

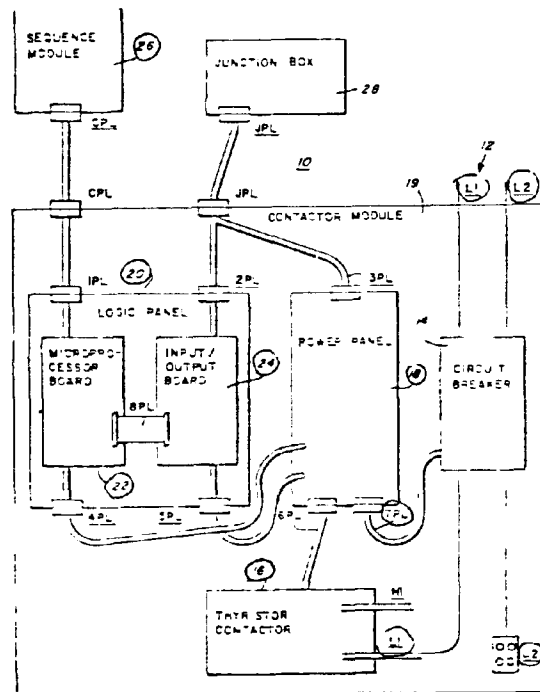
NON-STATUTORY, SECTION 2 Welder Control System

A digital welder control system for an automotive assembly line where the steps of manually setting the address selectors to the address location of the memory and manually setting the data selector for the maintenance interval counter and compensator is within a patentable field of art.

Final Action Reversed.

This decision deals with Applicant's request for review by the Commissioner of Patents of the Final Action on application 372,358 (class 327-105) filed March 5, 1981 and is a division of application 305,237 now Canadian Patent 1,128,143. It is assigned to Square D. Company and is entitled "Digital Welder Control System". The inventors are J.A. Dix, M.A. Guettel and M. Aslin. The Examiner in charge issued a Final Action on November 19, 1982 refusing to allow the application. A Hearing was originally requested but it was subsequently withdrawn by Applicant's letter dated October 8, 1985.

The subject matter of the application relates a digital welder control system for the automotive industry on an assembly line. Figure 1 is shown below.



Alternating current flows through L1 and L2 via circuit breaker 14 to the primary of the welding transformer through thyristor contactor 16 and to power panel 18 by cable 7PL. Logic panel 20 contains a microprocessor board 22 and an input/output board 24. Sequence module 26 provides a means for entering the weld schedule and interrogates the microprocessor. It also displays a diagnostic message readout and includes the operator controls of the welding controller.

In the Final Action the Examiner refused allowance of the claims for being directed to a method of programming a computer (non-statutory subject matter) and for being redundant in view of protection granted in the parent application now patent 1,128,143. That action stated (in part):

Assuming, however, for the sake of argument, that the process of claim 1 were not programming but only a method of "entering parameters" into a digital system, would it then be any more patentable? It would not, because the operation of the switches and address wheels is expected skill. There is nothing ingenious or unobvious in the combination of the four steps listed above. They are just as obvious to anyone skilled in the art, as are the steps of operating the above pre-programmed pocket calculator, illustrated on the attached photocopy. Every student in school performs these steps every day when he operates his calculator or enters the necessary parameters to have the calculator perform a specified pre-programmed function.

It is held again that the "programming" of a digital welder control system or the "entering of parameters" into its RAM, or just a plain straight-forward "operation" of the system, or whatever else one might choose to call it, is obvious because "it represents just some expected skill combined with mental activity" as was pointed out at the end of paragraph 1 on page 2, of the last Office Action.

Claims 1 and 2 are therefore again refused.

In the last Office Action, claims 1 and 2 are also rejected as being redundant. In his above letter, applicant strongly objects to that rejection and points out, that the claims in "the parent application are apparatus claims... of a different scope" and the "Applicant is entitled to such method claims and entitled to protect his invention...". This, of course may be so, but applicant obviously is unaware of the fact that in the parent, now Canadian Patent 1,128,143, he was already granted protection for both for the apparatus and for the method of controlling a welding system.

It is therefore again held that applicant's invention, including the method, is adequately protected by his above patent and therefore present claims 1 and 2 are rejected as redundant.

In response to the Final Action the Applicant added a new claim and stated (in part):

Claim 1 clearly discloses data entering steps and not program entering steps; the applicant is proposing a method of entering data into the data memory and not programming the microprocessor or any other part of the apparatus. The program is already in the program memory of the microprocessor and is not in any way accessible to the operator, who is entering the data, for the purposes of modification or change. The programmer is only capable of submitting timing period and welding constants data are being submitted into the data memory of the microprocessor.

