

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES W. HODGES

Appeal 2008-3757
Application 10/619,773
Technology Center 3600

Decided: September 8, 2008

Before WILLIAM F. PATE, III, JENNIFER D. BAHR, and STEFAN
STAICOVICI *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

James W. Hodges (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 3-10 and 12-19. Claims 2 and 11 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

The Appellant's invention is drawn towards a composite gasket 10 formed from a metal base sheet 16 having a plurality of apertures 12 and 14 that extend through the metal base sheet 16 (Spec. 3, ¶ 11 and fig. 1). Each aperture 12 and 14 is bounded by an edge 22 having an elastomeric material bonded thereon to form a sealing bead 18 (Spec. 3, ¶¶ 12 and 14 and fig. 2). The gasket 10 further includes two coined angles 24 formed between the edge 22 and the planar surfaces 20 of the metal base sheet 16 (Spec. 3, ¶ 13 and fig. 2). The coined angles 24 have a texture 26 that is formed by either removing material or by adding material to the outer surface of the coined angles 24 (Spec. 4, ¶ 16).

Claim 1 is illustrative of the claimed invention and reads as follows:

1. A gasket comprising:
 - a base sheet of substantially contiguous metal material having at least one aperture bounded by an edge of said base sheet;
 - one or more coined angles formed at said edge of said base sheet;
 - an elastomeric material disposed on said one or more coined angles and said edge of said base sheet; and
 - wherein said one or more coined angles increase a surface area of said base sheet exposed to said elastomeric material, thereby increasing bonding strength between said base sheet and said elastomeric material, and wherein said one or more coined angles includes a

textured surface to further increase the bonding strength between said base sheet and said elastomeric material.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

| | | |
|---------|-----------------|---------------|
| Jelinek | US 4,300,773 | Nov. 17, 1981 |
| Terai | US 5,322,299 | Jun. 21, 1994 |
| Fujino | US 6,719,300 B2 | Apr. 13, 2004 |

The following rejections are before us for review:

Claims 1, 3-10, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jelinek in view of Terai.

Claims 1, 3, 4, 6-10, and 12-19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jelinek in view of Fujino and further in view of Terai.

Claims 1, 3-7, 9, 12, 13, 15-17, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fujino in view of Terai.

The Examiner provides reasoning in support of the rejections in the Answer (mailed July 2, 2007). The Appellant presents opposing arguments in the Appeal Brief (filed November 1, 2006). A Reply Brief has not been filed.

FACTS

Jelinek

We make the following findings of fact with respect to Jelinek:

1. Jelinek discloses a sealing device 10 formed from a metal stamped backing plate 12 and having a central aperture 18, one or more outer apertures 14, and a coined lip 20 formed about the edge of the central aperture 18 (col. 2, ll. 10-19 and figs. 1 and 2).
2. An elastomeric material 22 is bonded to the coined lip 20 to form a sealing element (col. 2, ll. 19-23 and fig. 2).
3. The coined lip 20 has a profile including interior right angles (fig. 2).

Terai

We make the following findings of fact with respect to Terai:

4. Terai discloses a metal gasket 1 for sealing the surface between a cylinder head and cylinders of an automotive engine (col. 3, ll. 54-58).
5. The metal gasket of Terai includes four cylinder bores 2 (central aperture), a plurality of outer positioned holes 3-5, and sealing materials A and B surrounding the cylinder bore 2 (col. 3, ll. 58-61; col. 4, ll. 8-22; figs. 1 and 2).
6. Adhesion between the metal gasket 1 and the sealing materials A and B is improved by providing a roughened surface 21 (texture) (col. 6, ll. 21-42 and fig. 9).
7. Adhesion between the metal gasket 1 and the sealing materials A and B is improved by providing a primer 41 between the surface of the metal gasket and the sealing material (col. 7, l. 58 through col. 8, l. 6 and fig. 15(b)).

Fujino

We make the following findings of fact with respect to Fujino:

8. Fujino discloses a metal gasket for sealing the surfaces of three components, a cylinder block, a chain case, and a cylinder head of an internal combustion engine (col. 1, ll. 6-10).
9. The metal gasket A of Fujino includes an elastic seal 7 bonded to the edge of an opening 4 (col. 3, ll. 24-26 and fig. 1).
10. The edge of the metal gasket has a profile including a tapered configuration (fig. 3(I)), a trapezoidal configuration (fig. 3(II)), and a tapered concave configuration (fig. 3(III)) (col. 3, ll. 34-42).

OPINION

The Obviousness Rejection Based Upon Jelinek in view of Terai

The Appellant argues the rejection under 35 U.S.C. § 103(a) of claims 1 and 3-10 together as a group (Br. 12). Therefore, in accordance with 37 C.F.R. 41.37(c)(1)(vii), we have selected claim 1 as the representative claim to decide the appeal, with claims 3-10 standing or falling with claim 1. In view of Appellant's arguments, we will address the rejection of claims 13 and 14 separately.

The issue presented in the appeal of the rejection of claims 1 and 3-10 is whether the Appellant has demonstrated that the Examiner erred in determining that the subject matter of claims 1 and 3-10 is unpatentable over Jelinek in view of Terai. The issue turns on whether it would have been obvious to combine Jelinek and Terai as proposed by the Examiner and, if so, whether the combination of Jelinek and Terai proposed by the Examiner would result in the claimed invention.

The Examiner asserts that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a texture to the coined angles of the base sheet to improve adhesion of the elastomer applied thereto as taught by Terai” (Ans. 3).

The Appellant argues that the Examiner has failed to identify any motivation, suggestion or teaching of the desirability to combine Jelinek and Terai to arrive at the Appellant’s invention (Br. 13). That is, the Appellant contends that because the seal of Jelinek is “bindingly restricted on all sides and will not [be able] to move” a person ordinarily skilled in the art would not be concerned with the adhesion strength of the elastomeric material and hence would not look to the teachings of Terai to provide the increased adhesion (Br. 12).

We find the Appellant’s arguments unpersuasive, because while there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same

way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* In this case, Jelinek discloses a metallic sealing device (gasket) having a seal element formed by an elastomeric layer bonded to an edge of the sealing device (Findings of Fact 1 and 2). Similarly, Terai teaches a metallic sealing gasket having a sealing material bonded to an edge of the gasket (Findings of Fact 4 and 5). Terai further teaches to roughen the surface of the edge (texture) in the region where the sealing material is bonded thereon in order to enhance adhesion between the metallic gasket and the sealing material (Finding of Fact 6). One of ordinary skill in the art would have appreciated that a textured surface such as that of Terai on the coined lip of the sealing device of Jelinek would likewise facilitate improved adhesion between the coined lip and the elastomeric (sealing) material. A person of ordinary skill in the art would have been prompted to provide the sealing device of Jelinek with the textured surface of Terai, especially in light of Terai teaching that such a textured surface provides for improved adhesion between the metallic sealing gasket and the sealing material. Moreover, we agree with the Examiner that “improved connection/adhesion helps prevent separation or displacement during routine handling, assembly, and use” (Ans. 7). Furthermore, we find that one of ordinary skill in the art would have also appreciated that improved adhesion between the coined lip and the elastomeric (sealing) material in the sealing device of Jelinek also improves resistance to fatigue stress, heat, and pressure that result during operation of the device of Jelinek. Modifying the sealing device (gasket) of Jelinek to provide a textured surface would not have been uniquely challenging to a

person of ordinary skill in the art because it is no more than “the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.” *KSR*, 127 S.Ct. at 1740. Therefore, the modification appears to be the product not of innovation but of ordinary skill and common sense. Furthermore, when the improvement is technology-independent and the combination of references results in a product or process that is more desirable, an implicit motivation to combine exists even absent any hint of suggestion in the references themselves. “In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006). A person of ordinary skill in the art would readily appreciate that the benefits gained by providing the textured (roughened) surface of Terai could also be achieved in the sealing device of Jelinek when bonding the elastomeric (sealing) material to the coined lip, especially in light of Terai’s disclosure that a textured surface provides the benefit of improved adhesion between a metallic gasket and a sealing (elastomeric) material. Moreover, the Appellant does not provide any evidence to show that the modification of Jelinek to provide a textured surface would have been beyond the technical grasp of a person of ordinary skill in the art.

With respect to claims 13 and 14, the Appellant argues that Jelinek does not disclose “that the primer 41 produces a textured surface” (Br. 13).¹

¹ Contrary to the Appellant’s statement, it is Terai, and not Jelinek, that teaches to add a primer material to the surface of a metallic gasket in order to enhance adhesion between the metallic gasket and a sealing material (Finding of Fact 7).

The Appellant contends that in contrast to a “textured surface,” the primer 41 has a “smooth surface” (Br. 13).

The Appellant’s argument appears to be grounded on an unduly narrow interpretation of what the term “textured” means. When construing claim terminology in the United States Patent and Trademark Office, claims are to be given their broadest reasonable interpretation consistent with the specification, reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). In this case, we find that the ordinary and customary use of the word “texture” means “the visual or tactile surface characteristics and appearance of something” (*Merriam Webster's Collegiate Dictionary* 1220 (Tenth Ed. 1997)). As such, a “textured” surface is merely a surface having a predetermined “visual or tactile surface characteristic.” In this case, Terai specifically teaches adding a primer material 41 in order to enhance adhesion between the sealing material and the metallic base material forming the gasket (Finding of Fact 5). The addition of the primer material 41 creates a “visual and surface characteristic.” That is, the primer layer 41 has in itself a “tactile” and a “visual” characteristic that is different than that of the surface of the metallic gasket. Hence, the primer layer 41 constitutes a “textured” surface. Therefore, we agree with the Examiner that the “term ‘textured’ is not limited to ‘rough’” and as such, that primer material 41 constitutes or creates a “textured surface” (Ans. 7), as required by claims 13 and 14.

For the foregoing reasons, the Appellant’s arguments do not persuade us the Examiner erred in rejecting claims 1, 3-10, 13, and 14 as unpatentable

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over Jelinek in view of Terai. Therefore, the rejection of claims 1, 3-10, 13, and 14 is sustained.

*The Obviousness Rejection Based Upon Jelinek in view of Fujino and
further in view of Terai*

The Appellant argues the rejection under 35 U.S.C. § 103(a) of claims 1, 3, 4, 6-10, and 12-19 together as a group (Br. 12). Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we have selected claim 1 as the representative claim to decide the appeal, with claims 3, 4, 6-10, and 12-19 standing or falling with claim 1.

The Appellant argues that the teachings of Fujino cannot be considered as “an art equivalent of the lip 20 of Jelinek since Fujino does not illustrate any portion of a metal gasket that has a lip such as the lip 20 of Jelinek with a sectioned profile that includes interior right angles” (Br. 14). In response the Examiner takes the position that the edge bonding profiles taught by Fujino in Figures 3(I), 3(II), and 3(III) are “equivalent” shapes that “can be used when applying an elastomeric material to the base sheet of a gasket” because each shape provides for an “increased surface area around the aperture to increase bonding strength of the elastomer to the base” (Ans. 8). We agree. Obviousness does not require that all of the features of the secondary reference be bodily incorporated into the primary reference *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Moreover, the artisan is not compelled to blindly follow the teaching of one prior art reference over the other without the exercise of independent judgment. *Lear Siegler, Inc. v. Aeroquip Corp.*, 733 F.2d 881, 889 (Fed. Cir. 1984). After all, “[a] person

of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742 (2007). We note that both the sealing device of Jelinek and the metal gasket of Fujino are used for sealing (Findings of Fact 1 and 8). Both devices include a metallic base and a sealing material bonded thereon at an edge of an opening (Findings of Fact 1, 2 and 9). In both devices the edge of the opening has a distinct profile that allows bonding of the sealing (elastomeric) material thereon. Hence, both devices are functionally equivalent. As such, modifying the profile of the lip of Jelinek to provide the tapered configuration, the trapezoidal configuration, or the tapered concave configuration of Fujino would not have been uniquely challenging to a person of ordinary skill in the art because it is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement." *KSR*, 127 S.Ct. at 1741. Therefore, the substitution appears to be the product not of innovation but of ordinary skill and common sense. Furthermore, we note that one ordinarily skilled in the art would readily appreciate that a tapered lip configuration in the sealing device of Jelinek would increase the bonding strength because of an increased bonding surface area and a reduction of stress concentrators by eliminating the internal right angles. Accordingly, we find that the configurations of Fujino would have been a predictable replacement for the lip configuration of Jelinek.

For the foregoing reasons, the Appellant's arguments do not persuade us that the Examiner erred in rejecting claim 1 as unpatentable over Jelinek in view of Fujino and further in view of Terai. The rejection of claim 1, and claims 3, 4, 6-10, and 12-19, standing or falling with claim 1, is sustained.

The Obviousness Rejection Based Upon Fujino in view of Terai

The Appellant argues the rejection under 35 U.S.C. § 103(a) of claims 1, 3-7, 9, 12, 13, 15-17, and 19 together as a group (Br. 12). Therefore, in accordance with 37 C.F.R. 41.37(c)(1)(vii), we have selected claim 1 as the representative claim to decide the appeal, with claims 3-7, 9, 12, 13, 15-17, and 19 standing or falling with claim 1.

The issue presented in the appeal of the rejection of claim 1, and claims 3-7, 9, 12, 13, 15-17, and 19 standing or falling with claim 1, is whether the Appellant has demonstrated that the Examiner erred in determining that the subject matter of claim 1, and claims 3-7, 9, 12, 13, 15-17, and 19 standing or falling with claim 1 is unpatentable over Fujino in view of Terai.

The Appellant argues that because Terai teaches that “the roughened surfaces 21 are only applied to opposing parallel surfaces” (underlining added), in effect Terai teaches away from providing roughened surfaces to the non-parallel surfaces of the tapered parts of Fujino” (Br. 15). We do not agree. Simply that there are differences between two references is insufficient to establish that such references “teach away” from any combination thereof. *See In re Beattie*, 974 F.2d 1309, 1312-13 (Fed. Cir. 1992). We agree with the Examiner that Terai does not teach that increased adhesion between the metallic gasket 1 and the sealing materials A and B is obtained only if the surfaces are parallel (Ans. 9). We find no disclosure in Terai, and the Appellant has not pointed to any such disclosure, which would discourage a person of ordinary skill in the art from providing a

texture (roughened surface) to the tapered configuration, the trapezoidal configuration, or the tapered concave configuration of Fujino. Therefore, we find that the disclosure of Terai does not teach away from providing roughened surfaces to the non-parallel surfaces of Fujino.

The Appellant further argues that the Examiner has failed to identify any motivation to combine Fujino and Terai to arrive at the Appellant's invention (Br. 15). That is, the Appellant contends that because the seal member 7 of Fujino does not provide "a sealing function during the operation of the device of Fujino" a person ordinarily skilled in the art would not be concerned with the adhesion strength of the sealing member 7 and hence would not look to the teachings of Terai to provide the increased adhesion (Br. 15). It appears that the Appellant is making a similar argument as presented above with respect to the rejection of claims 1, 3-10, 13, and 14 as unpatentable over Jelinek in view of Terai. Following a similar reasoning to that discussed above, we find that Fujino discloses a metal sealing gasket for sealing of an internal combustion engine having an elastic sealing material bonded to a profiled edge of the gasket (Findings of Fact 8 and 9). Similarly, Terai teaches a metallic sealing gasket for an automotive engine having a sealing material bonded thereon (Findings of Fact 4 and 5). Terai further teaches to roughen (texture) the surface of the metallic gasket in the region where the sealing material is bonded thereon in order to enhance adhesion between the metallic gasket and the sealing material (Finding of Fact 6). One of ordinary skill in the art would have appreciated that a roughened (textured) surface such as that of Terai on the profiled edge of the metallic gasket of Fujino would likewise facilitate improved adhesion between the profiled edge and the sealing material. A

person of ordinary skill in the art would have been prompted to provide the metallic gasket of Fujino with the roughened (textured) surface of Terai in light of Terai's specific teaching that such a textured surface provides for improved adhesion between a metallic gasket and a sealing material.

Furthermore, one of ordinary skill in the art would have also appreciated that improved adhesion between the profiled edge and the elastic (sealing) material in the metallic gasket of Fujino also improves resistance to fatigue stress, heat, and pressure that result when using the gasket of Fujino as intended, that is, when sealing a cylinder block, a chain case, and a cylinder head of an internal combustion engine. Modifying the metallic gasket of Fujino to provide a textured surface would not have been uniquely challenging to a person of ordinary skill in the art and involves nothing more than the application of a known technique to a piece of prior art ready for the improvement. Thus, the proposed modification appears to be the product not of innovation but of ordinary skill and common sense. A person of ordinary skill in the art would readily appreciate that the benefits gained by providing the textured surface of Terai could also be achieved in the metallic gasket of Fujino when bonding the elastic (sealing) material to the profiled edge. Moreover, the Appellant does not provide any evidence to show that the modification of Fujino to provide a textured surface would have been beyond the technical grasp of a person of ordinary skill in the art.

For the reasons discussed above the Appellant's arguments do not persuade us that the Examiner erred in rejecting claim 1, and claims 3-7, 9, 12, 13, 15-17, and 19, standing or falling with claim 1 as being unpatentable over the teachings of Fujino and Terai. Therefore, the rejection of claims 1, 3-7, 9, 12, 13, 15-17, and 19 is sustained.

DECISION

The decision of the Examiner to reject claims 1, 3-10, 13, and 14 under 35 U.S.C. § 103(a) as unpatentable over Jelinek in view of Terai is affirmed.

The decision of the Examiner to reject claims 1, 3, 4, 6-10, and 12-19 under 35 U.S.C. § 103(a) as unpatentable over Jelinek in view of Fujino and further in view of Terai is affirmed.

The decision of the Examiner to reject claims 1, 3-7, 9, 12, 13, 15-17, and 19 under 35 U.S.C. § 103(a) as unpatentable over Fujino in view of Terai is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

JRG

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