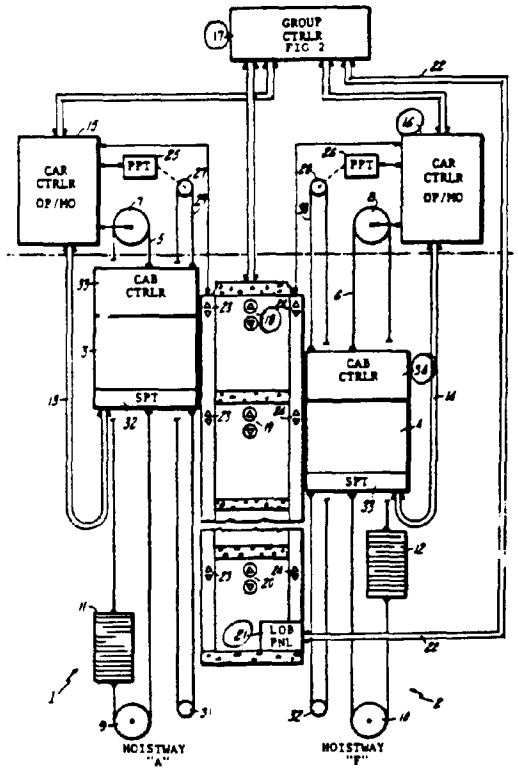
COMMISSIONER'S DECISION

Section 2: Elevator Call Assignments

The application and claims are directed to a combination of elements that form an elevator apparatus and are acceptable under S.2. Rejection withdrawn.

This decision deals with Applicant's request for review by the Commissioner of Patents of the Final Action on application 364,881 (Class 364-18) filed November 18, 1980, assigned to Otis Elevator Co. entitled DYNAMICALLY REEVALUATED ELEVATOR CALL ASSIGNMENTS. The inventor is Joseph Bittar. The Examiner in charge issued a Final Action on October 27, 1983 refusing to allow the application. In view of information that has become available subsequent to the Final Action, the Patent Appeal Board believes a review of the evidence on file permits a sufficient assessment of the merits of the application without conducting a Hearing. The Board recognizes that Applicant's right to a Hearing has not been waived.

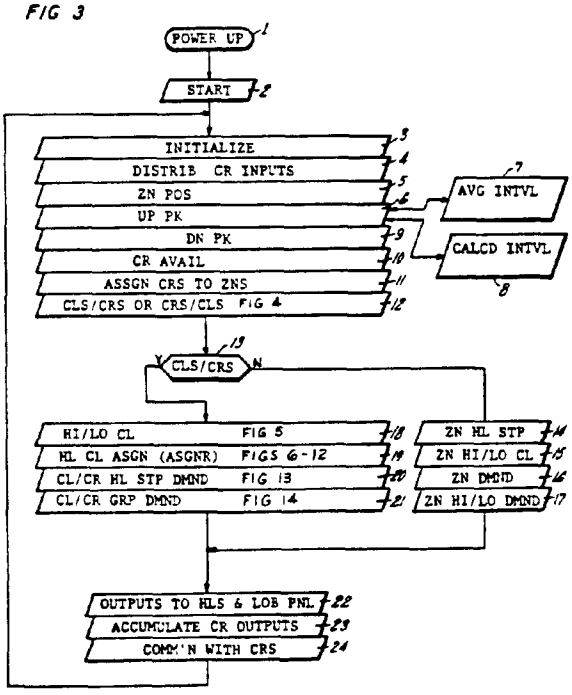
The application relates to an elevator system servicing a plurality of floors in a building, shown in figure 1 reproduced below, a simplified illustration of the components implementing the elevator functions.



The Group controller 17 for multi-car operations receives the up and down calls from each floor landing 18 and assigns cars according to various strategies using the controller and the panel 21 and the responses from the car controllers 16 which in turn communicate with the cab controllers 34. The group controller includes the signal reception means and the integrated elements which respond to the signals received, and produces commands to the cars based on a plurality of constantly changing aspects of operation and on an overall program structure.

Figure 3, reproduced below, illustrates the overall system and the routines (some referring to other figures for detail) which communicate their separate response factors to the group controller.

