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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LEROY C. STEPHENS and RICKIE W. WHITE JR.

Appeal 2020-000616
Application 15/925,431
Technology Center 3700

Before DANIEL S. SONG, BENJAMIN D. M. WOOD, and
WILLIAM A. CAPP, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ seeks our review under 35 U.S.C. § 134(a) of the final rejection of claims 1–3, 11, and 13–16 as unpatentable under 35 U.S.C. § 103(a) over Kudo (US 6,615,675 B1, iss. Sept. 9, 2003), and of claim 12 over Kudo and Huszagh (US 4,529,127, iss. July 16, 1985). 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(a). Appellant identifies E-One, Inc. as the applicant and real party in interest. Appeal Br. 3.

THE INVENTION

Appellant's invention is a fire truck. Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A firefighting vehicle comprising:
 - a water tank for storing water;
 - a discharge outlet for discharging liquid from the firefighting vehicle;
 - a pump for pumping liquid to the discharge outlet;
 - a foam tank for storing a liquid foam concentrate;
 - a foam metering device for metering fluid flow therethrough;
 - a foam addition system comprising one or more conduits for directing fluid from the foam metering device toward the discharge outlets;
 - a flow control system for controlling fluid flow to the foam metering device from the water tank and from the foam concentrate tank, wherein the flow control system is shiftable between a normal mode and a test mode, wherein when the flow control system is in the normal mode, fluid flow from the foam concentrate tank to the foam metering device is permitted, fluid flow from the water tank to the discharge outlet is permitted, and fluid flow from the water tank to the foam metering device is prevented, wherein when the flow control system is in the test mode, fluid flow from the water tank to the foam metering device is permitted and fluid flow from the foam concentrate tank to the foam metering device is prevented; and
 - a flow meter for measuring the flow of water through the foam metering device when the flow control system is in the test mode.

OPINION

Unpatentability of Claims 1–3, 11, and 13–16 over Kudo

The Examiner finds that Kudo discloses the invention substantially as claimed except for measuring the flow of water through the foam metering

device when the flow control system is in the test mode. Final Act. 2–3. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a flow meter to pipe 82 of Kudo to measure flow 83. *Id.* at 3; *see* Kudo Fig. 2.

Appellant argues that a person of ordinary skill in the art would not have been motivated to modify Kudo in the manner proposed in the rejection. Appeal Br. 8. Appellant points out that Kudo’s test mode contemplates a trailer 12 with water tank 14 that is separate and apart from the fire truck. *Id.* at 10. According to Appellant, Kudo does not contemplate flowing fluid through pipe 82 in test mode and, therefore, there would have been no reason to measure the flow rate of such non-existent flow during test mode. *Id.* This argument, taken by itself, is not persuasive as the Examiner’s proposed modification contemplates that flow would take place through pipe 82 and manifold 66 in test mode.

We appreciate the Examiner’s effort and analysis that went into the subject rejection. The Examiner, for the most part, is correct that Kudo is very similar to Appellant’s invention, both in its purpose and in its execution. After all, Kudo and Appellant’s invention both disclose fire trucks that dispense foam fire suppressant chemicals as is commonly used in aircraft rescue and firefighting applications. Kudo, col. 1, ll. 8–21. Both Kudo and Appellant’s invention operate in a normal mode and in a test mode. *Id.* col. 2, ll. 7–25. In both Appellant’s and Kudo’s systems, the tank containing fire suppressant foam chemicals is isolated from certain fluid conduits, particularly the spray nozzle outlets during system tests. *Id.* (Appellant admits that Kudo’s ball valve 54 is closed during system tests. Appeal Br. 10).

However, Kudo differs from Appellant's stand-alone system in that it uses a separate tank and trailer to supply water for its test mode. Kudo, col. 2, l. 64 – col. 3, l. 32, Figs. 1, 4–6. A flow meter for measuring the rate of fluid flow during testing resides in the trailer. *Id.* During testing, fluid flows from trailer/tank 12, 14 through pipe 26, then through flow transmitter 28 and fluid flow sensor 29, through hose connector 36, ball valve 48, pipe 60, check valve 62, valve 69, pipe 64, manifold 66, pipe 70, eductor 72, pipe 76, and nozzles 81. *Id.* col. 5, ll. 32 – col. 6, l. 5, Figs. 1–6. A person of ordinary skill in the art would understand that pipe 82 in the fire truck is isolated from the fluid flow through manifold 66 during test mode by reason of valve 67 being closed in test mode. *Id.* Fig. 2, col. 3, ll. 60–64 (“When one valve 67 or 69 is open the other valve is closed”).

In order to meet the claim language, the Examiner modifies Kudo so that the testing facilities reside entirely within the fire truck as opposed to significant parts of the testing system residing in a separate trailer. We deduce this from the Examiner's findings in the final rejection identifying tank 75 in the truck, as opposed to tank 14 in the trailer, as meeting the “water tank” limitation in the claim. Final Act. 2. The Examiner then modifies Kudo to insert a flow meter in pipe 82. *Id.* at 3. As to whether this would have been obvious to achieve the claimed invention, we engage in a two-step analysis. First, we look to whether more than mere ordinary skill is required to equip pipe 82 with a flow meter. In that regard, we tend to agree with the Examiner that inserting a flow meter into pipe 82 requires no more than ordinary skill. Secondly, we consider whether a person of ordinary skill in the art would have had a reason to do so.

“An obviousness determination requires finding that a person of ordinary skill in the art would have been motivated to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so.” *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018). “[O]bviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphasis added). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not necessarily make the modification obvious. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992).

In the instant case, Kudo’s pipe 82 is not used for testing. Although placing a flow meter in pipe 82 would have the result of measuring the flow of water through manifold 66 when valve 67 is open, such would not thereby convert pipe 82 into part of a “test” system. Water that is pumped from tank 75 encounters a junction that is upstream of eductor 72 and nozzles 81. Kudo, Fig. 2. There is no valve that selectively directs water from tank 75 alternatively either into pipe 82 or pipe 74. *Id.* Thus, some of the flow that is pumped from tank 75 flows directly into eductor 72 and nozzles 81 when ball valve 67 is open, thereby by-passing pipe 82. *Id.* Although Kudo appears to be silent on this subject, it is our impression that Kudo, after dispensing foam, uses pipe 82 and valve 67 to flush fire suppressant chemicals from the system via manifold 66 through pipe 95, ball valve 99, and into storage tank 91. *Id.*

In our opinion, it is unlikely that a person of ordinary skill in the art would have inserted a flow meter into pipe 82, because it would have

measured only a portion of the flow from tank 75 to eductor 72 and nozzle 81. Although the Examiner is technically correct that a flow meter in pipe 82 would measure the flow through manifold 66 so as to literally satisfy the claim language, this would not actually “test” the system, because it would not also measure the direct flow through pipe 74 to eductor 72 and nozzle 81. Kudo explains that foam discharge tests verify that the foam delivery system functions properly. Kudo, col. 1, ll. 15–21. The Examiner does not explain how measuring only a portion of the total flow to eductor 72 effectively subjects the system to a reliable test. “The court should consider a range of real-world facts to determine ‘whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1359 (Fed. Cir. 2017) (quoting *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017)). Here, due to the divergence of flow into pipes 82 and 74, the Examiner’s proposed reason for modifying Kudo in the manner proposed does not stack up to the “real-world facts” before us. *Id.*

In light of the foregoing discussion, we do not sustain the Examiner’s unpatentability rejection of claim 1.

Claims 2, 3, 11, and 13–16

Claims 2 and 3 depend from claim 1. Claims App. Claim 13 is an independent claim that is substantially similar in scope to claim 1 and claims 14–16 depend therefrom. *Id.* The Examiner’s rejection of these claims suffers from the same infirmity that was identified above with respect to claim 1. Thus, for essentially the same reason expressed above in

connection with claim 1, we do not sustain the rejection of claims 2, 3, 11, and 13–16.

*Unpatentability of Claim 12
over Kudo and Huszagh*

Claim 12 depends from claim 1. Claims App. In the rejection thereof, the Examiner relies on Huszagh as teaching an air compressor and an actuator for shifting a valve. Final Act. 4. The Examiner’s rejection relies on the same reasoning for modifying Kudo with a flow meter that we determined to be reversible error with respect to claim 1 as discussed above. Our analysis with respect to claim 1 applied with equal force to the rejection of claim 12. Thus, for similar reasons, we do not sustain the Examiner’s unpatentability rejection of claim 12.

CONCLUSION

Claims Rejected	§	References	Affirmed	Reversed
1-3, 11, 13-16	103	Kudo		1-3, 11, 13-16
12	103	Kudo, Huszagh		12
Overall Outcome				1-3, 11-16

REVERSED