



## Freedom-to-Operate Search Report

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**Client:** ADM Holdings  
**Contact:** A. Mody  
**Address:** 123 Main Street, Irvine, CA 92604  
**Email:** [REDACTED]  
**Phone:** (714) 555-1234  
**By:** V. Gambhir  
**Contact:** [search@patentmetrix.com](mailto:search@patentmetrix.com)  
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### Product/Service Description

The product/service is a method for portably playing back music by facilitating the accessing of tracks organized by a hierarchical structure of categories. A user interface is utilized to view track names, select tracks for playback, change the hierarchy, or activate other operations.

More specifically, the product/service is a method of selecting at least one track from several tracks stored in a portable media player. The media player is configured to present sequentially a first, second, and third display screen on the display of the media player. The tracks are accessed according to a hierarchy, which has a plurality of categories, subcategories, and items in the hierarchy. The method comprises the selection of a category in the first display screen of the portable media player, display of the subcategories belonging to the selected category in a listing presented in the second display screen, selection of a subcategory in the second display screen, display of items belonging to the second subcategory in a listing presented in the third display screen, and access of at least one track based on a selection made in one of the display screens.

In one embodiment, the product/service employs the top-level categories "Albums", "Artists", "Genres" (or styles), and "Play Lists". Within the Albums category are names of different albums of songs stored in the device. Within each album are the album tracks, or songs, associated with that album. Similarly, the Artists category includes names of artists which are, in turn, associated with their albums and songs. The Genre category includes types of categories of music such as "Rock", "Hip Hop", "Rap", "Easy Listening", etc. Within these sub-categories are found associated songs. Finally, the "Play Lists" category includes collections of albums and/or songs which are typically defined by the user.

### Search Description

Listed below are the results of a search conducted using a database of United States Patents and Patent Applications. We searched for patents that disclose methods of accessing/selecting tracks for playing as well as methods of organizing information into hierarchical categories. Our search methodology included the following keyword searches:

Keyword search strings provided here.



## Search Results

U.S. Patent Number: 6,201,176  
Assignee: Canon Kabushiki Kaisha  
Filing Date: April 21, 1999  
Priority Date: May 7, 1998 - PP3405, Australia

### *ABSTRACT*

A system and method for querying a music database, the database containing a plurality of indexed pieces of music, where the query is performed by forming a database request consisting of a conditional expression relating to the name and/or attributes of the desired piece of music. Associated features are derived from the database query, and compared with corresponding features for the other pieces of music in the database. A desired piece of music is determined by searching for a minimum distance between the database query features and those associated with the pieces of music in the database.

### *SPECIFICATION CITATIONS*

"When considering audio signals in general, and in particular those relating to music, the nature of the signals may be considered in terms of various attributes which are intuitively meaningful. These attributes include, among others, tempo, loudness, pitch and timbre. Timbre can be considered to be made up of a number of constituent sub-features including "sharpness" and "percussivity". These features can be extracted from music and are useful in characterizing the music for a classification scheme." Column 1, Line 35.

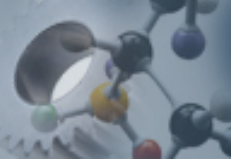
### *'176 PATENT CLAIMS*

1. A method for querying a music database, which contains a plurality of pieces of music, the method comprising steps of: classifying, using feature extraction on said plurality of pieces of music using steps of: (i) segmenting each piece of music into a plurality of windows; (ii) extracting at least one characteristic feature in each of said windows; and (iii) indexing said each piece of music dependent upon extracted features; forming a request which specifies (i) at least one of a name of a piece of music and features characterizing the piece of music, and (ii) at least one conditional expression; comparing the features characterizing the specified piece of music to corresponding features characterizing other pieces of music in the database; calculating corresponding distances between the specified piece of music and the other pieces of music based on comparisons; and identifying pieces of music which are at distances from the specified piece of music which satisfy the at least one conditional expression.

22. An apparatus according to claim 20, wherein the distance determination means comprises: first distance determination means for calculating corresponding distances based on a first relationship between (i) a loudness, a percussivity, and a sharpness of the specified piece of music, and (ii) a loudness, a percussivity, and a sharpness of each other piece of music; and a sorting means for sorting, on the basis of a second relationship between (i) a tempo of the specified piece of music, and (ii) a tempo of each other piece of music.

23. An apparatus according to claim 20, further comprising a means for clustering the pieces of music in the database into classes.

38. A computer readable memory medium for storing a program for apparatus for querying a music database which contains a plurality of pieces of music, said program comprising: code for a classifying step for classifying, using feature extraction on said plurality of pieces of music, said code for said classifying step comprising: (i) code for a segmenting step for segmenting each piece of music into a plurality of windows; (ii) code for an extracting step for extracting at least one characteristic feature in each of said windows; and (iii) code for an indexing step for indexing said each piece of music dependent upon extracted features; code for a forming step for forming a request which specifies (i) at least one of a name of a piece of music and features characterizing the piece of music, and (ii) at least



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one conditional expression; code for a comparing step for comparing the features characterizing the specified piece of music to corresponding features characterizing other pieces of music in the database; code for a calculating step for calculating corresponding distances between the specified piece of music and the other pieces of music based on comparisons; and code for an identifying step for identifying pieces of music which are at distances from the specified piece of music which satisfy the at least one conditional expression.

**U.S. Patent Number:** 6,232,539  
**Assignee:** Looney Productions  
**Filing Date:** October 18, 1999  
**Priority Date:** June 17, 1998

*ABSTRACT*

A music organizer and entertainment center provides a center having a microprocessor, sound card functions and high-volume data storage and retrieval units for playing back music according to a variety of predetermined categories. Music can be played back in random form or can be played back according to a particular pre-selected order. The categories are provided by service provider who delivers selected titles and/or songs to the end user. The songs are typically loaded using a custom CD-ROM provided from the service provider. The music is provided in data-compressed form and is decompressed and processed through a sound card during playback. The categories can include a variety of parameters such as title, artists, date, speed, dance characteristics, subjective energy level and music style, such as easy-listening, upbeat, etc.

*SPECIFICATION CITATIONS*

"A significant feature of the center, to be described in greater detail below, is the organization of individual songs or selections according to specific categories... These categories are carried in a database, along with the raw digital music data, and allow the user to playback each of the individual selections based upon specific categories in a random or ordered manner." Column 6, Line 10.

"The following categories, among others can be used in conjunction with the database program to catalog each individual musical selection-song title, artist, date, main music category, sub-main music category, special music category, sub-music category, music style, dance type, music speed and a subjective music "energy level" determined by the service provider." Column 6, Line 52.

*'539 PATENT CLAIMS*

1. A music organizer and entertainment center comprising: a storage device for storing compressed data defining a plurality of individual music selections and associated category flags; a processor that retrieves selections and the associated category flags from the storage device based upon user selection of predetermined of the categories; a data decompressor that translates the compressed data into playable digital music data; a network interface for receiving the compressed data from a remote source over a network for download into the storage device; and a graphical user interface display having a plurality of selectable screens, at least one of the selectable screens including a plurality of category buttons constructed and arranged so that when a predetermined of the category buttons is activated, music selections having category flags matching the predetermined category of a respective of the buttons are selected and listed on the display.

6. The center as set forth in claim 1 wherein at least one of the displays includes a play list of music selections chosen from the search list, the center being constructed and arranged to translate compressed data of each of the music selections on the play list, in a predetermined order, and to convert the playable digital music data into audible music signals.



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9. The center as set forth in claim 1 further comprising a display screen having a plurality of graphical user interface displays, at least one of the displays including a plurality of buttons that, when activated, display a list of music selections on a search list having the associated category flags.

10. The center as set forth in claim 9 wherein each of the category buttons is constructed and arranged to display a plurality of sub-category buttons with other associated category flags whereby activation of the sub-category buttons further defines a selection of individual music selections so that the further defined music selections have each of the selected associated category flags.

11. The center as set forth in claim 1 further comprising a graphical user interface having a plurality of display screens, at least one of the screens showing thereon a plurality of buttons associated with individual of the associated category flags, a playback list showing music selections schedule for playback by the center and a search list showing current music selections retrieved based upon predetermined of the category buttons.

14. The center as set forth in claim 1, wherein one of the categories includes sub-categories.

15. A computer readable medium that contains program instructions for: receiving compressed data representative of a plurality of musical selections from a source; storing the compressed data in a database with a plurality of category markers associated therewith representative of a plurality of predetermined characteristics of each of the musical selections, respectively; selectively accessing predetermined of the plurality of selections and constructing a list of the selections for playback as music based upon at least one of the predetermined characteristics entered by a user; decompressing and playing back each of the predetermined of the plurality of selections according to a desired order of playback; and displaying in a graphical user interface display having a plurality of selectable screens, at least one of the selectable screens including a plurality of category buttons constructed and arrayed so that when a predetermined of the category buttons is activated, music selections having category flags matching the predetermined category of a respective of the buttons are selected and listed on the display.

REST OF REPORT REDACTED.

IN AN ACTUAL FREEDOM TO OPERATE SEARCH REPORT, CLIENTS WILL RECEIVE A COMPREHENSIVE SUMMARY OF ALL PATENTS AND PATENT APPLICATIONS MATERIALLY RELEVANT TO THEIR PRODUCT(S)/SERVICE(S).