



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/731,147	12/31/2012	Nicholas D. Aiello	62759US01; 67097-2129PUS1	5426
54549	7590	06/16/2020	EXAMINER	
CARLSON, GASKEY & OLDS/PRATT & WHITNEY 400 West Maple Road Suite 350 Birmingham, MI 48009			PETERS, BRIAN O	
			ART UNIT	PAPER NUMBER
			3745	
			NOTIFICATION DATE	DELIVERY MODE
			06/16/2020	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptodocket@cgolaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* NICHOLAS D. AIELLO and UYEN PHAN

---

Appeal 2018-007338  
Application 13/731,147  
Technology Center 3700

---

BEFORE STEFAN STAICOVICI, JEREMY M. PLENZLER, and  
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

PLENZLER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 3–9, and 11–16. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Raytheon Technologies Corporation. Update to Real Party in Interest filed Apr. 23, 2020.

### CLAIMED SUBJECT MATTER

The invention is directed to a compressor rotor. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A compressor rotor comprising:
  - a rotor centered on an axis, and having a groove with opposed side edges, and said groove receiving a plurality of removable compressor blades, said groove having tangential sides, and said blades having tangential side surfaces to be in contact with said tangential sides of said groove, and at least one slot cut into said side edges;
  - a first radial distance defined measured from a radially outer edge of said side edge to a radially outer beginning point of said tangential sides of said groove, and a second radial distance defined radially between said radially outer beginning point of said tangential sides to a radially inner end of said tangential sides of said groove, and a ratio of said first radial distance to said second radial distance being between 1.1 and 5.0; and
  - said tangential sides of said groove are defined at an angle, said angle being greater than 0 and less than 75 degrees measured from a line parallel to a center axis of said rotor.

### REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Lechthaler	US 2,931,625	Apr. 5, 1960
Seda	US 6,619,030 B1	Sept. 16, 2003

### REJECTIONS<sup>2</sup>

Claims 1 and 3–8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lechthaler.

---

<sup>2</sup> As noted in the Examiner's Answer, the rejection under 35 U.S.C. § 112 was withdrawn by the Examiner. Ans. 2.

Claim 9 and 11–16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seda and Lechthaler.

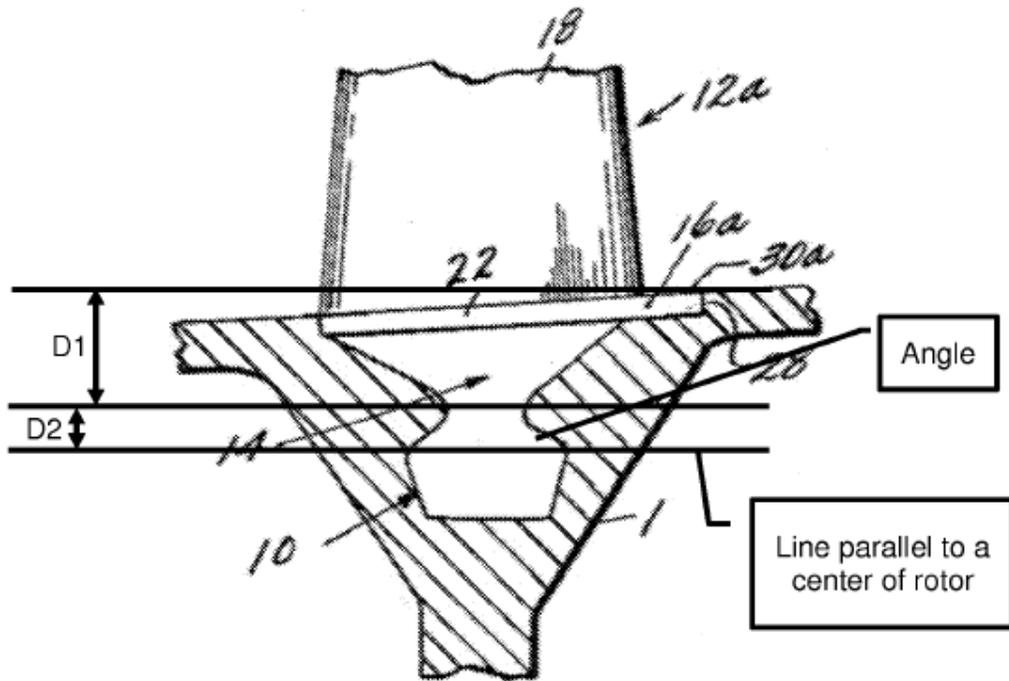
#### OPINION

Appellant does not address any particular claim separately. *See* Appeal Br. 2–3. For purposes of this decision, we consider Appellant to be arguing claims 1 and 3–8 as a group and claims 9 and 11–16 as a group. We select claims 1 and 9 as representative, and the remaining claims stand or fall with those claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Claims 1 and 9 each require “a ratio of said first radial distance to said second radial distance being between 1.1 and 5.0.” *See* Appeal Br. 4–5 (Claims App.). The Examiner’s rejections each rely on Lechthaler’s drawings as teaching this limitation. Final Act. 4, 8. Appellant’s sole dispute with the Examiner’s rejections is whether it is proper for the Examiner to rely on Lechthaler’s drawings as teaching the recited ratio range noted above. Appeal Br. 2–3.

Appellant does not dispute that the Lechthaler’s drawings, themselves, depict a distance ratio within the recited range. Appellant contends, however, that “[u]nless a patent clearly says its drawings are to scale, an Examiner is not allowed to measure those drawings.” Appeal Br. 2. Without discussing any particular portion of Lechthaler, Appellant alleges that “there is nothing within Lechthaler that would lead one to believe the drawing figures are to scale.” *Id.*; *see also id.* at 3 (“The disclosure gave no indications that the drawings were drawn to scale.”). Appellant does not provide an accurate characterization of Lechthaler’s teachings.

The Examiner’s annotated version of Lechthaler’s Figure 8 is reproduced below.



The figure reproduced above is Figure 8 from Lechthaler, which “is a view showing one of two locking blades . . . and showing the shape of the entry slot” (Lechthaler 2:20–21), as well as the Examiner’s annotations to illustrate how Lechthaler meets the recited ratio (Final Act. 5). The Examiner finds that “a ratio of said first radial distance [(D1)] to said second radial distance [(D2) is] between 1.1 and 5.0.” Final Act. 4. The Examiner explains that “[d]rawings and pictures can anticipate claims if they clearly show the structure which is claimed.” *Id.* at 5 (citing *In re Mraz*, 455 F.2d 1069 (CCPA 1972)). The Examiner explains that precise measurements for Lechthaler’s Figure 8 are not being relied on because “[i]mmediately upon viewing Lechthaler’s figure it clearly and reasonably discloses, suggests and teaches to one of ordinary skill in the art that D[1] is at least slightly larger

than D[2] and not so absurdly large as being 5 times the distance of D[2].”<sup>3</sup>  
Ans. 5.

Patent drawings not designated as being drawn to scale cannot define the precise proportions of the elements and cannot be relied upon to show particular sizes if the specification is completely silent on the issue. *Hockerson-Halberstadt, Inc. v. Avia Grp. Int’l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000). That does not mean, however, “that things patent drawings show clearly are to be disregarded.” *In re Mraz*, 455 F.2d at 1072 (emphasis omitted). A drawing is evaluated on the basis of what it reasonably discloses and suggests to a person of ordinary skill in the art. *In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979). It has long been the case that “[d]escription for the purposes of anticipation can be by drawings alone as well as by words.” *In re Bager*, 47 F.2d 951, 953 (CCPA 1931).

In *Mraz*, for example, the claims at issue required that mating portions of roll members (for removing edge burrs from thin metal strips) define a strip-receiving peripheral groove with inwardly converging inclined surfaces at an angle, with respect to a plane perpendicular to the axis of the roll member, “not exceeding 15°.” *Mraz*, 455 F.2d at 1070. The principal reference (Wilson) disclosed “edge rolls” that were provided for removing the burrs from side edges of thin metal strips. *Id.*

---

<sup>3</sup> The Examiner appears to have mistakenly reversed the reference to dimensions D1 and D2, which we corrected as noted.

Figure 3 of Wilson, as depicted in *Mraz*, is reproduced below.

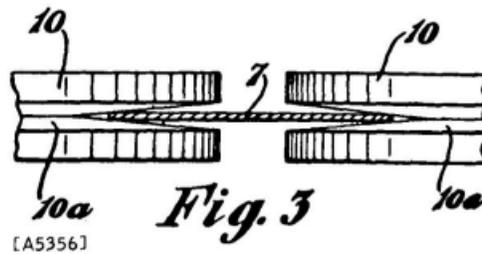
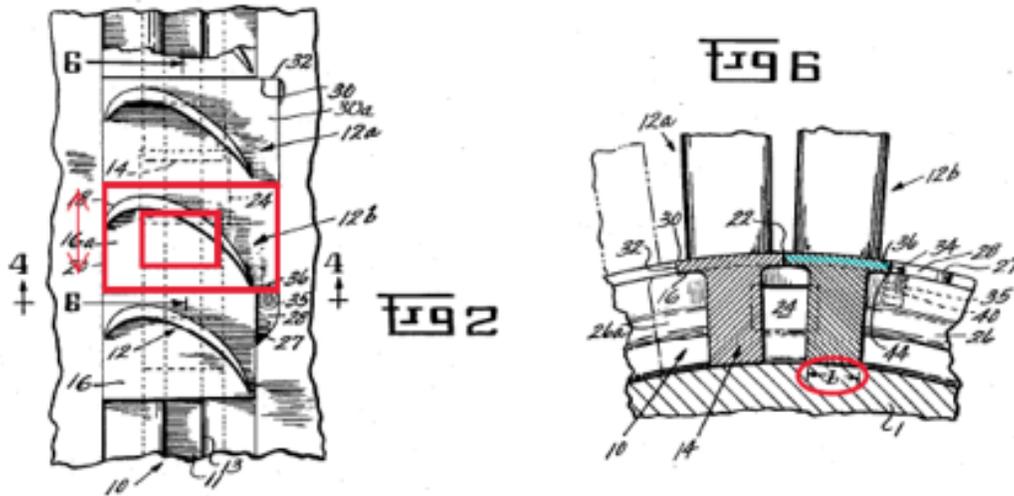


Figure 3 from *Mraz* depicts “edge rolls” 10 and thin metal strip 7. *Id.* at 1071. Without reference to expert testimony, the Court found that “[t]he half-angle of the V-shaped groove 10a measures about 6° on this drawing,” although noting that “the specification says nothing about the angle.” *Id.* The Court found that the Wilson reference “focuses on the edge rolls, showing them with great particularity and showing the grooves thereon to have an angularity well within the range recited in appellant’s claims.” *Id.* at 1072. In other words, although patent drawings are not working drawings, that does not mean that “things patent drawings show clearly are to be *disregarded.*” *Id.*

Based on the facts of this particular case, the Examiner has the better position in view of Lechthaler’s teachings. Annotated versions of Lechthaler’s Figures 2 and 6 are reproduced below.



The annotated version of Lechthaler’s Figure 2 depicts “a plan view of a portion of the rotor” (Lechthaler 2:9), and the annotated version of Lechthaler’s Figure 6 depicts “a view taken along the line 6—6 of Fig. 2 with the portion of the blade holding member between the line 6—6 and the blade holding slot being cut away and showing only two adjacent blades” (*id.* 2:14–17). Lechthaler’s Figure 8, relied on by the Examiner and reproduced above, is similar to the view taken along the line 4—4 of Figure 2.

When distinguishing its invention from the prior art, Appellant explains that “[i]n the prior art a ratio of  $d_1$  to  $d_2$  may have been approximately 0.9” (i.e.,  $d_1$  being less than  $d_2$ ). Spec. ¶ 27. There should be no real dispute that Lechthaler does not depict the prior art ratio because Lechthaler clearly teaches its  $D_1$  being greater than  $D_2$ . Further, Lechthaler provides sufficient reason to believe its drawings are at least generally a scale representation of the relevant features of the rotor assembly illustrated. Lechthaler explains, for example, that “[t]he circumferential width  $b$  of root 14 (see Figs. 2 and 6) is about 50% of the circumferential width of end wall

20 of the platforms.” Lechthaler 2:55–57. That ratio corresponds to what is depicted between the inner red box and the outer red box in our annotated Figure 2 (also shown illustrated in our annotated Figure 6 as the circled dimension *b* and the portion highlighted in blue). This discussion is significant because Lechthaler’s Figure 8 is also a section view taken from Figure 2, but taken perpendicular to the section taken for Figure 6. Like the features in the Wilson reference discussed in *Mraz*, Lechthaler focuses on rotor roots 14, which are received in slots 10, showing them with great particularity and including a discussion of their proportions, as well as showing the features of slots 10 being well within the range of groove distance ratios recited in Appellant’s claims.

For at least these reasons, Appellant’s general allegation that the Examiner errs in rejecting claims 1 and 9 by relying on Lechthaler’s drawings is not persuasive.

### CONCLUSION

The Examiner’s rejections are affirmed.

### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 3–8	102(b)	Lechthaler	1, 3–8	
9, 11–16	103(a)	Seda, Lechthaler	9, 11–16	
<b>Overall Outcome</b>			1, 3–9, 11–16	

Appeal 2018-007338  
Application 13/731,147

TIME PERIOD FOR RESPONSE

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).

AFFIRMED