United States District Court,
E.D. Texas, Marshall Division.

George E. FULHORST, d/b/a Saf-T-Net, USA,
Plaintiffs.
v.
TOYOTA MOTOR CORPORATION,
Defendants.

C.A. No. 2:00cv71-DF/HWN

May 21, 2001.

Danny Lloyd Williams, Williams Morgan & Amerson, Gregory M. Luck, Godwin Gruber, Houston, TX, for Plaintiffs.

David J. Beck, Beck Redden & Secrest, Houston, TX, Hubert Oxford, III, Benckenstein & Oxford, Beaumont, TX, John W. O'Meara, Kirk M. Hudson, Stephen T. Owen, James A. Oliff, Mark L. Whitaker, William J. Utermohlen, Oliff & Berridge, Alexandria, VA, for Defendants.

REPORT AND RECOMMENDATION OF SPECIAL MASTER ON TOYOTA'S AND FULHORST'S OBJECTIONS TO THE SPECIAL MASTERS REPORT AND RECOMMENDATIONS OF INTERPRETATION OF CLAIM 3 AND 5 OF U.S. PATENT 4,523,178

GUY E. MATTHEWS, Special Master.

The Report and Recommendations of Special Master of Interpretation of Claims 3 and 5 of U.S. Patent 4,523,178, dated April 10, 2001 (the "Report") was filed April 11, 2001. Defendant Toyota Motor Corporation ("Toyota") filed objections to the Report on May _____, 2001, and Plaintiff Fulhorst filed his response to Toyota's objections and his objections to the Report on May ____, 2001. At the hearing on Defendant Toyota's Motion for Summary Judgment of Non-Infringement on May 8, 2001, additional argument was heard on the objections and response.

The Special Master has considered the Objections and Response and the related arguments and recommends as follows:

I. TOYOTA'S OBJECTIONS

A. "Indicating an Alarm Condition" in Clause (c) of Claim 3.

The words at issue are from claim 3, clause (c), and are underlined:

"(c) vehicle means activated in response to said second means being activated for *indicating an alarm condition*".

1. ***Special Master's Construction Recommended in the Report***

In the Special Master's Report at Part VI ("*Interpretation of Elements of Claim 3*"), B ("*Clauses Subject to s. 112, para. 6; First Step: Determination of the Function*"), 2.("*Indicating an Alarm Condition*"), page 21, the Special Master recommended a construction of the phrase "indicating an alarm condition" to be the function of "signaling in a manner out of the ordinary calculated to draw attention so as to warn or alert about a condition of personal safety of another party".

The expression "alarm condition" is given no special definition in the '178 Patent. The "signaling in a manner out of the ordinary calculated to draw attention so as to warn or alert" in the Special Master's recommended construction was based on the ordinary definition of alarm as stated in WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY, Merriam Webster, Inc. (1985), which defines "alarm" to mean "2. a signal (as a loud noise or a flashing light) that warns or alerts." The "condition of personal safety of another party" portion of the recommended construction was rooted in the observation that a benefit of the invention as stated in the '178 Patent (col. 1, lines 11-13) is "to provide an environment for the safety of the individual" as compared with safety of property (a vehicle). Manifestly, the "another party" in the recommended construction is a party other than the one causing the alarm signal, and is a person responding to the indication of an alarm condition who might come to the aid of the party actuating the alarm. A signal that is calculated to alert or warn another person (who may come to the aid of a person actuating the alarm) inherently has to be "out of the ordinary" or it will not be calculated to warn or alert. A device does not inherently alert another that a condition of distress or emergency is occurring if the device is operated in alarm mode just as it is operated in normal use when no situation of distress or emergency is happening. Accordingly the Special Master's recommended construction employs the terms "out of the ordinary" and "calculated" in concert with "condition of personal safety of another party" to give definition to the word "condition" in the context of the ordinary meaning of "alarm" in the functional limitation of "indicating an alarm *condition*".

2. ***Toyota's Objection***

Toyota has objected to the Special Master's recommended construction of "indicating an alarm condition" to the extent that the recommended construction "may be understood to exclude the only disclosed embodiment for operating the vehicle horn or headlamps to indicate an alarm condition". Toyota states that this embodiment is operating a vehicle horn continuously or operating the vehicle headlamps continuously. As support for this assertion, Toyota says that "Plaintiff has never disputed, and the Special Master has not questioned" that is how the embodiments described in the '178 Patent operate". On the assumption that indeed is how the embodiments must operate, Toyota argues that to construe the "indicating an alarm condition" so as to exclude the only embodiments disclosed in the specification would give rise to invalidity of claim 3 under 35 U.S.C. s. 112, para. 1 (written description) and para. 2 (definiteness). For a second basis of objection, Toyota says the Special Master's recommended construction is flawed because it is inconsistent with the prosecution history relating to this language. Toyota correctly pointed out that the Special Master's Report erred in not saying that the originally filed claim 1 used the word "producing" instead of "indicating" in clause (c), and that, without explanation, Fulhorst changed "producing" to "indicating" when clauses (a), (b) and (c) were imported into claim 11 and claim 11 was changed to independent form. In the rejection leading to Fulhorst's amendment of claim 11, the Examiner without explanation had stated that "condition" in clause (c) of claim 1 should be changed to "signal". Toyota argued:

"Plaintiff could have easily described and claimed operating the vehicle devices to produce an alarm

(signal), but did not do so. Further, Plaintiff's actions in voluntarily changing 'producing/produce' to 'indicating/indicate,' but refusing to change 'condition' to 'signal' can reasonably only be only structure in the ignition circuit which is operative during both the 'start-up and shut-down' cycle is the ignition switch itself objectively construed as signifying that the amended claim phrase 'indicating an alarm condition' was intended to have a broader meaning than merely producing an alarm signal. This broader reading of the "indicating an alarm condition" language is fully consistent, moreover, with the only disclosed embodiment for activating/operating either the vehicle horn or headlamps to produce/indicate an alarm condition in response to the detection of a coded signal-the circuitry discussed above that operates the vehicle means in a continuous manner."

