

(12) **United States Patent**  
**Iggulden**

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(54) **METHOD AND APPARATUS FOR AUTOMATICALLY IDENTIFYING AND SELECTIVELY ALTERING SEGMENTS OF A TELEVISION BROADCAST SIGNAL IN REAL-TIME**

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**Related U.S. Application Data**

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(51) **Int. Cl.<sup>7</sup>** ..... **H04N 5/44**

(52) **U.S. Cl.** ..... **348/553; 348/907; 348/460; 725/22; 725/14; 725/19; 725/28**

(58) **Field of Search** ..... **348/553, 632, 348/687, 690, 552, 907, 722, 465, 460; 725/32, 42, 22, 14, 19, 20, 25, 28, 34**

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*Primary Examiner*—John Miller

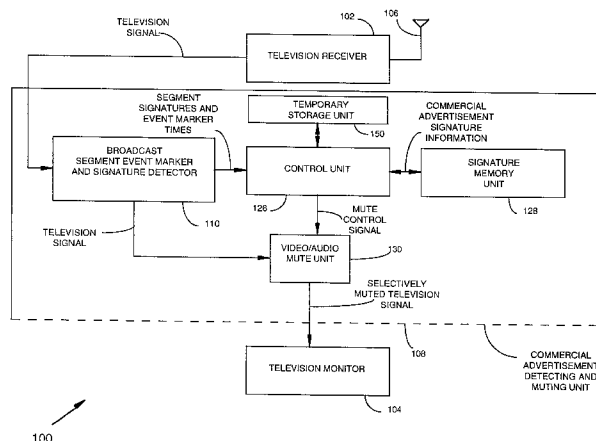
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(57) **ABSTRACT**

The method and apparatus identifies selected broadcast segments, such as commercial advertisements, of a television signal in real-time for the purpose of muting the video and audio portions of the television signal during each unwanted segment. A signature pattern associated with each segment of the television signal is detected and compared to stored signature patterns representative of selected segments such as commercial advertisement segments. If the signature pattern matches one of the stored signature patterns, the segment is thereby immediately identified as being one of the selected segments and is processed in real-time to mute the audio and video portions of the television signal during the segment. If the signature pattern of the segment does not match any of the stored signature patterns, the segment is analyzed to determine whether the segment is nevertheless a selected segment and, if so, its signature pattern is stored along with the stored signature patterns. The analysis to determine whether the segment is nevertheless a selected segment is performed by detecting the length of the segment upon its completion and then determining whether the length of the segment matches one of a pre-determined set of permissible selected segment lengths such as standard commercial advertisement segments of 15 seconds, 30 seconds, or 60 seconds. If so, the segment is identified as being a selected and its signature pattern is stored along with the other stored signature patterns such that, the next time the same segment is encountered, its signature will then match the stored signature and therefore the segment can be immediately identified and muted in real-time.

**8 Claims, 14 Drawing Sheets**





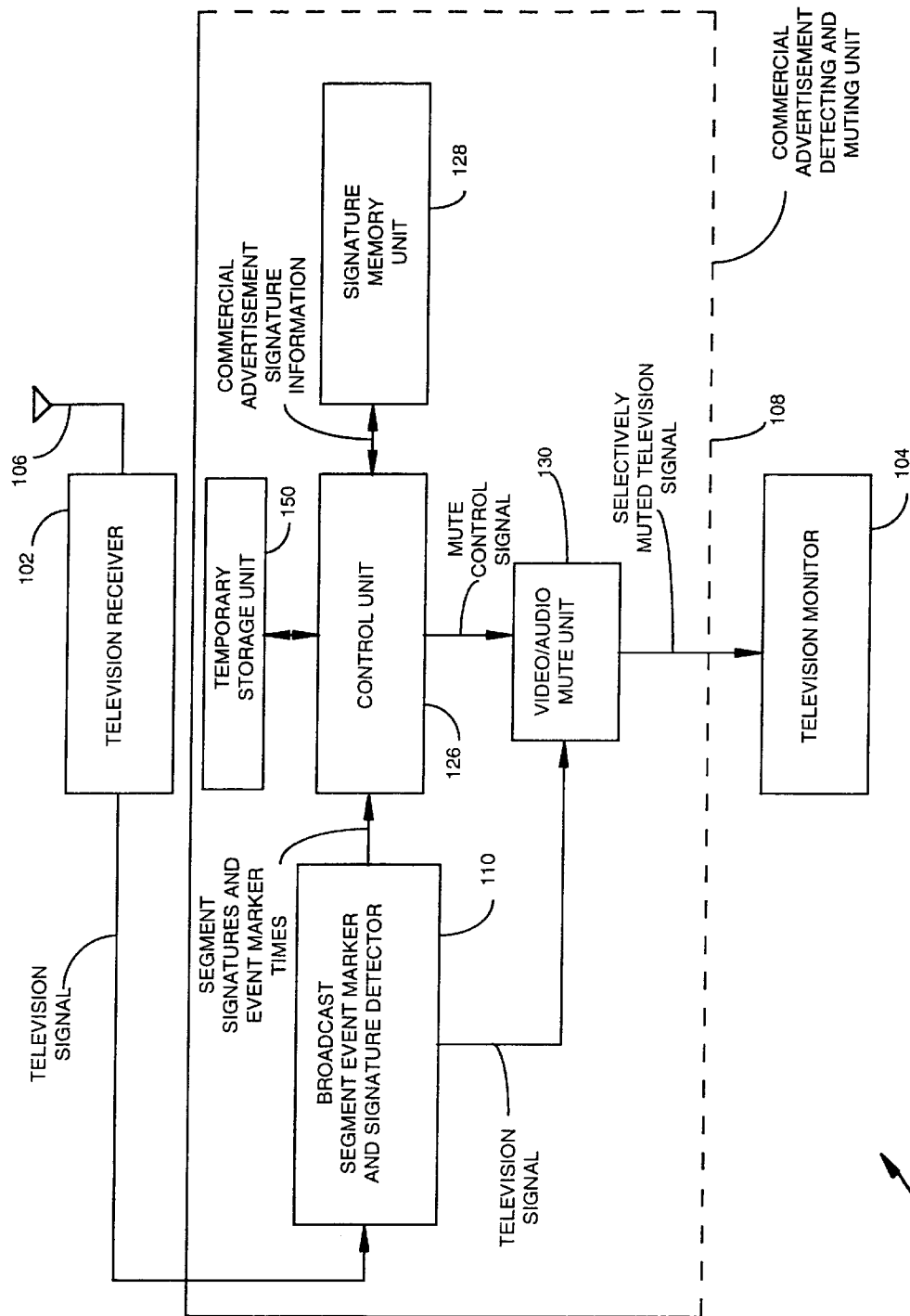
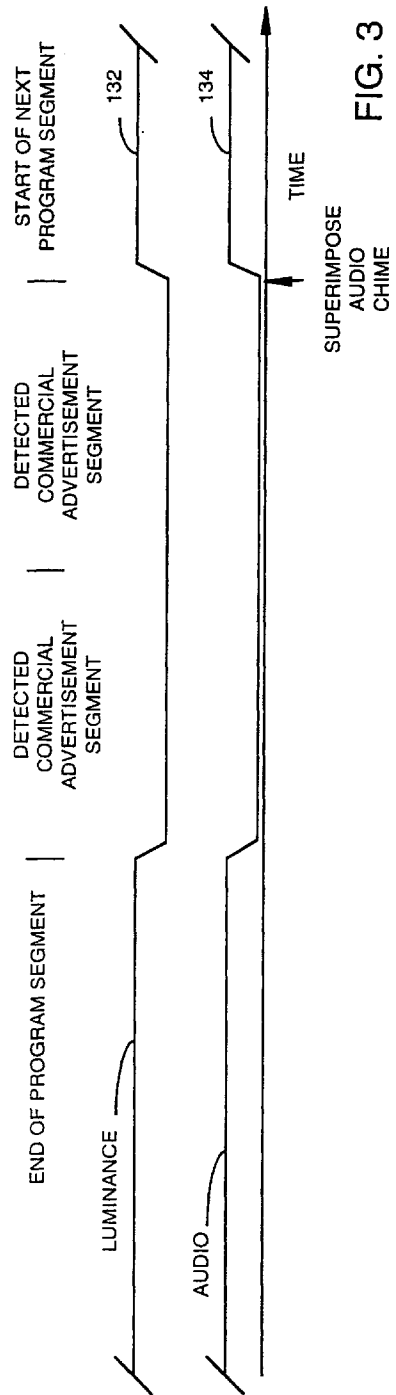
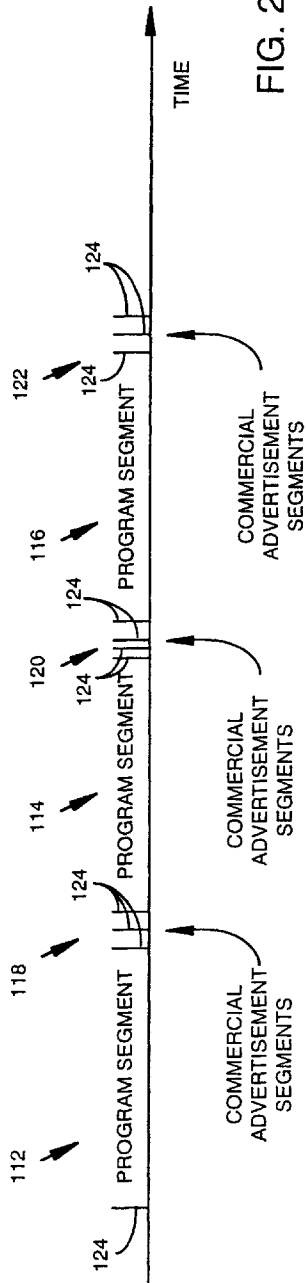
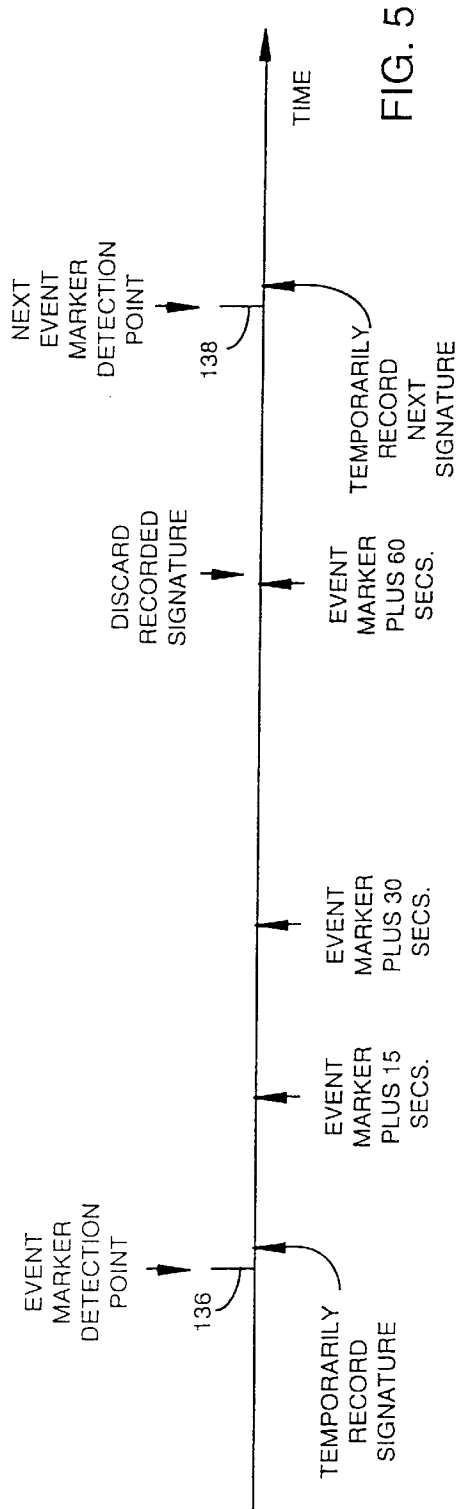
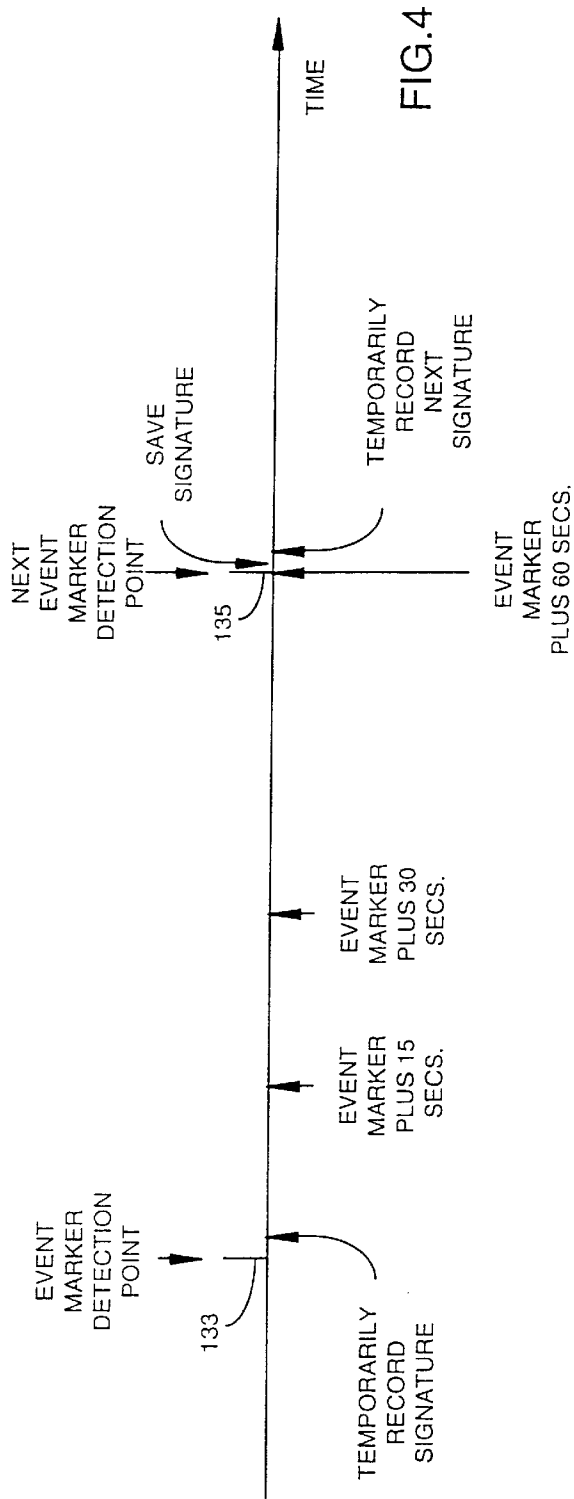


FIG. 1





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