IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PREMIER INTERNATIONAL ASSOCIATES LLC,

Plaintiff,

v.

MICROSOFT CORP.,
CELLCO PARTNERSHIP, d/b/a VERIZON WIRELESS,
AT&T MOBILITY LLC,
SPRINT SPECTRUM L.P.,
DELL INC.,
LENOVO GROUP LTD.,
LENOVO (UNITED STATES) INC.,
TOSHIBA AMERICA INFORMATION SYSTEMS, INC.,
VIACOM INC.,
REAL NETWORKS, INC.,
RHAPSODY INTERNATIONAL INC.,
NAPSTER, INC.,
SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS MOBILECOMM U.S.A., INC.,
MOTOROLA INC.,
NOKIA CORP.,
NOKIA INC.,
AND SANDISK CORP.,

Defendants.

CIVIL ACTION NO. 2:07-CV-396 (DF)
JURY TRIAL DEMANDED

DEFENDANT RHAPSODY INTERNATIONAL INC.'S
ANSWER, DEFENSES, AND COUNTERCLAIMS TO
THIRD AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Defendant Rhapsody International Inc. ("Rhapsody"), by and through its attorneys, hereby answers the Third Amended Complaint for Patent Infringement (the "Complaint") of Plaintiff Premier International Associates LLC ("Plaintiff" or "Premier") as follows:

PARTIES

1. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 1 of the Complaint and, therefore, denies each and every allegation of paragraph 1 of the Complaint.

2. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 2 of the Complaint and, therefore, denies each and every allegation of paragraph 2 of the Complaint.

3. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 3 of the Complaint and, therefore, denies each and every allegation of paragraph 3 of the Complaint.

4. Rhapsody admits the allegations of paragraph 4 of the Complaint.

JURISDICTION AND VENUE

5. Rhapsody admits that this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action purports to arise under the patent laws of the United States, including 35 U.S.C. § 271, *et seq.* Rhapsody admits that this Court has personal jurisdiction over it. Rhapsody denies all remaining allegations set forth in paragraph 5 of the Complaint, including any explicit or implied allegations of infringement, insofar as those allegations apply to it. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 5 of the Complaint as they relate to defendants Cellco Partnership, d/b/a Verizon Wireless ("Verizon") and RealNetworks, Inc. ("Real").

6. Rhapsody admits venue is proper in this district. Rhapsody denies the remaining allegations in paragraph 6 and specifically denies that it has committed or induced acts of patent

infringement in this district. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 6 of the Complaint as they relate to defendants Verizon and Real and, therefore, denies the same.

CLAIMS

7. Rhapsody incorporates its responses to and denials of the allegations contained in paragraphs 1 through 6 as if fully set forth herein.

8. Rhapsody admits that Exhibit A of the Complaint purports to be a true and correct copy of U.S. Patent No. 6,243,725 ("the '725 patent") which is titled "List Building System," names James D. Hempleman, Sandra M. Hempleman, and Neil A. Schneider as alleged inventors, and was issued by the United States Patent and Trademark Office ("U.S.P.T.O.") on June 5, 2001, but otherwise denies the allegations set forth in paragraph 8 of the Complaint. Rhapsody specifically denies that the '725 patent was duly and lawfully issued.

9. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 9 of the Complaint and, therefore, denies each and every allegation of paragraph 9 of the Complaint.

10. Rhapsody admits that Exhibit B of the Complaint purports to be a true and correct copy of the Ex Parte Reexamination Certificate for the '725 patent ("the '725 Reexam Certificate"), which was issued by the U.S.P.T.O. on March 31, 2009 with claims 115, 116, and 117, but otherwise denies the allegations set forth in paragraph 10 of the Complaint. Rhapsody specifically denies that the '725 Reexam Certificate was duly and lawfully issued.

11. Rhapsody admits that Exhibit C of the Complaint purports to be a true and correct copy of U.S. Patent No. 7,680,829 ("the '829 patent") which is titled "List Building System," names James D. Hempleman, Sandra M. Hempleman, and Neil A. Schneider as alleged

inventors, and was issued by the U.S.P.T.O. on March 16, 2010, but otherwise denies the allegations set forth in paragraph 11 of the Complaint. Rhapsody specifically denies that the '829 patent was duly and lawfully issued.

12. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 12 of the Complaint and, therefore, denies each and every allegation of paragraph 12 of the Complaint.

13. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 13 of the Complaint and, therefore, denies each and every allegation of paragraph 13 of the Complaint.

14. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 14 of the Complaint and, therefore, denies each and every allegation of paragraph 14 of the Complaint.

15. Rhapsody is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in paragraph 15 of the Complaint and, therefore, denies each and every allegation of paragraph 15 of the Complaint.

16. Rhapsody denies each and every allegation of paragraph 16 of the Complaint.

17. Rhapsody denies each and every allegation of paragraph 17 of the Complaint.

18. Rhapsody denies each and every allegation of paragraph 18 of the Complaint.

19. Rhapsody denies each and every allegation in paragraph 19 of the Complaint.

20. Rhapsody denies each and every allegation of paragraph 20 of the Complaint.

21. Rhapsody denies each and every allegation of paragraph 21 of the Complaint.

22. Rhapsody denies each and every allegation in the Complaint not expressly admitted herein.

RESPONSE TO PREMIER'S PRAYER FOR RELIEF

23. A response is not required to Plaintiff's prayer for relief. To the extent that a response is deemed required, Rhapsody denies that Plaintiff is entitled to be awarded any relief whatsoever. Plaintiff's prayer should therefore be denied in its entirety and with prejudice, and Plaintiff should take nothing therefore.

AFFIRMATIVE DEFENSES

24. Rhapsody asserts the following affirmative defenses to the Complaint. Assertion of an affirmative defense is not a concession that Rhapsody has the burden of proving the matter asserted.

FIRST AFFIRMATIVE DEFENSE

25. The manufacture, importation, offer of sale, sale, or use of Rhapsody software and services does not infringe any valid claim of either of U.S. Patent Nos. 6,243,725 (including claims 115, 116, and 117 of the '725 Reexam Certificate) and 7,680,829 (collectively "the Patents-in-Suit").

SECOND AFFIRMATIVE DEFENSE

26. One or more claims of the Patents-in-Suit are invalid for failure to satisfy one or more of the requirements of the Patent Act, 35 U.S.C. § 1, *et seq.*, including, but not limited to, the conditions of patentability set forth in 35 U.S.C. §§ 101, 102, 103, and 112.

THIRD AFFIRMATIVE DEFENSE

27. Plaintiff is estopped from construing the claims of the Patents-in-Suit in such a way as may cover Rhapsody's activities by reason of, among other things, statements made in the Patents-in-Suit, amendments and/or statements made in and to the U.S.P.T.O. during the

prosecution of the application that issued as the Patents-in-Suit, prior statements made in this or any other Court, prior rulings of this or any other Court, and/or Plaintiff's prior conduct.

FOURTH AFFIRMATIVE DEFENSE

28. Plaintiff's claims are barred, in whole or in part, by the doctrine of laches.

FIFTH AFFIRMATIVE DEFENSE

29. Plaintiff's claims for relief are barred, in whole or in part, by the doctrine of equitable estoppel.

SIXTH AFFIRMATIVE DEFENSE

30. Plaintiff's claims for relief are barred in whole or in part by operation of the applicable statutes, including, for example, 35 U.S.C. §§ 286 and/or 287.

SEVENTH AFFIRMATIVE DEFENSE

31. On information and belief, Plaintiff's claims should be dismissed under Rule 12(b)(6) of the Federal Rules of Civil Procedure for failure to state a claim upon which relief can be granted.

EIGHTH AFFIRMATIVE DEFENSE

32. The asserted patents are unenforceable due to inequitable conduct in the prosecution of a predecessor patent, U.S. Patent No. 6,763,345 ("the '345 patent"). A true and correct copy of the '345 patent is attached as Exhibit 1. The '829, '725 and '345 patents all share the same specification and stem from a common parent application, 08/859,995, filed on May 21, 1997. Specifically, the '829 patent stems from a divisional application of a continuation application of the application that led to the '345 patent. The '345 patent itself stems from a continuation of the application that led to the '725 patent, although the reexam claims that are asserted in this case were prosecuted and issued after the '345 patent issued.

33. Title 37 of the Code of Federal Regulations ("CFR") § 1.56 and the Manual of Patent Examination Procedure ("MPEP") § 2000.01, *et seq.*, impose a duty of candor and good faith on each individual associated with the filing and prosecution of a patent application before the U.S.P.T.O., which requires he or she to disclose to the U.S.P.T.O. all information that is material to the patentability of the application under examination. Breach of this duty of candor, good faith, and honesty with intent to deceive the U.S.P.T.O. constitutes inequitable conduct rendering the patent and any related patents unenforceable.

34. The asserted patents are unenforceable due to inequitable conduct in the prosecution of the '345 patent because Paul Vargo, the attorney who prosecuted the '345 patent, and/or others substantively involved in the prosecution of the '345 patent (collectively "applicant"), deliberately and with intent to deceive the U.S.P.T.O., made materially false and misleading statements regarding material prior art to the examiner in connection with the prosecution of the applications leading to the '345 patent in violation of their duty of candor.