3. ***Fulhorst's Response***

Fulhorst agrees with the Special Master's recommended construction of the meaning of the function limitation of clause 3(c) of the '178 Patent.

4. ***Special Master's Recommendation***

With respect to Toyota's first basis for objecting to the Special Master's recommended construction of the meaning of "indicating an alarm condition", the specification of the '178 Patent states (col. 3, lines 30-34) that the embodiments show the operation of horns but that the concept is applicable to illumination of headlamps. Specifically, with respect to the embodiment depicted in Fig. 3, the '178 Patent at col. 4, lines 45-48 says no more about operation of the vehicle horn or headlamps than: "[w]hen the contacts 96 close, the associated vehicle device 25 is operated, such as the operation of a horn or the illumination of vehicle headlamps, to produce an alarm condition." With respect to the other embodiment (Fig.6), the specification, at col. 6, lines 23-27, adds no more information about operation of vehicle horn or headlamps: "[w]hen the timer 175 is activated by the application of a pulse from the decoder 170, the relay 95 is energized to close contacts 96. This action operates the vehicles device 25, such as a horn, to produce an alarm condition." Since the words of the specification say nothing about operating the horn or headlamps continuously or any words to that effect, Toyota presumably bases its position that continuous operation is required when "indicating an alarm condition" on the presence of the unlabeled diagrammatic box 25 in the electrical schematic diagrams in Figs. 3 and 6 and on the diagrammatic box 25 labeled "alarm" in Fig. 4 of the '178 Patent (Fig. 4 depends on Fig. 3 or Fig. 6 as respects specifics of circuitry for powering box 25 labeled "alarm"). As respects box 25, the electrical schematics of Figs. 3 and 6 merely show a series circuit in which a switch 96 connects a battery to box 25. The recitations quoted above for the embodiments of Figs. 3 and 6 say that when vehicle device 25 is operated, it is operated "to produce an alarm condition." The fact of a diagrammatic box in a switch controlled series circuit does not require that the horn or headlamps be operated continuously. The informing language is "operated ... to produce an alarm condition." Since vehicle horns are not sounded continuously in normal use, the vehicle horn may produce or indicate an alarm condition if operated continuously. Since vehicle headlamps are illuminated continuously in normal use, the headlamps would not produce or indicate an alarm condition if operated continuously. Thus it is not believed that the depiction merely of a switch throwing power to a box that signifies a horn but which could be headlamps limits the patent disclosure, to one of ordinary skill in the art at the time the invention was made, to continuous operation of the horn or headlamps.

As respects the objection based on prosecution history, the argument that "Plaintiff could have easily described and claimed operating the vehicle devices to produce an alarm (signal)" is simply a strawman set up to be knocked down and is unpersuasive. It is irrelevant what Plaintiff could have done. What Plaintiff could have done is not prosecution history. If the argument is addressed to Fulhorst's refusal to amend

"condition" to "signal", the argument that this gives a broader claim meaning consistent with the patent disclosure is similarly unpersuasive regarding the point that the horn or headlamps must be operated continuously.

Because an "alarm condition" admits of continuously sounding a horn and not continuously illuminating headlamps of an vehicle, the recommended construction of "indicating an alarm condition" set forth in the Report of the Special Master does not exclude continuously sounding a horn.

Accordingly, to the extent that Toyota's objection would require a construction of clause 3(c) requiring headlamps to be continuously operated to signify an alarm condition, the Special Master recommends that the objection be *overruled*.

B. "Reset Means" in Clause (d) of Claim 3

The words at issue are from claim 3, clause (d), and are underlined:

"said timer including *reset means* to restore said timer to its initial deactivated state".

1. *Special Master's Construction Recommended in the Report*

At Part VI ("*Interpretation of Elements of Claim 3*"), C ("*Clauses Subject to* s. 112, *para. 6*"), 5 ("*Means in the Ignition Circuit*"), pages 43-45, of the Report, the Special Master concludes that the contacts 120 may be part of the "reset means" of the timer as recited in claim 4 or may be part of the "means in the ignition circuit" recited in claim 3, for the reasons set forth in the Report.

2. *Toyota's Objection*

Toyota has objected to the Special Master's recommended construction regarding contacts 120 "to the extent that it permits a reading of the claim 3 reset means as not including contacts 120", arguing that the specification clearly links contacts 120 to the function of the reset means to restore said timer to its initial deactivated position. Toyota also argues that this linking or association of means and function cannot be overridden by the doctrine of claim differentiation.

