

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CUB ELECPARTS INC.

Petitioner

v.

ORANGE ELECTRONIC CO., LTD.

Patent Owner

Patent No. 8,031,064 C3

IPR2024-00744

REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE

U.S. PATENT NO. 8,031,064 C3

In its Preliminary Response, the Patent Owner alleges that the Tang/Lemense and Matsui references are cumulative to the teachings of Toyofuku, Nantz, and Nihei and that, therefore, the IPR should be denied. In attempting to show Petitioner's references are cumulative to previously-considered references, the Patent Owner mischaracterizes the teachings of Petitioner's cited references. This Reply is directed to these mischaracterizations.

As stated in the Petition, the Tang/Lemense system includes a universal, blank programmable after-market pressure sensor plus a setting tool for copying an old tire pressure sensor ID and transmitting it to the universal sensor memory; this is followed by checking the newly-programmed ID through re-transmission of the newly-programmed ID from the new pressure sensor back to the setting tool. The Tang pressure sensor and Lemense setting tool are two components of the same system as stated in the Lemense reference itself (and confirmed in the Tang declaration). Tang is a new reference not previously considered; Lemense is being used for teachings not previously discussed or used in any previous proceeding. As such, the Tang/Lemense system is not cumulative to previously-considered references.

In its Preliminary Reply, the Patent Owner characterizes Tang's universal sensor as including plural manufacturer's codes, thus allegedly being cumulative to Nantz (pp. 18, 31) rather than being a blank sensor programmed by an external signal.

This is incorrect. The “plurality of manufacturers’ codes” cited by Patent Owner is an entirely separate embodiment of Tang not relied upon by Petitioner. Instead, in the embodiment of Tang relied upon, a blank detector is provided and is programmed by a program signal: “Alternatively, rather than storing a plurality of manufacturers’ codes, controller (32) may be used to store a particular manufacturer’s code received via a program signal (36)” (emphasis added, 4:66-5:1). That code is programmed into the detector 16 from a remote transmitter 38 (transmitter 38 sends program signal 36 to detector 16 col. 5, line 66-col. 5, line 14).

Tang: In either embodiment, rather than being specially configured to operate in a particular TPM system, tire monitor (16) is universal. That is, tire monitor (16) has the ability to transmit wireless signal (18) according to any signal format, and can therefore be programmed to operate in any TPM system. (emphasis added, 5:15-19)

Further, the Patent Owner attempts to confuse the detector from which the ID is copied and the detector into which the ID is written in order to discredit Tang/Lemense (pp. 47-49). The Orange patent claim requires the detector from which the ID is copied to have a single ID: “wherein the old tire pressure detector stores only the old identification” (claim 26). In the Tang/Lemense system, the Tang detector is the new detector into which the old ID is written. That is, Tang is “the identification rewriteable tire pressure detector” not the “old detector.” Clearly, the universal blank Tang sensor is programmed by external programming signal 36; the Lemense setting tool provides the external program signal that contains the copied ID from the old detector to the Tang detector. This is identical to the claimed system

and not cumulative to Nantz, Nihei, or Toyofuku. Thus, the issue of codes in the Tang detector is entirely irrelevant as long as the universal Tang detector is programmed with the old detector ID from the Lemense setting tool.

The Patent Owner states that the Tang/Lemense system does not show an old tire pressure sensor/detector storing “only the old identification code.” This statement is incorrect. Lemense states that the ID code (singular) of the broken sensor is programmed into the new sensor either by RF or by reading the code (singular) from the printed label on the sensor itself 3:56-67.

It is noted that the Orange patent specification has no description of a detector that “stores only the old identification.” Instead, its specification merely describes an old detector that has an ID. In step 62 of FIG. 3, the Orange cloning process requires “reading an old identification from an old tire pressure detector;” this is the same level of detail as Lemense regarding its old tire pressure detector- that is, the old detector has an ID and that ID is copied by the setting tool.¹

The Patent Owner asserts that the Tang pressure sensor/detector does not judge the consistency of the programmed/copied ID. However, Patent Owner’s pressure sensor/detector also does not judge consistency; this function is performed

¹ It is noted that the “only the old identification code” limitation was added in the final claim amendments immediately prior to the Notice of Intent to Issue Reexamination Certificate in Reexamination 3. It is clearly new matter entirely unsupported by the original specification, added only to overcome the Nantz reference and secure allowance.

in both systems by the setting tool. In the Tang/Lemense system, Lemense is the setting tool that supplies the program signal by copying the old sensor/detector ID and thus “judges...consistency” following the programming of the new sensor/detector with this old ID.

The Patent Owner’s Preliminary Response then goes on to incorrectly allege that the Lemense setting tool does not “judge...consistency.” The Preliminary Response states, “Notably, Lemense does not compare or otherwise check consistency of any sensor’s ID, let alone between an old sensor and its replacement” (p. 22) insinuating that only steps 50-51 outlined in blue in their annotated diagram are performed for sensor replacement. The Patent Owner’s allegation is incorrect. In contrast to the Patent Owner’s allegation, Lemense explicitly teaches checking sensors that have been newly-programmed with the old sensor/detector ID code. Lemense states:

“It may be desirable to retest after mounting to ensure that each [new sensor] is still functioning using the same test procedure shown in steps 40-43” 4:10-13.

These involve interrogation of the new sensor by the setting tool in step 41 where the sensor sends a data signal and ID code back to the setting tool in response and sensor re-interrogation in step 43. The Tang declaration further elaborates how this “judging consistency” aspect of the Tang/Lemense system is applied in actual repair shop practice.

To further mischaracterize Lemense, the Patent Owner quotes “...there is no need to reconfigure the correlation of ID codes with wheel locations stored in the control unit...” (Lemense 4:7-10) juxtaposing this quote with a summary of Lemense’s sensor ID copying process, implying that Lemense does not “judge...consistency.” However, the cited Lemense “control unit” is the automobile control module 20 since setting tool 24 has no “control unit.” Clearly the car control module does not need to be informed of any “new” sensor/detector ID since this ID is identical to the old sensor/detector ID which has just been directly copied by the Lemense setting tool 24 and programmed into the universal sensor/detector of Tang.

Finally, regarding the new Matsui reference, the Patent Owner states that its teaching is “no different than that of the Nihei reference cited in the Autel IPR” (p. 25) and that “...Matsui and Nihei do not even include the new identification newly recorded in its sensor” (p. 26). This statement is incorrect as it concerns Matsui.

Matsui demonstrates that when a setting tool programs an ID code via a wireless signal into a tire pressure sensor/detector, this newly-programmed code is verified by being transmitted back from the tire pressure sensor to the setting tool: “Next, in step 80, the generated transmitter identifier TID is transmitted and set to the transmitter 4. Then, in the determination step 82, it is determined whether or not a response has been returned from the transmitter” (Matsui, paragraph [0034]). Note that the transmitter 4 only generates a single signal type as according to Matsui. That

signal includes the transmitter ID. Matsui describes its transmitter signals in paragraph [0017]:

The microprocessor 13 uses the AD-converted air pressure data and temperature data and the identification information (TID) and data signal (data such as word length) of the transmitter 4 called from the memory 14 to generate a transmission signal to be transmitted ...

No other signals are described as signals that can be sent by the simple tire pressure sensor/detector 4 of Matsui. Therefore, the “response” signal in Matsui clearly has its transmitter ID as part of the signal that transmitter 4 generates.

Matsui states that if no signal is returned by transmitter 4 following programming, a failure message is displayed. If a user desires to continue registration of the new ID, another ID is sent again for programming to the same sensor. Only when the new ID is determined to be properly programmed in the sensor is the new ID sent to the car controller. Thus, Matsui teaches the verification of a wirelessly programmed ID in a sensor by having that sensor respond and, if the response is improper, the sensor is reprogrammed.

The Patent Owner cites Nihei paragraphs [0045] and [0066] as allegedly being cumulative to the above teaching of Matsui. However, in contrast to Matsui, Nihei merely returns a confirmation signal, not the newly programmed ID as in Matsui. Nihei states: “Upon completion...a signal of information to the effect that the new ID has been stored...is generated and returned from the transmitter circuit 36 to the setting device.” Clearly the Matsui signal, including its ID, that is returned to the

setting tool is not “cumulative” to the confirmation signal of Nihei which does not re-transmit a programmed code.

Regarding Toyofuku, the programming signal by the setting tool is via a wired connection; consequently, the issue of wireless programming signal corruption with its associated need to be verified is entirely absent. This contrasts with the wireless programming used in Tang/Lemense and Matsui; this wired vs. wireless programming is itself one of the many ways that the new references are not “cumulative” as alleged by the Patent Owner.

In summary, the present references are not cumulative to the previously-cited references. Not a single reference of any of the prior cited references provides a universal blank after-market sensor for programming with a broken sensor ID by a setting tool as explicitly taught by the Tang/Lemense system with its setting tool judging the consistency of a returned signal bearing the new ID. Similarly, Matsui is not cumulative to Nihei or Toyofuku as Matsui programs a sensor with a new ID which is re-transmitted to the programming tool as part of a return signal. Reprogramming is performed when the setting process fails.

Date: 10 September 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on the date below, this copy of Petitioner's Reply was served on the Patent Owner at the following e-mail addresses:

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