35. On three different occasions during the prosecution of the '345 patent, the examiner rejected all the pending claims as anticipated by U.S. Patent No. 5,864,868, titled "Computer Control System and User Interface for Media Playing Devices" (issued January 26, 1999) ("Contois"). A true and correct copy of Contois is attached as Exhibit 2.

36. Contois discloses, among other things, that "a feature of the invention is also to provide a computer system that can access others media recording data bases from other sources like internet or world wide web" (Ex. 2 at 5:1–3), and that "additional media data bases could be found on a world wide web, a satellite receiver, or an internet link system." (*Id*. at 14:6–8; *see also id*. at 5:1–7). Contois also discloses, among other things, that "[a]nother feature of the invention is to provide a computer interface that allows a user to display only music that is

related to a selected song or music piece . . . [such that] the user is then able to direct the media playing device to automatically play the selected music piece." Ex. 2 at 4:62–67; *see also id*. at 4:43–61, 9:19–10:64, 12:38–13:40, 14:9–14. At least these disclosures in Contois are material to the patentability of the pending claims of the '345 patent.

37. On December 18, 2002, the U.S.P.T.O. examiner rejected the pending claims for the third time based on Contois, and in response, James Hempleman, the first named inventor of the '345 patent, submitted a declaration signed on February 10, 2003 ("the Hempleman Declaration"), and sworn to under penalty of perjury. A true and correct copy of the Hempleman Declaration is attached as Exhibit 3.

38. Mr. Hempleman stated that he had reviewed and was familiar with Contois, and with the pending patent application, pending claims, and outstanding rejection of those claims by the U.S.P.T.O. *See* Ex. 3 ¶¶ 3, 4, and 6.

39. Mr. Hempleman further stated that "Contois has no disclosure of downloading works not available locally," and "Contois deals strictly with locally available works." *See* Ex. 3 ¶¶ 10.3, 14.1. These statements are false and misleading in light of at least the disclosures at 5:1–7 and 14:6–8 of Contois. Mr. Hempleman knew these statements were false and misleading and made the statements with intent to deceive the U.S.P.T.O.

40. Mr. Hempleman made numerous other false statements in the Declaration, for example, stating that Contois discloses only locally stored works and does not disclose downloading works for inclusion in playlists. *See, e.g.*, ¶¶ 7, 7.1, 7.3, 10.2, 10.3, 11.0, 11.1, 12.0, 14.0, 14.1 of the Hempleman Declaration. All of these statements are false and/or misleading in light of at least the disclosures at 5:1–7 and 14:6–8 of Contois, and were made with an intent to deceive the U.S.P.T.O.

41. Mr. Hempleman further stated that "Contois has no disclosure of automatically building lists of works in accordance with a selected characteristic. For at least this reason claim 40 as amended is not anticipated by Contois." Ex. 3 ¶ 10. Mr. Hempleman further suggested that Contois disclosed only manual creation of lists. Ex. 3 ¶ 7.6. These statements are misleading at least in light of the disclosures at 4:43–67, 9:19–10:64, 12:38–13:40, 14:9–14 of Contois, and were made with an intent to deceive the U.S.P.T.O.

42. Mr. Hempleman's false and misleading statements were presented to the U.S.P.T.O. in an Amendment filed February 21, 2003 by his attorney, Paul Vargo, who argued to the U.S.P.T.O. that Mr. Hempleman's statements showed that the pending claims should be allowed. Mr. Vargo knew or should have known that these statements were false and misleading.

43. Mr. Vargo also made false and misleading statements concerning Contois to the U.S.P.T.O. in a Response to Final Office Action filed December 6, 2002, prior to execution of the Hempleman Declaration. The description of Contois in the December 6, 2002 Response to Final Office Action shows that Mr. Vargo was familiar with Contois and knew or should have known that his statements were false or misleading.

44. Subsequent to the false statements made by Mr. Hempleman and Mr. Vargo, the patent examiner withdrew all previous rejections based on Contois in an Office Action mailed on May 7, 2003.

NINTH AFFIRMATIVE DEFENSE

45. On information and belief, the asserted patents are unenforceable due to prosecution laches. The '725 patent stems from an application filed on May 21, 1997, but the asserted claims were not added until over eleven years later, during reexamination proceedings,

and did not issue until March 31, 2009. Similarly, the '829 patent claims priority to the same application that led to the original '725 patent, filed on May 21, 1997, but the application that led to the '829 patent was not filed until almost a decade later on May 16, 2007, and the '829 patent did not issue until March 16, 2010, almost eleven years later. These delays in prosecution are unreasonable and unexplained, rendering the patents unenforceable for prosecution laches.

COUNTERCLAIMS

For its Counterclaims in the above-captioned action, Rhapsody International Inc. ("Rhapsody") hereby alleges as follows:

PARTIES

1. Rhapsody is a corporation organized under the laws of the State of Delaware and has a principal place of business at 1420 5th Avenue, Suite 1500, Seattle, Washington 98101.

2. Premier International Associates LLC ("Premier") is an Illinois Limited Liability Company with a principal place of business at 221 North LaSalle Street, Suite 1250, Chicago, Illinois 60601. Premier has appeared herein and is before this Court for all purposes.

JURISDICTION AND VENUE

3. This Court has subject matter jurisdiction over this Counterclaim arising under the Patent Act pursuant to 28 U.S.C. §§ 1331 and 1338 and the Federal Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202.

4. Venue is proper under 28 U.S.C. § 1391(b) and (c) and § 1400(b).

DECLARATORY JUDGMENT FOR INVALIDITY, UNENFORCEABILITY, AND NON-INFRINGEMENT OF UNITED STATES PATENT NOS. 6,243,725 AND 7,680,829

5. Rhapsody incorporates by reference Affirmative Defense Paragraphs 24 through 45 and Counterclaim Paragraphs 1 through 4 as though fully set forth herein.

6. Premier claims to be the assignee of the Patents-in-Suit with rights to enforce and sue infringers of the Patents-in-Suit.

7. On September 11, 2007, Premier commenced this action by filing a complaint in this Court, seeking enforcement of the '725 patent and the '345 patent against, among others, RealNetworks, Inc. ("Real") and Cellco Partnership, d/b/a Verizon Wireless ("Verizon").

8. On December 10, 2007, Premier filed a first amended complaint in this Court, seeking enforcement of the '725 patent and the '345 patent against, among others, Real and Verizon.

9. On March 31, 2010, Premier filed a second amended complaint in this Court, seeking enforcement of the '725 patent (including the '725 Reexam Certificate) and the '829 patent against Real and Verizon.

10. On April 30, 2010, Premier filed a Motion for Leave to File a Third Amended Complaint, which this Court granted on May 5, 2010.

11. On May 5, 2010, Premier filed a third amended complaint seeking enforcement of the '725 patent (including the '725 Reexam Certificate) and the '829 Patent against Real, Verizon, and Rhapsody, and alleging that various Rhapsody offerings infringe the claims of the Patents-in-Suit.

12. A substantial, actual, and continuing controversy exists between Premier and Rhapsody as to the infringement of the Patents-in-Suit by virtue of Premier's allegations of infringement.

13. Rhapsody has not infringed and does not presently infringe any claim of either of the Patents-in-Suit either literally or by application of the doctrine of equivalents.

14. The Patents-in-Suit are invalid and/or unenforceable for failure to meet the requirements of Title 35 of the United States Code including for inequitable conduct and prosecution laches as set forth in the Eighth and Ninth Affirmative Defenses above, incorporated by reference as if fully set forth herein.

15. Rhapsody is entitled to a declaration that the Patents-in-Suit are not infringed by Rhapsody and are invalid and/or unenforceable.

16. This is an exceptional case pursuant to 35 U.S.C. § 285, entitling Rhapsody to an award of its attorneys' fees.

PRAYER FOR RELIEF

WHEREFORE, DEFENDANT AND COUNTERCLAIMANT RHAPSODY prays as follows:

A. That the Complaint be dismissed in its entirety with prejudice and that a Judgment be entered for Rhapsody;

B. That Premier take nothing by reason of its Complaint;

C. For a declaratory judgment that:

1. Rhapsody does not infringe either directly or indirectly any valid and enforceable claim of the Patents-in-Suit;

2. The Patents-in-Suit are invalid and void;

3. The Patents-in-Suit are unenforceable; and

4. Premier, its officers, servants, employees, agents, and attorneys, and all those in concert or participation with them, are without right or authority to threaten or maintain suit against Rhapsody, its present or prospective customers, agents, servants, or

employees, or users of Rhapsody's products, for alleged infringement of the Patents-in-Suit;

D. For an injunction prohibiting Premier, its officers, servants, employees, agents, and attorneys, and all those in concert or participation with them who receive actual notice of the injunction, from initiating infringement litigation against and from threatening Rhapsody, its present or prospective customers, agents, servants, or employees, or users of Rhapsody's products, with infringement litigation or charging any of them either orally or in writing with infringement of the Patents-in-Suit, or representing to any of them that infringement has occurred, because of the manufacture, use, sale, or offer for sale of any Rhapsody offering;

E. That Rhapsody be awarded under 35 U.S.C. § 285 its attorneys' fees and costs of suit incurred in this litigation, as Premier's conduct as set forth above renders this an exceptional case; and

F. For such other relief as this Court deems proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Rhapsody respectfully demands a trial by jury on all issues so triable.

