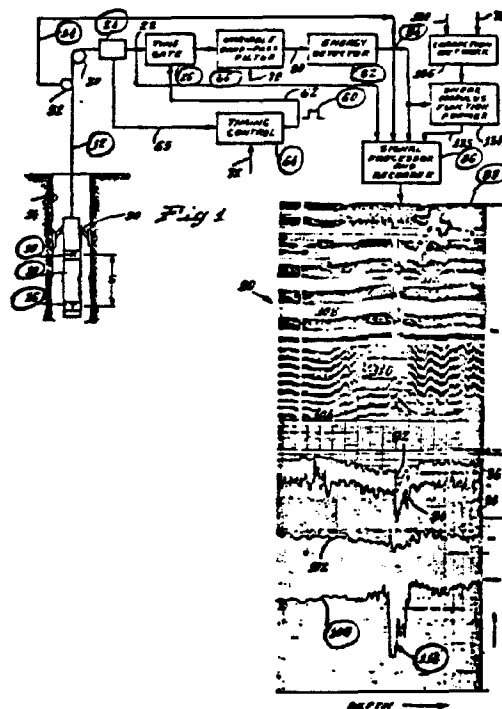
EXTENSION OF MONOPOLY: Sonic Well Logging

Claims were rejected as not being patentably different from claim 17 of the applicants Canadian Patent to the same inventor. The claims contain different terms which in some respects are broader in scope and in other respects are directed to different functions than the patent claims.

Final Action: Reversed.

This decision deals with Applicant's request that the Commissioner of Patents review the Examiner's Final Action on application 308,913 (Class 349-7). The application was filed August 8, 1978, by Schlumberger Canada Ltd., and is entitled METHOD AND SYSTEM FOR SONIC WELL LOGGING. The inventor is John D. Ingram. The Examiner in charge issued a Final Action on June 14, 1979 refusing the application.

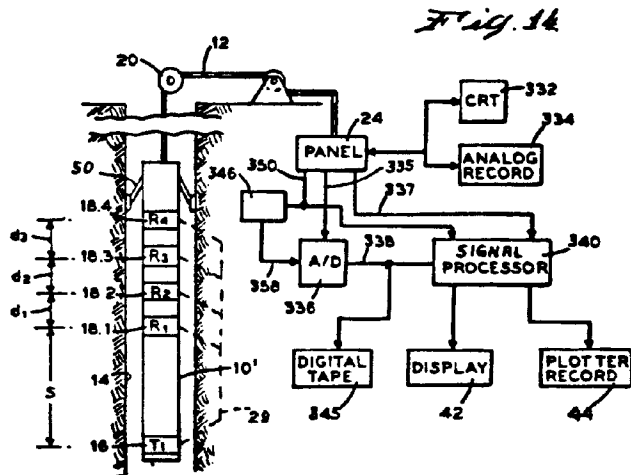
The application relates to a method for generating displays of sonic waveforms derived from an acoustic investigation of a borehole. Figure 1 of the application, reproduced below, shows apparatus used in acoustic borehole logging to produce a display in the form of a visual log 88. A tool 10 is suspended in a borehole and includes a transmitter 16 which produces sonic pulses, and a receiver 18 which picks up the waveforms which move not only along the borehole but also through the formation surrounding it.



The waveforms are sent via cable 12 to panel 24, and from there to a signal processor and recorder 86, and also to closing time gate 26. Panel 24 also applies a signal representative of the firing time of transmitter 16 to timing control 64, and this control sends an enabling window pulse 60 to time gate 26. This pulse permits the waveform segment which occurs during the pulse to move through the gate to a variable band pass filter 66.

Control 64 also generates a delay of duration of the wave, and at the end of the delay the time gate allows the remaining waveform to reach filter 66. The output from the filter is applied to an energy detector 82 which in turn provides an energy amplitude signal 84 representative of the late arriving wave in the filter 66. This energy signal is applied to the signal processor and recorder 86 together with the depth signal on line 54 and the waveform from panel 24. The processor and recorder produces the log 88. The Stoneley waves, which are included in late arrival waves, appear as wave plot 100. The drop in amplitude at 114 of the Stoneley wave is interpreted as indicating a narrow altered formation zone in the borehole.

We also produce figure 14 below to illustrate that the signal processor of the system has the capability to process the signals it receives, into different output forms, viz. digital tape, display and plotter record.



In the Final Action the Examiner rejected the claims of the application as not being patentably different from claim 17 of Applicant's Canadian patent 1,052,465 by the same inventor. In making his rejection the Examiner said:

Claim 17 of the patent depends on claims 1, 7 and 15. Claim 1 defines the waveform as being "derived from an acoustic investigation". Claim 7 recites the step of "producing a waveform representative of acoustic waves excited in a borehole by a sonic pulse". Claim 15 defines the waveform as "representative of acoustic waves excited by the acoustic pulse in the borehole". Thus the application uses the adjective "sonic" to describe the waveform while the patent uses the adjective "acoustic". Webster's dictionary defines "sonic" as "utilizing, produced by, or relating to sound waves", and defines "acoustic" as "of or relating to sound waves". There is no distinction between the terms. If applicant wishes to argue that there is a distinction he is required to indicate where this is set out in the application.

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Claim 17 recites the step of recording. The recorder is defined on page 19 line 5 to line 7 of the application (page 22 line 5 of the patent) as forming log 88 which is defined on page 19 line 19 of the application (page 22 line 19 of the patent) as a visual log. Thus as supported by the disclosure the step of recording in claim 17 is the formation of a display. The step of recording in claim 17 is not the formation of a non-displayable record such as a magnetic tape. Therefore claim 17 of the patent and claim 1 both specify the formation of a display.

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Claim 17 as dependent on claims 1, 7 or 15 recites late arrival waves which is a broader term than Stoneley wave. (see page 7 line 21 of the application: "The use of late arrival waves such as Stoneley waves"). Thus dependent claim 2 in the application is merely making a selection from the class of waves recited in the claims the patent (it is noted that claim 11 of the patent recites Stoneley waves). Since Stoneley waves are merely described as an example of late arrival waves on page 4 line 9 of the application any display of Stoneley waves would infringe claim 17 of the patent. Thus claim 2 of the application does not encompass anything not encompassed by claim 17 of the patent.

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Applicant states in his letter that claim 1 of the application is directed to a method for generating a display of sonic waveforms whereas claim 17 of the patent is directed to a method for extracting a late arrival wave from a waveform. It is true that claims 1, 7 and 15 of the patent are directed to a method of extracting a late arrival wave from a waveform. However claim 17 which depends on these claims is directed to the step of recording the waveform which has already been extracted by the method recited in claims 1, 7 and 15. Thus claim 17 does not recite part of the extraction process and hence is not directed to that process. Claim 17 is directed to the recording of the waveform. Since, as shown above, the recording is disclosed as a visual log claim 17 is directed to the formation of a display of the waveform.

Applicant has only pointed out differences in terminology between claim 17 of the patent and the claims of the application. To overcome the rejection applicant will have to

show what embodiment could infringe the claims of the application without infringing claim 17 of the patent. Failing that, allowance of the present application would extend the monopoly granted to the applicant by Canadian Patent 1,042,651. Since any allowable disclosed subject matter has been claimed in the parent application (now Canadian Patent 1,052,465) and in the divisional Canadian Patent 1,041,651 no amendment to overcome the above objection appears possible.

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In presenting his case for allowance of the application, in his response of April 20, 1979, Applicant cancelled claim 5 and argued (in part):

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Claim 17 of Canadian Patent 1,052,465 depends from any one of independent claims 1, 7 and 15. Claims 1 and 7 include a limitation calling for production of a waveform which includes a wavelength substantially exceeding the diameter of the bore hole. Claims 1, 7 and 15 all contain the limitation that the late arrival is extracted "from a preselected frequency segment of the waveform". Neither of these limitations is present in claims 1 and 2 of the present application and only the latter is recited in claim 3. Thus, claims 1-4 are believed patentable over claim 17 of the patent. Claim 5 has, however, been cancelled.

The Examiner suggested that it would be necessary to show what embodiment could infringe the claims of the application without infringing claim 17 of the patent. If the wavelength does not exceed the diameter of the bore hole, such an embodiment would not infringe the patent but would infringe the application. Also, to infringe the patent, the late arrival has to be extracted from a pre-selected frequency segment of the waveform whereas, in the application, the late arrival could be selected in some other manner, not necessarily from a pre-selected segment.

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The issue before the Board is whether or not the claims in the application differ patentably from certain claims of Applicant's Canadian patent 1,052,465.

Claim 1 of this application reads:

A method for generating a display of sonic waveform generated in an acoustic investigation of a borehole comprising the steps of producing a sonic waveform having a preferentially enhanced late arrival; extracting the late arrival; and recording the extracted late arrival as a function of depth to form said display.

Claims 1 and 17 of the patent read:

1. A method for extracting a late arrival wave from a waveform derived from an acoustic investigation of a borehole comprising the steps of:

producing a waveform having a preferentially enhanced late arrival characterized by a wavelength which substantially exceeds the diameter of the borehole; and extracting the late arrival from a preselected frequency segment of the waveform.

17. The method of any one of Claims 1, 7 or 15 further comprising the step of recording the extracted late arrival as a function of depth.

In the first action on this divisional application, the objection was made that its claims are not patentably different from claim 17 of application 295,834, now Patent 1,052,465, which was also a divisional application of application 239,560; but we note that no objection was made against the claims of application 295,834.

In comparing the first recited step in application claim 1 to that in the present claim 1 of Patent 1,052,465, we find these steps differ in two respects. In the application the step of producing a waveform includes the word 'sonic' in referring to the waveform, but excludes the limitation of the wavelength exceeding the diameter of the borehole found in Claim 1 of the patent. There is therefore a material difference between the first step of the processes claimed in the patent and this application.

In the second step in claim 1 of the application it is merely stated that the late arrival wave is extracted, which is a broader term than the one in claim 1 of the patent.

Application claim 1 also contains a third step, viz., recording the extracted late arrival (of step two) as a function of depth to form the display. By adding a statement that the display called for in the preamble is formed, the third step defines a feature not found in patent claim 17. Further, the term display, as found in application claim 1, defines a specific form that is provided by the signal processor.

We find that application claim 1 contains different terms which in some respects are broader in scope and in other respects are directed to different functions than patent claims 1 and 17.

Considering next application claim 2 as dependent on claim 1, we observe that it is limited to the late arrival in the form of a Stoneley wave and to a display thereof. We note that there are no steps in any of the patent claims which are directed to any kind of display or recording of Stoneley waves per se.

Considering next application claim 3. We note that the third step is different from patent claim 17, in that it adds that the recording is to form the display, a feature not set out in the patent claims.

Reviewing next application claim 4 as dependent on claim 3, we note that step five has no equivalent in any of the patent claims. We find that application claim 4 is directed to a different method from that claimed in the patent.

In Consolboard Inc. v. MacMillan Bloedel (Saskatchewan) Limited, S.C.C., March 18, 1981, the subject of divisional applications issued to separate patents was considered:

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As I noted earlier, the appellant originally filed a single patent application for Letters Patent, but was required by the Commissioner of Patents to divide his application into two parts. It may be open to question whether the Commissioner of Patents should have split off the wafers and treated them as the subject of a separate patent but in my view a patentee is not to be prejudiced by enforced divisional applications. If patents are granted on divisional applications directed by the Patent Office, none of them should be deemed invalid, or open to attack, by reason only of the grant of the original patent. (See J.R. Short Milling Co. (Canada) Ltd. v. George Weston Bread & Cakes Ltd. et al [1941], Ex. C.R. 69 at 82 (affirmed [1942] S.C.R. 187); Fox Canadian Patent Law and Practice, supra at 270.

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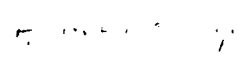
We are therefore informed by the above jurisprudence that patents granted on divisional applications so directed by the Office, shall not be invalid or open to attack only because of the grant of the original patent.

We are also guided by the statement found in 23 Fox Pat. C. 116,117, as referred to in Xerox of Canada Ltd. v IBM Canada Ltd., 33 CPR (2d), 58:

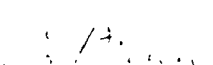
A subsequent claim cannot be invalidated on the ground of prior claiming unless the two claims are precisely coterminous.

We have reviewed the claims of this divisional application and find that they are directed to different features and to a different scope, albeit slight, from the claims in Applicant's patent. We are mindful also that Applicant was directed to file divisional applications on the subject matter found in this application and in his patent. Since there was no other objection, we are satisfied that the claims of this application should not be prevented from issuing solely for the reasons advanced in the Final Action.

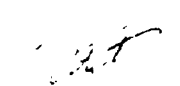
We recommend that the rejection of the application be withdrawn and the application be returned to the examiner.



A. McDonough
Chairman
Patent Appeal Board

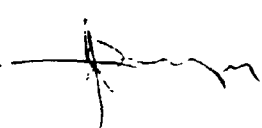


M.G. Brown
Assistant Chairman
Patent Appeal Board



S.D. Kot
Member

I concur with the findings and the recommendation of the Patent Appeal Board. Accordingly, I am remanding this application to the Examiner for continued prosecution consistent with the findings and recommendations of the Board.



J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec
this 29th. day of August, 1983

Agent for Applicant

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