

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENERAL ELECTRIC COMPANY,
Petitioner,

v.

UNITED TECHNOLOGIES CORPORATION,
Patent Owner.

Case IPR2016-00952
Patent 9,121,412 B2

Record of Oral Hearing
Oral Hearing Held: July 24, 2017

Before HYUN J. JUNG, SCOTT A. DANIELS and
GEORGE R. HOSKINS, *Administrative Patent Judges*.

IPR2016-00952
Patent 9,121,412 B2

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ON BEHALF OF THE PETITIONER:

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The above-entitled matter came on for hearing on Monday, July 24, 2017, commencing at 1:01 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

1 PROCEEDINGS

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3 JUDGE JUNG: This is the oral hearing for Case IPR2016-00952,
4 between Petitioner General Electric Company and Patent Owner United
5 Technologies Corporation. To specify for the record, the Petitioner
6 challenges the claims in U.S. Patent number 9,121,412. Starting with
7 Counsel for the Petitioner, and followed by Counsel for the Patent Owner,
8 please state your names for the record?

9 MR. LENDER: Good afternoon. David Lender for the Petitioner,
10 GE; and I think I'm going to leave 10 minutes for rebuttal.

11 JUDGE JUNG: Thank you.

12 MR. VALAIK: Good afternoon, Your Honor. Mike Valaik, Bartlit
13 Beck, for the Patent Owner; and I have with me Andy Holtman from
14 Finnegan, Henderson.

15 JUDGE JUNG: Welcome, Mr. Valaik. As stated in our order, each
16 party has 30 minutes of total time to present its position in this case. So,
17 with that said, Counsel for Petitioner, you may proceed when you are ready.

18 MR. LENDER: Thank you. Good afternoon. The '412 Patent claims
19 a geared turbofan engine with ranges of bypass flow passage pressure ratios
20 and N/R ratios. However, nowhere does the patent claim that these ranges
21 are particularly critical, or produce some new and unexpected results
22 discovered by the patent. In fact, the patent simply states that, "The engine
23 may be designed with a particular design pressure ratio," and says it can be
24 anywhere between 1.1 and 1.35.

25 Similarly, there is nothing novel about an N/R ratio between 8 and 16,
26 or between 18 and 28. In fact, UTC disclaimed claim 9 which covers that

1 exact same ratio. So, despite some of the arguments that I'm going to be
2 going through today, they know that Davies discloses those claim ranges.
3 And our position is that the claims that are at issue are unpatentable based on
4 Davies, either because it's anticipated by Davies, or rendered obvious based
5 on Davies, and the knowledge of one of ordinary skill in the art.

6 Now, there essentially, are three key disputed issues between the
7 parties, as pertains to whether Davies invalidates the '412 Patent. The first
8 is whether, as we assert, Davies discloses a solidity of 0.74, and therefore an
9 N/R range within the claim range, or whether Davies only disclose a solidity
10 of 0.83 which would result in an N/R ratio that's slightly outside the range.

11 The second is whether the claim bypass flow passage pressure ratio is
12 substantially equivalent to the fan pressure ratio disclosed in Davies, or it
13 would be obvious based on Davies. And the third relates to claim 11, which
14 is whether a person of ordinary skill would be motivated to increase the tip
15 chord dimension and thereby meet the N/R ratio in claim 11.

16 So, I'm going to start with the first issue, that's on slide 3. As you can
17 see, Davies describes an engine the M45SD-2 with a fan diameter of 5 feet,
18 and a blade chord for 14 blades of 10 inches at the tip.

19 Slide 4, as Dr. Abhari explained in his declaration, these dimensions
20 convert to a solidity value of 0.74 and an N/R ratio of 18.9 both within the
21 claimed ranges of the '412 patent. Now, UTC argues that this disclosure in
22 Davies should be ignored because Davies, elsewhere, disclosed a solidity of
23 0.83 and you can see that on slide 5.

24 However, unlike the section of Davies that we rely upon which
25 expressly ties the fan diameter and chord dimensions to the M45SD-02,
26 nowhere does Davies tie this 0.83 value to that engine. In fact, the section

1 that leads up to this discussion is called General Design Philosophy, and
2 talks about achieving a design pressure ratio of "say, 1.27."

3 JUDGE JUNG: Mr. Lender, if I can come in here for a second.

4 MR. LENDER: Yes.

5 JUDGE JUNG: About Davies, your contention is that it's talking
6 about one engine, the M45SD. Is that correct?

7 MR. LENDER: Oh, no. Actually, Davies discusses multiple engines
8 and the one we actually are focused on is the M45SD.

9 JUDGE JUNG: Okay. So it sounds like when I read Davies, it
10 introduces several engines in the beginning, and the M45H, for example, is
11 an operational engine, and then the M45SD that's kind of in contention,
12 that's the demonstrator engine that's developed from the M45H. Is that
13 correct?

14 MR. LENDER: That's my understanding.

15 JUDGE JUNG: So, why would Davies focus on any other engine in
16 the following sections? If they are talking about the demonstrator engine,
17 why would they take a sidebar and talk about another engine?

18 MR. LENDER: Well, in this particular section, what they are doing
19 here is -- what they are talking about is the general design philosophy, right?

20 JUDGE JUNG: Right.

21 MR. LENDER: So, they are making points about solidity, how it ties
22 to fan pressure ratio, they are actually tying these values together, but when
23 they actually are talking about the M45SD, they actually have a section,
24 right, that's right here on the screen. This is the section, on slide number 6,
25 where they actually call it engine definition.

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