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Paper 7
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AISIN SEKI CO. LTD.,
Petitioner,

v.

SIGNAL IP, INC.,
Patent Owner.

Case IPR2016-00369
Patent 5,732,375

Before MEREDITH C. PETRAVICK, JEREMY M. PLENZLER, and JAMES A. TARTAL, *Administrative Patent Judges*.

TARTAL, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

Petitioner Aisin Seiki Co., Ltd. filed a Petition requesting an *inter partes* review of claim 11 of U.S. Patent No. 5,732,375 ("the '375 patent"). Paper 1 ("Pet."). Patent Owner Signal IP Inc., filed a Preliminary Response. Paper 6 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

Upon consideration of the Petition and the Preliminary Response, we conclude the information presented does not show a reasonable likelihood that Petitioner would prevail in showing the unpatentability of the challenged claim. Accordingly, we do not authorize an *inter partes* review to be instituted as to claim 11 of the '375 patent.

I. BACKGROUND

A. The '375 Patent (Ex. 1001)

The '375 patent is titled "Method of Inhibiting or Allowing Airbag Deployment" and issued on March 24, 1998. The '375 patent discloses that vehicles may have airbags for protecting passengers in a front passenger seat and that it is desirable to inhibit the airbags from deploying if the front passenger seat is occupied by a small child or an infant in a rear facing car seat. Ex. 1001, 1: 12–29. The '375 patent, thus, discloses a method of detecting a type of seat passenger and determining the seating position of the passenger to allow or inhibit airbag deployment. *Id*. at 1:44–50.

The '375 patent discloses a vehicle passenger seat having an array of pressure sensors. The array of sensors is depicted in Figure 7 of the '375 patent, and Figure 7 is reproduced below.

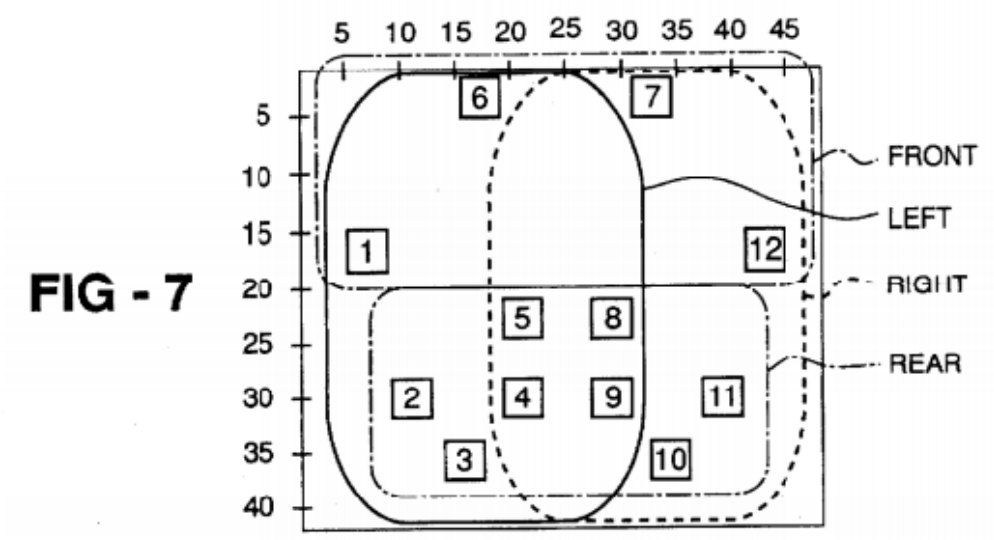

FIG - 7

Figure 7 depicts the seat having 12 sensors arranged as follows: 1) a left pair of sensors 1 and 2, 2) a right pair of sensors 11 and 12, 3) a front pair of sensors 6 and 7, 4) a rear pair of sensors 3 and 10, and 5) a center group of sensors 4, 5, 8, and 9. Ex. 1001 at 3:21–29.

Sensors 1–12 are also arranged in the overlapping localized areas as follows: 1) sensors 1, 6, 7 and 12 in a front group, 2) sensors 2, 3, 4, 5, 8, 9, 10, and 11 in a rear group, 3) sensors 1, 2, 3, 4, 5, 6, 8, and 9 in a left group, and 4) sensors 4, 5, 7, 8, 9, 10, 11, and 12 in a right group. *Id*. at 4:19–24.

An algorithm calculates a set of decision measures 40 based upon the output of the sensors. *Id*. at 3: 48–49; Fig. 4. The first decision measures are a total force, which is the sum of the sensor output values, and a fuzzy contribution for the total force. *Id*. at 3:49–67. The second decision measures are a load rating for each sensor, a total load rating, and a fuzzy contribution for the total load rating. *Id*. at 4:1–17. The load rating is a measure of whether the sensor is detecting some load, and the total load rating is the sum of the load ratings for each sensor. Ex. 1001 at 4:2–4, 9–11. The third decision measures are a force and fuzzy contribution for each

pair of sensors and for the center group. *Id*. at 4:30–47.

The algorithm also checks for force concentration. *Id*. at 4:18. The '375 patent states:

> [A] check is made for force concentration in a localized area. . . . The algorithm determines if the pressure is all concentrated in one group by summing the load ratings of the sensors in each group and comparing to the total load rating. If the rating sum of any group is equal to the total rating, a flag is set for that group (all right, all front etc.).

Id. at 4:18–24.

Based upon the set of decision measures, a decision algorithm determines whether airbag deployment should be allowed or inhibited. *Id*. at 4:64–66. The decision algorithm is depicted in Figure 8, and Figure 8 is reproduced below.

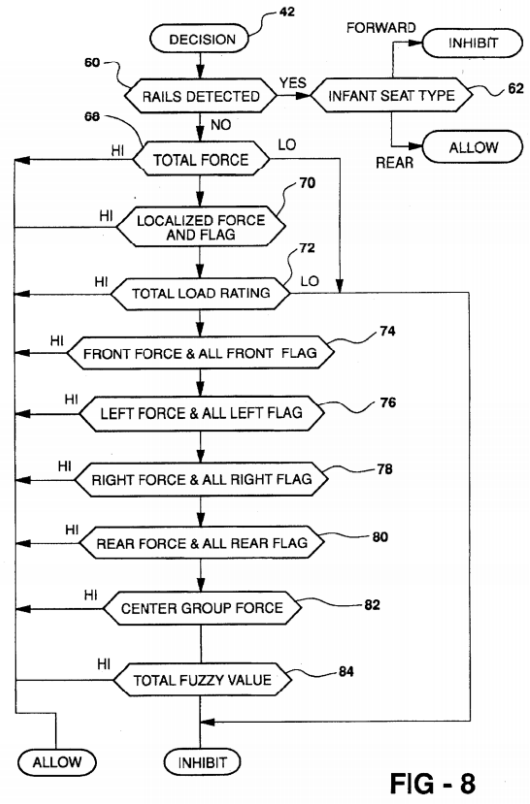

FIG - 8

Figure 8 depicts a flow chart of the deployment decision algorithm.

Whenever an inhibit or allow decision is made, that decision is controlling and all other conditions lower on the chart are bypassed. *Id*. at 5:9–11.

First, the decision algorithm determines if rails of an infant seat are detected and whether the infant seat is forward or rear facing. *Id*. at 4:65–5:9. Deployment is allowed for a forward facing seat and inhibited for a rear facing seat. *Id*. at 5:1–3.

> If rails are not detected <60>, the total force is compared to high and low thresholds <68>. If it is above the high threshold deployment is allowed and if below the low threshold the deployment is inhibited. Otherwise, if the localized force for a sensor group is above a threshold and the flag corresponding to that group is set <70>, deployment is allowed. If not, the next step is to compare the total load rating to high and low thresholds <72>. Deployment is allowed if the rating is above the high threshold and inhibited if below the low threshold. Each of the sensor pairs for front, left, right, and rear are compared to threshold values <74–80>. If any of them are above its allowed. If not, the center group force is compared to a threshold <82> to decide upon allowance. Finally, the total fuzzy value is compared to a threshold <84> to allow deployment if it is sufficiently high, and if not the deployment is inhibited.

Id. at 5:12–27.

B. Challenged Claim

Claim 11 of the ’375 patent is independent and recites:

> 11. A method of airbag control in a vehicle having an array of force sensors on the passenger seat coupled to a controller for determining whether to allow airbag deployment based on sensed force and force distribution comprising the steps of:
>
> measuring the force sensed by each sensor;
>
> calculating the total force of the sensor array;
>
> allowing deployment if the total force is above a total threshold force;

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