

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

*The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.*

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHIN-ICHI MATSUZAKI

Appeal No. 95-1866
Application 07/878,500¹

ON BRIEF

Before MARTIN, FLEMING, and LEE, Administrative Patent Judges.
MARTIN, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision in an appeal under 35 U.S.C. § 134 from the examiner's rejections of claims 1-7, all of appellant's pending claims, under 35 U.S.C. § 103. Both rejections are reversed.

¹ Application for patent filed May 5, 1992.

Appeal No. 95-1866
Application 07/878,500

The claimed invention is a location detecting system for use in a moving body, which in the preferred embodiment is a wheeled vehicle. Referring to Figure 1, a location detecting unit 3 responsive to a gyro 1 and wheel sensors 2 calculates the current position of the vehicle. A navigation controller 4 causes a memory drive 6 to retrieve the road map data for the surrounding area from a road map memory 5, which may be a CD-ROM. Display device 7 displays the surrounding road map information together with a mark representing the current location of the vehicle. The operator, using selection means such as a switch 13 located on the vehicle console 8, causes the system to operate in either of two modes, a traveling mode and a simulation mode. In the traveling mode, the sensor data are processed by location detecting unit 3 for generating a real time display representing the surrounding road map information including the current location of the vehicle. In addition, the sensor data are stored in a detachable memory unit 12 for later use in the simulation mode. In the simulation mode, the location detection unit 3 receives the sensor data from the memory unit rather than from the sensors. During simulation using stored sensor data, "a change of design in the stage of development or a repair after a

Appeal No. 95-1866
Application 07/878,500

system was mounted in a vehicle can be preformed with ease"
(Specification at 3, lines 10-12).

Claim 1, the sole independent claims, reads as follows:

1. A location detecting system mounted on a vehicle, comprising: sensor means; a main body having an operating mode consisting of a traveling mode and a simulation mode and including location detecting means for calculating a current location of said vehicle on the basis of data sensed by said sensor means and further including a navigation controller connected to said location detecting means; change-over means for changing over said operating mode to said traveling mode or said simulation mode; storage means detachably connected to said main body; write means for storing said data sensed by said sensor means into said storage means when said storage means is connected to said main body and also said main body is in said traveling mode; read means for inhibiting said data sensed by said sensor means from being supplied to said location detecting means and instead supplying the data stored in said storage means to said location detecting means, when said storage means is connected to said main body and said main body is in said simulation mode; and displaying means for displaying during said traveling mode said current location of said vehicle calculated by said location detecting means, wherein during said simulation mode, said location detecting means calculates a vehicle location based on said data supplied from said storage means, said calculated vehicle location being displayed by means during said simulation mode.

The references relied on by the examiner are:

| | | |
|--------------------|-----------|---------------|
| Benn et al. (Benn) | 4,604,711 | Aug. 5, 1986 |
| Ando | 4,903,211 | Feb. 20, 1990 |

The examiner has rejected claims 1, 2 and 5-7 for obviousness over Benn and claims 3 and 4 for obviousness over Benn in view of Ando. Appellant treats claims 1, 2 and 5-7 as

Appeal No. 95-1866
Application 07/878,500

standing or falling together, arguing separately only claims 1, 3, and 4.

Benn discloses an aircraft flight data system for visually displaying flight data directly from an aircraft flight data recorder that has been removed from an aircraft (col. 1, lines 11-15). Benn explains that

[t]he primary purpose for recording aircraft flight data is to provide flight data for accident analysis but the flight data recorded on the aircraft has also proven useful to airline management for other purposes including aircraft maintenance and incident analysis such as a landing approach resulting in a hard landing or a go-around. With the advent of modern digital flight data recorders, that are capable of storing over a hundred different flight parameters, the usefulness of the data to the airline operating and maintenance personnel has expanded dramatically. The availability of a large number of flight parameters has made possible significant improvements in the safety as well as the economics of flight operations by permitting management to analyze actual flight data. However, in order to be useful, this data must be made available to management in a timely manner and in useful formats. [col. 1, lines 19-35.]

Referring to Figure 1, Benn's invention is a data display system that reformats the flight data stored in a flight data recorder 10 or an optional copy recorder 14, converts the reformatted data into engineering units, and then displays values these values, including altitude, heading, acceleration, and speed (col. 11, lines 32-34), on a cathode ray tube 26 in either the graphical format shown in Figure 3 or the cockpit instrument format shown

Appeal No. 95-1866
Application 07/878,500

in Figures 4A and 4B (col. 3, lines 30-34). The operator can elect to display the results in real time or in fast mode and may choose a particular part of the flight for review (col. 13, lines 26).

The examiner, recognizing that Benn's flight data display system is not disclosed as being mounted on the aircraft and thus fails to satisfy claim 1's requirement that the location detecting system be mounted on the vehicle, argues that

one of ordinary skill in the art would have found it an obvious matter of engineering choice to playback [sic, play back] the recorded data wherever it was desired to locate play back equipment, the location chosen having no effect whatsoever on the ability of an operator to examine the recorded data. An ordinarily skilled artisan would have found it desirable to play back data on the aircraft due to quicker down time of the aircraft, by not having to transport and return recording means between the aircraft and another location. The decision on where to place play back equipment would have been based on such routine design choices as space availability, size of equipment, availability of portable playback means, acceptable time limits for data examination, aircraft down time limits and type of recording medium. [Answer at 6.]

Appellant responds that the mounting of Benn's flight data display system in the aircraft is based on hindsight and is contrary to the stated purposes of Benn's invention, including the primary purpose of allowing accident analysis and the secondary management purposes of monitoring of aircraft maintenance and performing incident analysis. The examiner

Appeal No. 95-1866
Application 07/878,500

agrees that mounting Benn's flight data display system in an aircraft is contrary to the primary purpose of accident analysis, because a crash of the aircraft would destroy Benn's system.² However, he maintains this modification of the aircraft is not contrary to the secondary management purposes, which he maintains could be performed "at any location deemed desirable by an ordinarily skilled artisan."³ Bearing in mind that a rejection may be based in part on the "common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference," In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969), we are of the opinion that the artisan would have been motivated to mount Benn's flight data system on an aircraft in order to permit maintenance personnel to perform an on-board display (e.g., in the fast mode) and review of various parameters that relate to aircraft performance, such as engine pressure ratios, inlet turbine speeds, exhaust gas temperature, and turbine RPMs (col. 13, lines 59-64). However, we agree with appellant that an aircraft modified to include Benn's data display system will not have a location detection means that is responsive to the sensor output

² Answer at 6.

³ Id. at 7.

Appeal No. 95-1866
Application 07/878,500

data during operation in the traveling mode (i.e., in flight) and to the stored data in the storage means during operation in the simulation (i.e., maintenance review) mode, as required by claim 1. That the sensor output data and the stored data must be alternatively applied to the location detecting means is clear from claim 1's recitation of "means for inhibiting said data sensed by the sensor means from being applied to said location detecting means and instead supplying the data stored in said storage means to said location detecting means, when . . . said main body is in said simulation mode" (emphasis added). In an aircraft modified to include Benn's data display system will include two different location detecting means, driving two different display means. The first location detecting means is part of the aircraft's own navigation system (not shown), which will continue to respond directly to the data from the sensor means in order to control the cockpit instruments during the traveling mode (i.e., in flight). The second location detecting means is part of the circuitry in Benn's flight data display system, which will be responsive to the data stored in the flight data recorder (or the copy recorder) to control the cathode ray tube display during the simulation mode (i.e., during on-board, post-flight review).

Appeal No. 95-1866
Application 07/878,500

While we are reversing the rejection of claim 1 for the foregoing reasons, we note that the examiner properly rejected appellant's argument that an aircraft modified to include Benn's flight data display system would not "have the capability of being able to promptly detect the cause of a breakdown in the navigation system, as can be carried out by the present invention" (Brief at 8). As the examiner correctly notes, this argument is unpersuasive because this function is not recited in the claim. See In re Self, 671 F.2d 1344, 1348, 213 USPQ 1, 5 (CCPA 1982) (argument that a feature of the invention provides a function or result not taught by the prior art is immaterial if the function or result is not recited in claim).

For the foregoing reasons, the rejection of claim 1 and of claims 2 and 5-7, which stand or fall therewith, is reversed.

Dependent claims 3 and 4, which were argued separately, stand rejected for obviousness over Benn in view of Ando. Claim 3 specifies that the sensor means of claim 1 comprises a magnetic sensor and wheel sensors. Claim 4 specifies that the sensor means of claim 1 comprises a GPS (Global Positioning Satellite) receiver for sensing an absolute location of the vehicle.

Appeal No. 95-1866
Application 07/878,500

Ando discloses an on-board navigation system for motor vehicles. The system controller 4, which is responsive to signals from a compass direction sensor 1, a distance sensor 2, and a GPS sensor 3, retrieves the surrounding road map information from memory device 10 and causes that information and the current vehicle location to be displayed by display unit 12 (col. 2, line 56 to col. 3, line 12). Ando does not disclose means for recording the sensor data. The examiner's position appears to be that it would have been obvious in view of Benn to add a sensor data recording and playback means to Ando's land vehicle:

It would have been obvious to utilize vehicle location sensors as suggested by Ando in a vehicle stored data playback device, in order that accurate vehicle location could have been displayed using a system as disclosed by the teachings of Benn, the specific sensors used by Ando merely being a routine matter of design choice based on what specific type of vehicle the playback device was to be used in. It is noted that land vehicle[s] would have benefitted [sic] from playback means for the same reasons as a flight vehicle, namely, to study the accuracy of previously recorded data. [Final Office action at 4.]

Appellant responded to this argument by correctly noting that Benn does not suggest using his system to study the accuracy of recorded data; instead, his system simply converts recorded data into engineering values for display in a graphical format or a

Appeal No. 95-1866
Application 07/878,500

cockpit instrument format.⁴ Appellant also argued that "while motor vehicles are subject to maintenance, they are not subject to rigorous maintenance procedures in airline aircraft and the idea of using a recorder corresponding to a flight recorder on a motor vehicle for purposes of maintenance is clearly outside of any routine consideration by [a] person with ordinary skill in the art." In response to this argument, the examiner explained (for the first time) that "the use of recording means is well established in the art, for example, [in] monitoring of stops and engine operation in fleet trucking operations to ensure proper delivery and equipment operation."⁵ Appellant complains,⁶ and we agree, that the examiner should have cited a reference in support of this factual allegation. Compare In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970) (an examiner may "take notice of facts beyond the record which, while not generally notorious, are capable of such instant and unquestionable demonstration as to defy dispute"). Furthermore, we agree with appellant that one skilled in the art would not have been motivated by Benn and Ando to add a sensor data recording and playback device to Ando's land

⁴ Brief at 9.

⁵ Answer at 7.

⁶ Reply Brief at 4-5.

Appeal No. 95-1866
Application 07/878,500

vehicle. Accordingly, we are reversing the rejection of claims 3 and 4 for obviousness based on Benn and Ando.

In summary, the rejection of claims 1, 2 and 5-7 for obviousness over Benn is reversed, as is the rejection of claims 3 and 4 for obviousness over Benn in view of Ando.

REVERSED

| | | |
|-----------------------------|---|-----------------|
| JOHN C. MARTIN |) | |
| Administrative Patent Judge |) | |
| |) | |
| |) | |
| |) | |
| MICHAEL R. FLEMING |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
| |) | INTERFERENCES |
| |) | |
| |) | |
| JAMESON LEE |) | |
| Administrative Patent Judge |) | |

Appeal No. 95-1866
Application 07/878,500

LANE, AITKEN & McCANN
Watergate Office Building, Suite 600
2600 Virginia Avenue, N.W.
Washington, D.C. 20037