Dated: June 14, 2010

Respectfully submitted,

/s/ Anne Champion
Josh Krevitt (NY Bar No. 2568228)
Charles Boudreau (NY Bar No. 4042701)
Anne Champion (NY Bar No. 4425237)
GIBSON, DUNN & CRUTCHER LLP
200 Park Avenue, 47th Floor
New York, New York 10166
Telephone: (212) 351-4000
Facsimile: (212) 351-4035
Email: jkrevitt@gibsondunn.com
Email: cboudreau@gibsondunn.com
Email: achampion@gibsondunn.com

Mark Reiter (TX Bar No. 16759900)
Steven Geiszler (TX Bar No. 24032227)
GIBSON, DUNN & CRUTCHER LLP
2100 McKinney Avenue, Suite 1100
Dallas, Texas 75201
Telephone: (214) 698-3100
Facsimile: (214) 571-2900
Email: mreiter@gibsondunn.com
Email: sgeiszler@gibsondunn.com

ATTORNEYS FOR DEFENDANTS REALNETWORKS, INC. AND RHAPSODY INTERNATIONAL INC.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on June 14, 2010 all counsel of record were served with a true and correct copy of the foregoing Defendant Rhapsody International Inc.'s Answer, Defenses and Counterclaims to Third Amended Complaint for Patent Infringement by this Court's CM/ECF system per Local Rule CV-5(a)(3).

Dated: June 14, 2010

/s/ Anne Champion
Anne Champion

EXHIBIT 1

US006763345B1

(12) **United States Patent**
Hempleman et al.

(10) **Patent No.: US 6,763,345 B1**
(45) **Date of Patent: *Jul. 13, 2004**

(54) **LIST BUILDING SYSTEM**

(75) Inventors: **James D. Hempleman**, Chicago, IL (US); **Sandra M. Hempleman**, Chicago, IL (US); **Neil A. Schneider**, Lake Zurich, IL (US)

(73) Assignee: **Premier International Investments, LLC**, Chicago, IL (US)

(*) 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.: **09/770,882**

(22) Filed: **Jan. 26, 2001**

Related U.S. Application Data

(63) Continuation of application No. 08/859,995, filed on May 21, 1997, now Pat. No. 6,243,725.

(51) **Int. Cl.**[7] **G06F 17/30**; G06F 17/00; G10H 7/00

(52) **U.S. Cl.** **707/1**; 715/530; 715/526; 84/601; 84/645

(58) **Field of Search** 707/530, 500–504, 707/512–513, 526; 709/200, 201; 84/601, 645; 715/512–513, 526

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,668,788	A *	9/1997	Allison	345/173
5,864,868	A *	1/1999	Contois	707/104
5,914,941	A *	6/1999	Janky	370/313
5,918,213	A *	6/1999	Bernard et al.	705/26

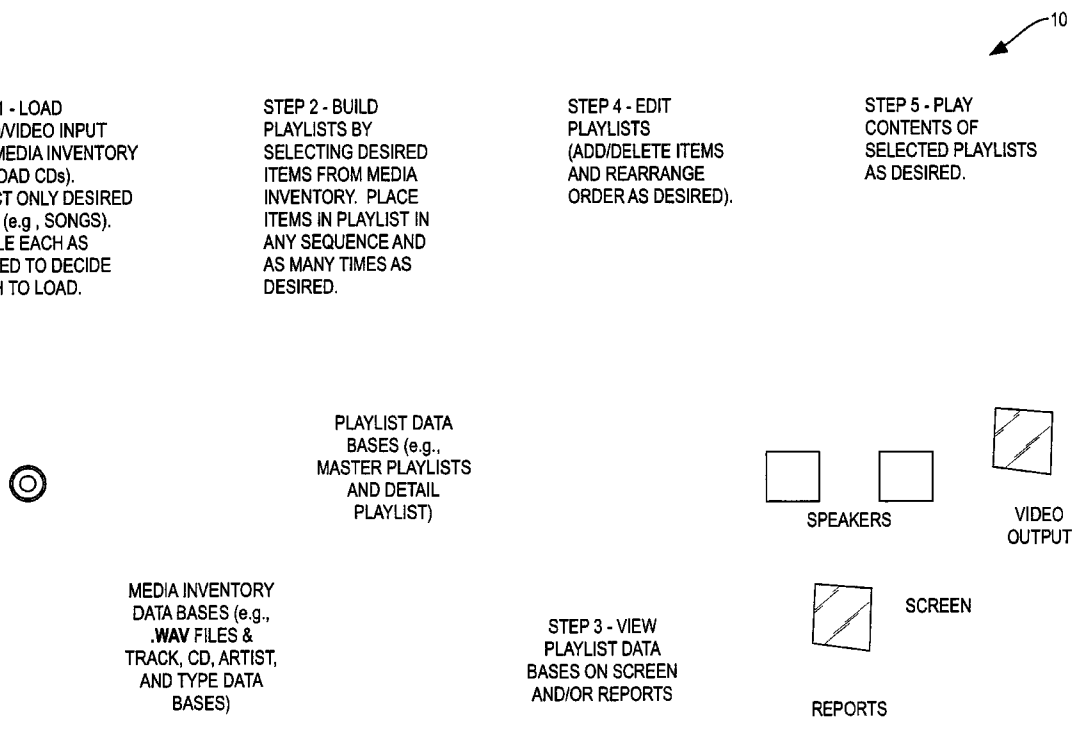
* cited by examiner

Primary Examiner—Alford Kindred
(74) *Attorney, Agent, or Firm*—Welsh & Katz, Ltd.

(57) **ABSTRACT**

A system implementable using a programmable processor includes a plurality of pre-stored commands for building an inventory of audio, musical, works or audio/visual works, such as music videos. A plurality of works can be collected together in a list for purposes of establishing a play or a presentation sequence. The list can be visually displayed and edited. A plurality of lists can be stored for subsequent retrieval. A selected list can be retrieved and executed. Upon execution, the works of the list are presented sequentially either audibly or visually. The works can be read locally from a source, such as a CD, or can be obtained, via wireless transmission, from a remote inventory. If desired, establishment of a predetermined credit can be a pre-condition to being able to add items to the list for presentation.

