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Crinon et al.

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(54) **SPRITE-BASED VIDEO CODING SYSTEM WITH AUTOMATIC SEGMENTATION INTEGRATED INTO CODING AND SPRITE BUILDING PROCESSES**

(75) Inventors: **Regis J. Crinon; Muhammed Ibrahim Sezan**, both of Vancouver, WA (US)

(73) Assignee: **Sharp Laboratories of America, Inc.**, Camas, WA (US)

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(21) Appl. No.: **08/999,103**

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Related U.S. Application Data

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(51) **Int. Cl.**⁷ **G06K 9/36; H04N 9/74; H04N 1/387; G06T 11/180**

(52) **U.S. Cl.** **382/284; 382/232; 382/236; 345/435; 348/584; 348/586; 348/598; 358/426; 358/450**

(58) **Field of Search** **382/232, 236, 382/284, 240; 345/202, 115, 435; 348/9, 19, 384, 584, 586, 598; 358/426, 450**

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Primary Examiner—Phuoc Tran

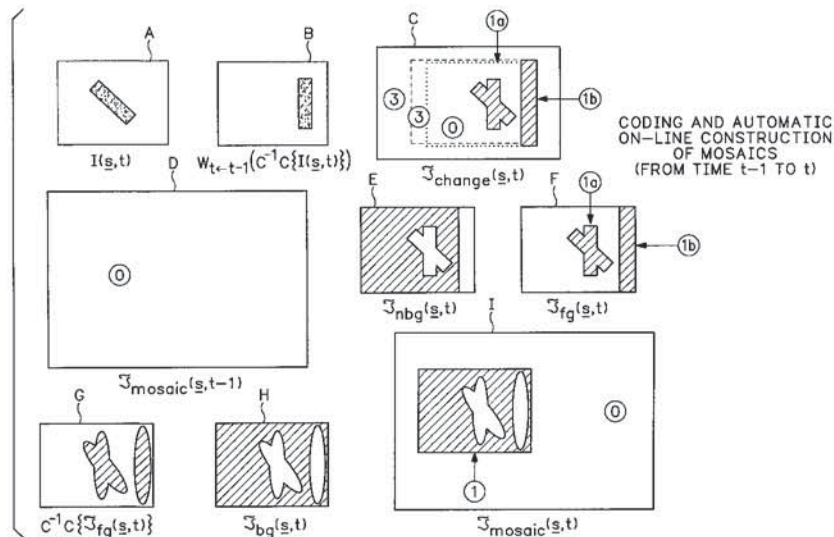
Assistant Examiner—Daniel G. Mariam

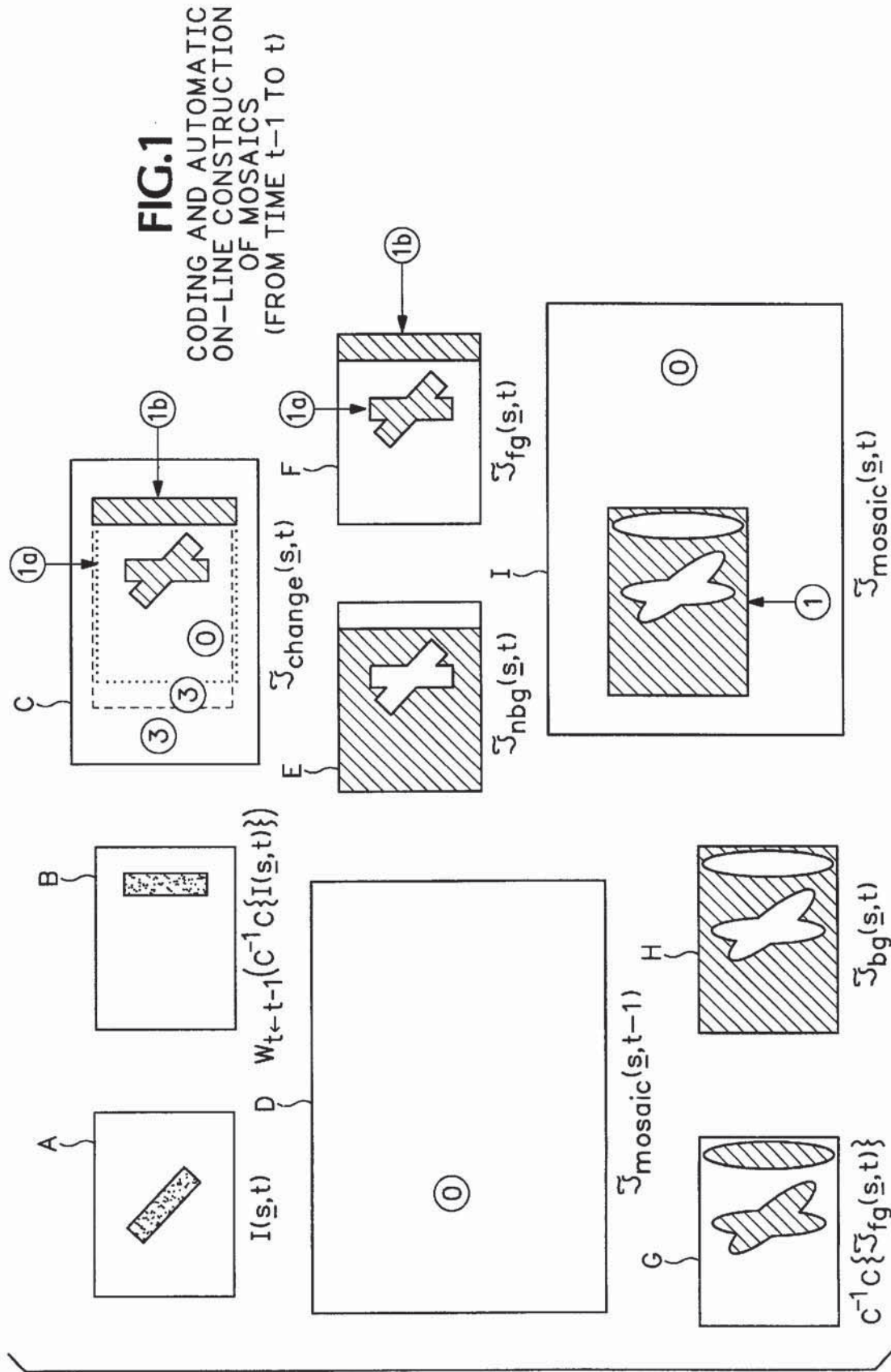
(74) *Attorney, Agent, or Firm*—Marger, Johnson & McCollom, P.C.

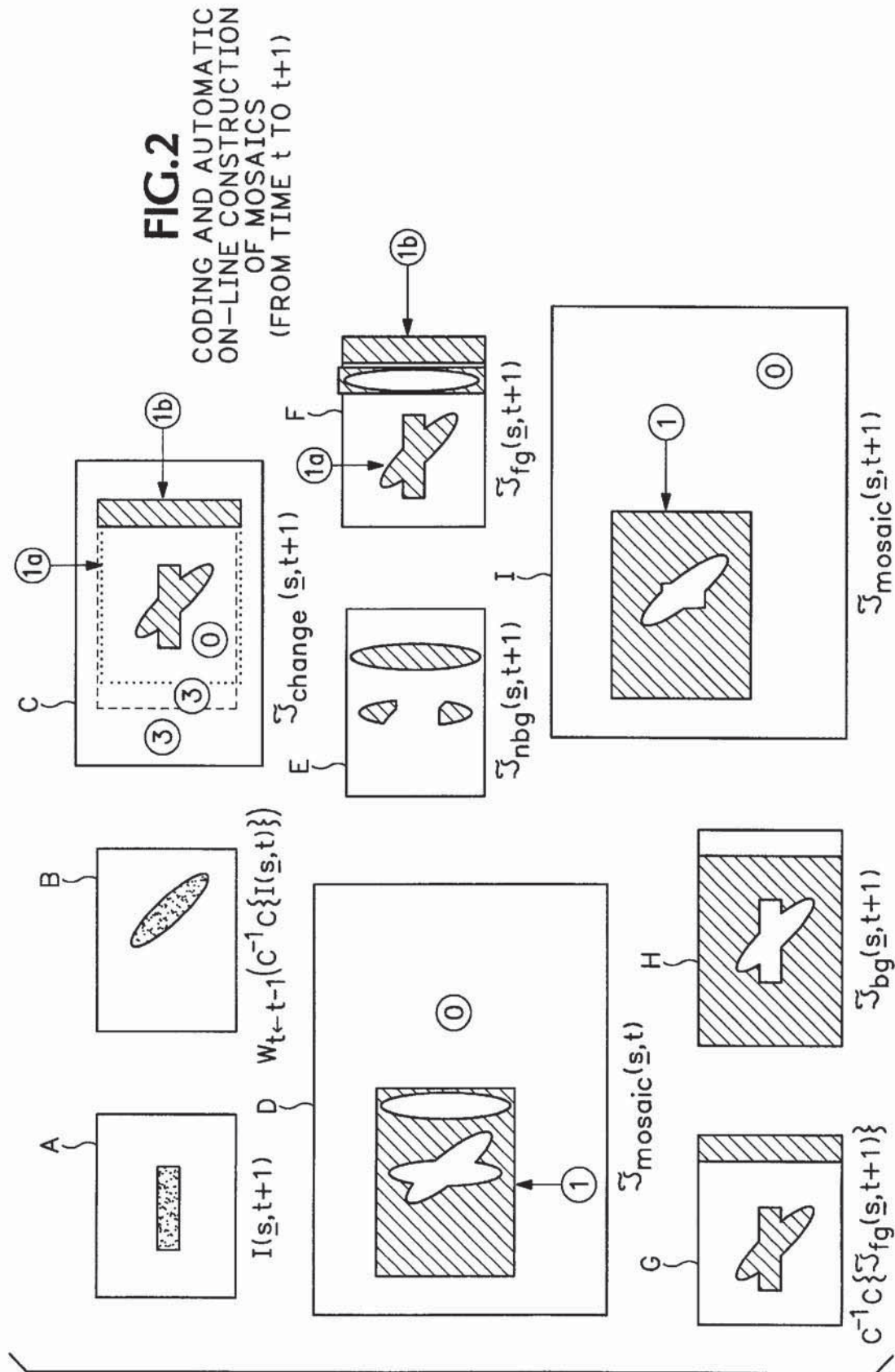
(57) **ABSTRACT**

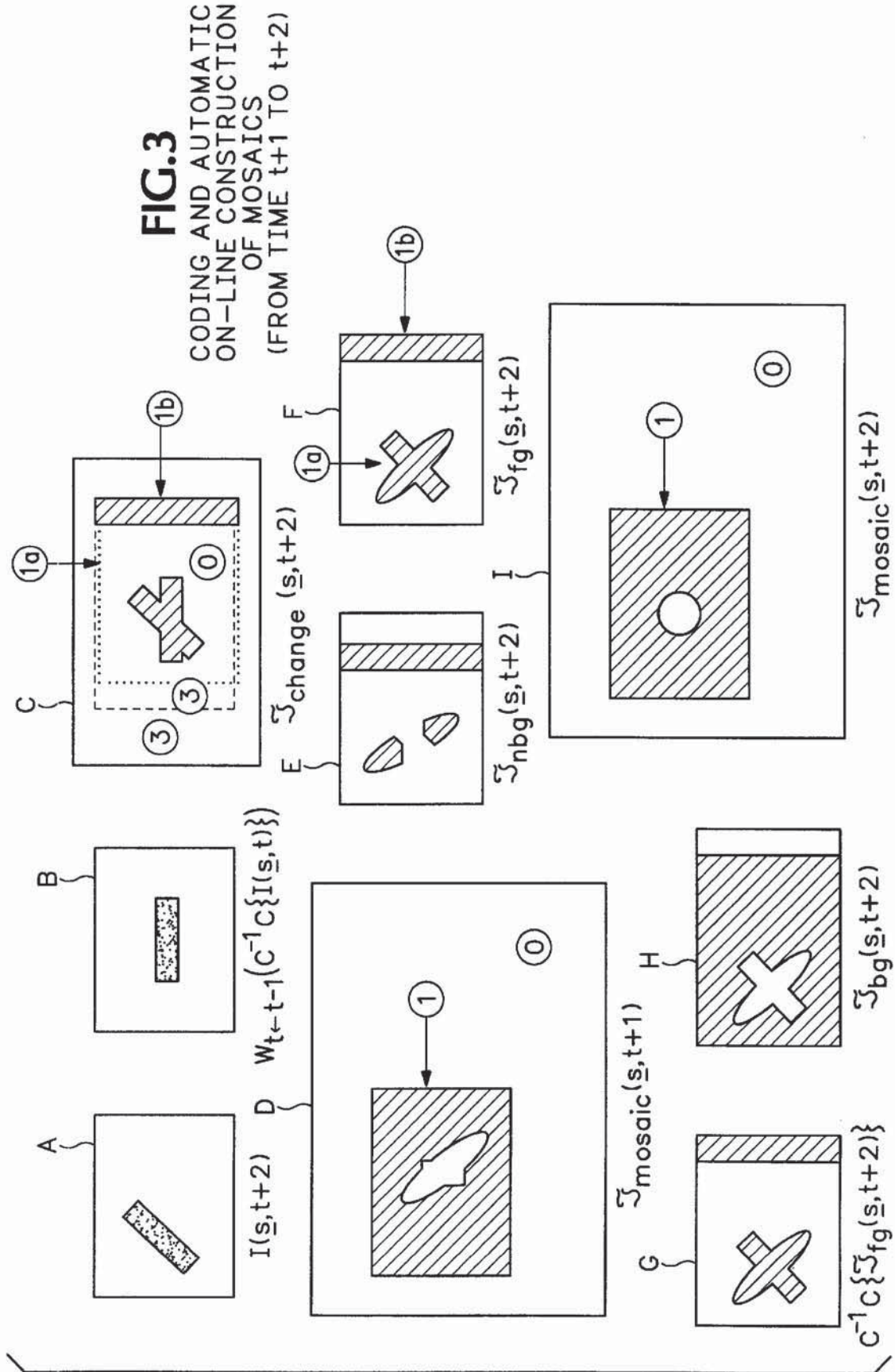
A sprite-based coding system includes an encoder and decoder where sprite-building is automatic and segmentation of the sprite object is automatic and integrated into the sprite building as well as the coding process. The sprite object is distinguished from the rest of the video objects on basis of its motion. The sprite object moves according to the dominant component of the scene motion, which is usually due to camera motion or zoom. Hence, the sprite-based coding system utilizes dominant motion, to distinguish background images from foreground images. The sprite-based coding system is easily integrated into a video object-based coding framework such as MPEG-4, where shape and texture of individual video objects are coded separately. The automatic segmentation integrated in the sprite-based coding system identifies the shape and texture of the sprite object.