3. *Fulhorst's Response*

Fulhorst agreed that the "reset means" of claim 3 need not necessarily include contacts 120. However, Fulhorst erroneously says that "the Special Master recognized that neither the 'ignition circuit means' nor the 'reset means' requires contacts 120 to perform their respective functions." What the Special Master said was "It is concluded that the contacts optionally may be either in the ignition circuit or in the reset circuit, *but must be in one or the other of them*." Report, page 44 (emphasis added).

4. *Special Master's Recommendation*

As respects Toyota's linking or association argument, it is true that Figs 3 and 6 show contacts 120 in a ground circuit to a reset terminal of timer 90, but it is equally true that Fig. 4 shows contacts 120 operatively associated with starter coil 104 in ignition circuit 103. Moreover, the words of the specification in the "Start-up and Shut-down Cycle Paragraph" referred to in the Report at page 43 use contacts 120 in the possessive form for starter coil 104, which is itself in the ignition circuit, thereby implying that contacts 120 are also in

the ignition circuit ("At the time the starter coil 104 completes its start-up and shut-down cycle, *its* contacts 120 (FIG.4) close and open", emphasis added). More to the point, however, at column 4, lines 52-54, the specification clearly associates the action of contacts 120 with the means in the ignition system, saying (emphasis added):

"The timer 90 is also reset to its initial state *by stepping the auto ignition system through its start-up and shut-down sequence ...*".

As described in the Special Master's recommendation on Toyota's Objection C set forth below, the phrase "operative during the start-up and shut-down cycle of said ignition circuit" modifies and limits "means in the ignition circuit". Thus there is ample basis in the specification demonstrating that contacts 120 are linked or associated not only to the reset means (clause 3(d)), but as much if not more are linked or associated with the "means in said ignition circuit" (clause 3(e)) that are operative during the startup and shut-down cycle of the ignition circuit for operating the reset means.

As respects Toyota's objecting to claim differentiation as a support for the Special Master's recommendation in the Report, the doctrine of claim differentiation does not override the association of contacts 120 with the "reset means" because the specification very clearly associates the contacts 120 with the "means in said ignition circuit" as much or more than with the "reset means". Accordingly the doctrine of claim differentiation is consistent with the linking of function and structure in the specification.

The Special Master recommends that this objection be *overruled*.

C. "Means in the Ignition Circuit" in Clause (e) of Claim 3.

The words at issue are from claim 3, clause (e), and are underlined:

(e) "means in said ignition circuit *operative during the start-up and shut-down cycle of said ignition circuit* for operating said reset means to restore said timer to its initial deactivated state"

1. *Special Master's Construction Recommended in the Report*

At part V ("*Claim Analysis*"), beginning on page 11 of the Report, the Special Master determined that clause 3(e) presumably was subject to 35 U.S.C. s. 112, para. 6 FN1 (hereinafter, " s. 112, para. 6"), because it recites "means in said ignition circuit" having the function of "operating said reset means to restore said timer to its initial deactivated state". At pages 12-13, for the purpose only of examining whether clause (e) contained sufficient structure for performing the recited function to take the means element outside the bounds of s. 112, para. 6, the phrase "operative during the start-up and shut-down cycle of said ignition circuit" was said to "not describe structure for carrying out the function but instead describes the circumstances under which the means in the ignition circuit performs the function."

FN1. "An element in a claim for combination may be expressed as a means or step for performing specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

At Part VI ("*Interpretation of Elements of Claim 3*"), B ("*Clauses Subject to* s. 112*, para. 6; First Step;*

Determination of the Function"), 5 ("*Operating Said Reset Means to Restore Said Timer to Its Initial Deactivated State*"), page 23, it was noted that the word "operating" is given no special definition in the written description of the '178 Patent and is therefore accorded its ordinary meaning (to carry out a practical work). At Part VI, C ("*Clauses Subject to* s. 112*, para. 6; Second Step; Interpretation of 'Means*' "), 5 (" *'Means in Said Ignition Circuit*' "), the Special Master observed that "the means 'in the ignition circuit' which function by 'operating said reset means to restore the timer to its initial deactivated position' must be 'operative during the start-up and shut-down cycle of said ignition circuit' ".

1. Toyota's Objection

Toyota objected to the Report to the extent that the construed function in clause 3(e) ("operating said reset means to restore the timer to its initial deactivated position") does not include what Toyota contends is a functional limitation, namely, that such means be "operative during the start-up and shut-down-cycle of the ignition circuit ..." Toyota directed the Special Master's attention to *Lockwood Martin Corp. v. Space Systems/Loral, Inc.,* 2001 U.S.App. 7894, decided by the Court of Federal Appeals on April 30, 2001. In that case the pertinent claim clause recited (emphasis added)

"b. means for rotating said wheel *in accordance with a predetermined rate schedule which varies sinusoidally over the orbit at the orbital frequency of the satellite* whereby the attitude of said satellite is offset in response to the effect of said rotating wheel by the direction of the pitch axis being changed with respect to said momentum vector, the direction of said pitch axis with respect to the inclined orbit normal varying sinusoidally at the orbital frequency to null said roll pointing error due to said orbit inclination, the momentum vector being maintained perpendicular to the plane of the geo-synchronous orbit to null said yaw pointing error due to said orbit inclination,"

The District Court determined that the functional limitation for the means clause was "rotating said wheel". The Court of Appeals for the Federal Circuit held that the District Court erred by "reading out" the additional language emphasized in the foregoing quotation that followed "rotating said wheel", thereby improperly broadening the scope of the claimed function:

"The function of limitation [b] is properly identified as "rotating said wheel in accordance with a predetermined rate schedule which varies sinusoidally over the orbit at the orbital frequency of the satellite." The function is properly identified as the language after the "means for" clause and before the "whereby" clause, because a whereby clause that merely states the result of the limitations in the claim adds nothing to the substance of the claim. Texas Instruments Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1172, 26 USPQ2d 1018, 1023-24 (Fed.Cir.1993)."