96 Claims, 32 Drawing Sheets



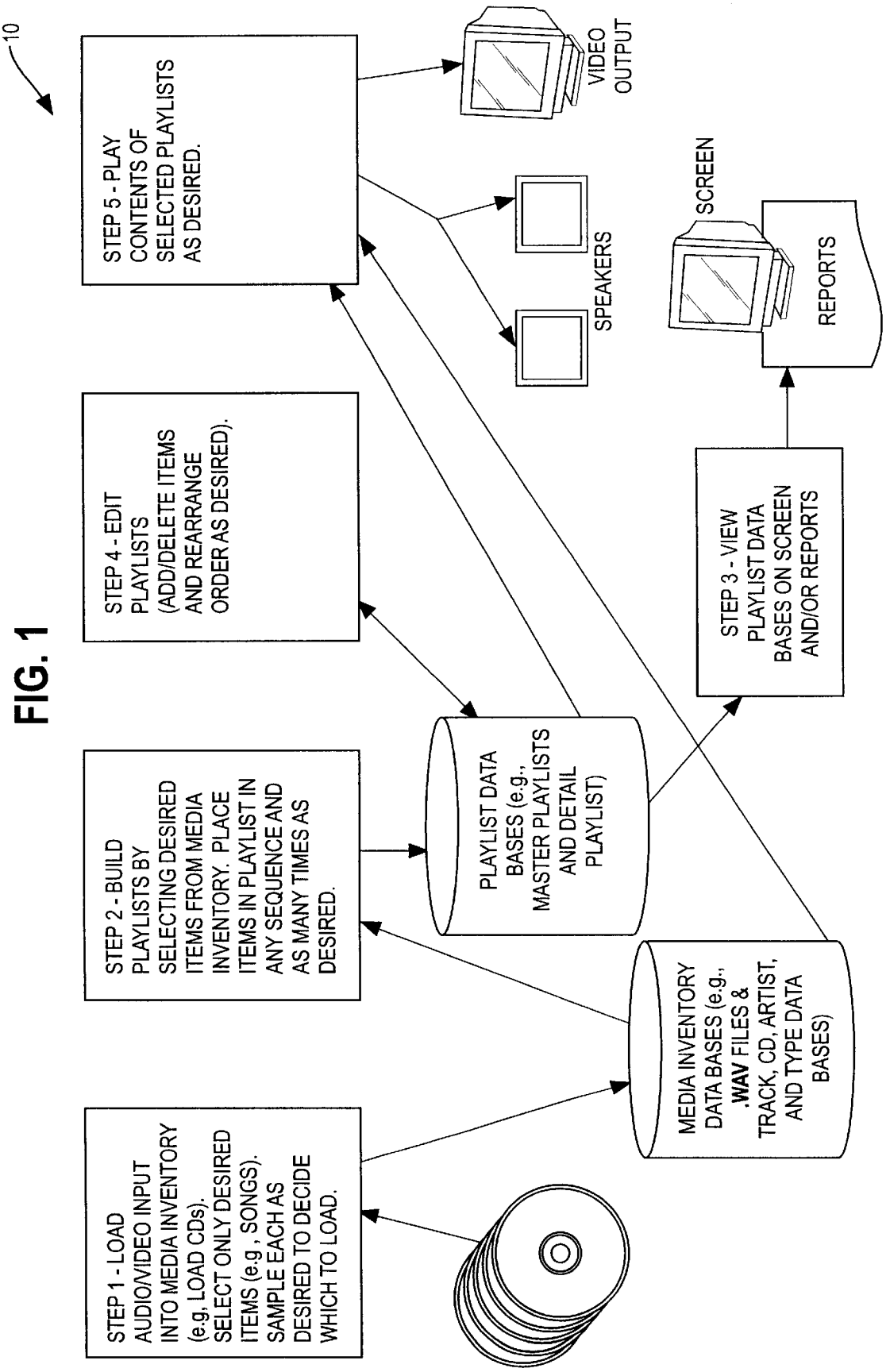

10
STEP 1 - LOAD AUDIO/VIDEO INPUT INTO MEDIA INVENTORY (e.g, LOAD CDs). SELECT ONLY DESIRED ITEMS (e.g , SONGS). SAMPLE EACH AS DESIRED TO DECIDE WHICH TO LOAD.
STEP 2 - BUILD PLAYLISTS BY SELECTING DESIRED ITEMS FROM MEDIA INVENTORY. PLACE ITEMS IN PLAYLIST IN ANY SEQUENCE AND AS MANY TIMES AS DESIRED.
STEP 4 - EDIT PLAYLISTS (ADD/DELETE ITEMS AND REARRANGE ORDER AS DESIRED).
STEP 5 - PLAY CONTENTS OF SELECTED PLAYLISTS AS DESIRED.
MEDIA INVENTORY DATA BASES (e.g., .WAV FILES & TRACK, CD, ARTIST, AND TYPE DATA BASES)
PLAYLIST DATA BASES (e.g., MASTER PLAYLISTS AND DETAIL PLAYLIST)
STEP 3 - VIEW PLAYLIST DATA BASES ON SCREEN AND/OR REPORTS
VIDEO OUTPUT
SPEAKERS
SCREEN
REPORTS

FIG. 1

FIG. 2

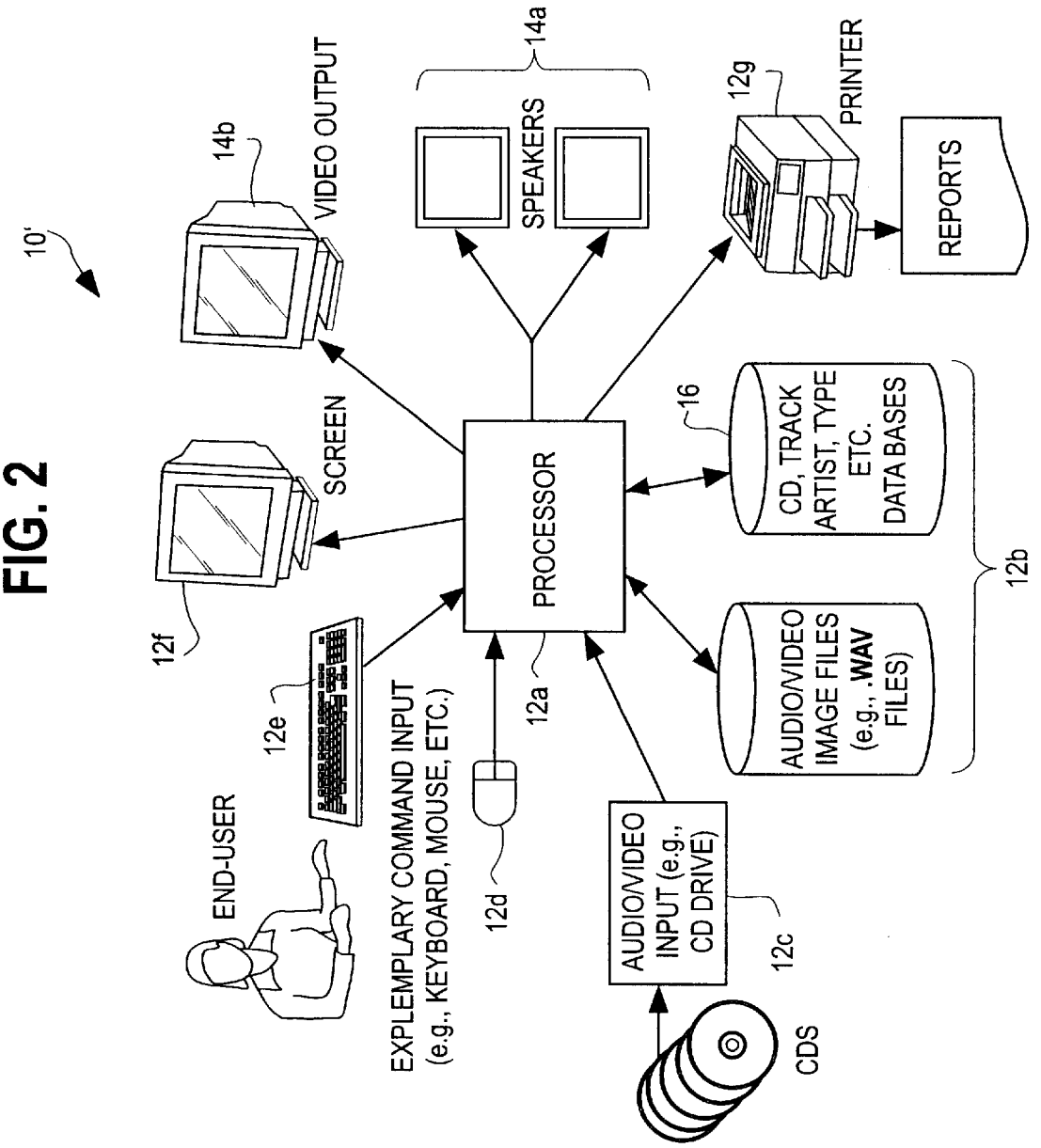

10'
14b
VIDEO OUTPUT
14a
SPEAKERS
12g
PRINTER
REPORTS
SCREEN
PROCESSOR
16
CD, TRACK ARTIST, TYPE ETC. DATA BASES
12b
AUDIO/VIDEO IMAGE FILES (e.g., .WAV FILES)
12f
12e
12a
END-USER
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
12d
AUDIO/VIDEO INPUT (e.g., CD DRIVE)
12c
CDS