It is also submitted that the combination of steps defined in the present claim are not similar to the steps performed on such apparatus as pre-programmed calculators, as the examiner insists. The mental operations of operating an apparatus such as a calculator are subject to unverifiable error; that is not the case with the method as described in Claim 1. An apparatus such as a pre-programmed calculator does not have the capacity of verifying data between limits set and distinguished by a program within the read-only memory, and this has an effect upon the method of entering data. The method of operating a pre-programmed calculator is not the same as the method of entering data into the welding apparatus as described in claim 1.

It is also submitted that Claim 1 is not redundant with Canadian Patent 1,128,143. This patent has several claims that refer to the apparatus and only a single method claim; the method claim does not disclose a method of entering data into the data memory and is therefore of a different scope.

Claim 2 discloses a method according to Claim 1 which further includes a method of automatically increasing the weld heat after a present number of welds. This method is not a method of programming either, but is a method of entering information that causes the apparatus to pre-empt entered weld heat constants for weld constants entered into the maintenance interval counter and compensator memory location in the microprocessor. The scope of the method as disclosed in Claim 2 is not redundant with any of the claims in Canadian Patent 1,128,143.

The issues before the Board are whether or not the claims are directed to non-statutory subject matter and are redundant in view of the issued parent application. Claim 1 reads:

In the digital welder control for controlling a portable gun welder of the type used in automotive industry in an assembly line having a microprocessor with a data memory and a program memory as its main control element, a sequence module including a run/program key switch, address selectors manually actuateable to select an address location in the data

memory, data selectors manually actuatable to select timing period and weld constants data to be entered into the selected address locations and an enter/reset switch for entering the selected data into the selected address locations, and a data entry worksheet containing the timing period and welding heat constants to be used in a weld sequence and address locations associated therewith, a method of entering data into the data memory, comprising the steps of:

setting the run/program key switch to the program position;

manually setting the address selectors to an address location of the memory associated with the timing period and weld constants data desired to be entered;

manually setting the data selector to select the timing period and weld constants data associated with the address locations selected by the address selector and which are associated therewith and actuating the enter/reset switch to enter the selected data into the data memory for controlling a weld sequence.

Refusal of the claims for being directed to non-statutory subject matter namely to a method of programming a computer, was made in the Final Action. The applicant responds that the claims clearly relate to data entering steps into the data memory which is not programming the microprocessor or any other part of the apparatus. Guidance in assessing computer related subject matter is found in Schlumberger Canada Ltd. v. Commissioner of Patents (1981) 56 C.P.R. 204 where Pratte J. stated:

In order to determine whether the application discloses a patentable invention, it is first necessary to determine what, according to the application, has been discovered.

and

I am of opinion that the fact that a computer is or should be used to implement discovery does not change the nature of that discovery.

A review of claim 1 shows a recital of components in a digital welder control system and a method manipulating them for entering data into the data memory which permits control of the apparatus for a weld sequence. We note from the disclosure that the control system includes components responsive to signals for detecting malfunction within the system and for generating diagnostic signals corresponding to the detected malfunction. Six common problems encountered by welding controllers which are difficult to diagnose were selected and circuitry to highlight and identify each problem for the

operator is provided. This enables an operator to enter the desired times and heat for the weld sequences into the controller by entering data into the data memory as set out in claim 1. In assessing the subject matter of the rejected claims, we are persuaded that the steps of manually setting the address selectors to the address location of the memory and manually setting the data selector for the maintenance interval counter and compensator of the welder control system represents a type of subject matter that falls within a patentable field of art. This also applies to newly submitted claim 3.

The Final Action refused the claims for being redundant in view of claims allowed in the parent application now Canadian Patent 1,128,143. It states that the patent granted protection "for the apparatus and for the method of controlling a welding system". Responding to this refusal the Applicant points out that the patent has several claims to the apparatus and only a single method claim which sets out some steps relating to apparatus control. We note that the claims in this application relate to a method of manipulating the entry of data to provide weld constants data to be entered into selected locations to be used in a weld sequence at the address location associated therewith. Consequently we do not find an objection on the basis of redundancy.

In summary, we recommend that the refusal of the claims for being directed to non-statutory subject matter and for being redundant be withdrawn.



M.G. Brown
Acting Chairman
Patent Appeal Board



S.D. Kot
Member

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



J. H. A. Gariépy
Commissioner of Patents

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

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