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Sandrew

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(54) **IMAGE SEQUENCE ENHANCEMENT SYSTEM AND METHOD**

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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 33 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/324,815**

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(65) **Prior Publication Data**

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Related U.S. Application Data

- (62) Division of application No. 10/450,970, filed as application No. PCT/US02/14192 on May 6, 2002, now Pat. No. 7,181,081.
- (60) Provisional application No. 60/288,929, filed on May 4, 2001.

(51) **Int. Cl.**
C06K 9/40 (2006.01)

(52) **U.S. Cl.** **382/254; 382/184; 382/212; 382/283; 358/506; 358/517**

(58) **Field of Classification Search** **382/184, 382/212, 254, 283, 293; 358/506, 517**
See application file for complete search history.

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(57) **ABSTRACT**

Motion picture scenes to be colorized are broken into separate elements, backgrounds/sets or motion/onscreen-action. Background and motion elements are combined separately into single frame representations of multiple frames which becomes a visual reference database that includes data for all frame offsets used later for the computer controlled application of masks within a sequence of frames. Each pixel address within the database corresponds to a mask/lookup table address within the digital frame and X, Y, Z location of subsequent frames. Masks are applied to subsequent frames of motion objects based on various differentiating image processing methods, including automated mask fitting of all masks or single masks in an entire frame, bezier and polygon tracing of selected regions with edge detected shaping and operator directed detection of subsequent regions. The gray scale actively determines the mask and corresponding color lookup that is applied in a keying fashion within regions of interest.

29 Claims, 22 Drawing Sheets

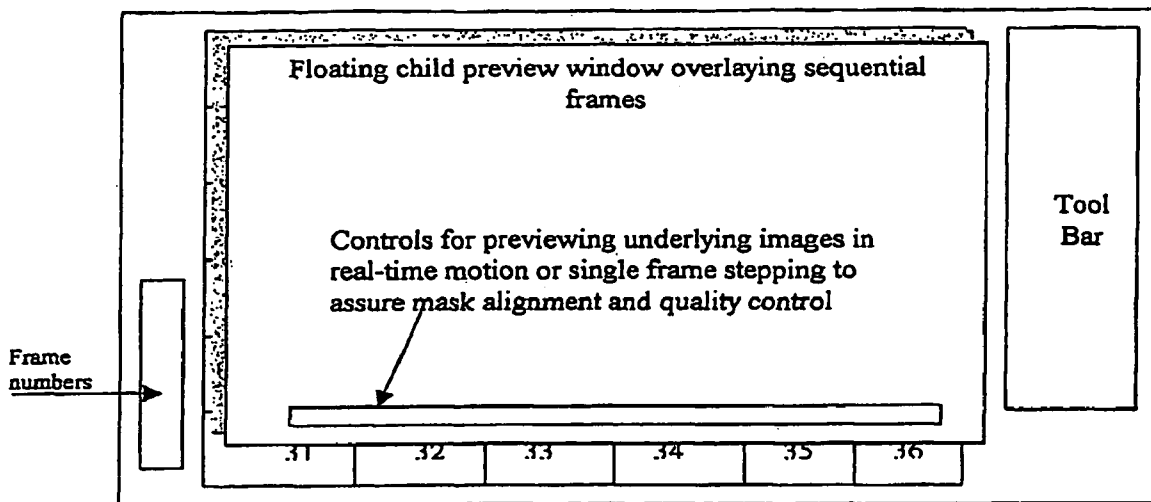


Figure 1

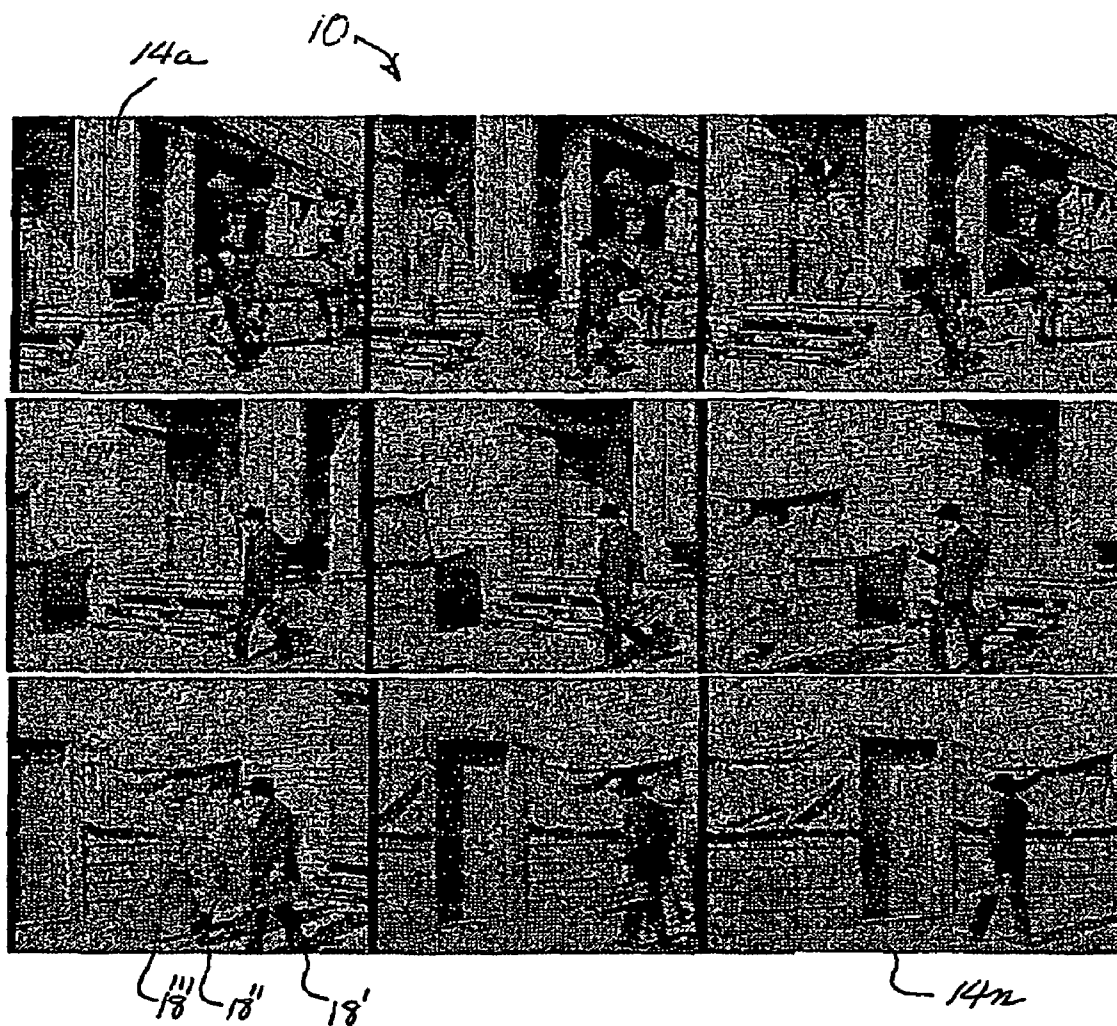


Figure 2

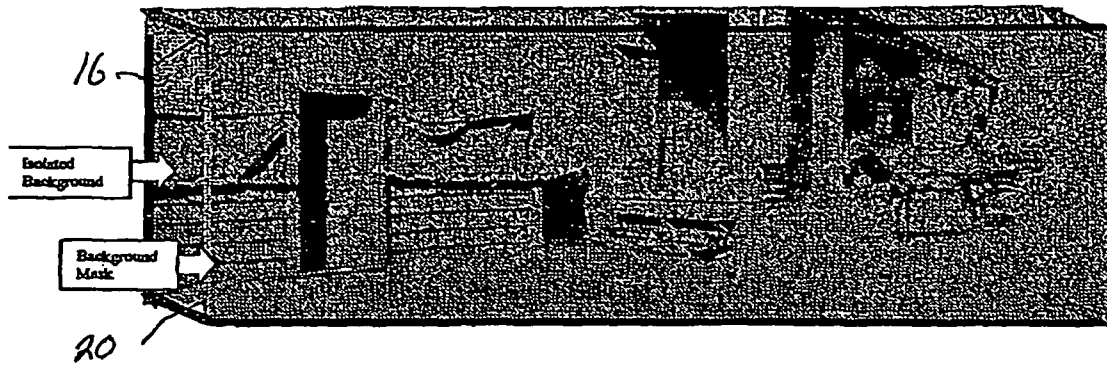


Figure 3

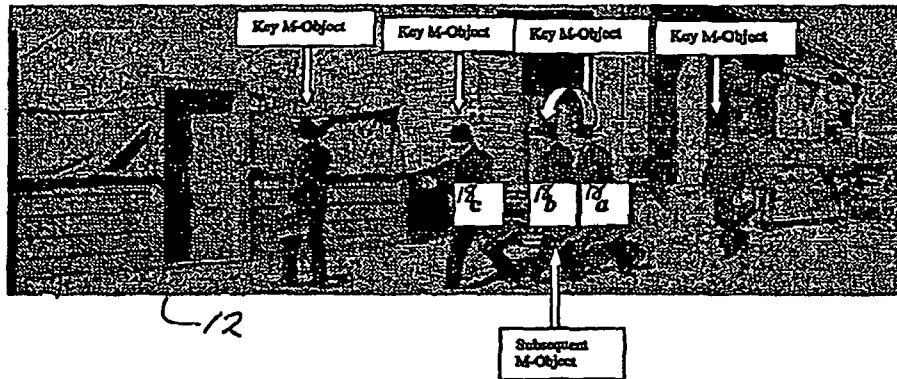


Figure 4

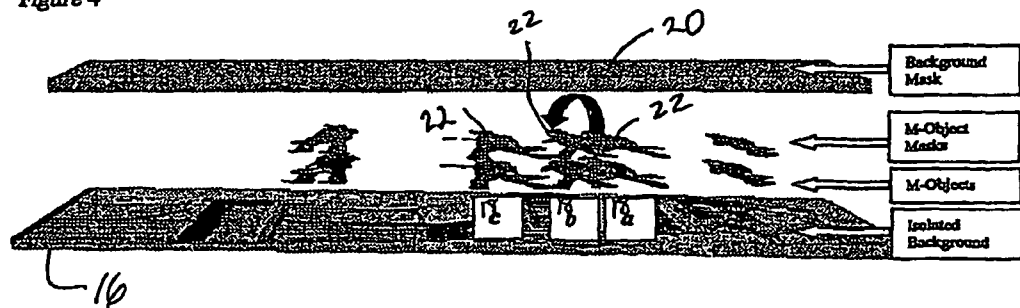


Figure 5A

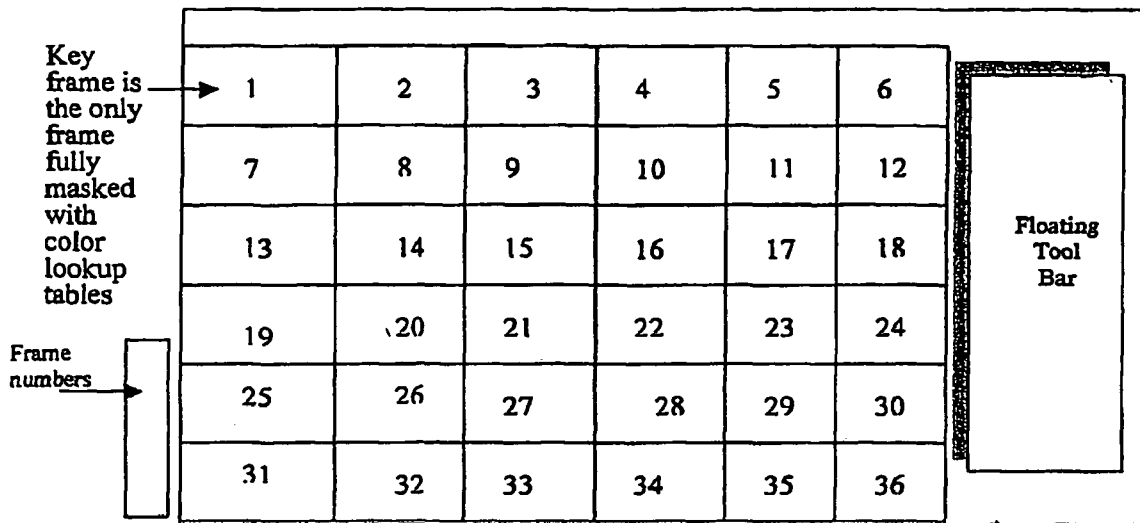
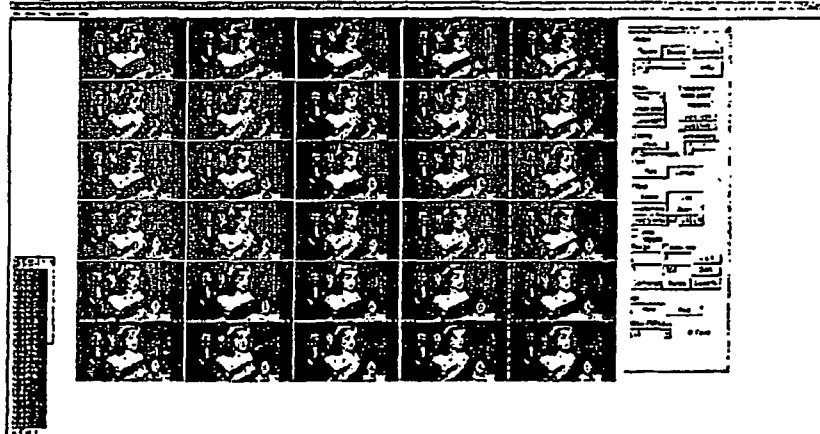


Figure 5B



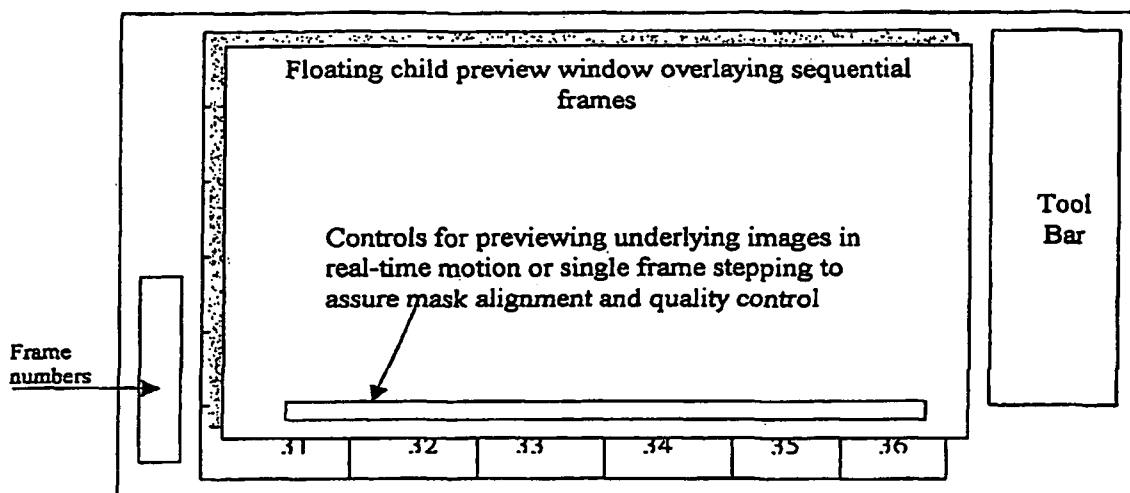


Figure 6A



Figure 6B

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