

COMMISSIONER'S DECISION

SUPPORT IN DISCLOSURE: Arpeggio System For Electronic Organ

Claims 34 to 36 were refused for lack of support in the disclosure. A suitable amendment was agreed upon and amended claims 34 to 36 were accepted.

Final Action: Affirmed and Modified

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This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated May 10, 1976, on application 149,193, (Class 84-1.2). The application was filed on August 11, 1972, in the name of Walter Munch Jr. et al, and is entitled "Arpeggio System For Electronic Organ." The Patent Appeal Board conducted a Hearing on November 2, 1977, at which Mr. J. Woodley and Mr. D. Johnson represented the applicant.

The application is related to an automatic arpeggio system for an electric organ which consists of a multi-stage counter, a plurality of tone signal sources, a separate key for each of said sources, means for priming the counter, means for making a count of the counters and means for selecting a tone source.

In the Final Action the examiner refused claims 23 to 41 for lack of support in the disclosure. To support his position he had this to say (in part):

The instant subject matter can be best seen by referring to block diagram Figure 1 and the description related thereto at pages 5 and 6 of the disclosure. In this figure, key switches 10 are labelled in respect to notes called for. A note played detector 21 is common to all said key switches. When at least one key is actuated, the detector provides a control voltage to a sequential readout (multi-stage counter) 13. Each key has, via a bus, a signal gate 23 and each gate is connected to a tone signal source 25 of appropriate frequency. There are four sets of three busses per set to cover all the octaves and all the notes of each octave. All C note key switches are connected to a C bus; all C# switches are connected to a C# bus, etc. Different signal gates, for instance 23, 24 and 24a, providing notes C2, C2# and D2 are tied together at their outputs to a tone gate. It is four of such tone gates, say 36, 37, 38 and 39 that cover a first octave. All the tone gates lead to tone filters 14, then to amplifier 15 and loudspeaker 16. When an input signal is present in any one of the tone gates, it is read out or scanned by the counter; others are skipped. This readout controls and effects arpeggiation.

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The disclosure, needless to say, appears clear; the invention described could be readily ascertained. On the other hand, the language in claim 34 and as well in claims 35 through to 41 is clear and unequivocal in its general terminology. Notwithstanding any flexible meaning imported into that language, it is definitely held that elements of substance in claim 34 are different from those described. They do not perform the same functions in the same way. Least of all, they do not coordinate to form the unitary combination disclosed.

In view of the above comments, claim 34 therefore is again rejected as contrary to Rule 25 for lack of support. Independent claim 37 which is of narrower scope and claims 35, 36 and 38 to 41 which are in dependent form are also rejected on the same ground.

In response to the Final Action the applicant cancelled claims 37 to 41, and presented arguments, in support of claims 34 to 36, which read (in part):

In the Final Action under the title, "Consideration of Applicant's Remarks" the Examiner has stated that gates 23 and 36 are not the "control" but passive type gates, and therefore, do not disclose a series of control gates for selectively interconnecting the key-operable switches in circuit with said generator means for producing tones and response to operation of said gates as claimed in part (d) of claim 34. Applicant respectfully submits that gates 23 and 36 referred to in the disclosure as signal gates and tone gates do in fact have an active operation and do selectively interconnect the key-operable switches with the generator means. The argument seems to boil down to the interpretation of the terminology appearing in the disclosure. The Examiner feels that the signal gates are keyed on by the key switches via a respective bus, as taught on lines 27 and 28 of page 5 and that the tone gates are turned on in sequence by the sequential read-out 13, as taught on lines 12 and 13 at page 6. Applicant admits that what the Examiner has stated is correct, however, this does not mean that the signal and tone gates are passive gates. The above quotes merely show that these gates are operated as claimed in the last two lines of part (d) of claim 34 wherein it is claimed, "in response to operation of said gates". When the signal gates and the tone gates are rendered operative, they then become active gates to control the a-c signal or pulses and to selectively interconnect the key-operable switches with the generator means. The argument seems to boil down to the interpretation of the terminology appearing in the disclosure. The Examiner feels that the signal gates are keyed on by the key switches via a respective bus, as taught on lines 27 and 28 of page 5 and that the tone gates are turned on in sequence by the sequential read-out 13, as taught on lines 12 and 13 at page 6. Applicant admits that what the Examiner has stated is correct, however, this does not mean that the signal and tone gates are passive gates. The above quotes merely show that these gates are operated as claimed in the last two lines of part (d) of claim 34 wherein it is claimed, "in response to operation of said gates". When the signal gates and the

