



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.
14/615,732	02/06/2015	John T. Schmitz	77270US01 (14-426)	1730
52237	7590	09/23/2019	EXAMINER	
Bachman & LaPointe, P.C. 900 Chapel St., Suite 1201 New Haven, CT 06510			FLANIGAN, ALLEN J	
			ART UNIT	PAPER NUMBER
			3763	
			MAIL DATE	DELIVERY MODE
			09/23/2019	PAPER

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.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN T. SCHMITZ, NEAL R. HERRING, JOHN H. WHITON,
JOSEPH TURNEY, BRIAN ST. ROCK, and MICHAEL K. IKEDA

Appeal 2018-006890
Application 14/615,732
Technology Center 3700

Before JENNIFER D. BAHR, MICHELLE R. OSINSKI, and
SEAN P. O'HANLON, *Administrative Patent Judges*.

OSINSKI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 4, 5, 7, 8, 10–17, and 21–27.² We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

¹ We use the term “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. 2.

² Claims 2, 3, 6, and 9 are cancelled, and claims 18–20 are withdrawn. *See* Claims Amendment (Nov. 20, 2017) (hereinafter “Amendment”). The after-final amendment dated February 12, 2018 was not entered by the Examiner. *See* Advisory Act. (Apr. 9, 2018).

We AFFIRM.

THE CLAIMED SUBJECT MATTER

Claims 1, 11, and 22 are independent. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A ducted heat exchanger system, comprising:
 - a heat exchanger core with an inlet face opposite an exit face;
 - an additively manufactured inlet header upstream of, and in fluid communication with, said heat exchanger core such that an airflow that enters said core is generally perpendicular to a front face over the entirety of said front face, said additively manufactured inlet header in communication with an inlet duct; and
 - an additively manufactured exit header downstream of, and in fluid communication with, said heat exchanger core, said additively manufactured exit header in communication with an exit duct, the additively manufactured inlet header and the additively manufactured exit header in fluid communication with the same air stream.

EVIDENCE

The Examiner relied on the following evidence in rejecting the claims on appeal:

Marco	US 3,364,548	Jan. 23, 1968
Briscoe	US 4,079,888	Mar. 21, 1978
Griffin	US 4,474,001	Oct. 2, 1984
Tsujita	US 2003/0111209 A1	June 19, 2003
Smith	US 2010/0199955 A1	Aug. 12, 2010
Deivasigamani	US 2014/0326197 A1	Nov. 6, 2014

REJECTIONS

- I. Claims 5, 7, 12, 13, and 15 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the enablement requirement.³ Final Act. 2.
- II. Claims 1, 11, and 12 stand rejected under 35 U.S.C. § 112(b) as indefinite.⁴ *Id.* at 2–3.
- III. Claims 21, 23, and 25 stand rejected under 35 U.S.C. § 112(d) as being of improper dependent form.⁵ *Id.* at 3–4.
- IV. Claims 1, 4, 9, 11, 21–23, 25, and 27 stand rejected under 35 U.S.C. § 102(a)(1) as anticipated by Marco, or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Marco. *Id.* at 4–5.
- V. Claims 1, 4, 9, 11, 21–23, 25, and 27 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco and Briscoe. *Id.* at 5.
- VI. Claims 5, 7, 8, 12, 13, 15, and 17 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco and Smith. *Id.* at 6.
- VII. Claims 5, 7, 8, 12, 13, 15, and 17 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco, Briscoe, and Smith. *Id.*
- VIII. Claims 10 and 14 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco, Smith, and Deivasigamani. *Id.*

³ The Examiner omits dependent claims 8 and 16, but these claims presumably inherit any deficiencies in claims 7 and 15 from which they depend, and thus logically should also be included in this rejection.

⁴ The Examiner omits dependent claims 4, 5, 7, 8, 10, 13–17, and 21, but these claims presumably inherit any deficiencies in claims 1 and 11 from which they depend, and thus logically should also be included in this rejection.

⁵ The Examiner omits dependent claims 24 and 26, but these claims presumably inherit any deficiencies in claims 23 and 25 from which they depend, and thus logically should also be included in this rejection.

- IX. Claims 10 and 14 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco, Smith, Briscoe, and Deivasigamani. *Id.*
- X. Claim 16 stands rejected under 35 U.S.C. § 103 as unpatentable over Marco, Smith, and Tsujita. *Id.*
- XI. Claim 16 stands rejected under 35 U.S.C. § 103 as unpatentable over Marco, Smith, Briscoe, and Tsujita. *Id.* at 7.
- XII. Claims 24 and 26 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco and Griffin. *Id.*
- XIII. Claims 24 and 26 stand rejected under 35 U.S.C. § 103 as unpatentable over Marco, Briscoe, and Griffin. *Id.*

OPINION

Rejection I–III

Appellant does not present any arguments contesting the Examiner’s rejections under 35 U.S.C. §§ 112(a), 112(b), and 112(d) (Final Act. 2–4) in the Appeal Brief. *See* Appeal Br. 11–17 (presenting argument only as to the rejections under 35 U.S.C. §§ 102(a)(1) and 103). In the Reply Brief, Appellant presents arguments contesting the 35 U.S.C. § 112 rejections for the first time. Reply Br. 1–5. The rules applicable to present appeal provide:

Any argument raised in the reply brief which was not raised in the appeal brief, or is not responsive to an argument raised in the examiner’s answer, including any designated new ground of rejection, will not be considered by the Board for purposes of the present appeal, unless good cause is shown.

37 C.F.R. §41.41(b)(2).

The arguments contesting the rejections under 35 U.S.C. § 112 raised for the first time in the Reply Brief were not responsive to an argument

raised in the Examiner's Answer. As to Appellant's explanation for the failure to present arguments in the Appeal Brief contesting these rejections, Appellant asserts only that it "mistakenly understood entry of the amendment after final to have obviated the 35 USC 112 rejections." Reply Br. 1.⁶ This does not constitute a showing of good cause for the Board to consider these new arguments presented for the first time in the Reply Brief.

Accordingly, we summarily sustain Rejections I–III. *See Hyatt v. Dudas*, 551 F.3d 1307, 1314 (Fed. Cir. 2008) (explaining that summary affirmance without consideration of the substantive merits is appropriate where an appellant does not contest a ground of rejection); *see also* 37 C.F.R. § 41.31(c) ("An appeal, when taken, is presumed to be taken from the rejection of all claims under rejection unless cancelled by an amendment filed by the applicant and entered by the Office.").

Rejection IV

Claims 1, 4, 9, 11, and 21

With respect to claims 1, 4, 9, 11, and 21, Appellant references certain limitations recited in independent claim 1, but otherwise presents arguments without regard to any particular claim. *See* Appeal Br. 11–12. We select claim 1 as the representative claim, and claims 4, 9, 11, and 21 stand or fall therewith. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that "Marco disclose[s] a copper heat exchanger provided with headers that are formed using electroforming, and thus

⁶ The Examiner denied entry of the after final amendment dated February 2, 2018. *See* Advisory Act. (April 9, 2018).

anticipates the . . . claims.” Non-Final Act. 4⁷; *see also id.* (explaining that “additive manufacturing is understood to encompass any manufacturing process which combines or adds material(s) to make objects from three dimensional models (either physical or mathematical models), often but not necessarily layer upon layer, including electroforming”). The Examiner also finds that “Marco clearly shows circular elements (e.g. 13, 14, 15) that are readable on the claimed ‘ducts.’” Final Act. 5.

Appellant argues that “Marco simply does not disclose a ducted heat exchanger system in smooth communication with the same airstream as recited in Appellant’s claims.” Appeal Br. 11. Appellant asserts that “[t]he entrances and exits of Marco are in each corner. This fundamental difference alone renders all of the rejections in which Marco is a primary reference improper and ineffective.” *Id.* at 12; *see also* Reply Br. 6 (asserting that “Marco provides visibly circular intakes and exhausts in the corner thereof, which simply could not be utilized within a duct airstream”). We are not persuaded by these arguments because they are not commensurate with the scope of claim 1. As stated by our reviewing court in *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998), “the name of the game is the claim.” It is well established that limitations not appearing in the claim cannot be relied upon for patentability. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982). The claim does not recite that the heat exchanger system is “in smooth communication with the same air stream,” and does not preclude inlets and exits at the corners of the heat exchanger. Moreover,

⁷ The rejection presented in the Final Action refers back to the Non-Final Action dated May 2, 2017. *See* Final Act. 4 (“Please see the comments made with regard to the above rejection in the previous Office action.”).

Appellant does not offer any evidence or persuasive technical reasoning to explain why inlets and exits at the corners of the heat exchanger would render Marco “improper and ineffective” as a reference.

In the Reply Brief, Appellant presents a new argument that was not raised in the Appeal Brief. *See* Reply Br. 5. Appellant argues “that the Examiner’s interpretation of [Marco’s] ‘electroforming’ as additively manufacturing is simply improper. One of ordinary skill in the art would never consider electroforming to be accomplished by additive manufacturing.” *Id.* This argument is not responsive to an argument raised in the Answer, and Appellant has not shown good cause why this argument could not have been raised earlier and should be considered now.⁸

Accordingly, this argument is not timely, and we do not consider it. *See* 37 C.F.R. § 41.41(b)(2); *see also Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative) (“[T]he reply brief [is not] an opportunity to make arguments that could have been made in the principal brief on appeal to rebut the Examiner’s rejections, but were not.”)

For the above reasons, Appellant does not apprise us of error in the Examiner’s finding that Marco anticipates the subject matter of claim 1. Having determined that the rejection is sustainable on the basis of anticipation by Marco, we need not consider in depth the Examiner’s alternative basis (obviousness) for the rejection. It is well settled that “anticipation is the epitome of obviousness.” *In re McDaniel*, 293 F.3d

⁸ The Examiner’s interpretation that Marco’s electroformed headers read on the claimed “additively manufactured” headers was first presented in the Non-Final Action. *See* Non-Final Act. 4; *see also* Final Act. 4 (the Examiner referring back to the Non-Final Action).

1379, 1385 (Fed. Cir. 2002) (quoting *Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)); *In re Fracalossi*, 681 F.2d 792, 794 (CCPA 1982). Accordingly, we sustain the rejection of claim 1, and of claims 2–4, 9, 11, and 21 falling therewith, under 35 U.S.C. § 102(a)(1) as anticipated by Marco, or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Marco.

Claims 22 and 23

Appellant argues that claim 22 recites “the inlet duct to receive an air stream, and an exit duct to expel the airstream” and “claim 23 further elaborates that the air stream is a free stream airflow[,] which necessarily requires a through flow of air which is neither disclosed nor suggested by the corner inlet exit arrangement of Marco.” Appeal Br. 15. Appellant asserts that “Marco simply does not receive a flow which could under any reasonable interpretation be considered a free stream airflow. In fact, at least one fluid of Marco is a liquid.” *Id.* at 15–16. This argument is unpersuasive.

The Examiner responds in the Answer by taking the position that the disputed limitation amounts to a recitation of intended use. *See* Ans. 12 (explaining that Appellant’s remarks for claim 23 are directed to intended use recitations and do not point out how the claim is structurally distinct from Marco). In this regard, Appellant does not specifically address or persuasively refute the Examiner’s position. Moreover, although Appellant is correct that Marco discloses a heat exchanger embodiment in which one of the fluids is a liquid,⁹ Appellant does not offer any evidence or persuasive

⁹ Marco discloses a second heat exchanger embodiment that exchanges heat between a flowing gas and a flowing liquid. Marco, col. 5, ll. 22–24.

technical rationale to explain why this would preclude Marco's heat exchanger from being able to receive a free stream airflow.

For the foregoing reasons, Appellant does not apprise us of error with respect to Rejection IV of claims 22 and 23, which we sustain.

Claim 25

In contesting the rejection of claim 25, Appellant asserts:

A bypass stream airflow is the airflow that flows through a fan nacelle of a turbofan engine. Again, Appellant specifically identifies such an airflow to put the additively manufactured inlet header and exit header in context of the duct to thereby define around a conventional heat exchanger such as Marco.

Appeal Br. 16. Appellant does not specifically address or identify any flaw in the Examiner's position that the disputed limitation amounts to a recitation of intended use. *See* Ans. 12 (explaining that Appellant's remarks for claim 25 are directed to intended use recitations and do not point out how the claim is structurally distinct from Marco).

For the foregoing reasons, Appellant does not apprise us of error with respect to Rejection IV of claim 25, which we sustain.

Claim 27

Although Appellant addresses claim 27 under a separate heading, Appellant merely characterizes the elements of this claim without setting forth any particular argument contesting the Examiner's findings relative to the presence of these elements in the disclosure of Marco. *See* Appeal Br. 16–17; Ans. 13 (Examiner finding that “‘brick-shaped’ would presumably encompass any parallelepiped shaped core, including that of Marco”). As such, Appellant does not apprise us of error with respect to Rejection IV of claim 27, which we sustain.

Rejection V

In contesting Rejection V, Appellant relies on the arguments presented against Marco that we found unpersuasive in connection with Rejection IV. *See* Appeal Br. 14 (“Appellant respectfully traverses these rejections for at least the reasons discussed above with regard to Marco.”). Accordingly, for the same reasons discussed above in connection with Rejection IV, we also sustain Rejection V.

Rejections VI and VII

In contesting Rejections VI and VII of claims 5, 7, 8, 12, 13, 15, and 17, which depend from one of independent claims 1 and 11, Appellant initially relies on the arguments presented against Marco in connection with Rejection IV. *See id.* For the same reasons discussed above, Appellant’s arguments do not apprise us of error in Rejection IV, and likewise do not apprise us of error with respect to Rejections VI and VII.

Additionally, with respect to claim 12, Appellant references certain limitations recited in the claim and asserts “that the specificity claimed by Appellant is simply not disclosed nor suggested by the proposed combinations.” *Id.* at 15. We are not persuaded by this argument because it is not responsive to the Examiner’s findings and reasoning set forth in the rejections.

With respect to claim 12, the Examiner finds that “[i]t is well known in the art that the geometry/shape of manifolds (inlet and/or outlet) affects the evenness of flow distribution, and that headers can be shaped to improve this aspect of heat exchange (see Smith).” Non-Final Act. 5; *see also* Final Act. 6 (referring to the rejection in the Non-Final Action). The Examiner determines that it would have been obvious “to do the same in the headers of

Marco.” Non-Final Act. 5. The Examiner also finds, “[r]egarding claim 12, such tapered manifolds inherently occupy less volume than parallelepiped shaped manifold tanks.” *Id.* In this regard, other than the bald assertion that the features of claim 12 are “simply not disclosed nor suggested by the proposed combinations” (Appeal Br. 15), Appellant does not specifically address the Examiner’s findings and reasoning articulated in the rejections, nor offer any evidence or persuasive technical reasoning that identifies an error in the Examiner’s position.

For the above reasons, Appellant does not apprise us of error in the Examiner’s conclusion of obviousness with respect to claims 5, 7, 8, 12, 13, 15, and 17 in Rejections VI and VII. Accordingly, we sustain Rejections VI and VII.

Rejections VIII–XI

In contesting Rejections VIII–XI, Appellant relies on the arguments presented against Marco that we found unpersuasive in connection with Rejection IV. *Id.* at 14. Accordingly, for the same reasons discussed above in connection with Rejection IV, we also sustain Rejections VIII–XI.

Rejections XII and XIII

The Examiner finds that Griffin teaches that it is known to locate heat exchangers within a fan or core nacelle. Final Act. 7. The Examiner determines:

As Marco indicate[s] that their heat exchanger is suitable for exchanging heat between “fluids”, which the fluids in Griffin . . . certainly are, and since Griffin . . . places no limitation on the configuration or structural design of heat exchangers 46, 48 located in fan or core nacelles (they are merely schematically represented as boxes), it would have been obvious to one of ordinary skill in the art to use any known heat exchanger

design, including that disclosed in Marco, as the heat exchanger (46 or 48) in the turbine engine of Griffin.

Id.

Appellant initially relies on the arguments presented against Marco in connection with Rejection IV. Appeal Br. 14. For the same reasons discussed above, Appellant's arguments do not apprise us of error in the rejection of claim 22, and likewise do not apprise us of error with respect to the rejections of claims 24 and 26. Appellant also argues that "Marco is simply not applicable to such an installation" and that location of the inlet duct and exit duct within a core nacelle "is neither disclosed nor suggested by the cited references." Appeal Br. 16. These arguments are unconvincing because they do not specifically address, much less contest, the Examiner's findings as to the disclosures of Marco and Griffin, nor persuasively refute the Examiner's reasoning articulated in support of the conclusions of obviousness. Final Act. 7. Moreover, Appellant does not offer any evidence to support the position that Marco's heat exchanger would be "inapplicable" to Griffin's gas turbine engine fan nacelle. This unsupported assertion is mere attorney argument, which cannot take the place of evidence in the record. *See In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

For the foregoing reasons, Appellant does not apprise us of error in Rejections XII and XIII of claims 24 and 26, which we sustain.

DECISION

The Examiner's decision to reject claims 1, 4, 5, 7, 8, 10–17, and 21–27 is AFFIRMED.

In summary:

Claims Rejected	Basis	Affirmed	Reversed
5, 7, 12, 13, and 15	§ 112(a)	5, 7, 12, 13, and 15	
1, 11, and 12	§ 112(b)	1, 11, and 12	
21, 23, and 25	§ 112(d)	21, 23, and 25	
1, 4, 9, 11, 21–23, 25, and 27	§ 102(a)(1) or §103 Marco	1, 4, 9, 11, 21–23, 25, and 27	
1, 4, 9, 11, 21–23, 25, and 27	§ 103 Marco and Briscoe	1, 4, 9, 11, 21–23, 25, and 27	
5, 7, 8, 12, 13, 15, and 17	§ 103 Marco and Smith	5, 7, 8, 12, 13, 15, and 17	
5, 7, 8, 12, 13, 15, and 17	§ 103 Marco, Briscoe, and Smith	5, 7, 8, 12, 13, 15, and 17	
10 and 14	§ 103 Marco, Smith, and Deivasigamani	10 and 14	
10 and 14	§ 103 Marco, Smith, Briscoe, and Deivasigamani	10 and 14	
16	§ 103 Marco, Smith, and Tsujita	16	
16	§ 103 Marco, Smith, Briscoe, and Tsujita	16	
24 and 26	§ 103 Marco and Griffin	24 and 26	
24 and 26	§ 103 Marco, Briscoe, and Griffin	24 and 26	
Overall Outcome		1, 4, 5, 7, 8, 10–17, and 21–27	

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