EXHIBIT 1

(12) **United States Patent** (10) Patent No.: **US 6,856,760 B2**
Takahashi et al. (45) Date of Patent: ***Feb. 15, 2005**

(54) **RECORDING MEDIUM**

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(73) Assignee: **Hitachi, Ltd.**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/191,504**

(22) Filed: **Jul. 10, 2002**

(65) **Prior Publication Data**

US 2002/0181945 A1 Dec. 5, 2002

Related U.S. Application Data

(63) Continuation of application No. 09/446,338, filed on Dec. 20, 1999, now Pat. No. 6,424,795.

(30) **Foreign Application Priority Data**

Jul. 5, 1999 (JP) P11-189868

(51) Int. Cl.^{7} **H04N 5/91**; H04N 5/225
(52) U.S. Cl. **386/120**; 386/117; 348/220; 348/232
(58) Field of Search 386/120, 117, 386/112, 121, 124, 125; 348/220.1, 231.99, 333.05

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(57) **ABSTRACT**

A recording medium which records thereon moving pictures encoded by a first encoding method, first pictures corresponding to the moving pictures and which have pixels smaller than the moving pictures, still pictures encoded by a second encoding method, and second pictures corresponding to the still pictures and which have pixels smaller than the still pictures.
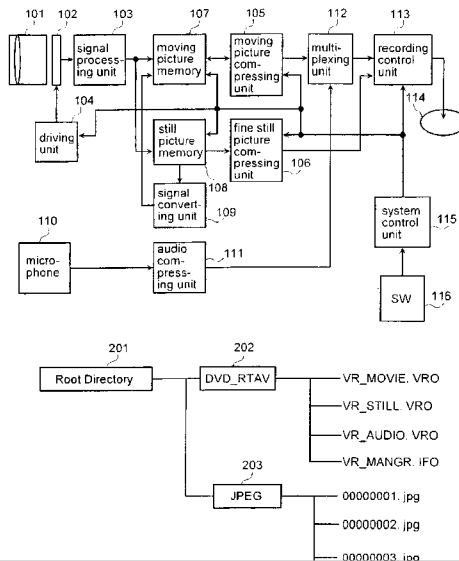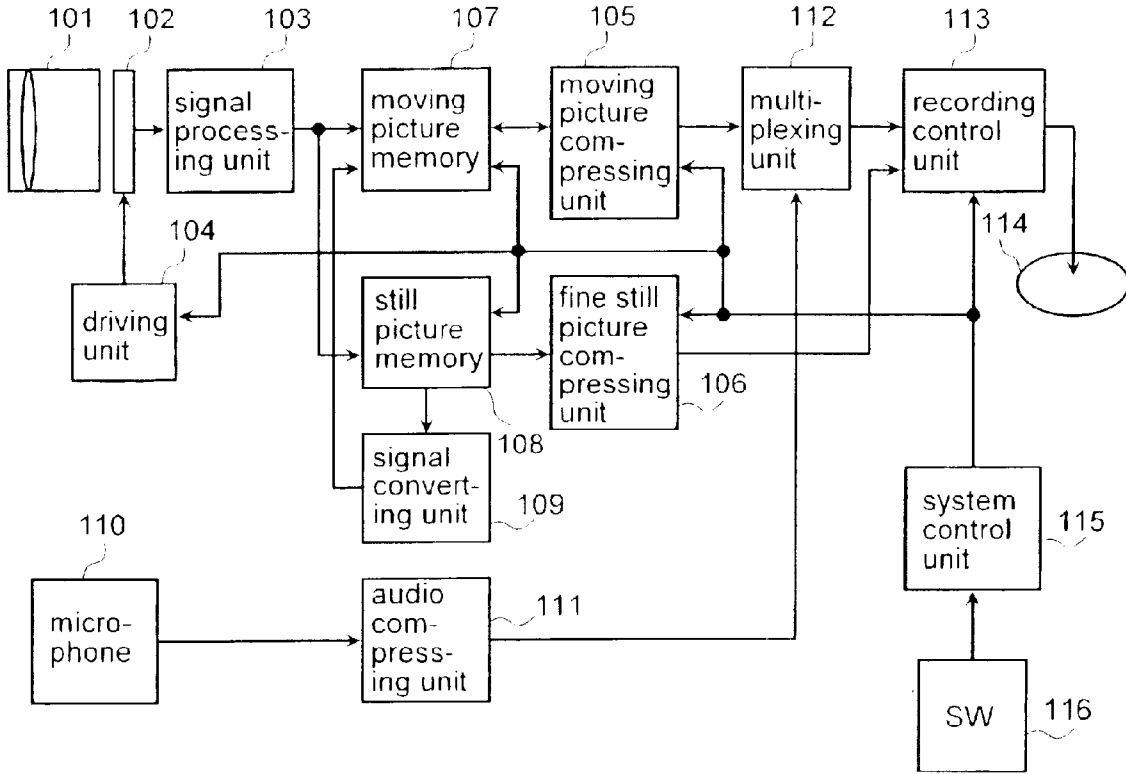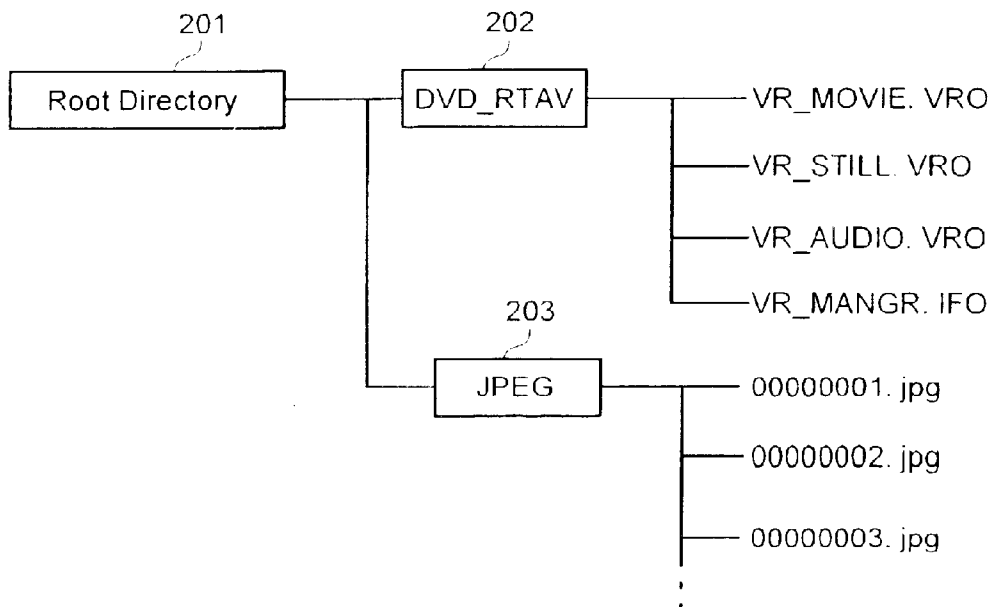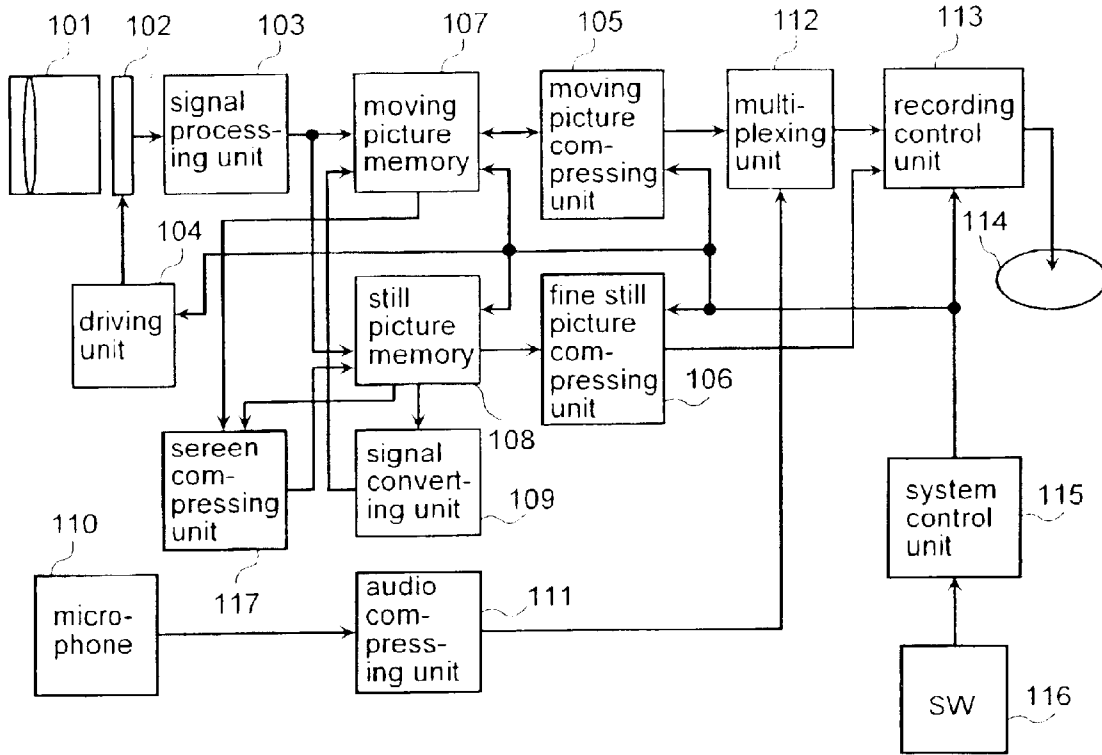
15 Claims, 3 Drawing Sheets

FIG.1

FIG.2

FIG.3

101   102   103   107   105   112   113

signal processing unit

moving picture memory

moving picture compressing unit

multi-plexing unit

recording control unit

104

114

driving unit

still picture memory

fine still picture compressing unit

106

sereen compressing unit

signal converting unit

108

109

system control unit

115

110

micro-phone

117

audio compressing unit

111

SW

116

FIG.4

201   202

Root Directory

DVD_RTAV

— VR_MOVIE. VRO

— VR_STILL. VRO

— VR_AUDIO. VRO

— VR_MANGR.IFO

203

JPEG

— 00000001. jpg

— 00000002. jpg

— 00000003. jpg

204

THUMBNAIL

— t0000001. jpg

— t0000002. jpg

— t0000003. jpg

FIG.5

FIG.6

DOCKET ALARM
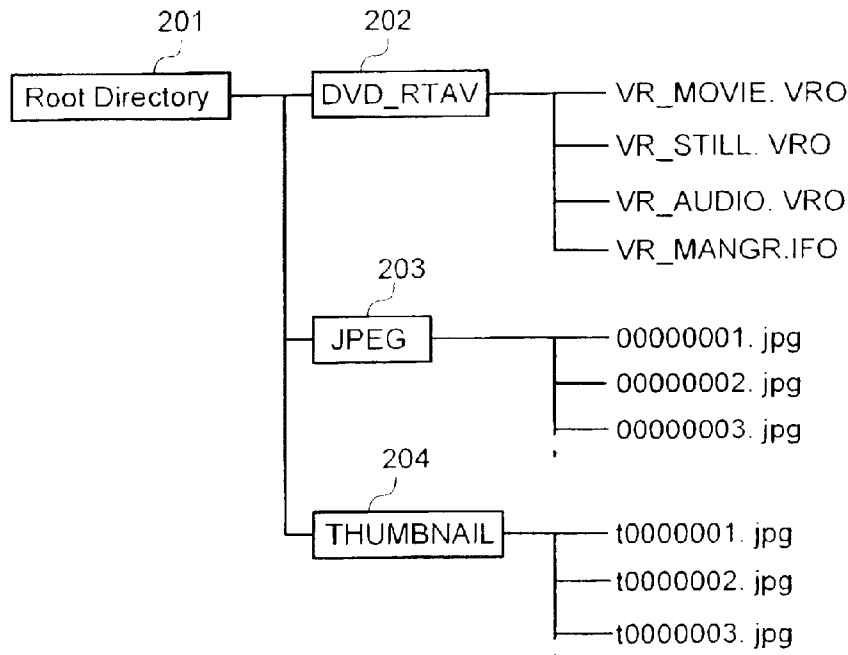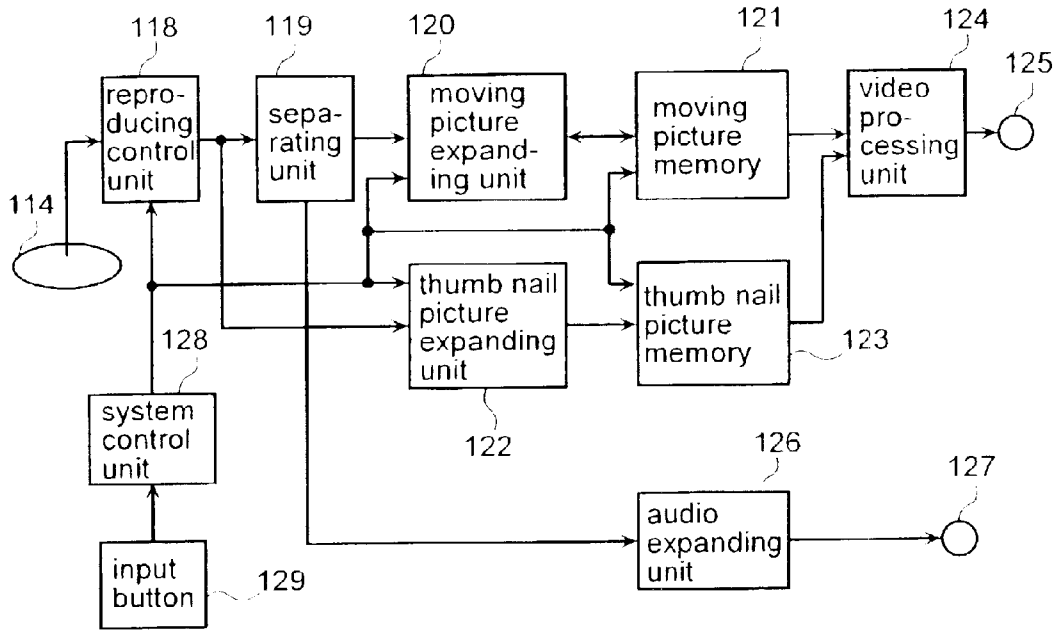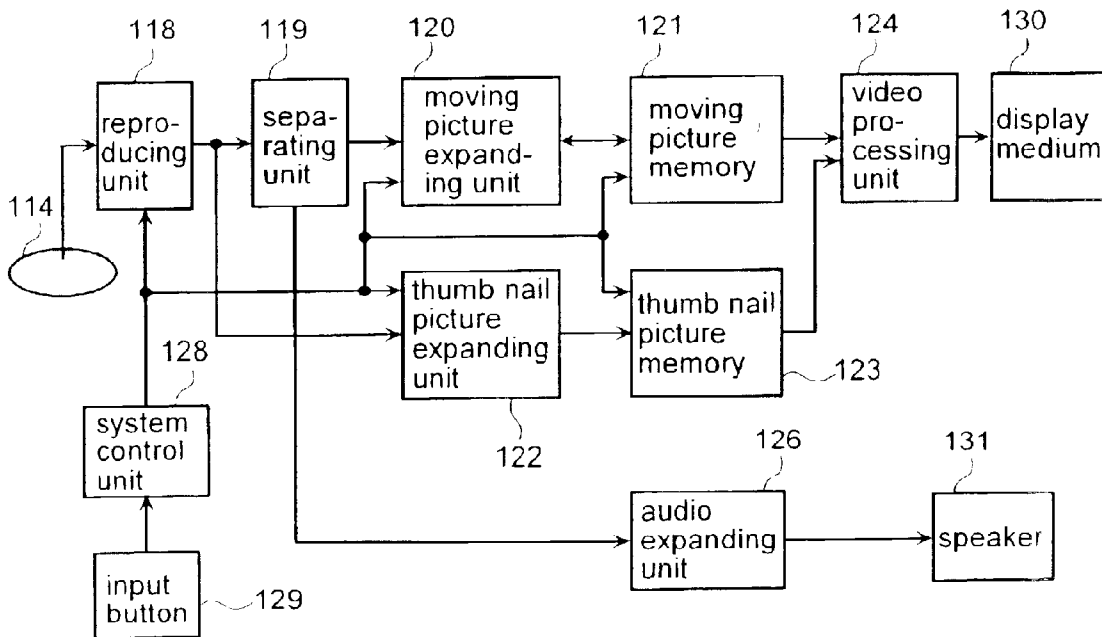
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