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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SERGEY V. FROLOV and MICHAEL CYRUS

Appeal 2019-005283
Application 15/785,104
Technology Center 2600

Before JEAN R. HOMERE, CARL W. WHITEHEAD JR, and
ERIC B. CHEN, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE¹

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner’s Final decision to reject claims 1–8 and 10–28, which constitute all of the claims pending in this appeal.² Appeal Br. 1. Claim 9 has been cancelled. *Id.* We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We refer to the Specifications, filed Oct. 16, 2017 (“Spec.”); the Final Office Action, mailed Aug. 15, 2018 (“Final Act.”); the Appeal Brief, filed Jan. 15, 2019 (“Appeal Br.”); the Examiner’s Answer, mailed May 1, 2019 (“Ans.”); and the Reply Brief filed July 1, 2019 (“Reply Br.”).

² We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies Sunlight Photonics Inc. as the real party in interest. Appeal Br. 3.

II. CLAIMED SUBJECT MATTER

According to Appellant, the claimed subject matter relates to airborne communication system (1110) for providing extended wireless communication to user (1125) by positioning its airborne platform at an altitude, which permits the airborne platform to establish an unobstructed line of sight (LOS) with wireless networks (1120, 1130). Spec. ¶¶ 48, 55, and Fig. 11. In particular, communication system (1110) uses its flight controller to elevate its airborne platform to an altitude or position that enables the platform to establish an optimal signal strength or coverage area for first or second wireless link (1120, 1130) with ground devices. *Id.*

Figure 11, discussed above and reproduced below, is useful for understanding the claimed subject matter:

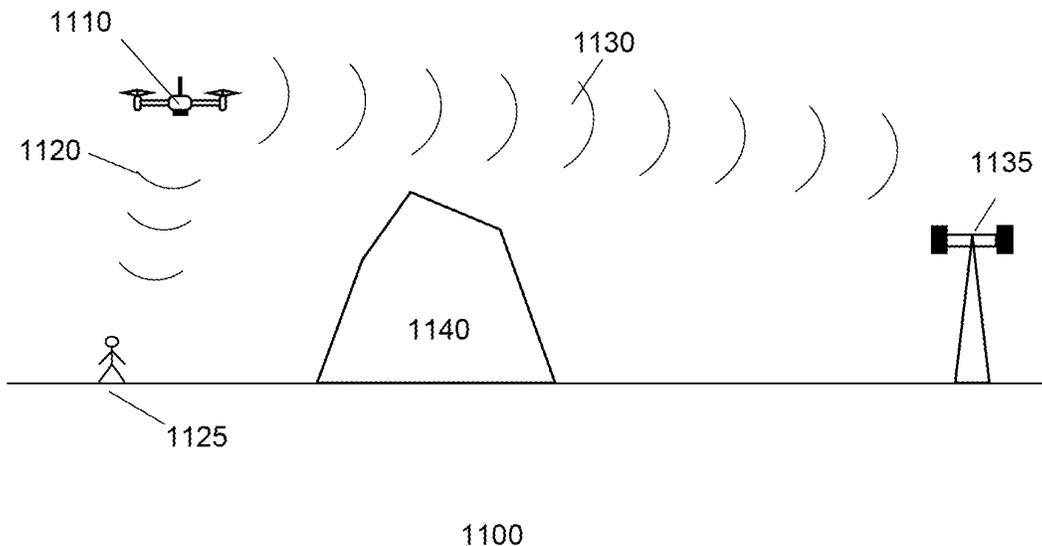


Figure 11.

Figure 11 illustrates airborne communication system (1110) providing local wireless network (1120) for users (1125) using wireless link (1130) to cell tower (1135).

Spec. ¶ 48.

Illustrative Claim

Claims 1, 26, and 28 are independent. Claim 1, reproduced below with disputed limitations emphasized in *italics*, is illustrative of the claimed subject matter:

1. A method for providing extended wireless communications, comprising:
 - providing an airborne platform having a communication payload able to establish at least a first and a second wireless link, and a flight control system able to alter at least one of a position or an attitude of the airborne platform;
 - elevating the airborne platform using the flight control system to an altitude at which wireless connectivity is able to be established with a first wireless network;
 - establishing a first wireless link to the first wireless network using the communication payload of the airborne platform;
 - establishing a second wireless link using the communication payload of the airborne platform;
 - relaying data between the first wireless link and the second wireless link using the communication payload; and
 - altering at least one of the position or the attitude (sic) of the airborne platform using the flight control system to locate a position or an attitude (sic) for the airborne platform having at least one of an optimum signal strength or coverage area for at least one of the first and the second wireless links.*

Appeal Br. 16 (Claims Appendix).

III. REFERENCES RELIED UPON

The Examiner relies upon the following references.³

³ All reference citations are to the first named inventor only.

