

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GENERAL ELECTRIC COMPANY,  
Petitioner,

v.

UNITED TECHNOLOGIES CORPORATION,  
Patent Owner.

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Case IPR2019-00213  
Patent 9,624,827 B2

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Before HYUN J. JUNG, SCOTT A. DANIELS, and  
TERRENCE W. McMILLIN, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
35 U.S.C. § 314(a)

## I. INTRODUCTION

General Electric Company (“Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–24 of U.S. Patent No. 9,624,827 B2 (Ex. 1001, “the ’827 patent”). United Technologies Corporation (“Patent Owner”), filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). Upon consideration of the Petition, the Preliminary Response, and the supporting evidence, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner will prevail with respect to any of the claims challenged in the Petition. Accordingly, we do not institute an *inter partes* review as to the challenged claims of the ’827 patent.

### A. Related Matter

The ’827 patent is also the subject of IPR2019-00212. Pet. 1; Paper 4, 2.

### B. The ’827 Patent

The ’827 patent is titled, “Thrust Efficient Turbofan Engine.” Ex. 1001, (54). The ’827 patent describes, “[a]n Engine Unit Thrust Parameter

["EUTP"] defined as net engine thrust divided by a product of the mass flow rate of air through the bypass flow path, a tip diameter of the fan and the first rotational speed of the power turbine." *Id.* at (57) (Abstract). The EUTP is expressed in the form of an equation in the '827 patent as:

$$\text{Engine Unit Thrust Parameter} = \frac{\text{Net Thrust of the Engine}}{(\text{mass flow rate of air through fan bypass}) (\text{Fan Tip Diameter}) (\text{Speed of the power turbine})} \quad \text{Equation 1}$$

*Id.* at 7:45–53. Figure 1 of the '827 patent is reproduced below.

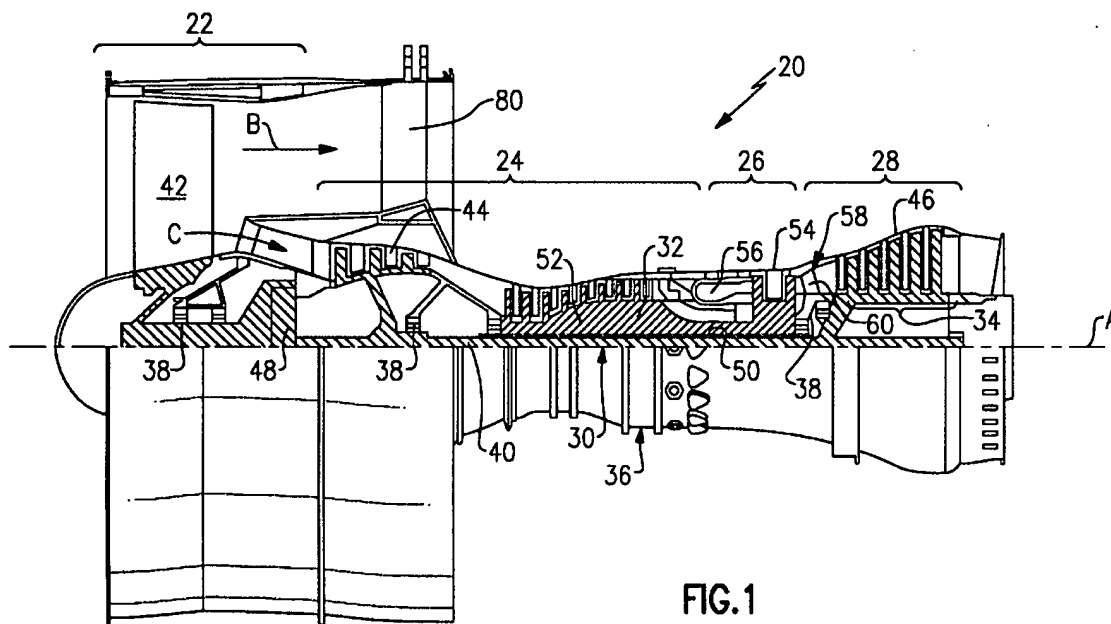


Figure 1 depicts "a schematic view of an example turbofan engine. *Id.* at 3:36. The detailed description of the turbofan engine of Figure 1 states:

FIG. 1 . . . includes a fan section 22, a compressor section 24, a combustor section 26 and a turbine section 28. . . . The fan section 22 drives air through a bypass flow path B while the compressor section 24 draws air in along a core flow path C where air is compressed and communicated to a combustor section 26, air is mixed with fuel and ignited to generate a high pressure exhaust gas stream that expands through the turbine section 28 where energy is extracted and utilized to drive the fan section 22 and the compressor section 24.

*Id.* at 3:42–54. Figure 2 of the '827 patent is reproduced below.

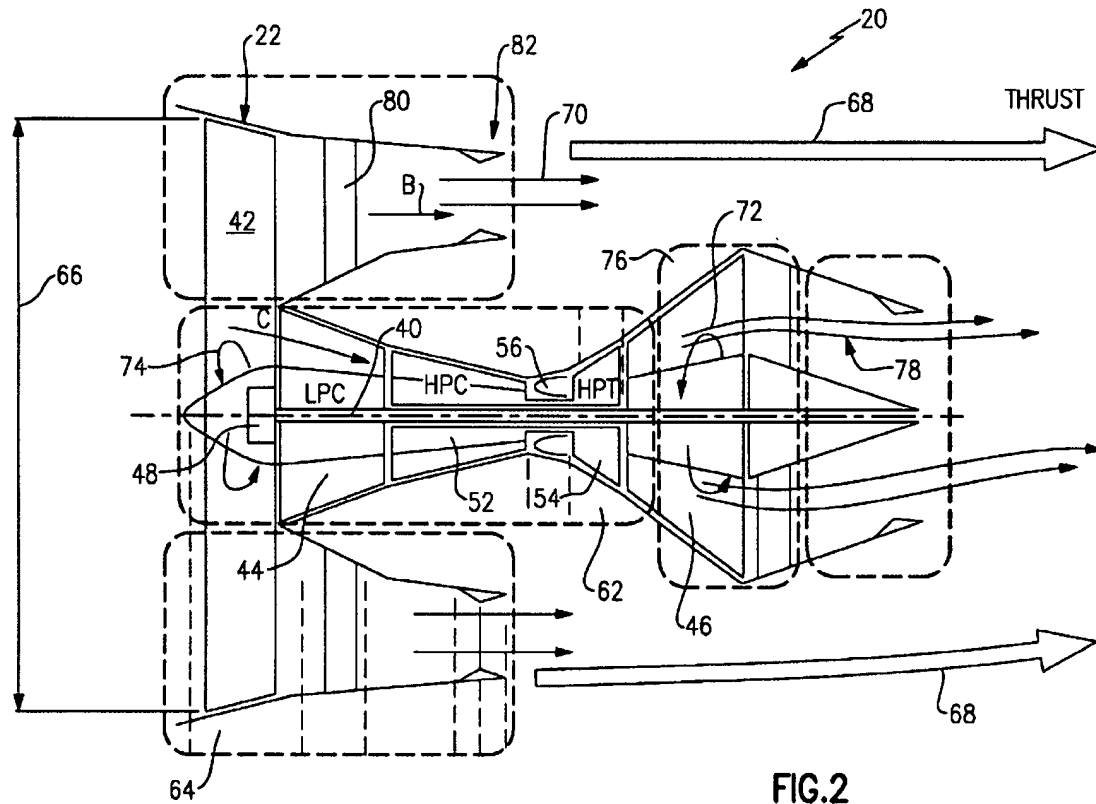


Figure 2 depicts, “a schematic view of functional elements of the example turbofan engine.” *Id.* at 3:37–38. The detailed description of Figure 2 provides:

[T]he example turbofan engine 20 includes a gas generator section 62 for generating a high energy (per unit mass) gas stream 78. A power turbine 76 converts the high energy gas stream 78 into shaft power that drives the geared architecture 48. In one embodiment, the power turbine may be the low pressure turbine 46 that drives the inner shaft 40. The power turbine 76 drives a propulsor section 64 through the geared architecture 48. The propulsor section 64 generates a mass flow 70 of air through the bypass flow path B that is a substantial portion of the overall propulsive thrust 68 generated by the turbofan engine 20.

*Id.* at 5:57–67. “The disclosed fan section 22 includes a tip diameter 66.”

*Id.* at 6:33–34.

*C. Disclaimer In Patent Under 37 C.F.R. § 1.321(a)*

Patent Owner states that it “has disclaimed each of the claims in the Petition except claim 19.” Prelim. Resp. 1 n.1. Exhibit 2001 is entitled “Disclaimer in Patent Under 37 C.F.R. § 1.321(a)” (“Disclaimer”) and states, “I hereby disclaim the following complete claims in [US Patent No. 9,624,627]: 1-18, 20-24.” The Disclaimer was executed by Troy S. Prince, Chief Intellectual Property Counsel, Pratt & Whitney Division, United Technologies Corporation.

Under 37 C.F.R. § 42.107(e), “[t]he patent owner may file a statutory disclaimer under 35 U.S.C. 253(a) in compliance with §1.321(a) of this chapter, disclaiming one or more claims in the patent. No *inter partes* review will be instituted based on disclaimed claims.” Patent Owner states, “[t]hus, this Preliminary Response addresses only Ground 2 of the Petition (the sole ground on which claim 19 is challenged), and only claim 19.” Prelim. Resp. 1 n.1.

*D. Claim 19*

Claim 19 depends from claim 17. Claim 17 recites:

17. A turbofan engine, comprising:

- a gas generator section for generating a high energy gas stream, the gas generating section including a compressor section, combustor section and a first turbine;
- a second turbine converting the high energy gas stream flow into shaft power, the second turbine rotating at a first speed and including less than or equal to about six (6) stages;
- a geared architecture driven by the second turbine; and
- a propulsor section driven by the second turbine through the geared architecture at a second speed lower than the first

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