The limitations that had been "read out" of "rotating said wheel" described the claimed function by further defining the manner in which the rotation was controlled (e.g., "varied sinusoidally" described a sine shaped rate or speed at which the wheel had to pass through zero, and "predetermined rate schedule" described a rate schedule produced by a rate generator that was mathematically dependent on an orbital period and angle of orbital inclination).

At the Hearing, Toyota contended (page 9-10 of the transcript):

The Lockheed Martin situation is similar to the situation with the 178 patent. The district court had construed one means limitation function to be rotating said wheel. The Federal Circuit said no, the proper

function is rotating the wheel in accordance with a predetermined rate schedule which various, et cetera, et cetera, saying that all of the limitations on the function following the means limitation other than language in the whereby clause should be considered part of the claimed function.

We are not dealing with a whereby clause in Claim 3 of the 178 patent. And the operative during the start-up and shutdown cycle similarly further defines the function performed by the ignition circuit means in saying when the reset means is operated to be restored-to restore the timer to its initial deactivated state.

And also, (by Mr. Hudson, at page 38 of the transcript):

The operative during the start-up and shutdown cycle is no more or less descriptive of the structure than the operating the reset means to restore the timer to its initial deactivated state is descriptive of the structure. Its saying what's being done and when it's being done. It's not describing any structure for causing it to be done when it's done.

MR. MATTHEWS: Are you of the opinion that it's a condition that must exist for the function to operate?

MR. HUDSON: Yes.

MR. MATTHEWS: It's a functional term.

MR. HUDSON: It's a functional term, yes.

2. Fulhorst's Response

Fulhorst in its Response contended that the phrase "operative during the start-up and shut-down cycle ..." does not describe the function of the ignition circuit means, but instead, describes circumstances under which the means performs its function and should be construed either as part of the means or-in accordance with the decision of the Federal Circuit in O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576 (Fed.Cir.1997)-not be construed under s. 112, para. 6. In *Tekmar,* the apparatus claim language was (italics added to emphasize phrase at issue):

17. An apparatus for removing water vapor from an analyte slug passing between a sparge vessel, trap and analytical instrument, comprising:

(a) first means for passing the analyte slug *through a passage heated to a first temperature higher than ambient,* as the analyte slug passes from the sparge vessel to the trap; and

(b) second means for passing the analyte slug *through the passage that is air cooled to a second temperature below said first temperature but not below ambient,* as the analyte slug passes from the trap to the analytical instrument.

The District Court had construed "a passage heated ..." and "the passage that is air cooled ..." as subject to s. 112, para. 6, and appellee on appeal argued in support of the District Courts construction, for the reason that the passage recited in the claim was required for passing and therefore was part of the "means for passing". The Federal Circuit held this construction was erroneous, saying:

"Although the passage may act upon the slug by channeling it while it is being passed, it is not the means that causes the passing. Rather, it is the place where the function occurs, not the structure that accomplishes it. Thus although claim 17 is a means-plus-function claim subject to section 112, para. 6, it is not so in respect of the word 'passage'." Id at 1580

Respecting *Tekmar,* at the Hearing, Toyota stated (pages 9-10 of the transcript):

The Techmar case does not suggest that you ignore any limitation in construing function; and, in fact, Techmar never reached the issue because the Techmar court concluded that the limitation written in a step plus function did not fall under 1(12)(6).

However, Toyota is incorrect that the court never reached the issue, for the Federal Circuit in *Tekmar* plainly decided that "passage" was not part of the means-plus-function limitation in claim 17.

At the Hearing, Fulhorst was questioned by the Special Master:

MR. MATTHEWS: All right. I have another question or two. We are back on the supplemental declaration of Dr. Rhyne, and back at Page 13, Element 3E.

In your opinion, is the phrase operative during the start-up and shutdown cycle of said ignition circuit functional? In other words, is it part of the function? You have means of said ignition circuit operative during the start-up and shutdown cycle of said ignition circuit for operating said reset means to restore said timer to its initial deactivated state.

In your opinion, is there any part of what I've read that's not functional?

MR. WILLIAMS: Means in the ignition circuit is not functional. Operative during the start-up and shutdown cycle of said ignition circuit is not functional. The function of the means in the ignition circuit is for operating the reset means. The operative during the start-up or shutdown cycle of said ignition circuit, if anything, really is just descriptive of the structure, but not the function that's being performed by that structure.

MR. MATTHEWS: Is it your opinion that that's a condition that exists when the function operates for operating said reset means?

MR. WILLIAMS: A condition that exists-

MR. MATTHEWS: In other words operative, in other words during start-up and shutdown.

MR. WILLIAMS: I believe our position is that that phrase is descriptive of the structure; that is, the structure operates during the start-up and shutdown cycle of the ignition circuit.

