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THE WEBB LAW FIRM, P.C. ONE GATEWAY CENTER 420 FT. DUQUESNE BLVD, SUITE 1200 PITTSBURGH, PA 15222			KUHFUSS, ZACHARY L	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARTIN SCHOBER, ALEXANDER ORELLANO,
ANDREAS TIETZE, MARCO WEISE, and STEFAN STEILEN

Appeal 2019-002240
Application 13/643,726
Technology Center 3600

Before BIBHU R. MOHANTY, MICHAEL C. ASTORINO, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), the Appellant¹ appeals from the Examiner's decision to reject claims 1, 3–14, and 16–19. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. The Appellant identifies the real party in interest as Bombardier Transportation GmbH. Appeal Br. 3.

STATEMENT OF THE CASE

Claimed Subject Matter

Claims 1 and 17 are the independent claims on appeal. Claim 1, reproduced below with added emphasis, is illustrative of the claimed subject matter.

1. A vehicle comprising:
 - a wagon body which is supported on at least one running gear, wherein
 - said wagon body defines a vehicle longitudinal direction, a vehicle transverse direction and a vehicle height direction,
 - said wagon body has a body section and an adjacent head section,
 - said head section is configured to form a free vehicle end during operation,
 - said head section, along said vehicle longitudinal direction, tapers at least in said vehicle height direction towards said free vehicle end,
 - said head section further has an outer skin and a flow separation unit extending in said vehicle longitudinal direction, said vehicle height direction, or both said vehicle longitudinal direction and said vehicle height direction for reducing sensitivity of said vehicle to crosswind,
 - wherein
 - said flow separation unit comprises a roof-like protrusion formed by said outer skin, wherein
 - said roof-like protrusion, in said vehicle transverse direction, is spaced from a vehicle longitudinal center plane,
 - said roof-like protrusion has a first roof section facing towards said vehicle longitudinal center plane, a second roof section on a first side of said first roof section distal to said vehicle longitudinal center plane facing away from said vehicle longitudinal center plane, a ridge section forming a transition between said first roof section and said second roof section, and a *third roof section* on a second side of said first roof section proximal to said vehicle longitudinal center plane and *facing away from said vehicle longitudinal center plane*,

said first roof section being located between said second roof section and said third roof section in a sectional plane perpendicular to said vehicle longitudinal direction,

said first roof section and said second roof section run inclined to one another such that, at a nominal operating speed of said rail vehicle and with an oblique flow against said roof-like protrusion by an air flow coming from said vehicle longitudinal center plane, said ridge section forms a flow separation edge for said air flow,

said first roof section is configured to impose, in a vehicle transverse plane running perpendicular to said vehicle longitudinal direction, in a first region adjacent to said ridge section, and upon a flow in said vehicle transverse direction coming from said vehicle longitudinal center plane, a first tangential direction on said air flow,

said second roof section is configured to impose, in said vehicle transverse plane, in a second region adjacent to said ridge section, and upon a flow in said vehicle transverse direction towards said vehicle longitudinal center plane, a second tangential direction on said air flow,

said first tangential direction and said second tangential direction define a roof angle of said roof-like protrusion, and

said roof angle, over a first edge region extending in said vehicle longitudinal direction, is less than 150°.

Rejections

Claim 1, 3–6, 8–14, and 17–19 are rejected under 35 U.S.C. § 103(a) as unpatentable over Käßmaier (DE 19600038 A1, pub. July 11, 1996)², Girardy et al. (US Des. 164,921, iss. Oct. 23, 1951) (“Girardy”), and Buckley Jr. (US 4,245,862, iss. Jan. 20, 1981) (“Buckley”). Ans. 3.

² The Appellant filed an Information Disclosure Statement (“IDS”) on March 6, 2013. The IDS included the Käßmaier reference and an English-language Abstract (“Käßmaier English Abstract”). Also, the Examiner mailed a machine translation of Käßmaier on October 9, 2014 (“Käßmaier Translation”).

Claim 7 is rejected under 35 U.S.C. § 103(a) as unpatentable over Käßmaier, Girardy, Buckley, and Iden (US 8,215,239 B2, iss. July 10, 2012). Ans. 3; *see* Appeal Br. 20.

Claim 16 is rejected under 35 U.S.C. § 103(a) as unpatentable over Käßmaier, Girardy, Buckley, and Sääntti et al. (US 6,945,176 B2, iss. Sept. 20, 2005). Ans. 3; *see* Appeal Br. 20.

ANALYSIS

The Examiner’s rejection of claims 1 and 17, includes the following determination:

Käßmaier does not specifically teach that the third roof section is facing away from said vehicle longitudinal center plane. However, Girardy teaches a central roof section that is contoured outward (i.e. convex) so that the section faces away from the vehicle longitudinal center plane, while maintaining ridge-like sections on the sides of the vehicle (Fig. 1). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention, to try contouring the center portion of the roof outward on the locomotive of Käßmaier, as taught by Girardy, in order to provide the vehicle operator more room inside the cabin.

Final Act. 4, 14.

The Appellant argues that the Examiner’s reasoning is flawed because it does not consider the entirety of Käßmaier’s and Girardy’s teachings. *See* Appeal Br. 14–16; Reply Br. 2–3. The Appellant points out Käßmaier’s “center section (i.e., ‘third surface’) faces towards the longitudinal center plane, rather than away from the longitudinal center plane, as required by independent claims 1 and 17.” Appeal Br. 15. Notably, Käßmaier compares the overall shape and design of the locomotive’s head section to a coal shovel. *See id.*; Ans. 5. The Appellant also points out that Käßmaier’s head

section has a flat front surface, which is expressly distinguished from a head section with a conventional oviform (i.e., convex or egg-shaped) surface.

See Appeal Br. 15.

More importantly, the Appellant points out that Käßmaier distinguishes air side pressure characteristics of the different surfaces. *See id.* at 15–16. Indeed, Käßmaier teaches that the overall coal shovel shape of its head section scoops air upwards and over the roof when travelling. *See* Käßmaier English Abstract. Käßmaier distinguishes its design from head sections with conventional oviform (i.e., aerodynamic egg shapes) designs, which carry away air sideways. *See* Käßmaier Translation. Käßmaier teaches that the conventional oviform design aggravates air side pressure at high speeds and produces air pressure shocks that are very unpleasant for passengers, whereas Käßmaier’s coal shovel design exposes train cars to much lower air pressure side forces, and therefore, less stress. *Id.* Additionally, Käßmaier’s coal shovel design is more cost-effective, which results in significant competitive advantages. *Id.*

In response, the Examiner explains that by modifying Käßmaier’s third roof section (i.e., the roof section proximal to said vehicle longitudinal center plane) from a flat or coal-shovel design to a contoured outward or convex surface, the side ridge sections of Käßmaier’s head section would still enable air to be scooped up and over the top of the locomotive. *See* Ans. 5.

In view of the Examiner’s response, we are unclear as to the proposed result of the Examiner’s proposed modification. Generally, two scenarios seem to be possible. First, the modification of Käßmaier’s third roof section in view of Girardy’s teachings could result in a third roof section with a

convex shape having a maximum height that is *greater than* the first and second sections that are lateral thereto. This scenario does not appear consistent with the Examiner's statement "the side ridge sections of the locomotive still enable air to be scooped up and over the top of the locomotive." Ans. 5. At the very least, the statement seems to heavily rely on speculation. *See* Appeal Br. 16; Reply Br. 3. Second, the modification of Käßmaier's third roof section in view of Girardy's teachings could result in a third roof section with a convex shape having a maximum height that is *less than* the first and second sections that are lateral thereto. This scenario does not appear consistent with Girardy's teaching, which shows the maximum height of the third section as greater than the sections that are lateral thereto (i.e., first and second roof like sections). *See* Appeal Br. 16; Reply Br. 3. In view of the foregoing, we determine that the Examiner fails to provide adequate articulated reasoning with rational underpinning, on this record, to support the conclusion of obviousness.

The Examiner fails to rely on the teachings of Buckley in any manner which would remedy the deficiency in the Examiner's rejection as discussed above. Thus, we do not sustain the Examiner's rejection of independent claims 1 and 17 and dependent claims 3–6, 8–14, 18, and 19.

Further, the Examiner fails to rely on the teachings of Iden or Sännti in any manner which would remedy the deficiency in the Examiner's rejection of independent claim 1 as discussed above. Thus, we do not sustain the Examiner's rejections of dependent claims 7 and 16, which depend from claim 1.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
1, 3–6, 8–14, 17–19	103(a)	Käßmaier, Girardy, Buckley		1, 3–6, 8–14, 17–19
7	103(a)	Käßmaier, Girardy, Buckley, Iden		7
16	103(a)	Käßmaier, Girardy, Buckley, Sännti		16
Overall Outcome				1, 3–14, 16–19

REVERSED