FIG 3



To achieve the elevator system defined by the claims the means oulined with reference to figure 11 and figure 13 are employed. In order to distribute the use of the cars evenly in the system, a previous assignment factor, step 7, is introduced during the assignment of figure 11. Assignment is

made in dependence upon a wide variety of response considerations and not merely on how quickly any particular car reaches the call. The system continuously reevaluates all of the cars to obtain updated information, and reassigns a call from an assigned car (which may be at rest) to a different car which the processing means indicate would better obtain the purposes of the overall system. Such reassignment occurs repeatedly and rapidly, and the routine of figure 13 provides for last-second car stops and call cancellations and for assignment based on the most appropriate car reaching its committable position and issuing its stop command on arriving at the particular hall call to be answered. The system provides flexibility, in that the car normally assigned the hall call may be assigned the call later. The system also minimizes start up of motor generator sets in cars stopped at various landings when one of the moving cars is indicated to be better suited to answer a call.

In his Final Action the Examiner refuses the application for disclosing and claiming non-statutory subject matter in view of Sections 2 and 28(3) of the Patent Act. He considers the elevator system of figure 1 and the controller shown in figure 2 are "common and/or well known in the elevator art". He regards claims 1 to 7 as defining "... the new mode of the operational control of the well known elevator system". He draws Applicant's attention to guideline 3 published in the P.O.R. of August 1, 1978, and to the court cases, Schlumberger vs. The Commissioner of Patents

56 CPR (2d) page 204, and the United States Supreme Court decision Diamond vs. Diehr 209 USPQ p.1. In rejecting the application he said, in part, as follows:

> Turning to the present application, the essential subject matter lies in the programs or routines shown in figures 3 to 14. What is new here is the discovery of these programs to instruct the well known microcomputer to control the well known elevator hardware shown in figures 1 and 2. Since the applicant has not disclosed any new electronic circuit or hardware to carry out these programs, then these programs could be assimilated to a "mere scientific principle" or "instructions to operate a computer".

In the response to the Final Action, Applicant argued in part as follows:

> ...
>
> ... the claims of the present application are not directed to a computer program or algorithm per se but, rather, they are directed to an elevator system including, as noted above, a number of elevators each including a car, car motion means, etc. and means for registering car calls, call controller means, with the system being characterized by a novel and non-obvious type of elevator operational control. The system uses a processing unit to carry out various functions to achieve that control. The processing unit may be a central processing unit, an analog computer, or even a conglomeration of discrete logic components. The selection does not matter because it does not matter what specific type of processor is used. It is the operational control provided by the overall system that is novel and non-obvious, not the processor. Hence, it is immaterial that similar hardware parts may be shown in the other patents noted by the Examiner. This is a system invention; the invention lies in the manner in which its parts co-act and are controlled. Stated differently, the utility of the invention can be said to reside in the useful results produced by the combination of the novel elevator operational control and the elevator system components set forth in the claims. These give rise to new elevator control and performance characteristics.
>
> ...

In support of his argument, Applicant discusses various court decisions to show his subject matter is patentable. He disagrees with the interpretation given, in the Final Action, to the decision in Schlumberger, supra, and the decision in Diehr, supra. He recognizes there are many areas of human endeavours that do not constitute proper subject matter, and refers to Lawson v. The Commissioner of Patents 62 CPR p. 107 as follows,

> It was held that the development in question was not proper subject matter for a patent in that the method fell within the skill of a solicitor and conveyancer and that of a planning

> consultant and surveyor. It was described as being an art which belongs to the professional field and not a manual art or skill.

and to Tennessee Eastman vs. The Commissioner of Patents 62 CPR 117 (affirmed 1974 SCR 111),

> ... it was held that a method of treating the human body by means of a surgical technique involving the use of a surgical adhesive known per se lay within the realm of professional skills and was not a manual art and not an art within the meaning of that term in Section 2.
>
> ...

In Applicant's view, the present application is not concerned with professional skills, nor whether the subject matter is a fine art as distinct from a manual art. He then refers to the Patent Office Record of August 1, 1978 p. xxvi containing a decision by the Commissioner of Patents which comments on a Supreme Court decision in Gottschalk v. Benson et al 175 USPQ 673, in part, as follows:

> ... the U.S. Supreme Court held that since the mathematical formulae involved had no substantial practical application except in connection with a digital computer, a patent would wholly pre-empt the mathematical formulae and in practical effect would be a patent on the algorithm itself. In other words, the claims were not limited to a particular novel apparatus and are not confined to a specific end use of field of technology.

Moving next to Applicant's discussion involving the United States decision in Re Freeman (197 USPQ 464), he draws attention to the following passage which takes cognizance of the above Benson decision:

> Determination of whether a claim pre-empts non-statutory subject matter as a whole, in the light of Benson, requires a two-step analysis. First, it must be determined whether the claim directly or indirectly recites an "algorithm" in the Benson sense of that term, for a claim which fails even to recite an algorithm clearly cannot wholly pre-empt an algorithm. Second, the claim must be further analyzed to ascertain whether in its entirety it wholly pre-empts that algorithm.

Applicant believes the findings in Diehr are important to a full consideration of his application, and he sums up four aspects of that decision, which briefly are as follows:

1. the claims did not seek to re-empt the use of an equation but sought to foreclose from others the use of that equation in conjunction with all the other steps in their claimed process.

2. a claim drawn to subject matter otherwise statutory does not become non-statutory because it uses mathematical formulae, or computer or digital programs.

3. claims must be considered as whole.

4. statutory subject matter existed despite the inclusion of a formula that could stand on its own.

To support his viewpoints he selects the following passage from Diehr p. 9

> "It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. ---The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the Section 101 categories of possibly patentable subject matter."

Next, he points to the consistency of the above position with that expressed by the Exchequer Court of Canada in Omark Industries vs. Gouger Saw Chain Co. et al 45 CPR pp. 218, 219 in quoting from the English decision in Albert Wood & Amcolite Ltd. vs. Gowshall Ltd. (1936) 54 RPC p. 37 as follows:

> "The dissection of a combination into its constituent elements and the examination of each element in order to see whether its use was obvious or not is, in our view, a method which ought to be applied with great caution since it tends to obscure the fact that the invention claimed is the combination."

In Applicant's view, simply because a computer is used in a system is no reason for considering the system not to be a proper combination in the patentable sense. He argues his claims are to an elevator system and should be considered as setting out statutory subject matter, and he relies on Schlumberger, above, at p. 206 as follows:

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

He reasons Applicant's system is allowable on the basis that;

> ... if the operational control shown herein had been replaced with an equivalent hardware system, i.e. a system of discrete logic components, it is extremely unlikely that the Examiner would have raised any objection to the claims as being non-statutory in the first place. Yet, an elevator system operating under the control of a 'hardware' system (a system of discrete logic gates, flip flops, etc.) is not fundamentally different, at least as far as its inventive content is concerned, from an elevator system incorporating as its

> operational control a pre-programmed computer arranged to provide the same end results. Essentially the same form of claim could be drawn for each system. It would surely not be logical to reject one system as being non-statutory by virtue of its use of a pre-programmed computer while the other is allowed the benefit of patent protection merely because it uses hardware components.

The Applicant contrasts the facts in this application with those in the Schlumberger case, stressing that Applicant's invention when considered as a whole provides an improved form of elevator control.

In a Supplemental Response dated September 10, 1985, Applicant draws attention to a recent decision of the Commissioner of Patents forming part of the file of Canadian Patent 1,185,714 issued April 16, 1985 to Westinghouse. He points out the similarities of the subject matter of this application to that of the elevator system of the above patent, noting particularly that in the patent the elevator service is part of the system patented. The Applicant quotes passages that were considered relevant from the Schlumberger case in finding the subject matter acceptable in Westinghouse. He then argues, "... in the words of the Schlumberger decision, once it has been determined what, according to the application, has been discovered", it will be found that the inventive idea, in the words of the Westinghouse decision, "lies not solely in a program but in changes brought to the operation of elevator systems".

The issue before the Board is whether or not the application discloses and claims non-statutory subject matter in view of Sections 2 and 28(3) of the Patent Act. Claim 1 reads:

> An elevator system including a group of elevators for servicing a plurality of floor landings in a building, comprising:
>
> group controller means, including hall call means for registering calls for up and down service at each of said landings, for exchanging signals with each of said elevators, and for controlling the operation of said elevators in response to said hall call means and signals received from said elevators;
>
> each of said elevators including a car, car motion means for providing and arresting the motion of said car, means registering car calls for service required by passengers therein, and a car controller means for providing signals

> indicative of conditions of said car, for controlling said car motion means to cause said car to move in a selected up or down direction and to stop in response to said signals indicative of conditions of said car and to signals received from said group controller means;
>
> characterized by said group controller means comprising signal processing means operative, within each one of a repetitive series of cycles occurring several times per second, in response to said signals indicative of conditions of each car and to all hall calls registered at said floor landings for assigning each hall call to one of said cars in dependence on the floor landing and direction of such hall call and the conditions of each car, as indicated during the cycle in which such assignment is made, for removing from each car, after making the assignment of any hall call in any cycle, the assignment of such hall call made to such car in a previous cycle which is assigned to a different car during such cycle, and for issuing a stop command to any car at the end of any cycle in which said signals indicative of conditions of such car indicate that its committable position coincides with the landing of a hall call assigned to it.

The Examiner sees the subject matter of the application as lying solely in the programs shown in figures 3 to 14. He regards claims 1 to 7 as defining a new mode of operational control, but takes the view they define only known hardware, and the routines of the above figures. Applicant believes the application and the claims contain patentable subject matter, and advances arguments that the inventive idea of his system as a whole must be borne in mind, and that his invention is not a mere computer program or algorithm.

In dealing with the kind of subject matter in the disclosure and claims of this application, we find direction from the decision in Schlumberger Canada Ltd. v. The Commissioner of Patents [1981] 56 CPR (2d) at 204, in the following passages of Pratte J.:

> 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.

We turn our attention to a determination of "what" has been discovered by Applicant. As noted in Omark Industries supra, if a combination is present, then great caution should be observed before dissecting it into its components on the basis of what is old and what is new. Here, in considering the overall inventive idea presented by the specification, we find an elevator system comprising several components, inter alia, elevator cars and associated lift means, a group controller for the cars, individual car motor generator means, and a rapid response control means for the elevator calls which responds to a signal processing means performing repetitive, short interval testing of the conditions of the cars and the calls to be served. The means produces signals to a car to answer a hall call even though another car may have that call assigned to it, and prevents on a temporary basis the stopping of the normally assigned car. In this way more even distribution of elevator wear is achieved, and less start up of cars that are at rest. We believe the disclosure is directed to an improved elevator system which lies in a field of subject matter that may be patented under Section 2 of the Patent Act. We are aware that programs are present, just as we see that elevator apparatus is described. However, when considering "what, according to the application" is the inventive idea, we are persuaded that Applicant has provided a combination of elements to provide an elevator system, and not solely a program. Having found the inventive idea lies in the combination, we dismiss the rejection made under Section 28(3) of the Act.

In reviewing the claims, we find they are directed inter alia, to an elevator system having a group controller for sending signals to the cars, car controller means providing signals indicative of traffic conditions, and signal processing means responsive to the signals indicative of car conditions for providing each car with a signal representing a summation of relative response factors which are weighted with respect to one another to provide a reasonable response time according to the desired scheme of elevator service for hall calls. No art having been cited, nor other objections made, the claims appear to be acceptable.

In summary, we find the elevator system presented in the application and defined in the claims, when considered in light of the "what" that is described in the specifications, is directed to a combination residing in a patentable field of endeavor.

We recommend that the rejection of the application and claims for being directed to subject matter non patentable in view of Sections 2 and 28(3) of the Act, be withdrawn and the application be returned for continued prosecution.

M.G. Brown
Acting Chairman
Patent Appeal Board

S.D. Kot
Member

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

J.H.A. Gariépy
Commissioner of Patents
Dated at Hull, Québec
this 14th Day of April 1986

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