The function-if you what are asking me is are the two-"coterminous" is not perhaps the exact word I'm looking for here. "Synonymous" is not exactly the same word either. But the notion that one must perfectly overlay the other, I think the answer is no.

MR. MATTHEWS: I'm not asking that.

MR. WILLIAMS: Okay. The operative during the start-up and shutdown cycle of the ignition circuit is descriptive of the structure; that is, that it's-I think the way you put it is-additional description, I think, is the way that the report terms it and that's the way we view 20 it as well. It's not a part of the function of the means in the ignition circuit. It is, in fact, additional description.

4. ***Special Master's Recommendation***

The Special Master is of the opinion that the phrase "operative during the start-up and shut-down cycle of said ignition circuit" must be included as part of the means-plus-function language of clause 3(e). To come within the *Tekmar* decision and so except the phrase from means-plus-function interpretation, the phrase would have to be a physical something (in *Tekmar,* that something was a place, namely, a "passage") which does not cause or accomplish the function in the means-plus-function limitation (in *Tekmar,* "means for passing"...). The phrase "operative during the start-up and shut-down cycle of said ignition circuit" is not a physical something not involved in the function of the means-plus function limitation. Therefore, the phrase "operative during the start-up and shut-down cycle of said ignition circuit" is not excepted by *Tekmar* from inclusion as part of the means-plus-function limitation of clause 3(e).

Here the means clause has a clear function, namely, "for operating said reset means to restore said timer to its initial deactivated state." The modifying phrase in question is "operating during". In the placement of the limitations that inform the means, the limitation "operative during" precedes the clearly functional limitation, "for operating." That is, the placement sequence is "means ..." operative during ... for operating ..." Under the rules of ordinary claim construction, in which a more particularized qualifying phrase that immediately follows a more general description of subject matter, acts to limit the preceding subject matter, the claim 3(e) phrase "operative during the start-up and shut-down cycle of said ignition circuit", that immediately follows "means in said ignition circuit", acts to limit "means in said ignition circuit". Under this construction, the "means in said ignition circuit ... for operating" are limited to means "operative during the start-up and shut-down cycle of said ignition circuit".

Accordingly, the Special Master construes the phrase "operative during the startup and shut-down cycle of said ignition circuit" to limit "means in said ignition circuit" and not to limit "for operating said reset means to restore said timer to its initial deactivated state."

The Special Master recommends that this objection by Toyota be *sustained* to the limited extend set forth in the next preceding paragraph hereof.

II. FULHORST'S OBJECTIONS/REQUEST FOR CLARIFICATION

The Special Master takes Fulhorst's objections in a somewhat different order than Fulhorst made them, addressing first the second objection, second the third objection, and thirdly, the first objection. This is done in order to avoid redundancy of explanation.

A. "Start-up and Shut-down Cycle" in Clause (e) of Claim 3

The words at issue are from clause (e) of claim 3, and are underlined:

"(e) a vehicle including an ignition circuit and means in said ignition circuit *operative during the start-up and shut-down cycle of said ignition circuit* for operating said reset means to restore said timer to its initial

deactivated state."

1. ***Special Master's Construction Recommendation in Report***

At Part VI (" *Interpretation of Elements of Claim 3*"), C (" *Clauses Subject to* s. 112*, para. 6; Second Step; Interpretation of 'Means*' "), 5 (" ' *Means in Said Ignition Circuit*' "), the Special Master in the Report construed the "means in the ignition circuit" at pages 37-38 as follows: FN2

FN2. The Special Master notes that the first sentence of the passage quoted above from the Report has a typographical error and hereby corrects it as follows (the original passage contains underlining, so the correction is indicated by double strikethough):
"The means 'in the ignition circuit' that function to reset the timer are minimally (1) a *switch* to send battery power starter to (2) a *starter coil,* (3) *contacts* closed responsive to energization or opened responsive to de-energization of the starter coil, and (4) a *ground circuit to the timer reset* controlled by the contacts, and the equivalents of such switch, starter coil, contacts, and ground circuit. These are the structure described in the specification that are operative only 'during' the 'start-up and shut-down cycle' of starter coil 104."

"The means 'in the ignition circuit' that function to reset the timer are minimally (1) a *switch* to send battery power starter to (2) a *starter coil,* (3) *contacts* closed responsive to energization or opened responsive to de-energization of the starter coil, and (4) a *ground circuit to the timer reset* controlled by the contacts, and the equivalents of such switch, starter coil, contacts, and ground circuit. These are the structure described in the specification that are operative only 'during' the 'start-up and shut-down cycle' of starter coil 104."
2 ***Fulhorst's Objection***

Fulhorst objects to the last sentence in the foregoing quotation from the Report:

"These are the structure described in the specification that are operative only 'during' the 'start-up and shut-down cycle' of starter coil 104

3. ***Special Master's Recommendation on Fulhorst's Objection***

A review of the written description of the invention in the '178 Patent is in order to address the instant objection by Fulhorst. The following are the occurrences in the specification of the "start-up and shut-down" terminology (emphasis added):

At col. 2, lines 44-46:	"When the receiver is in an alarm operating state, it is reset to its initial state by the start-up and shut down cycle *of* a vehicle ignition system."
At col. 4, lines 52-55	"The timer 90 is also reset to its initial state by ***stepping*** the auto *ignition system* through ***its*** *start-up and shut-down* ***sequence*** in a manner to be described hereinafter."

