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Paper 24
Date: July 22, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

UNILOC 2017 LLC,
Patent Owner.

IPR2020-00479
Patent 6,349,154 B1

Before JENNIFER S. BISK, DAVID C. MCKONE,
and SHARON FENICK, *Administrative Patent Judges*.

MCKONE, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Google LLC ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 1–4 of U.S. Patent No. 6,349,154 B1 (Ex. 1001, "the '154 patent"). Pet. 2. Uniloc 2017 LLC ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp."). Pursuant to 35 U.S.C. § 314, we instituted this proceeding. Paper 10, ("Dec.").

Patent Owner filed a Patent Owner's Response (Paper 12, "PO Resp."), Petitioner filed a Reply to the Patent Owner's Response (Paper 14, "Reply"), and Patent Owner filed a Sur-Reply to the Reply (Paper 16, "Sur-reply"). An oral argument was held on May 13, 2021 (Paper 23, "Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–4. Based on the record before us, Petitioner has proved, by a preponderance of the evidence, that claims 1–4 are unpatentable.

B. Related Matters

The parties indicate that the '154 patent is at issue in *Uniloc 2017 LLC v. Google LLC*, No. 2:18-cv-00496 (E.D. Tex.). Pet. 1; Paper 3, 2. The United States District Court for the Eastern District of Texas ("Texas court") transferred this case to the United States District Court for the Northern District of California ("California court"). Ex. 1017. Petitioner states that the California court found that another party held sufficient rights in the '154 patent such that Patent Owner lacked standing to sue and, accordingly, dismissed the litigation for lack of subject matter jurisdiction. Paper 13, 1 (citing *Uniloc 2017 LLC v. Google LLC*, No. 4:20-cv-05345-YGR, Dkt. 210 (N.D. Cal. Dec. 22, 2020)).

C. The '154 Patent

The '154 patent describes a technique for receiving a sequence of lower-resolution pictures, estimating motion in those pictures, and creating a high-resolution still digital picture from the sequence of lower-resolution pictures. Ex. 1001, 1:6–12. Figures 2 and 3, reproduced below, are illustrative.

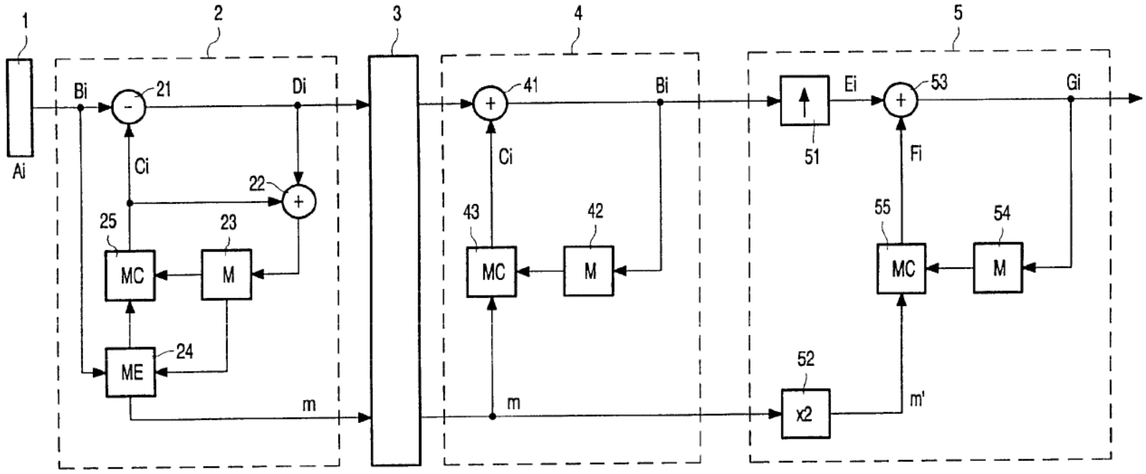

FIG. 2

Figure 2 is a block diagram of a system for creating high-resolution pictures. *Id.* at 2:15–17.

