

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 May 2003 (01.05.2003)

PCT

(10) International Publication Number
WO 03/036647 A1

(51) International Patent Classification⁷: **G11B 27/10**,
20/10, 27/34, 33/10, 19/02

(21) International Application Number: PCT/US02/33330

(22) International Filing Date: 18 October 2002 (18.10.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/346,236 22 October 2001 (22.10.2001) US
10/118,217 5 April 2002 (05.04.2002) US

(71) Applicant (for all designated States except US): **APPLE COMPUTER, INC.** [US/US]; 1 Infinite Loop, MS 3-PAT, Cupertino, CA 95014 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROBBIN, Jeffrey,**

L. [US/US]; 705 Benvenue Avenue, Los Altos, CA 94024 (US). **HOLBROOK, Ned, K.** [US/US]; 1632 Albatross Drive, Sunnyvale, CA 94087 (US). **BOLLINGER, Steven** [US/US]; 3352 Ensalmio Avenue, San Jose, CA 95118 (US).

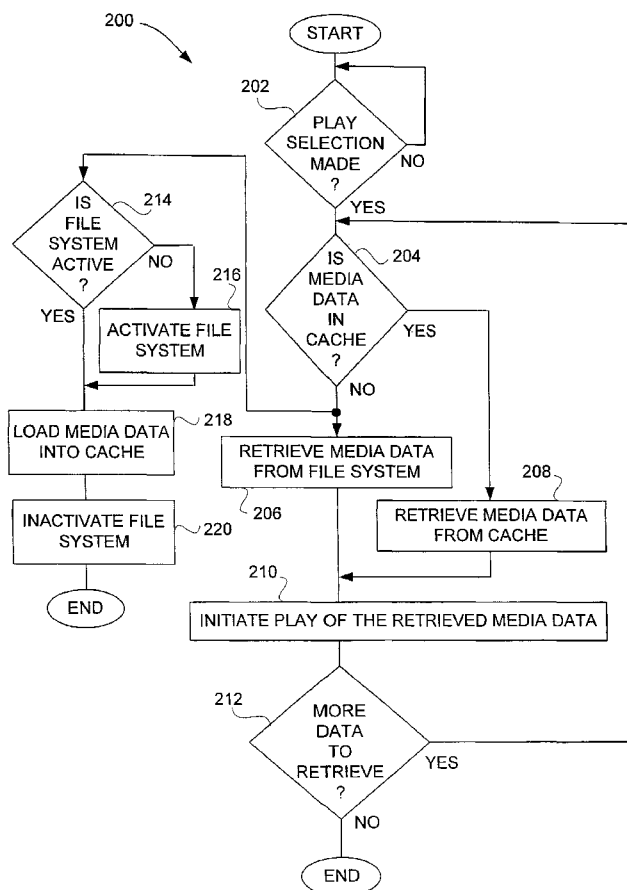
(74) Agent: **THOMAS, C., Douglass;** Beyer Weaver & Thomas LLP, P.O. Box 778, Berkeley, CA 94704 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: MEDIA PLAYER WITH INSTANT PLAY CAPABILITY



(57) Abstract: A media player and a method for operating a media player are disclosed. A media program is able to substantially immediately begin playing after a media play selection has been made. Through intelligent operation, the media program is able to start playing even before the media program has been substantially or completely loaded from disk storage into semiconductor memory (i. e., cache memory). Additionally, the media program can be loaded into semiconductor memory through use of a background process without disturbing the playing of the media program. Further, if desired, the disk storage is able to be aggressively "powered off" when not being accessed, thereby enhancing battery life when being battery-powered.

WO 03/036647 A1



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*

MEDIA PLAYER WITH INSTANT PLAY CAPABILITY

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to media devices and, more particularly, to playing of media on media devices.

Description of the Related Art

[0002] Media players are becoming more popular these days. Of particular popularity are portable media players such as MP3 players or DVD players. Media players operate to play media items for their user that are stored within the media players. The media items are most commonly audio items (e.g., songs) but could also be video items (e.g., DVDs). Typically, an MP3 player will store various audio items internally on a storage disk. When the user makes a selection to play one of the stored audio items, the audio item must first be loaded into semiconductor memory (i.e., Random-Access Memory) before the audio item begins to be played. Unfortunately, the delay in reading the rather large file for the audio item is unsatisfactory to users who are anxious to hear the audio item they have already selected to be played. Thus, there is a need for improved techniques for media players to play media items.

SUMMARY OF THE INVENTION

[0003] Broadly speaking, the invention relates to a media player and a method for operating a media player. According to one aspect of the invention, a media program is able to substantially immediately begin playing after a media play selection has been made. Through intelligent operation, the media program is able to start playing even before the media program has been loaded from disk storage into semiconductor memory (i.e., cache memory). According to another aspect of the invention, the loading of the media program into semiconductor memory is performed in a background process without disturbing the playing of the media program. Still another aspect of the invention is that the disk storage is able to be aggressively "powered off" when not being accessed, thereby enhancing battery life when being battery-powered.