At col. 5, lines 34-37 "When the *ignition system* of the vehicle is ***stepped*** *through* ***its*** *start-up and shut-down* ***sequence*** within 55 seconds of the operation of the alarm 25, the starter relay 104 is energized and then deenergized. ***At the time*** the starter coil 104 completes ***its*** *startup and shut-down* ***cycle,*** its contacts 120 (FIG.4) close and open."

At col. 6, lines 18-22 "The reset terminal 4 of the timer 175 can be grounded to reset the timer 175 within fifty-five seconds through the contacts 120 ***during*** a start-up and shut-down ***cycle*** *of* the ignition circuit *103* ***in a manner previously described.***"

From the foregoing, it is seen that Fulhorst speaks of "***stepping***" the vehicle ignition system though "***its***" start-up and shut-down "***sequence.***" Sequence signifies a series of steps one following another. Stepping an ignition circuit switch from OFF to ON, then to START, then when the vehicle engine starts, back to ON and leaving it there while the engine runs, then back to OFF to stop the engine, would appear to describe the most common sequence of steps of the ignition circuit that at the time of the invention a person of ordinary skill in the art would necessarily have known is inherently described "[w]hen the *ignition system* of the vehicle is stepped through its start-up and shut-down *sequence*." The start-up and shut-down sequence begins with the step of turning the ignition switch ON and ends with the step of turning the ignition switch OFF. In between the ignition switch is momentarily turned to START. The range of switched sequences of steps from OFF to START to ON to OFF is encompassed within the start-up and shutdown sequence of the ignition system.

The START portion of that sequence of operation of the vehicle ignition system is when the starter coil is energized then deenergized. At the time of the invention, a person of skill in the art would have known this reference to energization of the starter coil necessarily described a correspondence to the cranking portion of engine start-up when the ignition switch is stepped to START, connecting the ignition circuit to the starter coil and sending current to the starter coil of the starter motor to cause the starter motor to crank the engine. Such person of skill in the art necessarily would have known that deenergization corresponds to the step of releasing the START switch, thereby disconnecting the ignition circuit from the starter coil and stopping current from flowing to the starter coil, consequently stopping the starter motor from cranking the engine. Stepping the ignition switch from ON to START energizes the starter coil and stepping the ignition switch from START back to ON deenergizes the starter coil. The passage at col. 5 quoted above expressly identifies the energization and deenergization of the starter coil as ***the "start-up and shut-down cycle" of the starter coil:***

"At the time the ***starter coil*** 104 completes ***its*** start-up and shut-down ***cycle,*** its contacts 120 (FIG.4) close and open".

The passage at col. 6 quoted above refers to operation of contacts 120 "during a start-up and shut-down ***cycle*** of the ignition circuit 103 ***in the manner previously described***" (i .e., at col. 5, lines 34-45). The manner previously described in col. 5 expressly links operation of the contacts 120 ***to the starter coil cycle*** ("[a]t the time the *starter coil* 104 completes *its* start-up and shut-down *cycle, its* contacts 120 (FIG.4) close

and open"). This time at which the starter coil 104 ***completes its*** start-up and shut-down ***cycle*** marks the duration in which the contacts 120 open and close. This corresponds to the phase at issue here: "operative ***during the start-up and shut-down cycled.***"

It is concluded therefore that the expression "start-up and shut-down ***cycle*** of said ignition circuit" in claim 3(e) identifies the START ***cycle*** of the entire start-up and shutdown sequence though which the ignition circuit is stepped, from OFF to ON to START back to ON, and finally, back to OFF. The START cycle is the cycle that energizes and deenergizes the starter coil 104 and operates its contacts 120 that connect and disconnect the ground to the reset terminal of the timer that resets the timer to the initial deactivated state. As one switched portion of several operations in the start-up and shut-down sequence through which the ignition circuit is stepped, the START start-up and shutdown cycle involving the starter coil is a portion "of the ignition circuit.

Accordingly, the Special Master construes the phrase "the start-up and shut-down ***cycle of*** said ignition circuit" to mean the start-up and shut-down cycle of the starter coil of said ignition circuit. No other cycle is identified in the written description in connection with operating contacts 120 that connect and disconnect the ground to the reset terminal of the timer that resets the timer to the initial deactivated state.

The Report will be amended to integrate in it the foregoing comments of the Special Master and to change the sentence objected to by Fulhorst, as follows (underlining indicates addition):

"These are the structure described in the specification that are operative only 'during' the 'start-up and shut-down cycle' of starter coil 104 *of ignition circuit 103*.

Accordingly, the Special Master recommends that Fulhorst objection be *overruled*.

B. "Means in Said Ignition Circuit" in Clause (e) of Claim 3

The words at issue are from clause (e) of claim 3, and are underlined:

"(e) a vehicle including an ignition circuit and *means in said ignition circuit* operative during the start-up and shut-down cycle of said ignition circuit for operating said reset means to restore said timer to its initial deactivated state."

1. *Special Master's Construction Recommendation in Report*

At Part VI ("*Interpretation of Elements of Claim 3*"), C ("*Clauses Subject to* s. 112, *para. 6; Second Step; Interpretation of 'Means'* "), 5 (" *'Means in Said Ignition Circuit'* "), the Special Master in the Report construed the "means in the ignition circuit" at pages 37-38 as follows (as before the correction supra at note 2):

"The means 'in the ignition circuit' that function to reset the timer are minimally (1) a *switch* to send battery power starter to (2) a *starter coil,* (3) *contacts* closed responsive to energization or opened responsive to de-energization of the starter coil, and (4) a *ground circuit to the timer reset* controlled by the contacts, and the equivalents of such switch, starter coil, contacts, and ground circuit. These are the structure described in the specification that are operative only 'during' the 'start-up and shut-down cycle' of starter coil 104."

2. *Fulhorst's Objection*

Fulhorst objects that the Special Master in his Report inconsistently construes the term "means in [the] ignition circuit" as it appears in claim 3. Fulhorst's argument is that the above quoted passage from the Report (as before correction, supra at note 2) includes a switch, the starter coil, contacts and a ground circuit; that the Special Master in his Report at page 37 construed the "means in the ignition circuit" as being operative during the start-up and shut-down cycle of the ignition circuit; and that the Special Master at page 36 of the Report, quoting from Fulhorst, "emphasized that the structure defined by the 'means in [the] ignition circuit' function, e.g. be operative, in *both* the start-up *and* shut-down cycles" (emphasis by Fulhorst). Fulhorst added "In this case, the only structure in the ignition circuit which is operative during both the 'start-up and shutdown' cycle is the ignition switch itself."

From this premise Fulhorst argues:

"It is therefore clear that while the ignition coil and contacts may function in the 'start-up cycle' of the ignition circuit, these elements do not function in the 'shutdown' cycle of the ignition circuit, and thus cannot fulfill the Special Master's own definition of the 'means in said ignition circuit'. Hence, the starter coil and contacts should not be included as structure within the 'means in [the]ignition circuit' "

3. ***Special Masters Recommendation on Fulhorst's Objection***

Fulhorst's objection that the starter coil and contacts should not be included as structure within the "means in [the] ignition circuit" proceeds from the premise that the "only structure in the ignition circuit which is operative during both the 'start-up and shut-down' cycle is the ignition switch itself."

In Fulhorst's Brief in Opposition to Motion for Summary Judgment of Non-Infringement and/or Invalidity, Fulhorst at page 8 states:

"Everyone, including a person of ordinary skill in the art, knows what the start-up and shut-down cycle of an automotive ignition circuit is. It is turning on and turning off the ignition switch. It encompasses the period from when one starts to turn on the ignition switch to when one turns the ignition switch off. Toyota's attempt to force fit the starter coil as the subject of the recited function is ridiculous in view of the plain language of both the claim and the specification. There is no reason to claim the ignition circuit if what was meant was the starter coil."

Fulhorst's argument proceeds based on an appraisal of the "start-up and shutdown cycle of the ignition circuit" based on "what everybody knows" but without applying "what everybody knows" to the written description of the ' 178 Patent in which Fulhorst disclosed the "start-up and shut-down cycle of the ignition circuit" as being limited to the portion of the ignition circuit operation devoted to the START cycle, that is, the start-up and shut-down cycle of the starter coil, as explained in the Special Master's comments above regarding Fulhorst's objections relative to the "Start-up and Shut-down Cycle", to which reference is made.

What "everybody knows" is what the person of ordinary skill in the art knows is necessarily missing from what Fulhorst actually describes. What is necessarily missing is a description of the remainder of the sequence of switched ignition circuit manipulations "stepped through" in addition to the portion in that sequence limited to the START cycle for energization and deenergization of the starter coil. The analysis of the Special Master set forth above shows how "what everybody knows" places in context what Fulhorst described. See, generally, *Tronzo v. Biomet, Inc.,* Case Nos. 97-1117, -1177, -1213, Federal Circuit, August, 1998, and Hyatt v. Boone, 146 F.3d 1348, 1354, 47 USPQ2d 1128 (Fed.Cir.1998).

In light of the analysis set forth above under "Shat-up and Shut-down Cycle" and supplemented with the comments in this part directed to the "Means in said Ignition Circuit", the Special Master recommends that Fulhorst's objection be *overruled*.

C. "Initial Deactivated State" in Clauses (d) and (e) of Claim 3

The words at issue are from claim 3, clauses (d) and (e), and are underlined:

(d) said second means including a timer activated in response to the detection of said coded signal for operating said vehicle means to indicate an alarm condition, said timer including reset means to restore said timer to its *initial deactivated state;* and

(e) a vehicle including an ignition circuit and means in said ignition circuit operative during the start-up and shut-down cycle of said ignition circuit for operating said reset means to restore said timer to its *initial deactivated state*.

1. ***Special Master's Recommended Construction***

The Special Master recommended in his Report at page 32 that the term "initial deactivated state" be construed to be the state when the timing device is able to respond to a logic signal, and this is when the reset terminal of the timer is connected to an open, normally open, switch to ground, thus allowing the "second means" to function for operating said vehicle means to indicate an alarm condition.

2. ***Fulhorst's Objection***

Fulhorst has objected to the Special Master's construction of the meaning of "initial deactivated state, asserting that the Special Master is in error in saying that opening the contacts 120 and removing the ground to the reset terminal of the timer resets the timer to its initial state. The basis of this objection is selection of one sentence in the specification:

"The closing of the contacts 120 applies a ground to the reset terminals 4 and 8 of the timer 90. This action resets the timer 90 to its *initial* state to deenergize the relay 95". (col. 5, lines 39-41)

3. ***Special Master's Recommendation on Fulhorst's Objection***

Fulhorst says on the one hand, that

"The closing of the contacts 120 applies a ground to the reset terminals 4 and 8 of the timer 90. This action resets the timer 90 to its *initial* state to deenergize the relay 95". (col. 5, lines 39-41)

On the other hand Fulhorst says, at col. 6, lines 28-29::

"The resetting of the timer 175 *deactivates* the timer 175 to deenergize the relay 95"

At page 32 of the Report, the Special Master observed that:

"Unless in the phrase 'initiate activated [sic] state' the word 'initial' is either merely redundant or serves as

just an intensifier (really, really deactivated!), then 'initial has a different meaning than activated [sic]'.

The Special Master notes the typographical errors in the foregoing quotation and hereby corrects the sentence as follows (brackets indicate deletions, underlining indicates additions):

Unless in the phrase "[initiate activated] *initial deactivated* state" the word "initial" is either merely redundant or serves as just an intensifier (really, really deactivated!), then "initial" has a different meaning than [activated] *deactivated*'.

The written description of the invention as a whole in the remainder of the specification than the one sentence quoted by Fulhorst makes it quite clear that "operating the reset timer to restore said timer to its initial deactivated state" is a two step process. In the first step, the timer is returned to a deactivated state, which happens when-in the startup portion of the start-up and shut-down cycle of the starter coil of ignition system (see the discussion above respecting the "start-up and shut-dDown cycle")-the starter coil energizes and magnetically closes contacts 120, causing a ground to be applied to the reset terminal of the timer to reset the timer. In the second step, the deactivated timer is returned to an initial state, when-in the shut-down portion of the start-up and shut-down cycle of the starter coil of the ignition system-the starter coil is deenergized, causing contacts 120 to open and remove the ground to the reset terminal. With the ground removed, the timer is again in the condition it was in before it was activated, that is, it is ready and able to be activated again. Thus "stepping" the ignition system of the vehicle "through" its start-up *and* shut-down *sequence* (first) deactivates the timer in the start-up portion of the start-up and shut-down cycle of the starter coil, and then (secondly) returns it to its initial state in the shut-down portion of the start-up and shut-down cycle of the starter coil. The specification as a whole makes it clear that the return of the timer to its initial state requires completion of the entire startup and shut-down cycle of the starter coil, and completion coincides with the deenergization of the starter coil 104 and consequence opening of contacts 120 that removes the ground from the reset terminal.

Thus, the specification says at col. 2, lines 44046 that:

"when the receiver is in an alarm operating state, it is reset to its *initial* state by the start-up *and shut-down* cycle of the vehicle ignition system."

At col. 4, lines 52-55, the specification says:

"The timer 90 is also reset *to its initial state* by *stepping* the auto ignition system *through* its start-up *and shut-down* sequence in a manner hereinafter to be described."

This latter sentence points to a paragraph occurring at col. 5, lines 34-45, that the Special Master called the "Start-up and Shut-down Cycle Paragraph" in his Report. The Start-up and Shut-down Cycle Paragraph contains the sentence on which Fulhorst grounds his objection. The sentence on which Fulhorst bases his objection is preceded, however, by two sentences, which are necessary in order to give context to the sentence which Fulhorst emphasizes:

"When the ignition system of the vehicle is *stepped through* its start-up *and shutdown* sequence within 55 seconds of the operation of the alarm 25, the starter relay 104 is energized *and then de-energized*. At the time the starter coil 104 ***completes*** its start-up ***and shut-down cycle,*** its contacts 120 (FIG.4) close ***and open.***" (col. 5, lines 34-39, emphasis added).

Although in the one sentence on which Fulhorst relies for his objection Fulhorst used the word "initial" to describe the state of the timer coinciding with what Fulhorst calls "deactivation" later in the specification, the whole of the specification makes it clear that the final state to which the timer is returned-the "initial deactivated state"-is the state of the timer after (first) the reset means of the timer has been grounded to deactivate the timer, and then (secondly) the reset means of the timer has had the ground removed, to return the timer to its initial state, actions which are respectively caused by "stepping" the ignition circuit of the vehicle "through" the start-up *and* shut-down cycle of the starter coil of the ignition circuit. Accordingly, if there is inconsistency in the specification resident in the single sentence quoted by Fulhorst, it is Fulhorst's own doing, and any adverse consequence from the ambiguity so created must go against the creator of the ambiguity, Fulhorst.

The Special Master recommends that this first objection of Fulhorst be *overruled*.

III. FINAL COMMENTS

The Special Master files this Report and Recommendation on Toyota's and Fulhorst's Objections to the Special Master's Report and Recommendations of Interpretation of Claim 3 and 5 of U.S. Patent 4,523,178 with the clerk of this court and United States Federal District Magistrate Harry W. McKee.

The Special Master will file an "Amended Report and Recommendation of Special Master on Interpretation of Claims 3 and 5 of U.S. Patent 4,523,178" consistent with this Report and Recommendation on Toyota's and Fulhorst's Objections to the Special Master's Report and Recommendations of Interpretation of Claim 3 and 5 of U.S. Patent 4,523,178.

Prepared and done this *18* day of *May,* 2001.

E.D.Tex.,2001.
Fulhorst v. Toyota Motor Corp.