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

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 08/999,103
- (22) Filed: Dec. 29, 1997

#### Related U.S. Application Data

- (60) Provisional application No. 60/034,558, filed on Dec. 30, 1996.
- (51) **Int. Cl.**<sup>7</sup> ...... **G06K 9/36**; H04N 9/74; H04N 1/387; G06T 11/180

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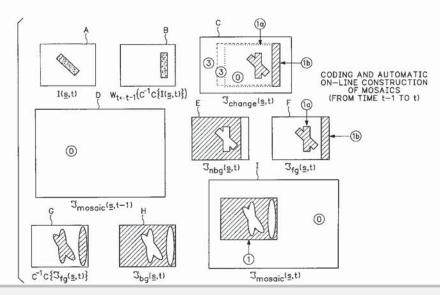
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McCollom, P.C.

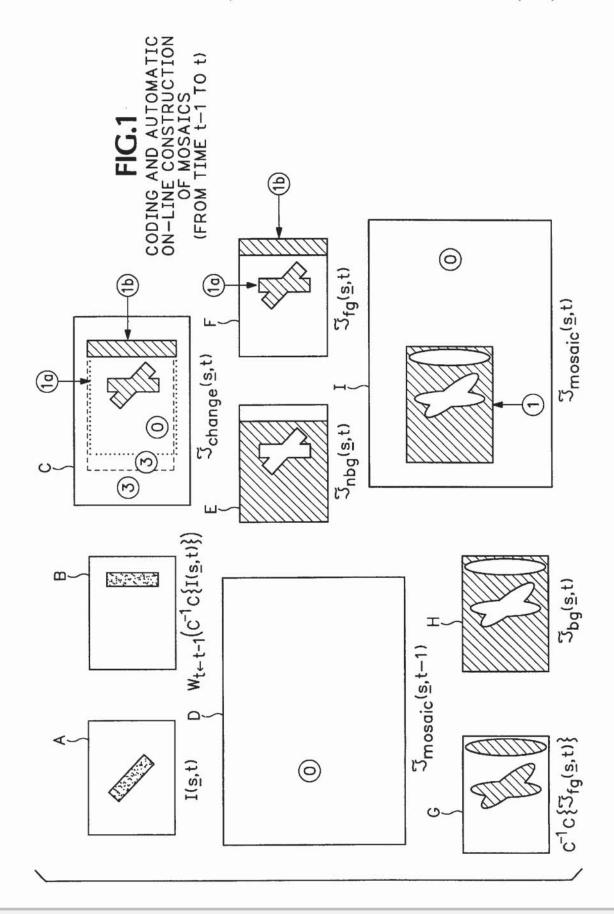
#### (57) ABSTRACT

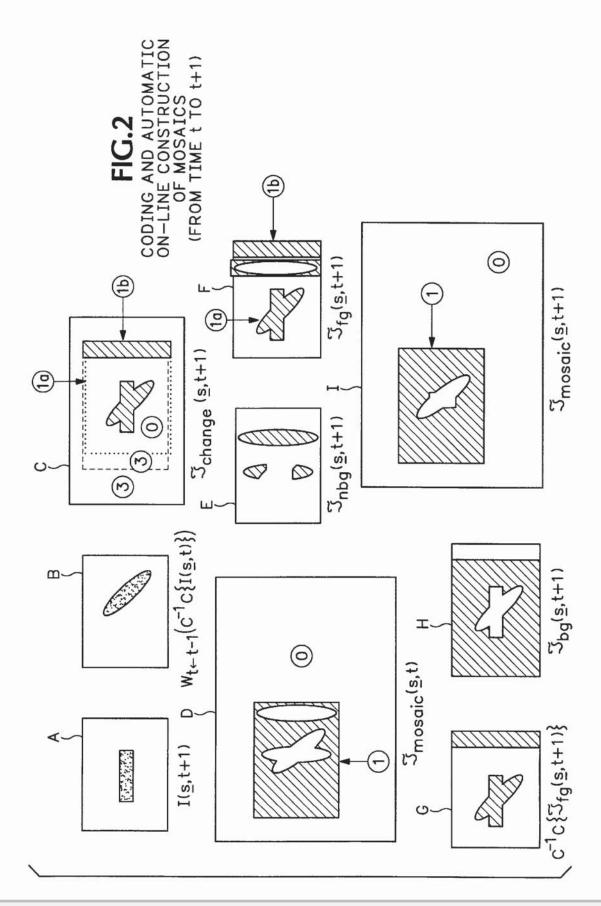
A sprite-based coding system includes an encoder and decoder where sprite-building is automatic and segmentation of the sprite object is automatic and integrated into the sprite building as well as the coding process. The sprite object is distinguished from the rest of the video objects on basis of its 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 spritebased coding system is easily integrated into a video objectbased 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

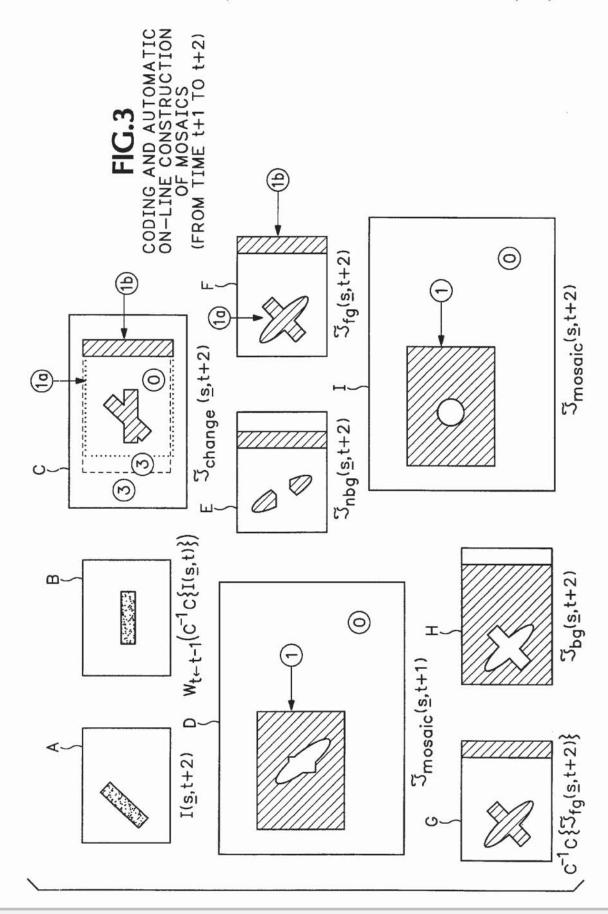






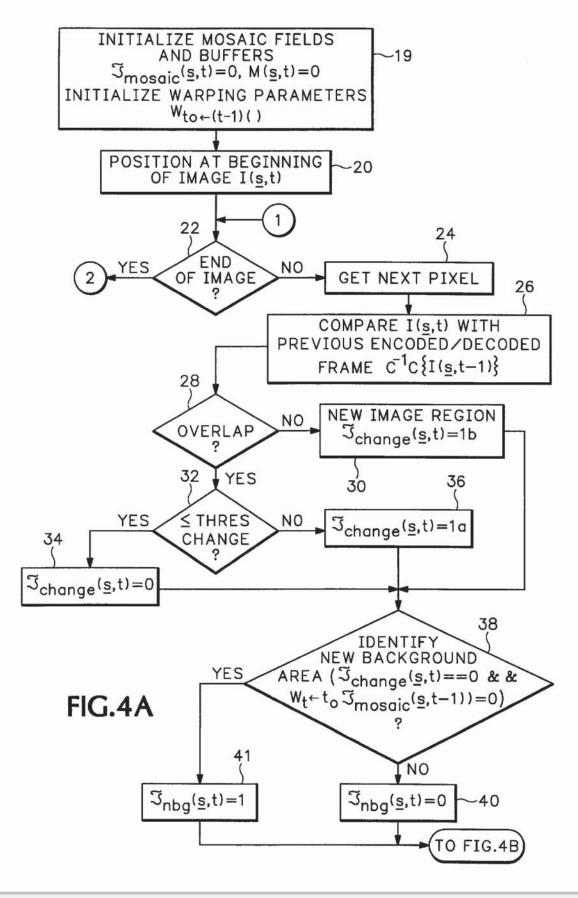








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