10 Claims, 11 Drawing Sheets









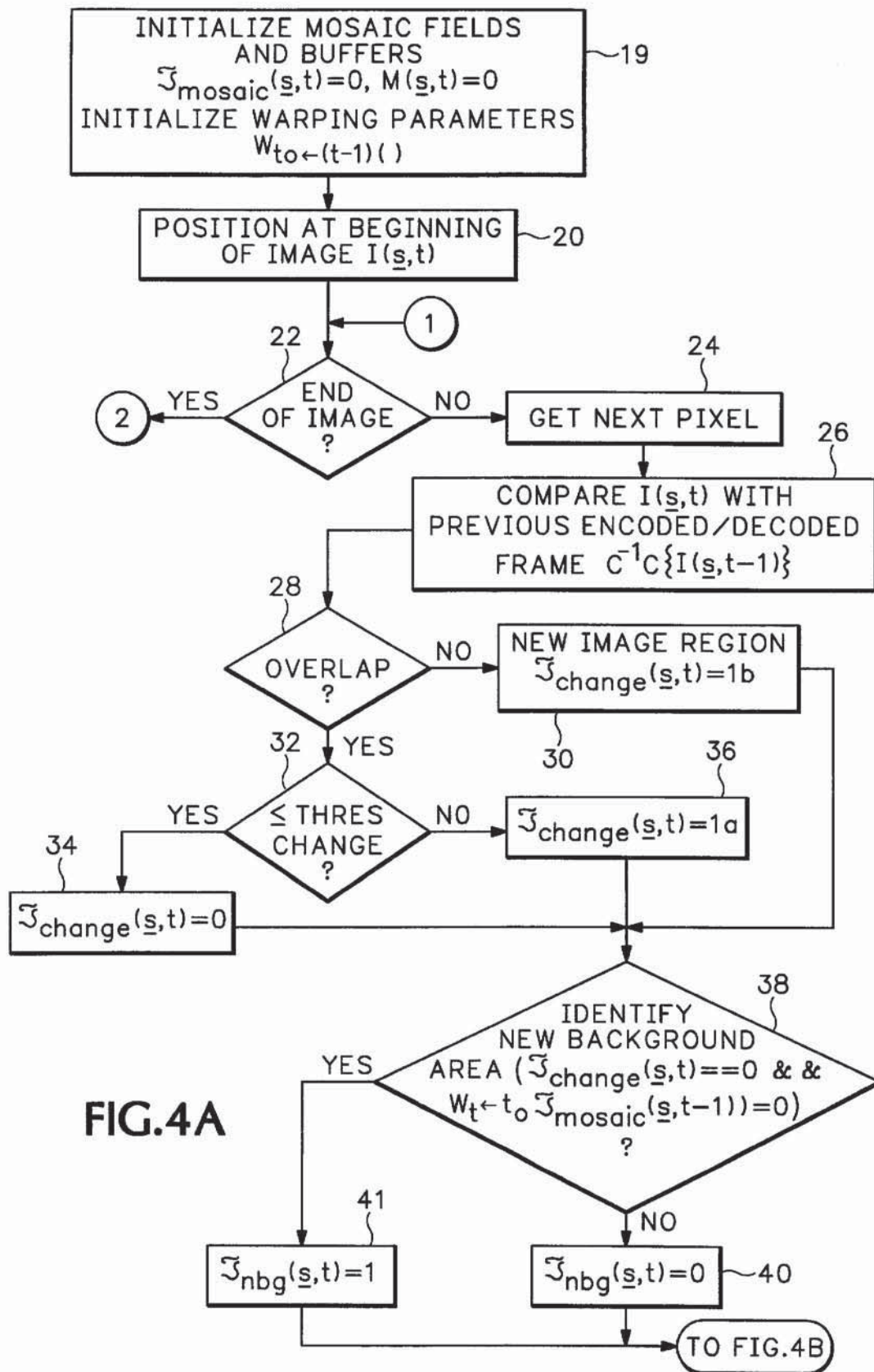


FIG. 4A

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