Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAMESH KESHAVARAJ

Appeal No. 2003-0220
Application No. 09/478,871

ON BRIEF

Before ABRAMS, FRANKFORT, and McQUADE, Administrative Patent Judges.

ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-25, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellant's invention relates to an inflatable cushion for a vehicle occupant restraint system. An understanding of the invention can be derived from a reading of exemplary claim 1, which has been reproduced below.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Wessels	4,603,571	Aug. 5, 1986
Ford et al. (Ford)	5,975,571	Nov. 2, 1999
Iino et al. (Iino)	6,142,520	Nov. 7, 2000 (filed Aug. 11, 1997)

Claims 1-3, 7-11 and 17-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Iino in view of Wessels.

Claims 4-6, 12-16 and 21-25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Iino in view of Wessels and Ford.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 13) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 12) and Reply Brief (Paper No. 14) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

The appellant explains that prior art cushions from which vehicle airbags are constructed comprise pairs of congruent circular pieces of fabric joined to one another to form the two sides of a cushion, and that the common practice of cutting a plurality of circles from a rectangular piece of fabric results in a great deal of waste, even when the circles are spaced in touching relationship with one another. The improvement provided by the appellant's invention is to make the panels in the geometric shape of a dodecagon, which is a polygon having twelve sides and twelve vertices. According to the appellant, this provides better fabric utilization by reducing the waste between adjacent panels, results in waste sections which have straight edges and therefore are easier to use to make other fabric portions of the airbag system, and the linear edge segments facilitate seaming operations by improving the ease with which cut panels can be aligned as well as making folding operations simpler. In addition, if pairs of panels are provided with shared uncut boundaries on one of the sides, the folding is even more efficient and one less side need be sewn. Also, the dodecagon shape requires minimal orientation to align the finished product with respect to any fold line to facilitate storage of the uninflated cushion in an operative position in the vehicle.

The invention is manifested in claim 1 in the following manner:

> 1. An inflatable fabric cushion for use in a vehicle occupant restraint system, said cushion having a face panel and a rear panel, wherein said face panel is in the shape of a first twelve-sided polygon and said rear panel is in the shape of a second, congruent twelve-sided polygon, said face panel and said rear panel being joined along the respective coincident cut edges.

The examiner has rejected this claim under 35 U.S.C. § 103 as being obvious[1] in view of the combined teachings of lino and Wessels. It is the examiner's position that all of the subject matter recited in claim 1 is disclosed by lino except for making the face and rear panels in the shape of a twelve-sided polygon, but that it would have been obvious to one of ordinary skill in the art to modify the lino airbag in such a manner as to meet the terms of the claim in view of the teachings of Wessels. The appellant argues in rebuttal that Wessels is not analogous art, and that even if it were so considered, there would have been no suggestion to modify lino in the manner proposed by the examiner.

[1]The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Even considering, arguendo, Wessels to be analogous art, we find ourselves in agreement with the appellant that the rejections are defective and cannot be sustained. Our reasoning follows, with claim 1 being representative.

Iino is exactly the type of prior art airbag over which the appellant believes his invention to be an improvement, in that it is comprised of a pair of superimposed circular panels fastened together along their outer edges. Therefore, Iino lacks the twelve-sided polygonal shape specified in the appellant's claim 1 for the face and rear panels.

Wessels is directed to an apparatus for drawing circular cups from non-circular blanks obtained from sheets of metal. Wessels teaches that "[t]he blanks may be hexagonal, or square or substantially hexagonal or substantially square so as to provide better utilization of the overall area of the metal sheet" from which they are stamped to reduce the amount of waste as compared to the prior art practice of using circular blanks (column 1, lines 37-41). Another reason Wessels uses the disclosed shapes is to improve upon the manner in which the blank is stretched during the drawing operation (column 1, lines 42-55). The two shapes disclosed in the drawings are a square (Figure 4) and a six-sided polygon (Figure 15). A twelve-sided polygon is not shown or discussed.

The examiner has explained the rejection in the following manner on page 4 of the Answer:

> From this [six-sided] teaching [of Wessels], forming the face and rear panels of lino et al. with a polygonal shape, rather than a circular shape, would have been obvious to one of ordinary skill in the art at the time the invention was made in order to minimize waste during manufacturing.
>
> Moreover, forming the polygonal shape with twelve sides, such that each side has a specific length, represents a change in shape that would have been obvious to one of ordinary skill in the art. This change in shape would apply a well known concept in a way that optimizes the use of space on the sheet of material used in manufacturing, while maintaining a generally circular shape in the panel (emphasis added).

The examiner further states in response to the appellant's argument (Answer, page 5):

> Since a circle is conceptually understood to be a polygon with an infinite number of sides, this problem can be more particularly stated as whether or not providing the panels with a specific number of sides is patentably distinguishing over the prior art (emphasis added).

The fact of the matter is that the appellant's claim 1 specifies that the face and rear panels each have the shape of a twelve-sided polygon, and the specification explains that this provides several advantages other than merely providing less waste than utilizing panels that are circular. While Wessels recognizes that there are more efficient shapes than circles for reasons of saving waste and improving the forming operation, Wessels does not disclose or teach that a twelve-sided polygon is useful for

purposes of his invention, or imply that increasing the number of sides beyond six would be equally or more advantageous. The examiner has provided no evidence in support of his statements that forming the shape with twelve sides to optimize the use of material is "a well known concept" and that it is "conceptually understood" that a circle is a polygon with an infinite number of sides, although we fail to appreciate the relevance of the latter statement.

In view of the lack of supporting evidence provided by the examiner, and considering the appellant's assertion that utilizing twelve sides provides specific improvements to the manufacture of cushions for airbags, we cannot agree with the examiner that the combined teachings of Iino and Wessels establish a prima facie case of obviousness with regard to the subject matter recited in claim 1. From our perspective, suggestion for combining the references in such a manner as to meet the terms of claim 1 is found only in the hindsight afforded one who first viewed the appellant's disclosure. This, of course, is not a proper basis for a rejection.[2]

We therefore will not sustain the rejection of claim 1 or of claims 2 and 3, which depend from claim 1 and stand similarly rejected.

We reach the same conclusion on the basis of the same reasoning with regard to independent claims 7 and 17 and dependent claims 8-11 and 18-20, which contain the

[2] In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

limitation of a twelve-sided polygon and also stand rejected on the basis of lino and Wessels.

Claims 4-6, 12-16 and 21-25 have been rejected as being unpatentable over lino in view of Wessels and Ford. These claims require the twelve-sided polygons plus the limitation that the polygons be contiguous along a common uncut side, a teaching for which Ford is applied. However, Ford fails to overcome the shortcoming pointed out above concerning the combined teachings of lino and Wessels, and therefore this rejection also cannot be sustained.

CONCLUSION

Neither rejection is sustained.

The decision of the examiner is reversed.

NEAL E. ABRAMS Administrative Patent Judge	)	
CHARLES E. FRANKFORT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN P. McQUADE Administrative Patent Judge	)	

NEA/lbg

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