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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WARNER OLAN HARRIS

Appeal 2015-000330
Application 12/402,199
Technology Center 3600

Before KEVIN W. CHERRY, CYNTHIA L. MURPHY, and KENNETH G. SCHOPFER, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant[1] appeals under 35 U.S.C. § 134 from the Examiner's rejections of claims 1–4, 7–9, 13, 15–18, 21–23, and 26–40. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] The Appellant identifies the real party in interest as "Clean Emissions Technology, Inc." (Appeal Br. 1.)

STATEMENT OF THE CASE

The Appellant's invention relates to operation of a vehicle "to maximize the reduction in emissions" and "obtaining credit therefrom." (Spec. 1, lines 12–15.)

Illustrative Claim[2]

> 1. A method of operating a vehicle having an electric traction system (ETS) and an internal combustion engine (ICE) and corresponding ETS and ICE operation modes; comprising:
>
> generating vehicle location data using a GPS system physically coupled to the vehicle;
>
> sending from the vehicle the vehicle location data to a remote system operating an emission credit process;
>
> the vehicle receiving from the remote system an indication that emission credits are available for the vehicle as a function of the vehicle location data if the vehicle operates in the ETS operation mode within a specified geographical location;
>
> enabling a system controller in the vehicle to switch between the ICE and ETS operation modes as a function of the vehicle location data, the indication of the available emission credits, and parametric measurements of an operation of the vehicle; and
>
> sending from the vehicle the parametric measurements of the operation of the vehicle to the remote system while the vehicle is operating in the ETS operation mode.

Evidence

Fleming	US 2003/0055665 A1	Mar. 20, 2003
Gault	US 7,062,371 B2	June 13, 2006
Tanase	US 7,130,766 B2	Oct. 31, 2006
Harris	US 2007/0181355 A1	Aug. 9, 2007

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[2] This illustrative claim is quoted from the Claims Appendix ("Claims App.") set forth on pages 17–22 of the Appeal Brief.

Rejections

I. The Examiner rejects claims 1–4, 7–9, 13, 15–18, 21–23, 26, 27, and 29–40 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase. (Final Action 2.)

II. The Examiner rejects claims 28 and 32 under 35 U.S.C. § 103(a) as unpatentable over Gault, Tanase, and Fleming. (Final Action 6.)

ANALYSIS

Claims 1, 15, 26, and 31 are the independent claims on appeal, with the rest of the claims on appeal (i.e., claims 2–4, 7–9, 13, 16–18, 21–23, 27–30, and 32–40) depending therefrom. (Claims App.) The claims on appeal are directed to a method and systems involving a vehicle having "an electric traction system (ETS)," "an internal combustion engine (ICE)," and "corresponding ETS and ICE operation modes." (*Id.*)

Independent Claim 1

Independent claim 1 recites a "controller" that is enabled to "switch between the ICE and ETS operation modes" as a function of "vehicle location data." (Claims App.) The Examiner finds that Gault teaches that a hybrid vehicle can be "switched to electric mode from an engine operating mode" based on "location specific emission parameters" determined from "emission compliance zones." (Final Action 2–3.)

The Appellant argues that, although Gault discloses initiating the modification of vehicle functions, these modifications "are limited to modifications of the operation of the internal combustion engine." (Appeal Br. 9.) We are not persuaded by this argument because Gault teaches that its location-specific-emission information can include "a fuel selection

parameter that modifies which fuel source the mobile vehicle is using." (Gault, col. 7, lines 20–22.) And Gault specifically teaches that fuel types can include "gasoline" and "electricity." (*Id.,* col. 8, lines 12–13.) Hence, Gault teaches selecting an electric fuel source (i.e., an electric mode) over a gasoline fuel source (i.e., an engine mode) based upon a specific location of the vehicle.

The Appellant also argues that the Examiner incorrectly assumes that "a hybrid vehicle is well known to have ICE and ETS operation modes." (Reply Br. 4.) We are not persuaded by this argument because the Examiner finds that, when Gault's hybrid vehicle "switches fuel sources between electricity and gasoline," this "would read upon Appellant's ICE and ETS modes." (Answer 6.) The Appellant does not adequately address why, when Gault's hybrid vehicle is using a gasoline fuel source, movement of the vehicle would not be a direct result of generation of a motive force by an engine; and why, when Gault's hybrid vehicle is using an electric fuel source, movement of the vehicle would not be a direct result of generation of a motive force by an electric motor.

Independent claim 1 further recites that the switch between ICE and ETS operation modes must also be a function of "an indication that emission credits are available for the vehicle." (Claims App.) The Examiner finds that Tanase teaches a system of "ecological driving evaluation" that "provides emission credits to hybrid vehicles that operate in electric mode." (Final Action 3.) And the Examiner determines that it would have been obvious, in view of the teachings of Tanase, for Gault's emission-related information to identify available emission credits. (*See id.*)

The Appellant argues that the prior art does not teach "to switch between ICE and ETS operating modes to obtain points or credits." (Appeal Br. 9.) We are not persuaded by this argument because, as discussed above, Gault teaches switching between engine and electric operating modes based upon emission-related information and Tanase teaches the awarding of emission-related credits. The Appellant does not adequately address why one of ordinary skill in the art, armed with these teachings, would not infer that Gault's emission-related information could comprehend emission-related credits.

Moreover, we agree with the Examiner's implication that the content of Gault's emission-related information does not translate into structural differences or functional distinctions between the claimed method and that disclosed by Gault. (*See* Answer 11.) The Appellant asserts that its system controller "has either software or hardware, or a combination of the two" that is "configured to perform" the actions recited in independent claim 1. (Reply Br. 6.) However, the Appellant does not explain, and we do not see, how or why such software and/or hardware would differ depending upon the content of Gault's emission-related information. Rules regarding the existence, acceptance, availability, and/or awarding of emission credits would depend upon "cooperation of groups of people" and "[o]therwise, said credits are merely stored bits which the logic circuitry accumulates according to its programming." (Answer 17.)

Accordingly, the Appellant does not establish that the Examiner errs in determining that the method recited in independent claim 1 would have been obvious over the combined teachings of Gault and Tanase.

Thus, we sustain the Examiner's rejection of independent claim 1 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Independent Claims 15, 26, and 31

Independent claim 15 recites a "controller" that "switches between the ICE and ETS operation modes" in response to receiving data corresponding to "vehicle location data" and signals that "emission credits are available for the vehicle." (Claims App.) Independent claims 26 and 31 each recites a similar controller. (*Id.*) As indicated above, the Examiner finds that, when Gault's hybrid vehicle "switches fuel sources between electricity and gasoline," this "would read upon Appellant's ICE and ETS modes." (Answer 6.)

The Appellants argue that independent claims 15, 26, and 31 recite additional limitations regarding the ICE and ETS operation modes and that the Examiner does not specifically address these limitations. (*See* Appeal Br. 10–11.) Specifically, independent claims 15, 26, and 31 also recite that, in the ICE operational mode, "movement of the vehicle is a direct result of generation of a motive force by the ICE" and that, in the ETS mode, "movement of the vehicle is a direct result of generation of motive force by the ETS." (Claims App.) We are not persuaded by this argument because, as discussed in our analysis of independent claim 1, the Appellant does not explain why, when Gault's hybrid vehicle is using a gasoline fuel source, movement of the vehicle would not be a direct result of generation of a motive force by an engine and/or why, when Gault's hybrid vehicle is using an electric fuel source, movement of the vehicle would not be a direct result of generation of a motive force by an electric motor.

Independent claim 31 additionally recites "a comparison of the geographical location of the vehicle to a stored data structure indicating coordinates of boundaries for emission non-attainment areas to determine whether the ETS operation mode occurred in non-attainment areas." (Claims App.) The Examiner finds that Gault's "emission compliance zones" are equivalent to the claimed non-attainment areas. (*See* Answer 13.) The Appellant does not persuasively challenge this finding by the Examiner or otherwise address why, in view of this teaching by Gault, the prior art does not show or suggest the comparison recited in independent claim 31. (*See* Appeal Br. 11; *see also* Reply Br. 7–10.)

Accordingly, the Appellant does not establish that the Examiner errs in determining that the systems recited in independent claims 15, 26, and 31 would have been obvious over the combined teachings of Gault and Tanase.

Thus, we sustain the Examiner's rejection of independent claims 15, 26, and 31 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 3, 4, 8, 13, 17, 18, 22, and 27

The Appellant does not argue dependent claims 3, 4, 8, 13, and 22 separately from the independent claims (*see* Appeal Br. 10–15) and so they fall therewith. As for dependent claims 18 and 27, the Appellant's arguments reiterate or refer to the issues discussed above for the independent claims (*see id.* at 11) and so they also fall therewith.

Thus, we sustain the Examiner's rejection of dependent claims 3, 4, 8, 13, 17, 18, 22, and 27 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 2 and 16

Dependent claims 2 and 16 require "optimizing fuel for the ICE and stored electrical potential energy for the ETS." (Claims App.) The Examiner finds that "optimizing fuel and electricity" is an "obvious goal." (Final Action 5.)

The Appellant argues that the Examiner merely asserts that such optimization "would be desirable" and this assertion is "a mere conclusory statement." (Appeal Br. 12.) We are not persuaded by this argument because the Appellant does not argue that this assertion is incorrect and/or otherwise explain why a fuel-optimizing goal would not be on the mind of one of ordinary skill in the art when modifying Gault's system. We further note that Gault teaches "tailor[ing] fuel consumption" according to the location and availability of "refueling" stations or, in other words, optimizing the use of fuel and electrical energy. (Gault, col. 1, lines 35–39; *see also id.* col. 6, lines 12–21.)

Thus, we sustain the Examiner's rejection of dependent claims 2 and 16 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 7 and 21

Claims 7 and 21 each recites a limitation involving "receiving a signal from a manually operated switch to switch the vehicle to the ETS operation mode." (Claims App.) The Examiner finds that such a manually operated switch is "known art" and cites to a statement in the Specification discussing how a driver might not be sufficiently motivated to manually switch to an electric operating mode. (Final Action 5.)

The Appellant argues that the cited statement is "background information" and "not necessarily prior art." (Appeal Br. 12.) We are not persuaded by this argument because the Appellant does not contend that manual switches are not conventional mechanisms for vehicle control, or otherwise persuasively challenge the Examiner's finding that such manual switches are known in the art. (*See Id.*) We note that Gault implicates that it is known to adjust fuel-emission-related equipment non-automatically (i.e., manually) to support air-quality-improvement efforts, via its discussion of how adjusting "fuel emissions automatically" would "further support" these efforts. (Gault, col. 1, lines 28–29.)

Thus, we sustain the Examiner's rejection of dependent claims 7 and 21 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 9 and 23

Dependent claims 9 and 23 recite that emission credits are "only awarded" when "the ETS operation mode preempts an otherwise legitimate ICE operation mode." (Claims App.) The Examiner finds that Tanase teaches awarding emission credits to "provide positive incentive to operate vehicles in [a] cleaner operating mode." (Final Action 3.)

The Appellant argues that "the Examiner has not specifically addressed these claim limitations" and they are not "taught or suggested by the cited prior art." (Reply Br. 8.) We are not persuaded by this argument because one of ordinary skill in the art would infer that providing positive incentive to operate vehicles in electric mode would not be necessary if legitimate ICE operation was not an option. Moreover, as discussed above,

rules regarding when (or when not) to award emission credits would depend upon "cooperation of groups of people." (Answer 11).

Thus, we sustain the Examiner's rejection of dependent claims 9 and 23 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 13 and 30

Dependent claims 13 and 30 recite that emission credits are awarded only if "the vehicle remains stationary for no more than a predetermined time interval." (Claims App.) The Examiner finds that Tanase teaches this credit-awarding scheme. (*See* Final Action 6.)

The Appellant argues that Examiner "makes a mere conclusory statement" and does not sufficiently explain why Tanase discloses the claim limitation. (Appeal Br. 13.) We are not persuaded by this argument because the Examiner discusses Tanase's idling stop detector (*see* Final Action 5) and this detector measures "stationary" time intervals, compares them to predetermined time periods, and transmits idling-related information to an ecological driving evaluation unit (*see* Tanase, col. 7, lines 50–62). And again, as discussed above, rules regarding when (or when not) to award emission credits would depend upon "cooperation of groups of people" (Answer 11).

Thus, we sustain the Examiner's rejection of dependent claims 13 and 30 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 28 and 32

Dependent claims 28 and 32 recite that emission credits are awarded "only for particular non-attainment areas," that different "types" of emission

credits are awarded for different attainment areas, and that different "types" of credits are awarded for different ETS uses. (Claims App.) The Examiner determines that "given the knowledge of emission credits and non-attainment areas" the recited emission-credit-awarding scenario would have been obvious. (Answer 17.)

The Appellant argues that the Examiner "has not specifically shown where these limitations are taught or suggested by the combination of the prior art references." (Reply Br. 9.) We are not persuaded by this argument because Gault teaches that some emission compliance zones are "stricter" than others (Gault, col. 6, lines 42–45), Fleming teaches that there are different types of non-attainment areas (Fleming ¶ 40), and Tanase teaches that different operating states (e.g., idling and non-idling) factor into energy-saving evaluations (Tanase, col. 1, lines 43–46). The Appellant does not adequately address why one of ordinary skill in the art would not have recognized that the claimed combination of these familiar concepts could be employed to formulate rules regarding when, where, and how emission credits are awarded. Moreover, as discussed above, such rules would depend upon "cooperation of groups of people." (Answer 11.)

Thus, we sustain the Examiner's rejection of dependent claims 28 and 32 under 35 U.S.C. § 103(a) as unpatentable over Gault, Tanase, and Fleming (Rejection II).

Dependent Claim 29

Dependent claim 29 recites "logic circuitry" that is "configured to analyze the parametric measurements and the vehicle location data to determine an actual operating status of the vehicle and its actual location." (Claims App.) The Examiner finds that "the presence of said logic circuitry

is indicated by the teachings of Gault and Tanase, which require knowledge of a vehicle's location and operating parameters." (Final Action 8.)

The Appellant argues that these are "unsupported subjective statements." (Appeal Br. 12.) However, Gault teaches that a "current emission zone" is based on the "vehicle location" (Gault, col. 6, lines 35–36) and Tanase teaches an energy-saving evaluation should be based on "the detected operating state of the machine" (Tanase, col. 2, lines 14–15). The Appellant does not adequately address why one of ordinary skill in the art would not have recognized that these teachings indicate the presence of corresponding logic circuitry.

Thus, we sustain the Examiner's rejection of dependent claim 29 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 33, 35, 37, and 39

Dependent claims 33, 35, 37, and 39 recite that "during the ETS operation mode, the movement of the vehicle is solely the result of generation of the motive force by the ETS, and the ICE is shut off." (Claims App.) As discussed above, the Examiner finds that, when Gault's hybrid vehicle "switches fuel sources between electricity and gasoline," this "would read upon Appellant's ICE and ETS modes." (Answer 6.)

The Appellant argues that Gault does not disclose an operation mode wherein the vehicle is operating "solely under the power" of electric components and "the ICE is shut off." (Appeal Br. 14.) We are not persuaded by this argument because Gault discloses "a fuel selection parameter that modifies which fuel source" the vehicle is using. (*See* Gault, col. 7, lines 20–22.) When gasoline is not the selected fuel source (i.e.,

electricity is selected), "it follows that the ICE can be not chosen as the power source" and is "thus shut off." (Answer 16.)

Thus, we sustain the Examiner's rejection of dependent claims 33, 35, 37, and 39 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

Dependent Claims 34, 36, 38, and 40

Dependent claims 34, 36, 38, and 40 recite that "the electric motor is coupled to the drive train via a power takeoff port of a transmission in the drive train." (Claims App.) The Examiner finds that a power takeoff port "is merely the output of a transmission in the drive train that imparts motion downstream" and "any connection by the electric motor to the drive train is nominally a power takeoff port." (Answer 16.)

The Appellant argues a power takeoff port is "not equivalent to any connection of an electric motor to the drive train in a vehicle." (Reply Br. 9.) We are persuaded by this argument because the record reflects that a power takeoff is "a specific type of transfer device" for "accessing a specific gear within the transmission." (*Id.*, *see also* Harris, ¶¶ 9–12.) The Examiner does not sufficiently show that one of ordinary skill in the art would glean, from the teachings of Gault and Tanase, that the electric motor of a hybrid vehicle could be coupled to a drive train via a port associated with this specific type of transfer device.

Thus, we do not sustain the Examiner's rejection of dependent claims 34, 36, 38, and 40 under 35 U.S.C. § 103(a) as unpatentable over Gault and Tanase (Rejection I).

DECISION

We AFFIRM the Examiner's rejections of claims 1–4, 7–9, 13, 15–18, 21–23, and 26–40.

We REVERSE the Examiner's rejection of claims 34, 36, 38, and 40.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART