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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KEVIN SAMUEL KLASING, CHING-PANG LEE  
and SCOTT DAVID HUNTER

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Appeal 2010-010434  
Application 11/642,002  
Technology Center 3700

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Before MICHAEL L. HOELTER, LYNNE H. BROWNE and  
BARRY L. GROSSMAN, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

### STATEMENT OF THE CASE

This is a decision on appeal, under 35 U.S.C. § 134(a), from a final rejection of claims 1-16 and 18-21. App. Br. 4. Claim 17 has been canceled. App. Br. 4. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

### THE CLAIMED SUBJECT MATTER

The disclosed subject matter pertains to increasing the efficiency of gas turbine engines and more particularly to a stator bullnose cooperating with a rotary seal “for reducing aerodynamic losses thereat.” Spec. paras. [0001], [0020]. Independent claim 1 is illustrative of the claims on appeal and is reproduced below:

1. A turbine stage comprising:
  - an annular combustor;
  - a first stage turbine stator nozzle directly following said combustor, and including a row of vanes mounted between inner and outer bands, and said inner band includes a radially inwardly extending mounting flange;
  - a row of blades mounted to a perimeter of a rotor disk and spaced aft from said mounting flange to define a forward cavity for channeling purge air therethrough;
  - each blade including an inner platform adjoining said inner band at a rotary seal therewith disposed atop said forward cavity for discharging said purge air; and
  - said inner band terminates at a trailing edge thereof and includes a full height bullnose extending radially inwardly from said vanes to said trailing edge for reducing aerodynamic losses at said rotary seal.

### REFERENCES RELIED ON BY THE EXAMINER

Shepherd	US 5,252,026	Oct. 12, 1993
Correia	US 5,358,374	Oct. 25, 1994

### THE REJECTIONS ON APPEAL

1. Claims 1 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Shepherd. Ans. 4.
2. Claims 11-13, 18 and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kuwabara. Ans. 5.
3. Claims 1-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuwabara and of Shepherd. Ans. 5.
4. Claims 2-7, 9, 10, 12-16, 19 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shepherd and Correia. Ans. 7.
5. Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shepherd, Correia and Kuwabara. Ans. 9.
6. Claims 2, 3, 12-16, 19 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shepherd and Kuwabara. Ans. 10.

### ANALYSIS

*The rejection of claims 1 and 11 as being anticipated by Shepherd*

Independent claims 1 and 11 are separately argued and will be separately addressed. Claim 1 includes the limitation “said inner band terminates at a trailing edge thereof and includes a full height bullnose extending radially inwardly from said vanes to said trailing edge for reducing aerodynamic losses at said rotary seal.” We note that the claim terms “bullnose” and “edge” are not expressly defined in Appellants’ Specification but each term is used therein consistent with its dictionary definition. The claim term “bullnose” is defined as “a rounded or obtuse

exterior angle, as the corner made by two walls.”<sup>1</sup> A similar definition is also proffered by Appellants and accepted by the Examiner. App. Br. 20; Ans. 14. The claim term “edge” is defined as “a line or border at which a surface terminates.”<sup>2</sup> During prosecution before the Office, claims are to be given their broadest reasonable interpretation consistent with 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). We thus understand this limitation as broadly reciting an inner band that terminates at a trailing line or border (“edge”) and that this inner band includes a rounded exterior angle or corner (“bullnose”) that extends inwardly from the vanes to this trailing line or border (“edge”).

The Examiner has identified corresponding inner band 26 and bullnose 46 of Shepherd and finds that the “inner band terminates axially aft at a trailing edge of the inner band.” Ans. 4. The Examiner does not specifically identify the trailing edge in Shepherd’s drawings nor do Appellants specifically identify the trailing edge in their drawings.

Appellants contend that “Shepherd fails to disclose any ‘stator bullnose 46’” and instead discloses an “aft edge [that] is predominantly radially flat or blunt, with a small curved transition to the horizontal or axial surface 40.” App. Br. 16. Appellants’ acknowledgement of Shepherd’s disclosure of “a small curved transition to the horizontal” appears to be an acknowledgement that Shepherd discloses a bullnose as that term is defined *supra*. Nevertheless, Appellants provide an enlargement of Shepherd’s Fig.

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<sup>1</sup> Webster’s Encyclopedic Unabridged Dictionary of the English Language 196 (1989).

<sup>2</sup> Webster’s Encyclopedic Unabridged Dictionary of the English Language 453 (1989).

1 and focus on the flat or blunt portion downstream Shepherd's curved portion. App. Br. 16, 17. Appellants contend that this enlargement shows that Shepherd's "inner band 26 clearly does not terminate in any bullnose extending from the vanes 28 to the terminating trailing edge, but terminates solely at the vertically flat trailing edge." App. Br. 17. Appellants' argument that Shepherd's inner band does not terminate *in any bullnose* is not consistent with the claim limitation which is directed to an inner band that terminates "at a trailing edge" and that the bullnose merely extends "to said trailing edge."

Appellants also contend that the reduction of aerodynamic loss "cannot occur in Shepherd in view of the different configuration thereof." App. Br. 17. However, Appellants have not provided evidence or declarations to this effect and instead rely on attorney argument<sup>3</sup> that Shepherd's upper curved corner would not have the same effect on aerodynamic loss as Appellants' upper curved corner. To this point, the Examiner has found that Shepherd's configuration "is inherently of the same claimed configuration" as Appellants' device (Ans. 12, 14) and we are instructed that when relying on the theory of inherency, the Examiner has the initial burden of providing a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic reasonably flows from the teachings of the applied prior art. *See In re King*, 801 F.2d 1324, 1327 (Fed. Cir. 1986). Here, the Examiner

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<sup>3</sup> *See In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) ("Attorney's arguments in a brief cannot take the place of evidence."); *see also In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984) (lawyer arguments and conclusory statements which are unsupported by factual evidence are entitled to little probative value).

finds that “the bullnose 46 of Shepherd is considered to be configured for reducing aerodynamic losses at the rotary seal,” and that it would also experience the Coanda effect, because the convex configuration of Shepherd’s seal is “the same claimed configuration” as that of Appellants’ device which provides such advantages. Ans. 12, *see also* 14. We are further instructed that once the PTO establishes a prima facie case of anticipation based on inherency, the burden shifts to the applicant to prove that the prior art does not possess the characteristic at issue. *King*, 801 F.2d at 1327. *See also In re Best*.<sup>4</sup> Accordingly, and based on the record presented, we are not persuaded that the Coanda effect would react any differently whether the gas flows over Shepherd’s inner band with trailing bullnose or over Appellants’ inner band with trailing bullnose.

Appellants also contend that the Examiner erred in not addressing Appellants’ enlargement of Shepherd’s Fig. 1. App. Br. 18, Reply Br. 3-4. The Examiner finds that “Appellants’ enlargement of figure 1 of Shepherd provides distortion of the bullnose, and that in the examiner’s view, original figures 1 and 2 of Shepherd that are present in the printed patent should be utilized, and clearly show element 46 to be a bullnose.” Ans. 13. The Examiner’s reluctance to rely on enlargements due to distortions is reasonable because an enlargement of Appellants’ figure also appears to distort Appellants’ bullnose 62 by disclosing a flat or blunt downstream portion similar in kind (but perhaps not in size) to that which Appellants rely

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<sup>4</sup> It is well settled that where “the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.” *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977).

on to distinguish their claimed invention from Shepherd. We thus do not fault the Examiner's reluctance to rely on enlargements in this matter due to distortions.

Appellants also assert that this enlargement indicates that Shepherd's terminating end lacks a "full height" bullnose. Ans. 16, 19. Appellants' contention is not persuasive as nowhere do Appellants show where Shepherd's curvature from one surface to another is truncated or interrupted.

Appellants also contend that "Shepherd is completely silent on any stated problem or unexpected result or any reduction in aerodynamic losses at the flat aft edge 46." App. Br. 20. Appellants provide no support to the effect that a rejection under Section 102 requires the problem solved to be stated or requires a statement addressing unexpected results. We instead agree with the Examiner that "this is not a requirement under a section 102 rejection." Ans. 14. We have been instructed that claims must be distinguished from the prior art in terms of structure rather than function. *See In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Additionally, our reviewing court has provided guidance to the effect that one skilled in the art is able to read a reference for all that it teaches and not limit a reference to its preferred embodiment. *See Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989). We also note *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772 (Fed. Cir. 1983) to the effect that what matters is whether all of the limitations of the claim are found in the reference, not whether the reference "teaches" what the subject application teaches.

Appellants also appear to imply that Shepherd's corner is "relatively square" when it is clearly (and as acknowledged *supra*) curved. App. Br. 17.

Regarding independent claim 11, Appellants present similar arguments as set forth with respect to claim 1. Additionally, Appellants contend that the “aft edge 46 in Shepherd is clearly flat over its substantially full height, with the arcuate transition to the surface 62 being relatively short, and the examiner has not and cannot show otherwise.” App. Br. 22. The relative size of Shepherd’s “arcuate transition” (i.e. bullnose) is not at issue. What is at issue is whether Shepherd discloses the structure claimed, i.e., an inner band that terminates axially aft at a trailing edge with this inner band including a bullnose that is arcuate to this trailing edge. Appellants’ focus on the size of Shepherd’s bullnose is misplaced.

Based on the record presented, we sustain the Examiner’s rejection of claims 1 and 11 as being anticipated by Shepherd.

*The rejection of claims 11-13, 18 and 21 as being anticipated by Kuwabara*

Appellants present separate arguments for each of these claims. App. Br. 24-33. We address each claim separately.

Claim 11 requires that “said inner band terminates axially aft at a trailing edge thereof and includes a bullnose being arcuate both axially and radially from said vanes to said trailing edge.” The Examiner references Kuwabara’s Fig. 10 and more specifically identifies item 39 as an inner band with a bullnose atop thereof. Ans. 5. Appellants contend that “the examiner has failed to recognize that figure 10 in Kuwabara is a crude schematic” and that corresponding Fig. 11 provides less crude details of Fig. 10. App. Br. 24, *see also* Ans. 26 and Reply Br. 5. As the issue here is the curvature of the aft end of the inner band, we agree with the Examiner that “Figure 10 is a cross sectional view, and clearly more accurately depicts the

claimed bullnose configuration” as contrasted with Fig. 11 which is a perspective view and does not depict any cross section of the bullnose. Ans. 16. We further note that the quality of the figure has little to do with what the figure may actually disclose. We are not persuaded the Examiner erred in applying Fig. 10 of Kuwabara.

Appellants also address the Examiner’s reluctance to consider an enlargement of Kuwabara’s Fig. 10. App. Br. 25, Reply Br. 3-4, Ans. 17. However, we do not find Appellants’ contentions to be persuasive in view of similar contentions, and our analysis thereof, made with respect to Shepherd *supra*. Appellants rely on this enlargement to show that Kuwabara’s inner band 39 “clearly terminates in a radially flat and blunt configuration.” App. Br. 25. More specifically, Appellants contend that the “convex portion in inner shroud 39 of Kuwabara, as shown in figure 10, does not terminate aft at the trailing edge of that inner shroud, but terminates upstream therefrom.” App. Br. 25. Appellants’ arguments notwithstanding, claim 11 requires an inner band to terminate “at a trailing edge” with this inner band including a bullnose that is arcuate “to said trailing edge.” As these claim terms are broadly construed (*supra*) Appellants do not persuade us that Kuwabara’s item 39 fails to terminate “at a trailing edge” (i.e. line or border) or that Kuwabara’s curved corner does not extend “to said trailing edge.”

Appellants also address the lack of any stated problem being solved by Kuwabara’s item 39 along with no unexpected results (App. Br. 26) but again, Appellants provide no support to the effect that a rejection under Section 102 requires the problem solved to be stated or requires a statement addressing unexpected results (*see* Ans. 17). Appellants also contend that, as with Shepherd, “Kuwabara will clearly promote aerodynamic losses.”

App. Br. 26. This contention is believed in response to the Examiner's finding that "the bullnose of Kuwabara is configured for reducing aerodynamic losses at the rotary seal, since it is inherently of the same claimed configuration." Ans. 16-17. As above, upon a finding of inherency, the burden shifts to Appellants and Appellants do not provide any persuasive evidence that rebuts the Examiner's findings other than attorney argument.

Independent Claim 21 further recites "a first stage turbine nozzle" in addition to limitations directed to an inner band, a bullnose and a trailing edge. Appellants employ many of the same arguments as employed *supra* and also dispute that Kuwabara's "nozzle 37 may be considered as a first stage nozzle" and further that "the Kuwabara inventors themselves understood the structural differences between first and second stage nozzles." App. Br. 27-28. The Examiner contends that claim 21 "does not recite any structural features that relate to the stage number" and further that the "nozzle 37 may be designated as a first stage nozzle, since the designation of a stage number is arbitrary without reference to any structural features that relate to the stage number." Ans. 18.

Appellants' arguments are not persuasive and specifically Appellants' contention that Kuwabara's inventors understand the structural differences between first and second stage nozzles. This is because Appellants and Kuwabara use the term "stage" and "first stage" differently. For example, Appellants identify "stage" as including both a stator nozzle *and* a row of turbine blades (Spec. para. [0020]) while Kuwabara uses the term "stage" to mean *either* a moving blade *or* a stationary blade, but not both together (Kuwabara 1:25-47). Further, Appellants employ the term "first stage" to mean the first of a series of stages in that specific component (for example,

booster compressor 16 has four stages, high pressure compressor 18 has seven stages, high pressure turbine 22 is a single stage turbine and low pressure turbine 24 has five stages). Spec. paras. [0030]-[0034]. Appellants identify the single stage in component 22 as the “first stage” despite component 22 being an intermediate component. Spec. paras. [0034], [0037], *see also* Reply Br. 8-9 regarding Appellants’ discussion of the sequential numbering of stages. In contrast, Kuwabara identifies blade 32 as “first stage” and also identifies downstream blade 35 *in the same component* as “first stage.” Kuwabara 1:25-28. Unlike Appellants, Kuwabara makes a distinction between multiple “first stages” depending on whether it is stationary or moving and not sequentially as do Appellants. Hence, the meaning of both “stage” and “first stage” varies depending on the user and as such, we are not persuaded by Appellants’ contention that ““first stage turbine nozzle’ is clearly a term of art.” Reply Br. 7, *see also* 9.

Accordingly, and based on the record presented, the Examiner’s finding that the “designation of a stage number is arbitrary” is not unreasonable.

Appellants also contend that the Examiner “overlooks that the first stage turbine nozzle directly follows the combustor.” App. Br. 28.

However, the limitation of “directly following said combustor” arises in claim 1, not claim 21; and claim 1 is not rejected here as being anticipated by Kuwabara. Appellants’ contention is not persuasive.

Regarding the limitations of dependent claims 12 and 13, the Examiner indicates where Kuwabara discloses these additional limitations. Ans. 5. However, Appellants do not address the specific rejections of claims 12 and 13 but instead provide arguments directed to their parent claim regarding Kuwabara’s item 39. App. Br. 29.

Regarding claim 18, Appellants address whether Kuwabara discloses a bullnose and not the Examiner's additional rejection of claim 18 and the stated reasons for this rejection. App. Br. 29.

Based on the record presented, we sustain the Examiner's rejection of claims 11-13, 18 and 21.

*The rejection of claims 1-3 as being unpatentable  
over Kuwabara and of Shepherd*

More specifically with respect to claim 1, Appellants rely on many of the arguments previously addressed and also contend that the Examiner has not provided any weight to the claim language that a first stage turbine stator nozzle "directly following said combustor." App. Br. 32. Appellants do not comprehend how the Examiner can find (Ans. 6) that Kuwabara's nozzle 37 follows combustor 30 when nozzle 32 is disposed therebetween. App. Br. 32. The Examiner's stated basis is "because [nozzle 37] is in flow alignment with the discharge of combustion gases from the combustor." Ans. 18.

As understood from Kuwabara's Fig. 10, the prior art turbine (unnumbered) illustrated therein directly follows combustor 30. Kuwabara discloses that this prior art turbine includes nozzles 37. Kuwabara 1:31. Kuwabara does not disclose any structure between the combustor and the turbine other than fitting flange 31 connecting the two together. Kuwabara 1:16-19. Hence, because the turbine is in direct flow alignment with the combustor, it does not appear unreasonable for the Examiner to find that the turbine's nozzle 37 directly follows the combustor. Ans. 6. Appellants do not show that the Examiner's reliance on flow alignment is in error but instead Appellants focus on other turbine components without disputing that the turbine directly follows the combustor. We have previously addressed

Appellants' contentions regarding "first stage" and accordingly, Appellants' contentions are not persuasive.

With respect to claims 2 and 3, Appellants do not address the additional rejections of these claims provided by the Examiner. *See* Ans. 6. Instead, Appellants contend that Kuwabara's inner band 34 lacks a bullnose (App. Br. 33) and do not show how the Examiner's specific rejections of claims 2 and 3 are in error.

Accordingly, we sustain the Examiner's rejection of claims 1-3.

*The rejection of dependent claims 2-7, 9, 10, 12-16, 19 and 20  
as being unpatentable over Shepherd and Correia*

Appellants present separate arguments for each of these dependent claims. App. Br. 33-40. We address each claim separately.

Appellants begin by discussing the rejections of parent claims 1 and 11 and proffer arguments previously made which are not considered persuasive. App. Br. 34. Specifically addressing the dependent claims at issue in this rejection, Appellants contend that the reason for combining Shepherd and Correia is a "fabrication" and based on "hindsight." App. Br. 34. The Examiner's stated reason for the above combination is "for the purpose of providing a seal at the stator band and the rotor platform to prevent leakage of combustion gases." Ans. 8. This is nearly a direct quote from Correia which provides guidance to "provide separate sealed cavities as is conventionally known for preventing leakage of the hot combustion gas." Correia 4:14-17. We thus are not persuaded that the Examiner's stated reason is either a fabrication or is based on hindsight.

Appellants also argue that Correia fails to disclose certain claim limitations (App. Br. 34), but the Examiner has not relied on Correia for that teaching and hence Appellants' argument is not persuasive.

Appellants further address the Federal Circuit's discussion regarding holding an invention obvious on the basis of engineering principles as well as "a subjective view of 'common experience.'" App. Br. 35. The features relied on by the Examiner when referencing Correia are expressly illustrated and discussed (Ans. 8); they are not "subjective" as Appellants imply.

More specifically with respect to claims 2 and 12, Appellants do not argue the specific rejection of these claims but instead challenge the Examiner's reason to combine Shepherd and Correia. Appellants do not persuade us that the Examiner's grounds of rejection lack articulated reasoning with rational underpinning to support the legal conclusion of obviousness. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Regarding claims 3 and 13, Appellants do not argue the Examiner's specific rejection of these claims (*see* Ans. 7) but instead contends that Shepherd's inner band 26 "clearly terminates at the blunt and flat aft end 46" (App. Br. 36). Appellants are not addressing the Examiner's additional rejection of these two dependent claims but instead the rejection of their respective parent claims.

Regarding claims 4 and 15, again Appellants are not addressing the specific rejection of these claims by the Examiner. Ans. 7. Instead, Appellants contend that Shepherd's configuration "teaches away" from the claimed configuration. Appellants' contention is not persuasive in view of instructions from our reviewing court that the "prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of

these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed.” *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

Regarding claims 5 and 16, Appellants contend that Shepherd’s aft end of inner band 26 “is clearly blunt and cannot converge in the manner recited in these claims” and further that Appellants’ “recited stator bullnose 62 is expressly tailored for reducing aerodynamic losses, with the specific Coanda configuration being optimum.” App. Br. 37. We note that Appellants argue a difference in function, not structure, and Appellants’ argument do not persuade us that the Examiner’s finding that such function would be inherent in Shepherd’s configuration is in error. Appellants also do not argue the Examiner’s specific rejection of these dependent claims. Ans. 7.

Regarding claim 6, Appellants again are not arguing the specific rejection of this claim. App. Br. 37.

Claim 7 includes the additional limitation that both the stator and rotor bullnoses “are fully convex in radial elevation.” Appellants contend that both Shepherd and Correia lack this claim limitation. App. Br. 37. Appellants appear to be ignoring the fully curved corners disclosed in both references and do not persuade us that these curved corners are truncated or otherwise curtailed or shortened, i.e., not “fully convex” as claimed.

With respect to dependent claims 9 and 19, Appellants do not address Shepherd’s item 54 identified by the Examiner as the claimed “stator wing.” Ans. 7. In fact, Appellants do not address the Examiner’s specific rejection of claims 9 and 19 but instead reiterate that both Shepherd and Correia

“terminate in blunt aft ends and therefore do not share the special combination of features recited in these claims.” App. Br. 38.

Both claims 10 and 14 include the additional limitation of the inner band further including “a lower surface under said stator bullnose disposed generally parallel to and axially overlapping said rotor wing.” Appellants identify lower surface 70 as disclosing this limitation and contend that neither Shepherd nor Correia disclose “any analogous lower surface 70 under the stator bullnose” that terminates as claimed. Here, Appellants are silent with respect to and do not address the corresponding lower surface of Shepherd which the Examiner indicates is “near 60.” Ans. 7. Appellants also re-argue the matter of the bullnose which has previously been discussed and decided.

Claim 19 is directed to an additional limitation concerning a certain configuration of the mounting flange and also a stator wing extending aft from the mounting flange. Appellants contend that this configuration is not shown in Shepherd or Correia. App. Br. 38. The Examiner relies on Shepherd for teaching this configuration, not Correia (Ans. 7). Further, like Appellants’ item 72, Shepherd’s item 54 extends from a support that is itself supported by corresponding mounting flange (48) which is similar to Appellants’ configuration that likewise discloses a support extending from the mounting flange (also numbered 48). Appellants do not persuade us that there is any claimed structural difference between the two manners of support.

Dependent claim 20 includes the further limitation of a “cavity disposed between said nozzle and rotor disk.” Appellants do not dispute the existence of such a cavity in the references but instead addresses the

termination of Shepherd's inner band 26 which has previously been discussed. App. Br. 39. We note once again that the limitation set forth in parent claim 11 (similar to that in independent claim 1) specifies that the inner band "terminates axially aft at a trailing edge thereof" and not "in a stator bullnose" as Appellants assert. App. Br. 39.

Accordingly, and based on the record presented, we sustain the Examiner's rejection of claims 2-7, 9, 10, 12-16, 19 and 20 as being obvious over Shepherd and Correia.

*The rejection of claim 8 as being  
unpatentable over Shepherd, Correia and Kuwabara*

Claim 8 ultimately depends from claim 1 and further requires that the "stator bullnose has a larger radius of curvature than said rotor bullnose." In rejecting this claim, the Examiner states that "Kuwabara is merely relied upon to teach a stator bullnose having a larger radius of curvature than the rotor bullnose." Ans. 23. Appellants contend the Examiner has relied on "hindsight" as the basis for this rejection and that the stated reason for the rejection of claim 8 is faulty (App. Br. 40). Notably, Appellants do not dispute the Examiner's specific reliance on Kuwabara for teaching the additional limitation of claim 8. Further, Appellants do not show where the Examiner's stated reason to combine,<sup>5</sup> which is similar to that previously discussed, is in error or lacks articulated reasoning with rational underpinning as required. *See KSR* 550 U.S. at 418. Appellants' reiteration

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<sup>5</sup> The Examiner states that it would have been obvious to combine the references "for the purpose of providing a seal at the stator band and the rotor platform to prevent leakage of combustion gases." Ans. 9-10.

of arguments previously presented are also not persuasive. App. Br. 40-42. Accordingly, we sustain the Examiner's rejection of claim 8.

*The rejection of dependent claims 2, 3, 12-16, 19 and 20  
as being unpatentable over Shepherd and Kuwabara*

Appellants argue these claims together and Appellants also present separate additional arguments specific to each claim. App. Br. 42-48. Regarding Appellants' common assertions, Appellants address parent claims 1 and 11 stating that the features disclosed in the cited art "teach away from Appellants' claims" and that the Examiner has not provided sufficient legal motivation for their combination. App. Br. 43. We are not persuaded by these assertions for reasons similar to those previously discussed.