tone gates are rendered operative, they then become active gates to control the a-c signal or pulses and to selectively interconnect the key-operable switches with the generator means. Signal gates 23 and tone gates 36 in combination control the flow of a-c tone signal from the tone signal sources 25 to the tone output circuits 40. Applicant supports this position with a number of references appearing in the disclosure. It is taught on page 5, at lines 10 and 11 that each key has a signal gate as 23 for C2, 24 for C2#, and each signal gate is connected to a tone signal source as 25. This particular description shows that the signal gates do connect the key-operable switches with the generator, which in this case is the tone signal source 25. The active participation of the signal gate is taught on page 9, at lines 6 through 9, "Discussing key switches #13, #14, and #15, each supplies gating voltage, as via a lead 100, to a three signal gate SG, (23, 24, 25a of Figure 1) pertaining to three keys, which sum and pass tone signal to tone gate TG1 via a single lead (shown in Figure 5)." The signal gates which do the summing and passing of tone to the tone gate do in fact have an active role as taught in the above quote taken from page 9 of the disclosure. Further support for this position is found on page 9, at lines 22 through 27, "Any key which is actuated thus can close the gates which serve to pass all notes of the same nomenclature as the key which is actuated, in higher octaves. Circuit details to this end are illustrated in Figure 1. The tone signals passed by the signal gates SG1 - SG20 are passed to the tone gates NG1 - NG20, respectively." By this description it can be seen that the signal gates are not merely passive gates but do in fact have an active function in passing tone signals from the keys to the tone signal gates.

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Therefore, in the summary of the invention, applicant describes that the actuated keys operate as bistable devices and the unactuated keys operate a mono-stable devices. The Examiner seems to feel that the scanning operation of all keys, whether actuated or not, is not described in the detailed description of the invention. However, a good description of the scanning operation is given on page 8, at the second last paragraph wherein it is stated, "A positive voltage source is available at lead U, which is conveyed via any one or more of key switches 10, identified as S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>, to terminal 74, and thence to the collector of transistor Q<sub>1</sub>, of flip-flop N, shown as 71. This transistor is normally on and Q<sub>2</sub> of flip-flop 71 is normally off.

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In view of the above arguments, applicant feels that the present disclosure does support parts (a) through (f) of Claim 34. The generator means of part (a) have been defined on page 5 at lines 10 to 13 as tone signal sources which are well known in the art as generator means. The control gates are a combination of the signal gates and the tone gates as argued hereinabove. The discrepancy in the disclosure with respect to the scanning of all positions and reading out only those which are enabled as well as the halting operation of the scanner has also been explained above. Therefore, applicant believes this application to be in condition for allowance and requests your review at the earliest convenience.

The consideration before the Board is whether or not claims 34 to 36 are supported by the disclosure. At the Hearing Mr. Woodley argued strongly that there was support for claims 34 to 36 in the disclosure. He did however, make it clear that if there was any doubt he was willing to amend the claims if a suitable amendment could be agreed upon. As this is a complex invention no successful conclusion was reached at the Hearing.

After the Hearing, and in an attempt to expedite the prosecution of this application, the Board with the gainful help of Examiner Toyooka made some suggested amendments to claim 34 which, in our view, would be supported by the disclosure. That amendment was submitted to the applicant by phone on or about November 20, 1977.

On December 8, 1977, the applicant submitted a proposed claim 34 with further amendments to parts (e) and (f) of the claim. The Board then considered that amendment, but would not accept part (e) and advised the applicant accordingly.

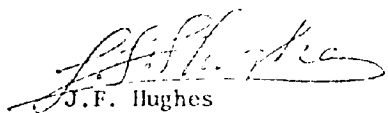
On January 13, 1978, the applicant cancelled refused claim 34, and submitted an amended claim 34 in accordance with our original suggestion. That claim now reads:

A musical instrument comprising:

- a) generator means for producing a series of signals corresponding to a plurality of musical tones;
  - b) a keyboard;
  - c) a set of key-operable switches operable by the keys of said keyboard;
  - d) a series of control gates for selectively inter-connecting the key-operable switches in circuit with said generator means for producing tones in response to operation of said gates;
  - e) scanning means for sequentially scanning and operating said control gates;
  - f) control means associated with said scanning means at operated ones of said key operable switches for successively holding the scanning operation of said scanning means from proceeding and for operating said control gates;
- and
- g) means to restart the scanning operation of said scanning means.

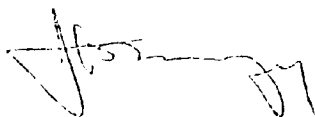
The applicant also made a minor suggested amendment to claim 36, vis. he changed the word "hauling" in line 6 to "holding."

In the circumstances we find it unnecessary to comment further because the amendments to the claims now overcome the rejection in the Final Action. We recommend that claims 34 to 36 be accepted as amended.



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

I have studied the prosecution of this application and I concur with the recommendation of the Patent Appeal Board. Accordingly, the application is returned to the examiner for resumption of prosecution.



J.H.A. Gariopy  
Commissioner of Patents

Agent for Applicant

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Dated at Hull, Quebec

this 18th. day of January, 1978