Name	Number	Publ'd/Issued
Dent	US 7,010,290 B2	Mar. 7, 2006
McGuffin	US 2006/0217851 A1	Sept. 28, 2006
Knoblack	US 2008/0299990 A1	Dec. 4, 2008
Self	US 9,334,627 B2	May 10, 2016

IV. REJECTIONS

The Examiner rejects claims 1–3 and 5–20 as follows:

1. Claims 1–4, 6–8, 10–19, and 22–28 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Knoblack and McGuffin. Final Act. 3–16.
2. Claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Knoblack, McGuffin, and Self. Final Act. 16–17.
3. Claim 20 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Knoblack, McGuffin, and George. Final Act. 17–18.
4. Claim 21 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Knoblack, McGuffin, and Dent. Final Act. 19–20.

V. ANALYSIS

We consider Appellant's arguments *seriatim*, as they are presented in the Appeal Brief, pages 7–22 and the Reply Brief, pages 2–15.⁴ We are unpersuaded by Appellant's contentions. Except as otherwise indicated herein below, we adopt as our own the findings and reasons set forth in the Final Action, and the Examiner's Answer in response to Appellant's Appeal Brief. Final Act. 3–30; *see also* Ans. 4–12. However, we highlight and address specific arguments and findings for emphasis as follows.

Regarding the rejection of claim 1, Appellant argues the combination of Knoblach and McGuffin does not teach or suggest altering a *position or altitude* of an airborne platform to locate a *position or altitude* thereof having an optimal *signal strength or coverage area* of a first or second wireless link. Appeal Br. 8. In particular, Appellant argues Knoblach's disclosure of altering the position or altitude of an airborne platform is not taught in connection with locating the optimum signal strength or coverage of a wireless network associated with the platform. *Id.* at 11–12 (citing Knoblach ¶¶ 95–98). Further, Appellant argues McGuffin's disclosure of an air-ground station for measuring the signal strength of a ground station to maintain communication therewith or to select another ground station where the signal strength is above a threshold value does not cure the admitted deficiencies of Knoblach. *Id.* at 8 (citing McGuffin ¶ 18). In particular, Appellant argues McGuffin's teaching of selecting a suitable ground station based upon its signal strength to maintain communication between the air

⁴ We have considered in this Decision only those arguments Appellant actually raised in the Briefs. Any other arguments Appellant could have made but chose not to make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2012).

and ground stations relates to hand-over points between the stations, as opposed to altering the position or altitude of a platform to obtain an optimal signal strength for a first or second wireless link. *Id.* at 9, 10. Appellant's arguments are not persuasive of reversible Examiner error.

As a preliminary matter, we note the disputed claim limitation requires locating either the *position or altitude* of an airborne platform having either an optimal *signal strength or coverage area* of a wireless link. Reply Br. 3. As correctly noted by the Examiner, Knoblach discloses an airborne communication platform carrying a payload of electronic communication and control equipment including an altitude regulator for altering the altitude of the platform from 60,000 to 140,000 feet. Ans. 5 (citing Knoblach ¶¶ 52, 65, 66, 164, and 165). Knoblach indicates that the disclosed teaching is intended “to provide *substantially 100% coverage*” and can be combined with existing high density wireless carrier networks to provide extended communication coverage by maintaining a line of sight communication between airborne platforms and ground terminals. *See* Knoblach ¶¶ 62, 64, 131, 134, and 135 (emphasis added). On this record, Knoblach therefore teaches an altitude regulator for altering the altitude of an airborne platform to provide 100 percent wireless communication coverage between the airborne platform and ground devices. As further correctly noted by the Examiner, McGuffin discloses, as the altitude of an airborne platform is changing, a wireless connection with an optimal signal strength between the airborne platform and a ground terminal is determined. Ans. 5–6 (citing McGuffin ¶ 18). Accordingly, we agree with the Examiner that the proposed combination of Knoblach and McGuffin teaches or suggests, as an altitude regulator is used to vary the altitude of an airborne

platform from “60,000 to 140,000 feet,” determining “[a wireless network with] an optimum signal strength or coverage” for effective wireless communication between the airborne platform and ground devices. *Id.* at 5; *see also* Reply Br. 10–11. Although both Knoblach and McGuffin teach selecting optimum signal strength or coverage as part of a handoff operation between wireless networks, the disputed claim limitation does not preclude such selection nor does it limit the selection of the optimal performance to be associated with a particular operation. Because the proposed combination of references teaches or suggests using an optimal signal strength or coverage as a way to extend communication between the airborne platform and ground device, we are satisfied that, on the record before us, the Examiner has established by a preponderance of the evidence that the combination of Knoblach and McGuffin renders claim 1 unpatentable. Accordingly, we are not persuaded of error in the Examiner’s obviousness rejection of claim 1.

Regarding the rejection of claims 2–8 and 10–28, Appellant has not presented separate patentability arguments or has reiterated substantially the same arguments as those previously discussed for the patentability of claim 1. As such, claims 2–8 and 10–28 fall therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv).

VI. DECISION

For the above reasons, we affirm the Examiner’s rejections of claims 1–8 and 10–28.

VII. CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-4, 6-8, 10-19, 22-28	103	Knoblach, McGuffin	1-4, 6-8, 10-19, 22-28	
5	103	Knoblach, McGuffin, Self	5	
20	103	Knoblach, McGuffin, George	20	
21	103	Knoblach, McGuffin, Dent	21	
Overall Outcome			1-8, 10-28	

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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED