



# 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.
14/617,428	02/09/2015	Hung Duong	79629US01; 67097-3152PUS1	3514
54549	7590	01/07/2020	EXAMINER	
CARLSON, GASKEY & OLDS/PRATT & WHITNEY 400 West Maple Road Suite 350 Birmingham, MI 48009			NGUYEN, ANDREW H	
			ART UNIT	PAPER NUMBER
			3741	
			NOTIFICATION DATE	DELIVERY MODE
			01/07/2020	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* HUNG DUONG and NATHAN SNAPE

---

Appeal 2019-003204  
Application 14/617,428  
Technology Center 3700

---

Before LINDA E. HORNER, DANIEL S. SONG, and  
CHARLES N. GREENHUT, *Administrative Patent Judges*.

GREENHUT, *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, 5–7, 13, 14, and 16–23. *See* Final Act. 1. 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. Appellant identifies the real party in interest as United Technologies Corporation. Appeal Br. 1.

### CLAIMED SUBJECT MATTER

The claims are directed to a gearbox for gas turbine engine. Claim 14, reproduced below, is illustrative of the claimed subject matter:

14. A gas turbine engine comprising:  
a core that includes a turbine shaft configured to rotate about an engine axis;  
a tower shaft coupled to the turbine shaft;  
a gearbox mounted to the core and oriented longitudinally in a direction of the engine axis, the gearbox includes:  
a housing that includes a cavity provided between opposing first and second mounting surfaces,  
an input gear shaft coupled to the tower shaft,  
a drive gear connected to first and second shaft portions that respectively extend to the first and second mounting surfaces, the drive gear configured to rotate about a gear axis,  
first and second accessory drive components respectively mounted to the first and second mounting surfaces and respectively coupled to the first and second shaft portions; and  
wherein the gear axis lies entirely within a horizontal plane that is perpendicular to a vertical plane through the engine axis, wherein the engine axis lies entirely within the vertical plane.

### REFERENCES

The prior art relied upon by the Examiner is:

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Price	US 2,638,744	May 19, 1953
Guillot	US 3,722,214	Mar. 27, 1973
Morris	US 2005/0103931 A1	May 19, 2005
Cloft	US 2009/0000308 A1	Jan. 1, 2009
Deperrois	US 2009/0232640 A1	Sept. 17, 2009
Suciu	US 2011/0289936 A1	Dec. 1, 2011

## REJECTIONS

Claims 1–3, 6, 7, 13, 14, 16–19, and 23 are rejected under 35 U.S.C. § 103 as being unpatentable over Deperrois and Price. Final Act. 2.

Claim 5 is rejected under 35 U.S.C. 103 as being unpatentable over Deperrois, Price, and Suciu. Final Act. 6.

Claim 20 is rejected under 35 U.S.C. § 103 as being unpatentable over Deperrois, Price, and Morris. Final Act. 6.

Claim 21 is rejected under 35 U.S.C. § 103 as being unpatentable over Deperrois, Price, Cloft, and Suciu. Final Act. 7.

Claim 22 is rejected under 35 U.S.C. § 103 as being unpatentable over Deperrois, Price, and Guillot. Final Act. 7.

## OPINION

Claim 14, the sole independent claim, is the only claim argued on the merits with the remaining claims and rejections argued based on dependency. App. Br. 3–5. The Examiner concluded it would have been obvious to orient the gearbox of Deperrois in the manner taught by Price. Final Act. 2–4.

Appellant argues Deperrois is specifically designed to be mounted such that the gearbox is oriented circumferentially around the engine as opposed to “longitudinally” resulting in a gear axis and engine axis that do not exhibit the relationship recited. App. Br. 3. Appellant further contends, interpreting the axis of Price’s power take-off shafts 66 as the recited “gear axis,” that Price also does not exhibit the recited relationship between the gear and engine axis. App. Br. 4.

As to Appellant’s *second* contention, it is not clear why Appellant regarded the axis of power take-off shafts 66 as the recited “gear axis”

because the Examiner did not give any indication the Examiner was doing so. Arguments must address the Examiner's action. 37 C.F.R.

§ 41.37(c)(1)(iv). We recognize that the Examiner does not appear to have cited Price's gear 78 by reference numeral. However, the Examiner cited Price's gearbox 76, which contains gear 78 and drew a line directly through the rotational axis of gear 78 to identify the recited "horizontal plane" in which the recited "gear axis lies." Final Act. 4 (annotating Price Figure 3 (as noted by the Examiner (Ans. 6), Figure 3 of Price in the Answer has been rotated 90° from the side elevation view of Figure 1, making the actual horizontal and vertical direction also rotated 90° from the horizontal and vertical directions as viewed in Figure 3)); *see also* Ans. 5–6. Thus, it should have been readily apparent<sup>2</sup> that the Examiner was relying the rotational axis of Price's gear 78 to define the recited "gear axis" and not Price's power take-off shaft 66. Ans. 3. Appellant's misapprehension of the Examiner's analysis renders Appellant's second argument inapposite.

Regarding Appellant's first argument, Appellant does not apprise us of sufficient evidence to demonstrate, or technical reasoning to explain why, there would be any significant technological challenges associated with reorienting the gear box of Deperrois like that of Price. App. Br. 3; Reply Br. 1–2. Although the evidence is not entirely clear on the point,<sup>3</sup> even

---

<sup>2</sup> *See, e.g.*, 37 C.F.R. § 1.104(c)(2) ("When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, *if not apparent*, must be clearly explained") (emphasis added)

<sup>3</sup> Reference numeral 14 (Fig. 3) in Deperrois is used to refer to the "front side face" of the gearbox. However, Deperrois does not appear to expressly indicate that the front side of the gearbox faces the same way as the front side of the engine.

Appeal 2019-003204  
Application 14/617,428

assuming, that Appellant is correct that Deperrois's gearbox was intended to mount circumferentially, this fact, without more, does not apprise us of error in a rejection under § 103, as opposed to § 102, and predicated on *modifying* Deperrois to arrive at the claimed subject matter. "Non-obviousness cannot be shown by attacking references individually when the rejection is predicated upon the teachings of a combination of references." *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citation omitted). If there were, as Appellant asserts, technical difficulties associated with orienting gearboxes, and gears within them, in the manner claimed and illustrated by Price, Price demonstrates that they have long been resolved. "It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements." *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012). The fact that judgment and mechanical skill may be required to arrive at a particular combination does not necessarily mean that particular combination constitutes a nonobvious invention. *Graham v. John Deere Co. of Kansas City*, 383 US 1, 10–12 (discussing *Hotchkiss v. Greenwood*, 11 How. 248 (1851)). One of ordinary skill can use his or her ordinary skill, creativity, and common sense to make the necessary adjustments and further modifications to result in a properly functioning device. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) ("the [obviousness] 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").

For the foregoing reasons we sustain the Examiner's rejection.

CONCLUSION

The Examiner's rejections are affirmed.

DECISION SUMMARY

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-3, 6, 7, 13, 14, 16-19, 23	103	Deperrois, Price	1-3, 6, 7, 13, 14, 16-19, 23	
5	103	Deperrois, Price, Suci	5	
20	103	Deperrois, Price, Morris	20	
21	103	Deperrois, Price, Cloft, Suci	21	
22	103	Deperrois, Price, Guillot	22	
<b>Overall Outcome</b>			1-3, 5-7, 13, 14, 16-23	

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