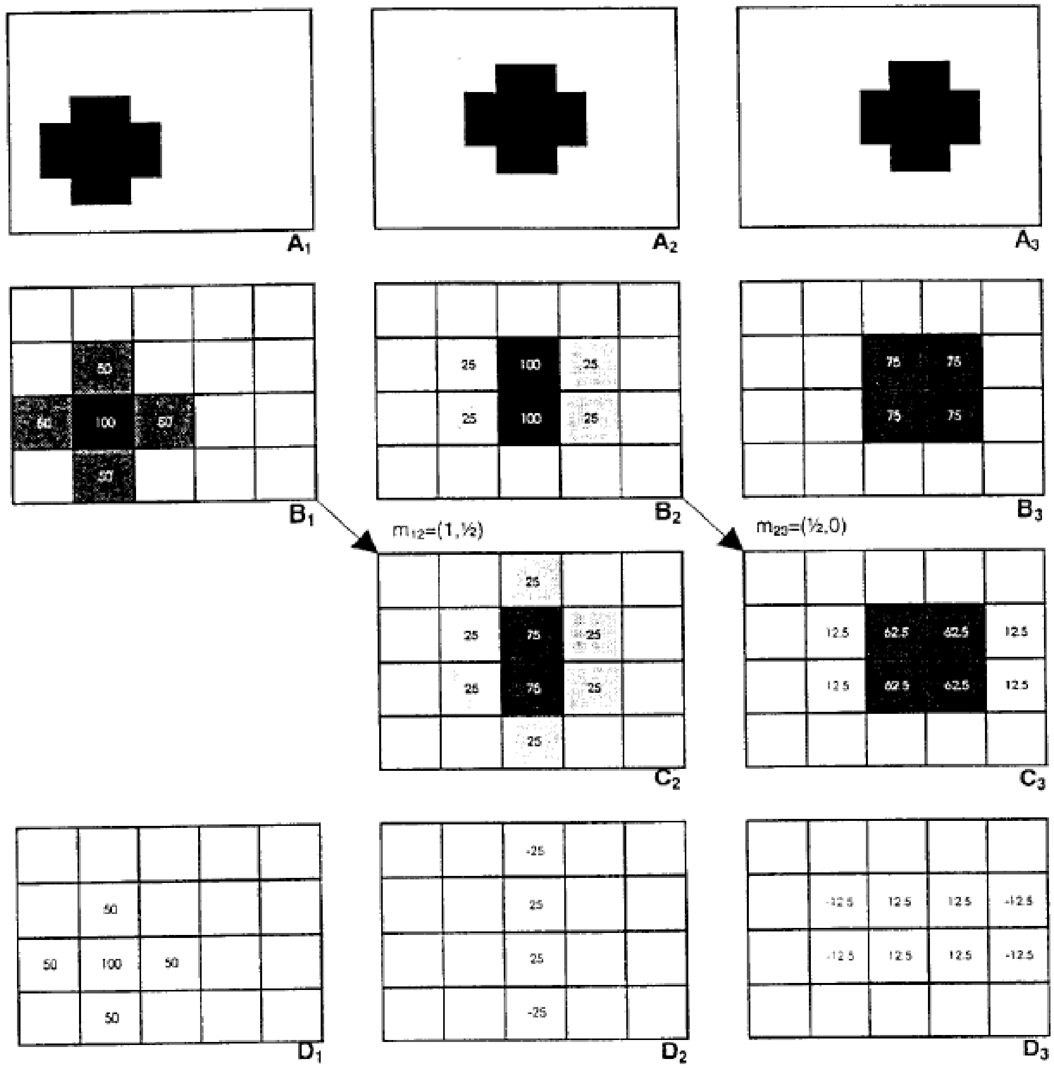

FIG. 3

Figure 3 depicts sequences of images as they are processed by prediction encoder 2 of Figure 2. *Id.* at 2:18–19, 3:24–53.

With reference to Figures 2 and 3, image sensor 1 receives images A_i (A_1, A_2, etc.) and generates digitized low-resolution pictures B_i (B_1, B_2, etc.). *Id.* at 3:4–8. Pictures A_1, A_2, and A_3 show three successive phases of a moving object. *Id.* at 2:23–25. B_1 is an autonomously encoded picture and D_1, showing the pixel values of B_1, is applied to motion-compensated prediction encoder 2's output and stored in frame memory 23. *Id.* at 3:22–27. Motion estimator 24 calculates the amount of motion between successive pictures B_1, B_2, and B_3 to predictively encode pictures B_2 and B_3. *Id*. at 3:28–32. Using the calculated motion vector, motion compensator 25 generates prediction picture C_i, which is subtracted from picture B_i to form difference output picture D_i. *Id.* at 3:34–37. Adder 22 adds prediction image C_i and encoded difference D_i and stores the sum in frame memory 23. *Id*. at 3:37–39. Here, picture C_2 is the motion-compensated prediction picture for encoding picture B_2, motion vector m_{12} has the value (1,½), picture C_3 is the motion-compensated prediction picture for encoding picture B_3, and motion vector m_{23} has the value (½,0). *Id*. at 3:40–51.

Encoded pictures D_i and motion vectors m are stored on storage medium 3 and transmitted through a transmission channel to motion-compensated prediction decoder 4, which decodes the original sequence of low-resolution pictures B_i and supplies them to processing circuit 5. *Id.* at 3:54–59, 4:1–4. The operations of processing circuit 5 are shown in Figure 4, reproduced below:

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