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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREW P. KELEHER and GREGORY T. EISELE

Appeal 2019–004634
Application 13/783,664
Technology Center 3700

Before JAMES P. CALVE, JILL D. HILL, and LISA M. GUIJT,
Administrative Patent Judges.

GUIJT, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134(a) of the rejection of claims 1, 2, 5–7, 9, 11, 12, 17–19, 21, and 23–31.¹ We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies The Boeing Company as the real party in interest. Appeal Br. 2.

THE INVENTION

Appellant’s invention relates to “environmental systems in aircraft,” and particularly, “to a method and apparatus for circulating air in a passenger cabin of an aircraft.” Spec. ¶ 1. Claims 1, 6, and 17 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. An air circulation system for a passenger cabin of an aircraft, the air circulation system comprising:

a suite formed by walls extending upward from a substantially flat floor of the passenger cabin without reaching a ceiling of the passenger cabin, the suite having a seat, an armrest, a bench, and a light unit; and

a circulation unit comprising:

an inlet system configured to receive air from an inlet grill located in one of the walls, the inlet grill opening outside of the suite in the passenger cabin;

an outlet system configured to output the air received by the inlet system into an interior of the suite through an outlet grill located inside the suite;

a fan system configured to cause movement of the air into the inlet system from outside of the suite and out of the outlet system into the interior of the suite, wherein the air moves upwards in the suite and over the walls and wherein the air moving over the walls mixes with air in the aircraft cabin outside of the suite to form mixed air and causes a circulation of the mixed air within the passenger cabin in addition to circulating the air in the suite;

a first duct connecting the fan system to a restrictor attached to the inlet grill, the first duct smaller than the inlet grill and passing through the armrest; and

a second duct connecting the fan system to a diffuser attached to the outlet grill, the second duct passing through the bench or the light unit; and

wherein the diffuser reduces a velocity of the air received through the second duct and entering the suite.

THE REJECTIONS²

The Examiner relies upon the following as evidence in support of the rejections:

NAME	REFERENCE	DATE
Bohannon	US 2,953,103	Sept. 20, 1960
Steigerwald	US 3,492,934	Feb. 3, 1970
Koch	US 5,100,375	Mar. 31, 1992
Trunkle	US 5,294,049	Mar. 15, 1994
Okita	US 2009/0093206 A1	Apr. 9, 2009
Space	US 2010/0081369 A1	Apr. 1, 2010
Kroll	US 9,169,020 B2	Oct. 27, 2015

The following rejections are before us for review:

- I. Claims 1, 5, and 24–26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Steigerwald, Kroll, Bohannon, Koch, and Okita.
- II. Claims 2, 21, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Steigerwald, Kroll, Bohannon, Koch, Okita, and Space.
- III. Claims 6, 7, 9, 11, 12, 27, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Steigerwald, Bohannon, Kroll, Koch, Okita, Space, and Trunkle.

² The Examiner’s rejection of claims 1, 2, 5, 21, and 23–26 under 35 U.S.C. § 112, second paragraph, as indefinite, has been withdrawn. Adv. Act. 2; *see also* Final Act. 2.

- IV. Claims 17–19 and 29–31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Steigerwald, Koch, Okita, Bohannon, Space, and Trunkle.

OPINION

Rejection I

Regarding independent claim 1, the Examiner finds that Steigerwald discloses an aircraft passenger cabin circulation unit including: (i) an inlet system configured to receive air from an inlet grill located a wall of the seating area (i.e., perforated wall 103); (ii) an outlet system configured to output the air received by the inlet system through an outlet grill located in a wall of the seating area (i.e., perforated wall 3); (iii) a fan system configured to cause movement of the air into the inlet system from outside the seating area and out of the outlet system (i.e., conditioning unit 24, which “implicitly contains a fan due to airflow arrows and associated ducts”); (iv) a first duct (i.e., supply conduit 4) connecting the fan system to a restrictor (i.e., wall element 6) attached to the inlet grill, the first duct being smaller than the inlet grill; (v) a second duct (i.e., supply conduit 4) connecting the fan system to a diffuser (i.e., wall element 6) attached to the outlet grill; and (vi) wherein the diffuser reduces a velocity of the air received through the second duct (i.e., “Steigerwald is capable of performing [this function] by ‘avoiding draft phenomena’”); as claimed. Final Act. 4–5 (citing, *e.g.*, Steigerwald 1:68–2:10, 3:8–10, Fig. 1).

The Examiner finds that Kroll is in the same field of endeavor as the claimed invention, namely, “an air circulation system for a passenger cabin,” and teaches *a suite* formed by walls extending upwardly from a substantially

flat, passenger cabin floor without reaching a passenger cabin ceiling, and also having a seat, armrest, bench, and light unit, as claimed. Final Act. 5 (citing Kroll 6:30–31, Figs. 1, 2, 12 (passenger suites 20A, 22A)); *see also* Adv. Act. 2 (Kroll discloses “at least partially enclosed” passenger seats). The Examiner reasons that it would have been obvious to modify Steigerwald’s passenger cabin “by adding the suite, seat, and other structures as taught by Kroll in order to enhance passenger convenience and comfort.” Final Act. 6 (citing Kroll 1:17–22).

The Examiner finds that Bohannon is in the same field of endeavor as the claimed invention, namely, “an air circulation system for a passenger cabin” (Final Act. 6) and is also reasonably pertinent to a problem addressed by the inventors of the claimed invention, namely, “airflow structures that guide[] air in a cabin between the inside and outside of a suite” (Ans. 7). *See also* Adv. Act. 2 (finding Bohannon meets *both* prongs of the two-part analogous art test set forth *infra*). The Examiner further relies on Bohannon for teaching a passenger cabin suite (i.e., compartments 400) with an inlet grill (i.e., gratings 235) *opening outside of the suite* and an outlet system configured to output the air received by the inlet system *into an interior of the suite* “via gratings 455,” as claimed. Final Act. 6 (citing Bohannon, Figs. 1, 11). The Examiner reasons that it would have been obvious to modify Steigerwald’s passenger cabin, as modified by Kroll to include a suite, by adding the inlet and outlet structures relative to walls of a suite, taught by Bohannon, “to facilitate the circulation of air in and out of the suite.” *Id.* at 6.

The Examiner finds that Koch is reasonably related to a problem faced by the inventors, namely, “providing ventilation in a passenger

compartment” (Final Act. 7), and more particularly, that Koch addresses air circulation “for the health and comfort of the occupant” (Adv. Act. 2). The Examiner further relies on Koch for teaching a fan system (i.e., blower unit 6) configured to cause upward movement of air over the walls of the suite, as claimed. Final Act. 7 (citing Koch 2:67–3:3, Figs. 1, 10, 11); *see also* Ans. 6. The Examiner also finds that the claim limitations requiring “the air [to] mov[e] over the walls [and] mix[] with air in the aircraft cabin outside of the suite to form mixed air” and also requiring the fan system “[to] cause[] a circulation of the mixed air within the passenger cabin in addition to circulation of the air in the suite,” are “functional,” and that Steigerwald, as modified by Kroll, Bohannon, and Koch, is “capable of performing” these functions. Final Act. 7. The Examiner reasons that it would have been obvious to modify Steigerwald’s passenger cabin (as modified by Kroll to include a suite, and by Bohannon to add inlet and outlet structures placed relative to the suite’s walls) to move the air upwardly within the suite over the walls, as taught by Koch, “to provide a draft-free circulation of air.”³ *Id.* (citing Koch 2:67–68).

³ Notably, other than with reference to the circulation fan system (or more broadly, the circulation unit including the fan system and outlet, inlet, and filter systems), which is claimed as being configured to move air into the inlet from outside the suite and out the outlet into the interior of the suite, there are no *additional* structures expressly disclosed in the Specification that cause the air moved into the interior of the suite to move upwardly in the suite and over the walls of the suite, and in fact, the Specification discloses that such air movement may or may not occur. *See, e.g.*, Spec. ¶ 7 (stating that “air moves upwards in the suite and over the walls [to] cause[] a desired circulation of the air within the passenger cabin”); *id.* ¶ 46 (stating that “the movement of air 204 by circulation unit 216 [(which is depicted in Figure 2 as including inlet 226, outlet 228, fan 230, and filter 236 systems)] may cause air 204 in the interior 232 of suite 212 to move upward in suite

The Examiner finds that Okita is reasonably related to a problem faced by the inventors, namely, “airflow and light sources through seating structures” (Final Act. 8) and more particularly, addresses “solutions to providing airflow through seating structures such as the bench,” which is a claimed structure (or monument (*see* Spec. ¶ 69)) (Adv. Act. 2); *see also* Ans. 8 (“Okita is reasonably related to a problem faced by the inventor because Okita also teaches air ducts extending through seating structures in a passenger compartment, as claim[ed] in claim 1”). The Examiner further relies on Okita for teaching a first duct (i.e., main duct 22 with communication holes 23) passing through an armrest and a second duct (i.e., “other portions of” main duct 22 with communication holes 23) passing through a bench or light unit. Final Act. 8 (citing Okita, Figs. 1–3, 5). The Examiner reasons that it would have been obvious to modify Steigerwald’s passenger cabin (as modified by Kroll to include a suite, and by Bohannon to add inlet and outlet structures placed relative to the suite’s walls, and further by Koch to move the air upwardly within in the suite over the walls) to pass the ducts through the armrest and the bench or the light unit, as taught by Okita, “as a combination of prior art elements according to known methods to yield predictable results.” *Id.* (citing MPEP § 2143).

Alternatively, the Examiner finds that “automobiles have long had air ducts disposed within center armrests to cool back seat passengers and air ducts in

212,” wherein “[t]his movement of air 204 may cause air 204 in suite 212 to mix with air 204 outside of suite 212 in passenger cabin 208,” such that “desired circulation 210 of air 204 may occur within passenger cabin 208”); *id.* ¶ 87 (stating, with reference to Figure 12, that “[t]he air may then flow upward over the tops of walls 134 to mix with cabin air outside of suite 132 in passenger cabin 122”).

seats to heat or cool the occupant,” and that the claimed invention is “[a] combination of familiar elements according to known methods . . . yield[ing] predictable results.” Ans. 8 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007)).

In sum, the Examiner reasons that, with respect to the individual elements disclosed in the individual prior art references *supra*, “[o]ne of ordinary skill in the art could have combined the elements as claimed by known methods,” and also that “in combination, each element merely performs the same function as it does separately,” such that “[o]ne of ordinary skill in the art would have recognized that the results of the combination were predictable.” Final Act. 8.

Appellant argues that “[n]one of the references, individually or in combination, teach or suggest the claimed air circulation system as recited in claim 1.” Appeal Br. 10. For example, Appellant submits that “Steigerwald teaches an air circulation system in an aircraft but fails to teach a suite having an armrest, a bench or a light unit as claimed.” *Id.* However, as correctly noted by the Examiner, Appellant’s argument does not address the Examiner’s rejection, which relies on Kroll, not Steigerwald, for disclosing a suite having a seat, armrest, and light unit. *See* Ans. 4; *see also* Adv. Act. 2 (Appellant’s arguments address the “references individually”) (citations omitted). “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. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citation omitted).

Regarding Kroll, Appellant argues that the reference “does not teach a suite but rather a partially enclosed seat that reclines to a bed often in [sic]

found in business class sections of commercial aircraft.” Appeal Br. 10 (citing Kroll Fig. 1). In particular, Appellant submits that “Kroll teaches a partially enclosed seating area [that] does not have door or any other type of obstruction which closes the seating area off from the remaining areas of the airplane cabin,” wherein “the seating area is open to the rest of the cabin via an entryway.” Reply Br. 4; *see also* Appeal Br. 10 (submitting that Kroll fails to disclose “[a] suite with walls having an inside and outside”).

Again, the Examiner correctly responds that Kroll discloses “suites,” as claimed, and further, suites formed by walls, as claimed. Ans. 4 (citing Kroll, Fig. 1); *see also id.* at 5 (the Examiner’s annotated Figure 1 of Kroll). In support, we find that the Specification defines the claim term “suite” as “[a] private sitting[] area.” Spec. ¶ 4; *see also id.* ¶ 33 (“[i]n this illustrative example, suites 128 are private sitting areas located in passenger cabin 122”). The Specification also discloses that “[the] private sitting area *may* be formed by installing walls in a passenger cabin,” which “*may* cover three or more sides to provide *a desired level of privacy* and passenger comfort.” *Id.* ¶ 4 (emphasis added); *see also id.* ¶ 34 (“[f]or example, suite 132 includes a seat (not shown) surrounded by walls 134” that “extend upward from floor 136 of passenger cabin 122 without reaching ceiling 138” (emphasis added)). The Specification further discloses that “[a] suite *typically* has two doors that move to open and close” and that “[t]he *height* of the walls *and* the suite *doors* affect the flow of air in the entire passenger cabin.” *Id.* ¶ 5. Thus, according to the Specification, a “suite” is defined as “a private sitting area,” which *may* be formed by walls, which *may* cover three or more sides depending on the desired level of privacy and extending

upwardly from the floor but not reaching the ceiling, wherein doors (or an entryway) are optional.

Kroll, titled, “Aircraft Passenger *Suite* Seating Arrangement,” discloses “[a]n aircraft passenger *suite* including one or more *privacy walls* arranged to define a seating area and a living area positioned to the side of the seating area,” wherein “an entrance to the suite is defined by a break in the one or more privacy walls.” Kroll, Abstract (emphasis added). Thus, a preponderance of the evidence supports the Examiner’s finding that Kroll discloses “a suite,” as claimed. Appellant’s arguments also do not apprise us of error in the Examiner’s reliance on Kroll for disclosing a suite “formed by walls extending upward from a substantially flat floor of the passenger cabin without reaching a ceiling of the passenger cabin, the suite having a seat, an armrest, a bench, and a light,” as claimed. To the extent Appellant argues that Kroll must disclose a suite with walls of a specific height (except not reaching the ceiling as claimed) and/or doors or entryways, limitations not appearing in the claims cannot be relied upon for patentability. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

Appellant also argues that because Kroll has “an open-air configuration,” wherein “air is naturally moved in and out of the seating area without the need or assistance of a ventilation system,” there is “no need or motivation to add a separate air circulation system,” or “motivation or even place to add inlet and outlet grills, let alone ducts.” Appeal Br. 11; Reply Br. 4. However, Appellant’s argument is conclusory and lacks sufficient evidence to support Appellant’s contention that Kroll’s suites would not benefit from a dedicated circulation unit. *See In re Wood*, 582 F.2d 638, 642 (CCPA 1978) (“Mere lawyer’s arguments and conclusory statements in the

specification, unsupported by objective evidence, are insufficient to establish unexpected results.”). Notably, Kroll discloses that “[p]rivacy walls 24 between adjacent suites may include portions that can be opened/closed or raised/lowered to open the suites depending on the desired degree of privacy,” at least implying that the privacy walls are substantial enough to affect air flow within the suite and/or in the entire passenger cabin. Kroll 4:65–67.

Regarding Bohannon, Appellant argues that the reference is nonanalogous art and, therefore, improperly relied on by the Examiner. Appeal Br. 13. In support, Appellant submits that Bohannon is not in the same field of endeavor as Appellant’s claimed invention, because “Bohannon is concerned with a combination coach/sleeping car double arrangement to increase the number of beds available in a train car,” which “has nothing to do with air circulation in aircraft cabins.” *Id.* Appellant submits that “[t]he brevity of [Bohannon’s teachings relative to gratings] would not motivate one skilled in the art of ventilation to turn to Bohannon because Bohannon is not concerned with ventilation.” Reply Br. 8.

The Examiner responds that the field of endeavor of the claimed invention is “passenger cabins in a vehicle comprising a suite,” and thus, Bohannon is in the same field of endeavor. Ans. 7. Alternatively, the Examiner finds that Bohannon’s invention addresses a problem that is reasonably pertinent to a problem also addressed by the inventors of the claimed invention, namely, “airflow structures that guide[] air in a cabin between the inside and outside of a suite.” *Id.* (citing Bohannon (grating 455, vents 235)).

A reference qualifies as prior art for an obviousness determination when it is analogous to the claimed invention. *Innovation Toys, LLC v. MGA Ent., Inc.*, 637 F.3d 1314, 1321 (Fed. Cir. 2011). “Two separate tests define the scope of analogous art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). The “field of endeavor” test asks if the structure and function of the prior art is such that it would be considered by a person of ordinary skill in the art because of similarity to the structure and function of the claimed invention as disclosed in the application.” *Id.* at 1325–26. “A reference is reasonably pertinent . . . if it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.” *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992). “If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection.” *Id.* Whether a prior art reference is “analogous” is a question of fact. *Id.* at 658.

We find that the structure and function of Bohannon’s “Combination Coach and Sleeping Car” is similar to the claimed invention, for example, Bohannon’s “plurality of compartments” for accommodating passengers, which may include “seats [and] folding beds,” are similar in structure and function to the claimed suites. Notably, the Specification itself recognizes similarities in structure and function between suites of an aircraft passenger cabin and sleeping compartments of a train by disclosing that “although

platform 202 has been described as taking the form of aircraft 100 in Figure 1, platform 202 may take other forms,” for example, “a surface ship, a cruise ship, a spacecraft, *a train*, or some other suitable type of platform.” Spec. ¶ 63 (emphasis added). Thus, we are not persuaded of Examiner error in the Examiner’s finding that the field of endeavor of Appellant’s invention is passenger cabins in *a vehicle* comprising a suite and that Bohannon is in the same field of endeavor, and therefore, analogous art properly relied on by the Examiner. Moreover, regarding the second prong of the analogous art test, a problem addressed by the inventors is air circulation within passenger cabins relative to the general passenger cabin, and—however brief—Bohannon discloses the same purpose for using “[g]ratings 455 . . . for air circulation in the compartments,” which addresses the need to circulate air between privacy walls defining contained or enclosed personal spaces in passengers cabins. Bohannon 7:25–26.

Appellant also argues that “Bohannon discloses a vent but no duct,” and therefore, there “is no motivation or even a place in the Kroll configuration to add vents or ducts.” Appeal Br. 12. However, as set forth *supra*, the Examiner relies on Steigerwald for disclosing first and second ducts that move air into a passenger cabin including seats, and on Kroll’s disclosure of suites for modifying Steigerwald’s passenger cabin to include individual suites having privacy walls. Appellant’s argument does not apprise us of error in the Examiner’s reliance on Bohannon to add gratings (i.e., grills 235, 455) into the walls of an individual suite (or a compartment) to facilitate the circulation of air in and out of the suite.

Next, regarding Koch, Appellant argues that the reference “lacks the elements of ductwork as recited in claim 1.” Appeal Br. 12. However, as

set forth *supra*, the Examiner is relying on Koch for teaching movement of the air in the suite (or compartment 24 of Koch) upwardly over the walls; the Examiner relies on Steigerwald for disclosing first and second ducts (i.e., supply and outlet conduits 4, 104), and Kroll for disclosing suites having privacy walls within a passenger cabin.

Appellant also argues that Koch is non-analogous art because the field of endeavor of Koch is “baby incubators.” Appeal Br. 12. We find that the field of endeavor of Appellant’s claimed invention is air circulation systems for contained or enclosed personal spaces, and therefore, Koch is in the same field of endeavor by disclosing an air circulation system for an incubator in which infants are enclosed. Moreover, regarding the second prong of the analogous art test, we find that Koch would have commended itself logically to an inventor’s attention when considering the problems addressed by the claimed invention, which the Specification discloses are “stagnant air, temperature stratification, or other undesirable conditions within suite 212, other suites in suites 206, or other areas within passenger cabin 208 that may result in an undesired experience for passengers.” Spec. ¶ 37; *see also id.* at ¶ 5 (discussing the structure of suites in a passenger cabin and their effect on “the flow of air in the entire passenger cabin,” which may result in “air stagnation and temperature stratification . . . within the suite, in the aisles outside of the suite, and in other areas of the passenger cabin”). Specifically, Koch discusses an air circulating system, wherein air from outside of an occupied space is moved upwardly in the space to ensure there is no temperature gradient horizontally within the space, for the comfort of the infant occupant. *See, e.g.*, Koch, Abstract. Thus, we find Koch is analogous art properly relied on by the Examiner, because, for example, the

disclosure has the same purpose as the claimed invention with respect to the upward movement of air within an occupied space, i.e., temperature control.

Regarding Okita, Appellant further argues that the reference is non-analogous art because “Okita discloses a central air conditioning system for an automobile,” such that Okita is “primarily concerned with providing light indicators that change color with the temperature of the conditioned air.”⁴

Appeal Br. 12.

We find that Okita is in the same field of endeavor as Appellant’s claimed invention, namely (as discussed *supra*), air circulation systems for contained or enclosed personal spaces, because Okita discloses an air circulation (or conditioning system) for passengers enclosed in a vehicle. *See, e.g.*, Okita, Abstract. Moreover, regarding the second prong of the analogous art test, we find that Okita would have commended itself logically to an inventor’s attention when considering the problems addressed by the claimed invention, namely, “undesirable conditions” within the enclosed personal space (Spec. ¶ 37), such as the velocity of air entering the enclosed personal space and the body part upon which the air impinges. *See, e.g., id.* ¶ 56 (discussing the desirability of reducing the velocity of air entering the

⁴ To the extent Appellant is arguing that Okita is not an *enabling* reference, Appellant has not presented this argument in the Appeal Brief. *See* Appeal Br. 12; Reply Br. 7 (“Okita is not properly enabled with respect to teaching and or disclosing placing ducts throughout the vehicle”). *See* 37 C.F.R. § 41.41(b)(2) (2012) (“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, . . . will not be considered by the Board for purposes of the present appeal, unless good cause is shown.”); *Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative) (“[a]ny basis for asserting error, whether factual or legal, that are not raised in the principal brief are waived”).

suite, “such that the movement of air 204 in the suite is substantially imperceptible to a person in the suite”); *id.* 57 (disclosing that “the velocity of air 204 in suite 212 may be selected to avoid a feeling of draftiness by a passenger in suite 212,” for example, “the velocities may be selected to avoid a feeling of draftiness on ankles, wrist, head, or other body parts of a passenger”). Okita discloses, *inter alia*, with respect to positioning “an air outlet 31” on a side of “[t]he door garnish 12 compris[ing] an armrest 12A” (Okita ¶ 38) to deliver air flow “to the vehicle occupant in a mild manner [by] transfer[ing] a large amount of heat without causing discomfort to the vehicle occupant as opposed to localized air flow of a relatively high velocity” (*id.* ¶ 40). Thus, we find Okita is analogous art properly relied on by the Examiner.

Finally, Appellant argues that

the limitations of claim 1 cannot be formed by combination of the references . . . as well as any other references cited as prior art. . . . Moreover, the Examiner does not articulate any reasons why someone of skill in the art would be motivated to combine such disparate prior art references and modify them in order to arrive at the features of the present invention or even how they could be so modified, which they clearly would need to be.

Appeal Br. 12–13. Appellant submits that the Examiner has failed to state a *prima facie* case of obviousness, and further, that “significant modification” is required, according to the Examiner’s rejection, to result in the claimed subject matter. *Id.* at 13.

Appellant’s arguments, however, lack sufficient technical reasoning or evidence as to why the Examiner’s proposed modifications, for which the Examiner provides reasoning in each instance, are unsupported by rational underpinning. *See In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974)

("[a]ttorney's argument in a brief cannot take the place of evidence"); *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). We also note that the number of references applied is not relevant to the propriety of the combination of references. *See In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991).

Accordingly, we sustain the Examiner's rejection of claim 1. Appellant chose not to present arguments for the patentability of claims 5 and 24–26 apart from the arguments presented *supra* for claim 1, and therefore, we also sustain the Examiner's rejection of claims 5 and 24–26. Appeal Br. 14.

Rejection II

Appellant chose not to present arguments for the patentability of claims 2, 21, and 23 apart from the arguments presented *supra* for claim 1, and therefore, we also sustain the Examiner's rejection of claims 2, 21, and 23. Appeal Br. 14.

Rejection III

The Examiner relies on Trunkle in the rejection of dependent claim 6. The Examiner finds that "Trunkle is reasonably related to a problem faced by the inventor by teaching details of a ventilation system arrangement." Final Act. 11.

Regarding independent claim 6, Appellant argues that "[t]he same arguments made above in regard to claim 1 apply to claim 6 as well." Appeal Br. 15. However, for the same reasons stated *supra*, we are not persuaded by Appellant's arguments presented *supra*.

Appellant also argues that “Trunkle discloses a fan system drawing air from a room through a conduit to outside of a building,” and “Trunkle’s system is disposed under a floor and over ground,” such that “[i]t is completely non-analogous art with no relation at [all] to aircraft design.” *Id.* Appellant does not address Trunkle in the Reply Brief. *See, e.g.*, Reply Br. 2–9.

We find that Trunkle is in the field of endeavor of heating and air condition systems, for example, for contained or enclosed rooms in houses for personal use, and therefore, is in the same field of endeavor of Appellant’s claimed invention, namely, air circulation systems for contained or enclosed personal spaces. For example, Trunkle discloses that

[i]n addition to the use described above in the field of foundation ventilators, flexible adapter 110 can be used generally in the heating and air conditioning field, where typically there is a problem in connecting a square housing, which empties into a room, on the one hand and a round duct, which carries the air to and from the housing.

Trunkle 9:38–64. Moreover, Appellant’s conclusory argument *supra* does not apprise us of error in the Examiner’s finding with respect to the second prong of the analogous art test, which is specifically relied on by the Examiner *supra*. *See* Ans. 11 (“Appellant has not said [that the Examiner’s finding that Trunkle is reasonably related to a problem faced by the inventor] is in error or is deficient”).

Accordingly, we sustain the Examiner’s rejection of claim independent 6. Appellant chose not to present arguments for the patentability of claims 7, 9, 11, 12, 27, and 28 apart from the arguments presented *supra* for independent claim 6, and therefore, we also sustain the Examiner’s rejection of claims 7, 9, 11, 12, 27, and 28. Appeal Br. 15.

Rejection IV

Regarding independent claim 17, Appellant argues that “[t]he arguments made above in regard to claims 1 and 6 apply to claim 17 as well.” Appeal Br. 16. However, for the same reasons stated *supra*, we are not persuaded by Appellant’s arguments presented *supra*. Accordingly, we sustain the Examiner’s rejection of claim 17. Appellant chose not to present arguments for the patentability of claims 18, 19, and 29–31 apart from the arguments presented *supra* for independent claim 17, and therefore, we also sustain the Examiner’s rejection of claims 18, 19, and 29–31. Appeal Br. 16.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 5, 24–26	103(a)	Steigerwald, Kroll, Bohannon, Koch, Okita	1, 5, 24–26	
2, 21, 23	103(a)	Steigerwald, Kroll, Bohannon, Koch, Okita, Space	2, 21, 23	
6, 7, 9, 11, 12, 27, 28	103(a)	Steigerwald, Bohannon, Kroll, Koch, Okita, Space, Trunkle	6, 7, 9, 11, 12, 27, 28	
17–19, 29–31	103(a)	Steigerwald, Koch, Okita, Bohannon, Space, Trunkle	17–19, 29–31	
Overall Outcome			1, 2, 5–7, 9, 11, 12, 17–19, 21, 23–31	

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED