

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 10

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BENITA J. FELMUS, CHRISTOPHER S. RIELLO
and EDILBERTO I. SALAZAR

Appeal No. 1998-3359
Application 08/572,347

ON BRIEF

Before KRASS, FLEMING, and LALL, Administrative Patent Judges.
FLEMING, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 5, all the claims pending in the present application.

The invention relates to control systems particularly suited for the control of a postage meter mailing machine in

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real time. Appellants disclose on page 8 of the specification, by referring to figure 4, that each process control cycle is set at a discrete time of 2 microseconds in the preferred embodiment. Each control cycle allocates a discrete time interval for motion control, communications and idle. The motion control includes motor control, sensor sampling, subsystem control and profile generation. The system algorithm for motor control, sensor sampling and processing, subsystem control, motor control profile generation and communications provides sufficient time to complete. The algorithms that execute during idle time control the mailing machine user interface, message processing and perform machine synchronization and high level control. Appellants disclose on page 3 of the specification that the machine control portion of the system is driven by a discrete timer which causes the control algorithms to execute within a specified time interval. When the discrete time interval occurs, the machine control algorithms execute to completion. These algorithms complete prior to the occurrence of the next discrete interval.

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Independent claim 1 is reproduced as follows:

1. An improved method of controlling a mailing machine wherein said mailing machine includes a microcontroller system for executing machine control algorithms during each control

cycle and having a user interface system responsive to user interface algorithms, wherein said improved method comprises the steps of:

dividing said control cycle into first discrete time intervals sufficient to allow completion of said respective control algorithms and second discrete time intervals, and

providing for partial execution of user interface algorithm during said second discrete time intervals and completion of said user interface algorithms during subsequent control cycles.

The Examiner relies on the following references:

DiGiulio et al. (DiGiulio)	4,959,600	Sept. 25, 1990
Salazar	5,367,236	Nov. 22, 1994

Claims 1 through 5 stand rejected under 35 U.S.C. § 103 as being unpatentable over DiGiulio in view of Salazar.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief and answer for the respective details thereof.

OPINION

We will not sustain the rejection of claims 1 through 5 under 35 U.S.C. § 103.

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The Examiner has failed to set forth a *prima facie* case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. *In re Sernaker*, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." *Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.*, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 519 U.S. 822 (1996), *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

On page 5 of the brief, Appellants argue that neither DiGiulio nor Salazar teaches or suggests dividing the control cycle into first discrete time intervals sufficient to allow completion of the respected control algorithms as recited in Appellants' claim 1. Appellants agree that DiGiulio does

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teach the discrete time periods established for the execution of motor control functions, but argue that DiGiulio does not allow sufficient time to allow completion of the machine control algorithms, but instead uses an elaborate priority system to reallocate time from lower priority functions to higher priority functions in the event that a higher priority function requires additional processing time to execute to completion.

On page 6 of the answer, the Examiner argues that DiGiulio does teach completion of the control algorithms. The Examiner points us to column 6, line 60, to column 7, line 68.

Upon our careful review of DiGiulio, we find that DiGiulio teaches in column 6, lines 60-63, that the motor controller 50 performs a control cycle every 1 millisecond as shown in figure 5. In column 6, lines 65-67, DiGiulio teaches each control cycle is divided into discrete time periods T during which control functions are performed as noted in table 1 illustrated in figure 5. In column 7, lines 45-46, DiGiulio

teaches that during each control period, the specified control function is performed and is prioritized. In lines 48-52, DiGiulio teaches that if at any point a higher priority function requires additional processor time, the required time is appropriated from the lowest remaining priority function.

Turning to figure 5 of DiGiulio, we note that the figure shows four priority schemes for executing within 1 millisecond. In particular, figure 5 shows a top priority, second priority, third priority and fourth priority. These motor functions are prioritized so as if a particular control function requires additional processing time above that which has been allocated, then time is appropriate from a lower priority control function. Thus, each motor control function is allocated an amount of time that may not be sufficient to complete its execution. As a result, the execution of the motor control functions must be constantly monitored along with the time remaining to determine if the time appropriate is necessary.

We note that Appellants' claim 1 recites "[a]n improved method of controlling a mailing machine wherein said mailing

machine includes a microcontroller system for executing machine control algorithms during each control cycle . . . wherein said improved method comprises of step of: dividing said control cycle into first discrete time intervals sufficient to allow completion of said respective control algorithms." We fail to find that DiGiulio teaches providing control cycles of a first discrete time interval sufficient to allow completion of the respective control algorithms because DiGiulio instead utilizes a complex priority system to determine when each of the machine control algorithms can be executed.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." **In re Fritch**, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), **citing In re Gordon**, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "[s]uch a suggestion may come from the nature of the problem to be solved, leading inventors to look to

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references relating to possible solutions to that problem.”

Pro-Mold & Tool Co. v. Great Lakes Plastics Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), **citing In re Rinehart**, 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976) (considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in **Para-Ordnance Mfg. Inc. v. SGS Importers Int’l Inc.**, 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), **cert. denied**, 519 U.S. 822 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellants. However, “[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention.” **Para-Ordnance Mfg. v. SGS Importers Int’l**, 73 F.3d at 1087, 37 USPQ2d at 1239, **citing W.L. Gore & Assocs., Inc. v. Garlock, Inc.**, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. In addition, our reviewing court requires the Patent and Trademark Office to make specific findings on a

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suggestion to combine prior art references. *In re Dembiczak*,
175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir.
1999).

We fail to find that either DiGiulio or Salazar contains
any teachings or suggestions of modifying DiGiulio's complex
priority system to a first discrete time interval divided such
that there is sufficient time to allow completion of the
machine control algorithms. Therefore, we will not sustain
the Examiner's rejection of claims 1 through 5.

In view of the foregoing, the Examiner's decision is
reversed.

REVERSED

ERROL A. KRASS)
Administrative Patent Judge)
)
) BOARD OF PATENT
MICHAEL R. FLEMING)
Administrative Patent Judge) APPEALS AND
)
) INTERFERENCES
)
PARSHOTAM S. LALL)
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