More specifically with respect to claims 2 and 12, Appellants again assert that Shepherd's "inner band 26 terminates in the blunt and flat aft end 46" and argues a distinction of Kuwabara's "second stage blades 37" (App. Br. 43) rather than address the Examiner's specific reason for the rejection of these dependent claims (Ans. 10). Appellants also contend that the cited references "provide no problems relevant to any combination of the disparate disclosures." App. Br. 43-44. We disagree with Appellants as the Examiner has provided a reason for their combination (Ans. 11) and Appellants cite no authority that the cited art needs to identify the specific problem Appellants address.

Regarding claims 3 and 13, Appellants do not argue the Examiner's specific rejection of these claims (*see* Ans. 10) but instead contends that Shepherd's inner band 26 "clearly terminates at the blunt and flat aft end 46" (App. Br. 44). Appellants are not addressing the Examiner's specific

rejection of these two dependent claims but instead re-argue the rejection of their respective parent claims.

Claim 14 includes the additional limitation of the inner band further including “a lower surface under said bullnose disposed generally parallel to and axially overlapping said rotor wing.” Appellants identify lower surface 70 as disclosing this limitation and contend that neither Shepherd nor Kuwabara disclose “any analogous lower surface joining an arcuate bullnose.” App. Br. 44-45. Here, Appellants are silent with respect to and do not address the corresponding lower surface of Shepherd which the Examiner indicates is “near 60.” Ans. 10. Appellants also re-argue the rejection of the parent claim.

Regarding claim 15, Appellants contend that “Shepherd and Kuwabara are blunt or right-angled without any convex curvature.” App. Br. 45. Appellants’ contention that Shepherd’s aft end is blunt or right-angled and without convex curvature is without merit in view of Shepherd’s Fig. 10.

Regarding claim 16, Appellants contend that Shepherd’s aft end of inner band 26 “is clearly blunt and cannot converge in the manner recited in these claims” and further that Appellants’ “recited stator bullnose 62 is expressly tailored for reducing aerodynamic losses, with the specific Coanda configuration being optimum.” App. Br. 45. We note that Appellants argue a difference in function, not structure, and Appellants do not persuade us that the Examiner’s finding that such function would be inherent in Shepherd’s configuration is in error. Appellants also do not argue the specific rejection of dependent claim 16 directed to both the inner band and

the blade platform being “coextensive in elevation at the rotary seal” that converge radially inwardly. Ans. 10.

As mentioned previously, claim 19 requires an additional limitation directed to a certain configuration of the mounting flange and a stator wing extending aft from the mounting flange. Appellants contend that this configuration is not shown in Shepherd or Kuwabara. App. Br. 45-46. The Examiner relies on Shepherd for teaching this configuration, not Kuwabara. Ans. 10. Further, like Appellants’ item 72, Shepherd’s item 54 extends from a support that is itself supported by corresponding mounting flange (48) which is similar to Appellants’ configuration that likewise discloses a support extending from the mounting flange (also numbered 48). Appellants do not persuade us that there is any claimed structural difference between the two manners of support.

As mentioned previously, claim 20 includes the further limitation of a “cavity disposed between said nozzle and rotor disk.” Appellants do not dispute the existence of such a cavity in the references but instead contends that Shepherd’s inner band 26 “terminates in the blunt aft end 46” which has previously been addressed. App. Br. 46. Appellants do not address the Examiner’s specific rejection of claim 20. Ans. 10.

Accordingly, and in view of the record presented, we sustain the Examiner’s rejection of claims 2, 3, 12-16, 19 and 20 as being obvious over Shepherd and Kuwabara.

Upon consideration of the record as a whole in light of Appellants’ contentions and the preponderance of relevant evidence, we are of the opinion that Appellants have not successfully rebutted the Examiner’s grounds of rejection.

Appeal 2010-010434  
Application 11/642,002

DECISION

The Examiner's rejections of claims 1-16 and 18-21 are 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).

AFFIRMED

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