FIG. 3A

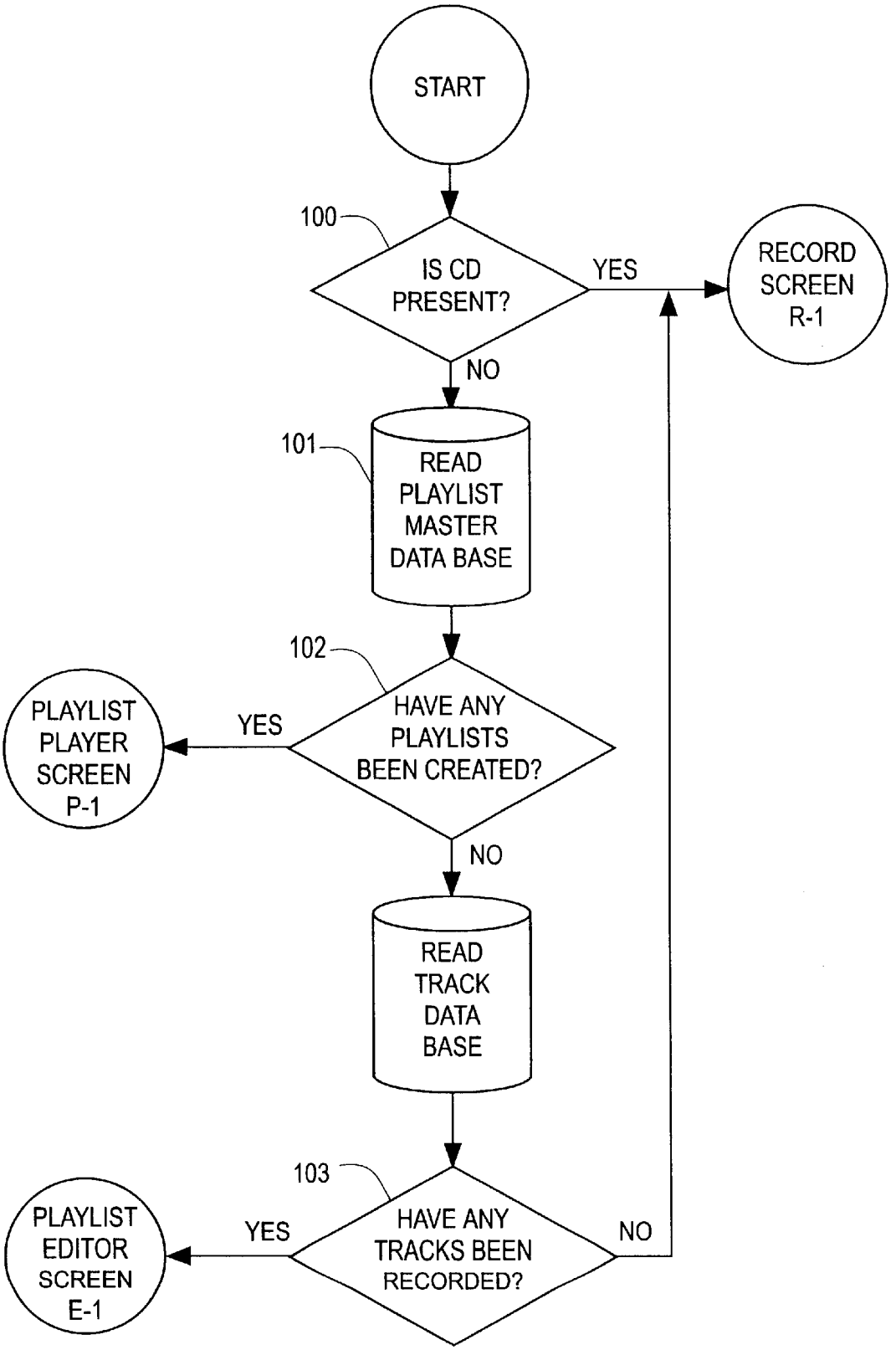

START
100
IS CD PRESENT?
YES
RECORD SCREEN R-1
NO
101
READ PLAYLIST MASTER DATA BASE
102
HAVE ANY PLAYLISTS BEEN CREATED?
YES
PLAYLIST PLAYER SCREEN P-1
NO
READ TRACK DATA BASE
103
HAVE ANY TRACKS BEEN RECORDED?
YES
PLAYLIST EDITOR SCREEN E-1
NO

FIG. 3B

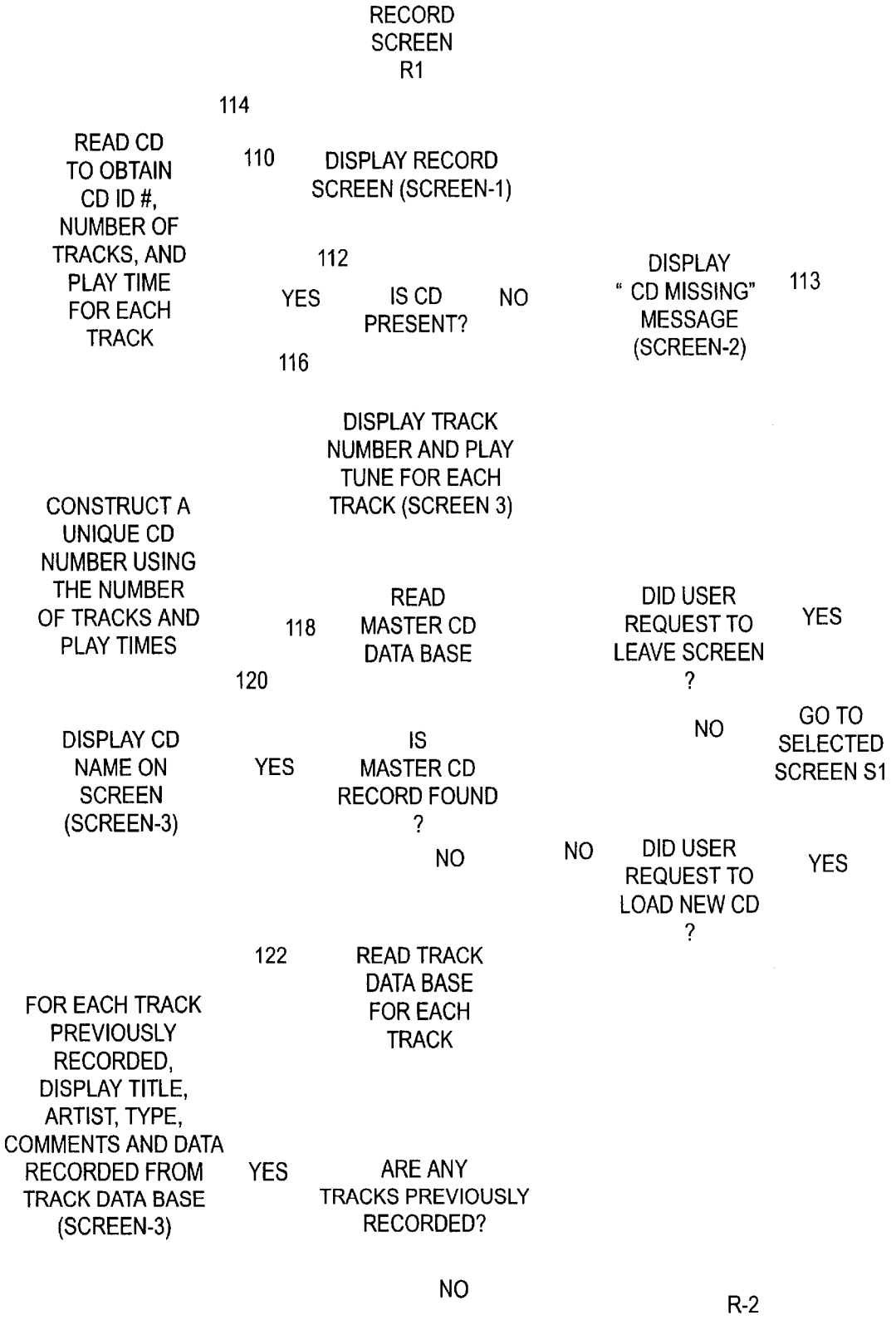

RECORD SCREEN R1
114
READ CD TO OBTAIN CD ID #, NUMBER OF TRACKS, AND PLAY TIME FOR EACH TRACK
110
DISPLAY RECORD SCREEN (SCREEN-1)
112
YES
IS CD PRESENT?
NO
DISPLAY " CD MISSING" MESSAGE (SCREEN-2)
113
116
DISPLAY TRACK NUMBER AND PLAY TUNE FOR EACH TRACK (SCREEN 3)
CONSTRUCT A UNIQUE CD NUMBER USING THE NUMBER OF TRACKS AND PLAY TIMES
118
READ MASTER CD DATA BASE
DID USER REQUEST TO LEAVE SCREEN ?
YES
120
NO
GO TO SELECTED SCREEN S1
DISPLAY CD NAME ON SCREEN (SCREEN-3)
YES
IS MASTER CD RECORD FOUND ?
NO
NO
DID USER REQUEST TO LOAD NEW CD ?
YES
122
READ TRACK DATA BASE FOR EACH TRACK
FOR EACH TRACK PREVIOUSLY RECORDED, DISPLAY TITLE, ARTIST, TYPE, COMMENTS AND DATA RECORDED FROM TRACK DATA BASE (SCREEN-3)
YES
ARE ANY TRACKS PREVIOUSLY RECORDED?
NO
R-2

FIG. 3C

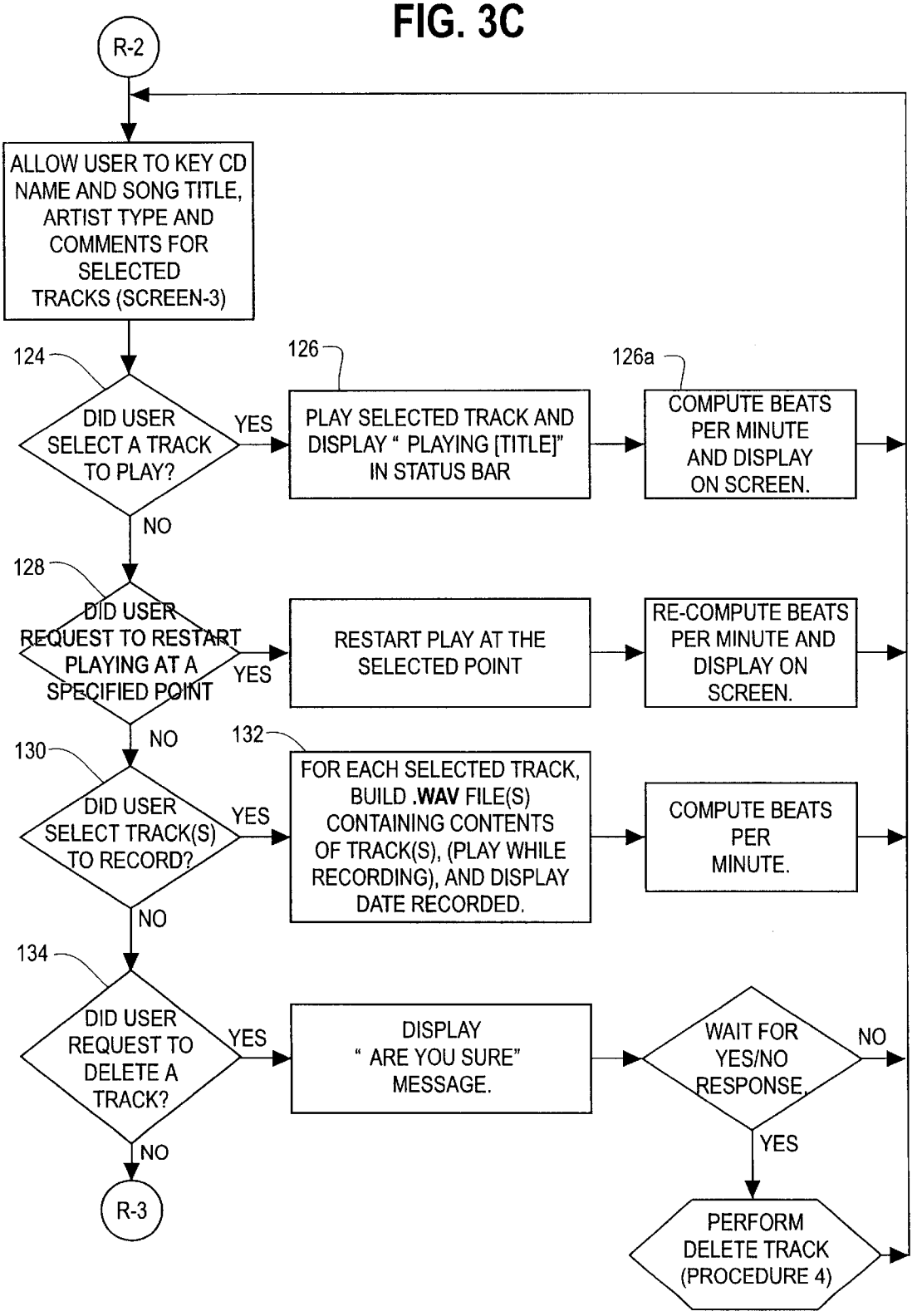

R-2
ALLOW USER TO KEY CD NAME AND SONG TITLE, ARTIST TYPE AND COMMENTS FOR SELECTED TRACKS (SCREEN-3)
124
DID USER SELECT A TRACK TO PLAY?
YES
126
PLAY SELECTED TRACK AND DISPLAY " PLAYING [TITLE]" IN STATUS BAR
126a
COMPUTE BEATS PER MINUTE AND DISPLAY ON SCREEN.
NO
128
DID USER REQUEST TO RESTART PLAYING AT A SPECIFIED POINT
YES
RESTART PLAY AT THE SELECTED POINT
RE-COMPUTE BEATS PER MINUTE AND DISPLAY ON SCREEN.
NO
130
DID USER SELECT TRACK(S) TO RECORD?
YES
132
FOR EACH SELECTED TRACK, BUILD .WAV FILE(S) CONTAINING CONTENTS OF TRACK(S), (PLAY WHILE RECORDING), AND DISPLAY DATE RECORDED.
COMPUTE BEATS PER MINUTE.
NO
134
DID USER REQUEST TO DELETE A TRACK?
YES
DISPLAY " ARE YOU SURE" MESSAGE.
WAIT FOR YES/NO RESPONSE.
NO
YES
PERFORM DELETE TRACK (PROCEDURE 4)
NO
R-3

FIG. 3D

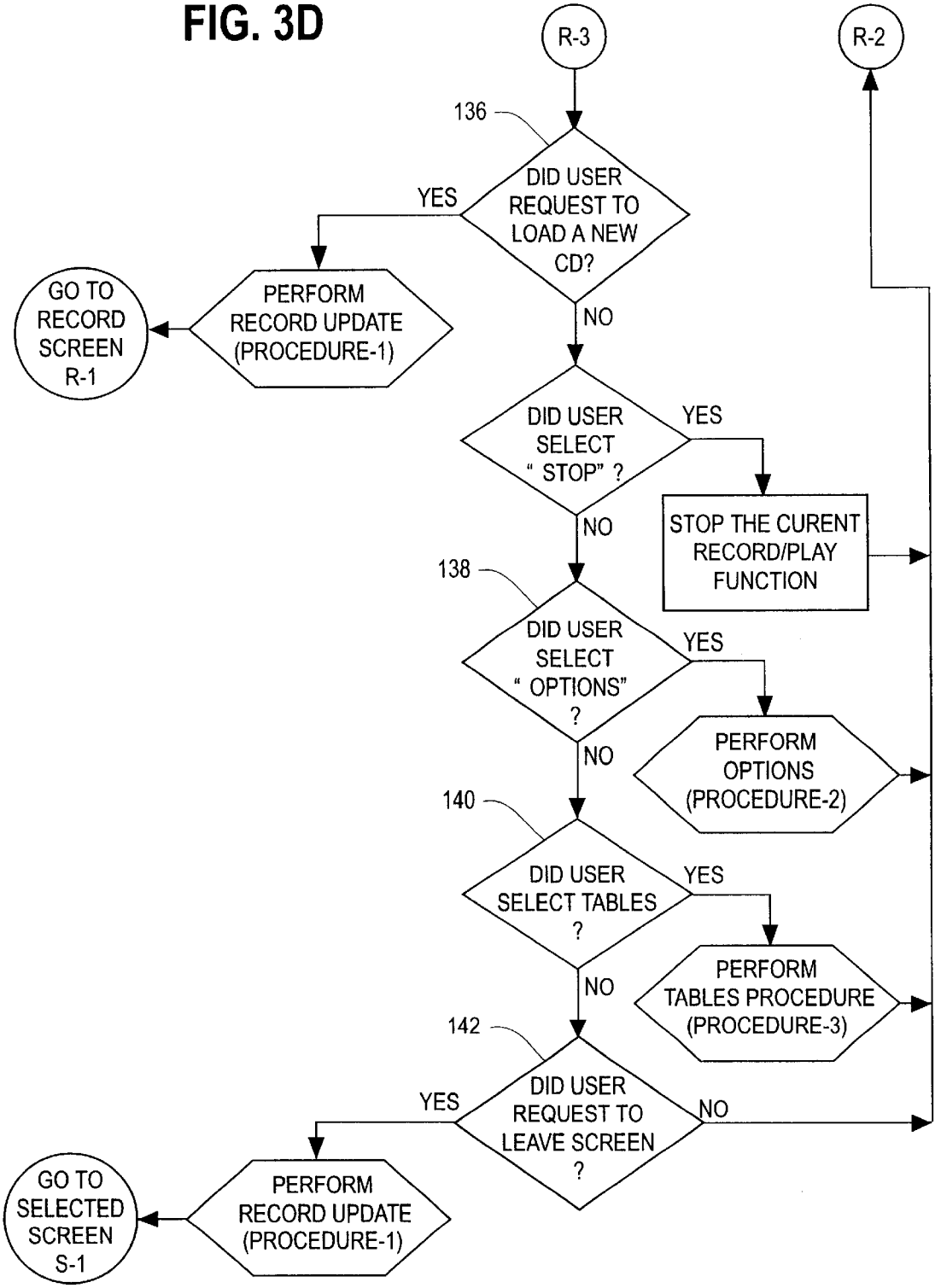

R-3
R-2
136
DID USER REQUEST TO LOAD A NEW CD?
YES
NO
PERFORM RECORD UPDATE (PROCEDURE-1)
GO TO RECORD SCREEN R-1
DID USER SELECT " STOP" ?
YES
NO
STOP THE CURENT RECORD/PLAY FUNCTION
138
DID USER SELECT " OPTIONS" ?
YES
NO
PERFORM OPTIONS (PROCEDURE-2)
140
DID USER SELECT TABLES ?
YES
NO
PERFORM TABLES PROCEDURE (PROCEDURE-3)
142
DID USER REQUEST TO LEAVE SCREEN ?
YES
NO
PERFORM RECORD UPDATE (PROCEDURE-1)
GO TO SELECTED SCREEN S-1

FIG. 3E

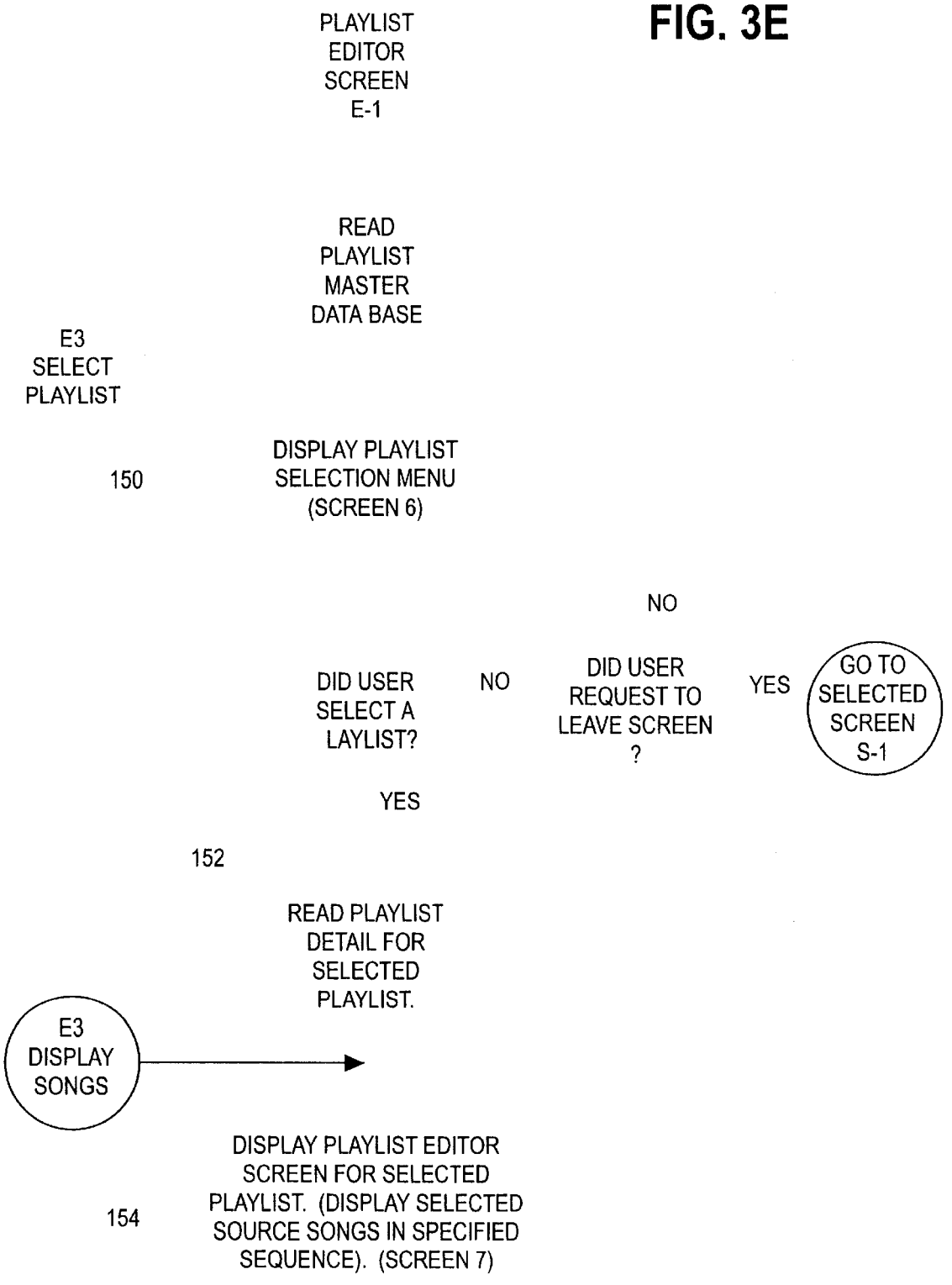

PLAYLIST EDITOR SCREEN E-1
READ PLAYLIST MASTER DATA BASE
E3 SELECT PLAYLIST
150
DISPLAY PLAYLIST SELECTION MENU (SCREEN 6)
NO
DID USER SELECT A LAYLIST?
NO
DID USER REQUEST TO LEAVE SCREEN ?
YES
GO TO SELECTED SCREEN S-1
YES
152
READ PLAYLIST DETAIL FOR SELECTED PLAYLIST.
E3 DISPLAY SONGS
DISPLAY PLAYLIST EDITOR SCREEN FOR SELECTED PLAYLIST. (DISPLAY SELECTED SOURCE SONGS IN SPECIFIED SEQUENCE). (SCREEN 7)
154

FIG. 3F

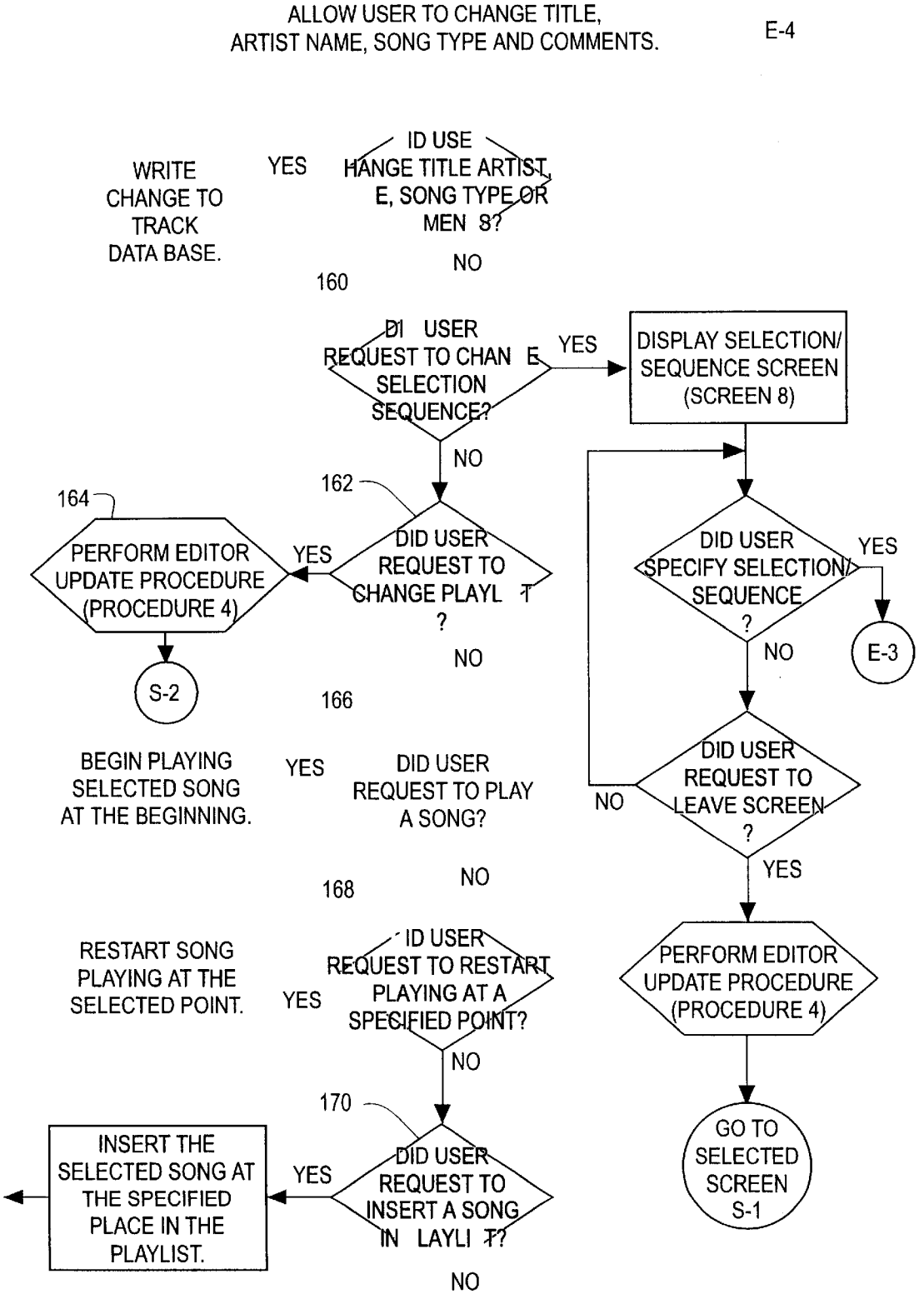

ALLOW USER TO CHANGE TITLE, ARTIST NAME, SONG TYPE AND COMMENTS.
E-4
ID USE HANGE TITLE ARTIST, E, SONG TYPE OR MEN 8?
YES
WRITE CHANGE TO TRACK DATA BASE.
NO
160
DI USER REQUEST TO CHAN E SELECTION SEQUENCE?
YES
DISPLAY SELECTION/ SEQUENCE SCREEN (SCREEN 8)
NO
162
164
PERFORM EDITOR UPDATE PROCEDURE (PROCEDURE 4)
YES
DID USER REQUEST TO CHANGE PLAYL T ?
DID USER SPECIFY SELECTION/ SEQUENCE ?
YES
E-3
NO
S-2
NO
166
BEGIN PLAYING SELECTED SONG AT THE BEGINNING.
YES
DID USER REQUEST TO PLAY A SONG?
DID USER REQUEST TO LEAVE SCREEN ?
NO
YES
NO
168
RESTART SONG PLAYING AT THE SELECTED POINT.
ID USER REQUEST TO RESTART PLAYING AT A SPECIFIED POINT?
YES
PERFORM EDITOR UPDATE PROCEDURE (PROCEDURE 4)
NO
170
INSERT THE SELECTED SONG AT THE SPECIFIED PLACE IN THE PLAYLIST.
YES
DID USER REQUEST TO INSERT A SONG IN LAYLI T?
GO TO SELECTED SCREEN S-1
NO

FIG. 3G

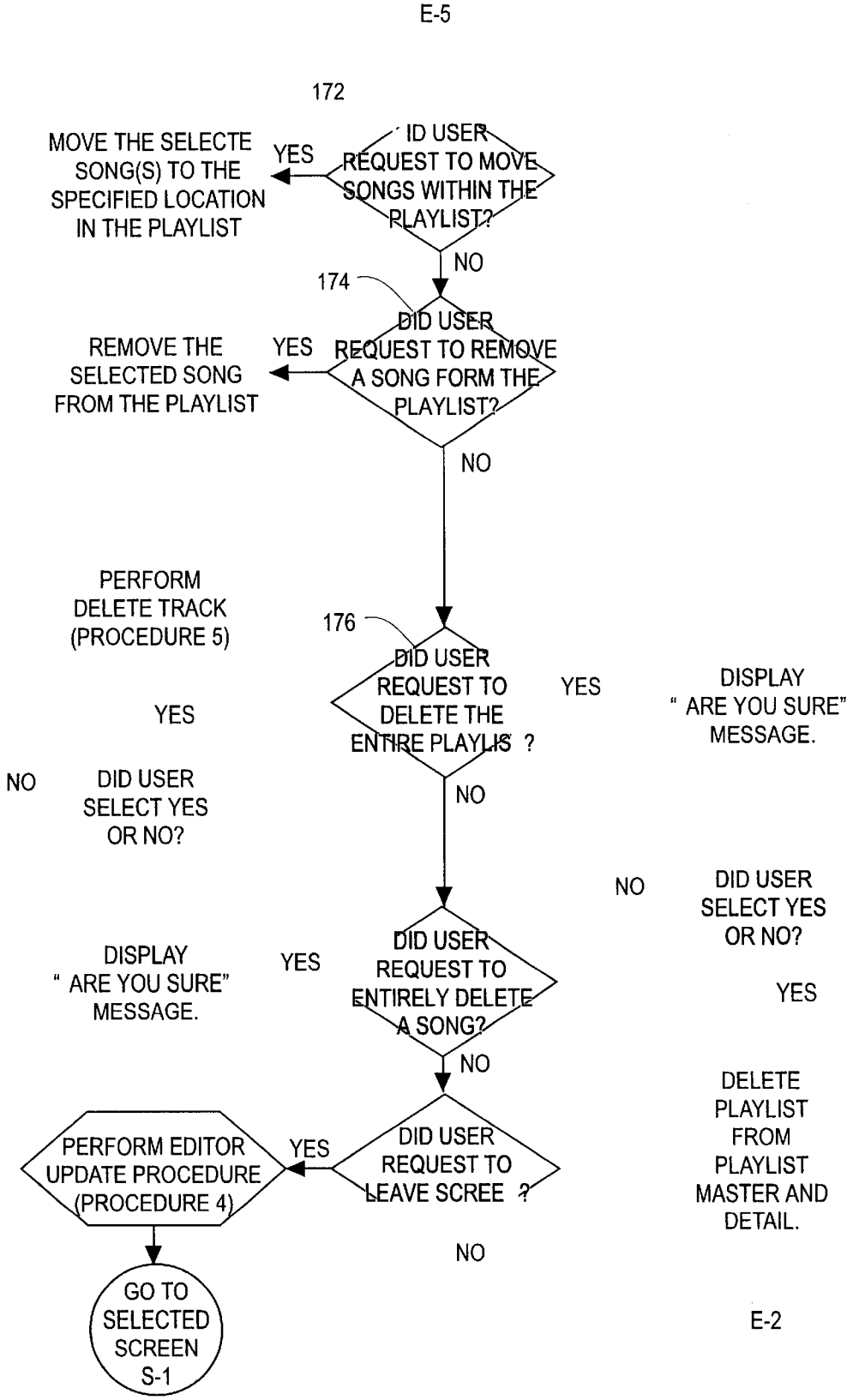

E-5
172
ID USER REQUEST TO MOVE SONGS WITHIN THE PLAYLIST?
YES
MOVE THE SELECTE SONG(S) TO THE SPECIFIED LOCATION IN THE PLAYLIST
NO
174
DID USER REQUEST TO REMOVE A SONG FORM THE PLAYLIST?
YES
REMOVE THE SELECTED SONG FROM THE PLAYLIST
NO
176
DID USER REQUEST TO DELETE THE ENTIRE PLAYLIS ?
YES
DISPLAY " ARE YOU SURE" MESSAGE.
NO
DID USER SELECT YES OR NO?
YES
PERFORM DELETE TRACK (PROCEDURE 5)
NO
DID USER REQUEST TO ENTIRELY DELETE A SONG?
YES
DISPLAY " ARE YOU SURE" MESSAGE.
NO
DID USER SELECT YES OR NO?
YES
DELETE PLAYLIST FROM PLAYLIST MASTER AND DETAIL.
NO
DID USER REQUEST TO LEAVE SCREE ?
YES
PERFORM EDITOR UPDATE PROCEDURE (PROCEDURE 4)
GO TO SELECTED SCREEN S-1
E-2

FIG. 3H

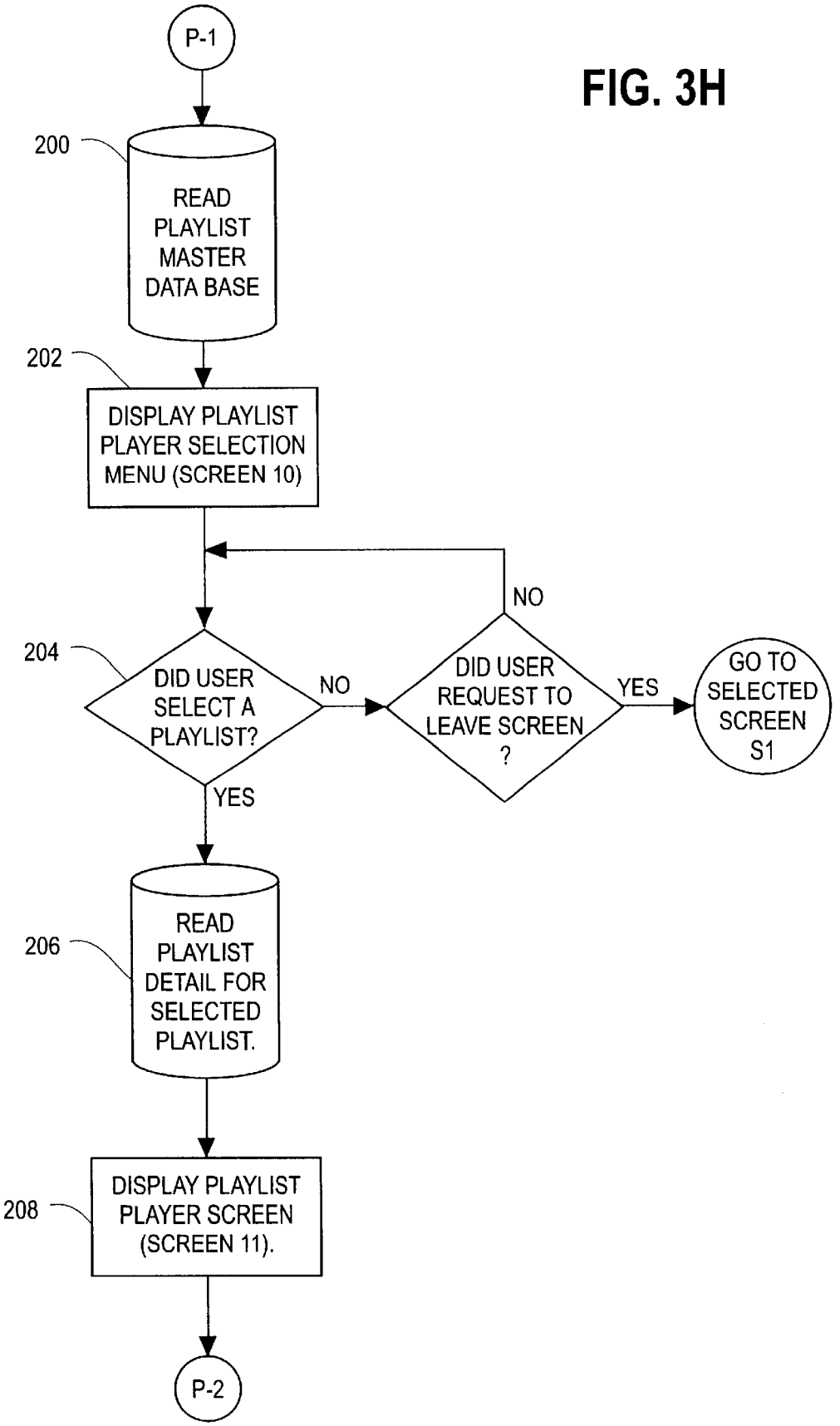

P-1
200
READ PLAYLIST MASTER DATA BASE
202
DISPLAY PLAYLIST PLAYER SELECTION MENU (SCREEN 10)
204
DID USER SELECT A PLAYLIST?
NO
DID USER REQUEST TO LEAVE SCREEN ?
NO
YES
GO TO SELECTED SCREEN S1
YES
206
READ PLAYLIST DETAIL FOR SELECTED PLAYLIST.
208
DISPLAY PLAYLIST PLAYER SCREEN (SCREEN 11).
P-2

FIG. 3I

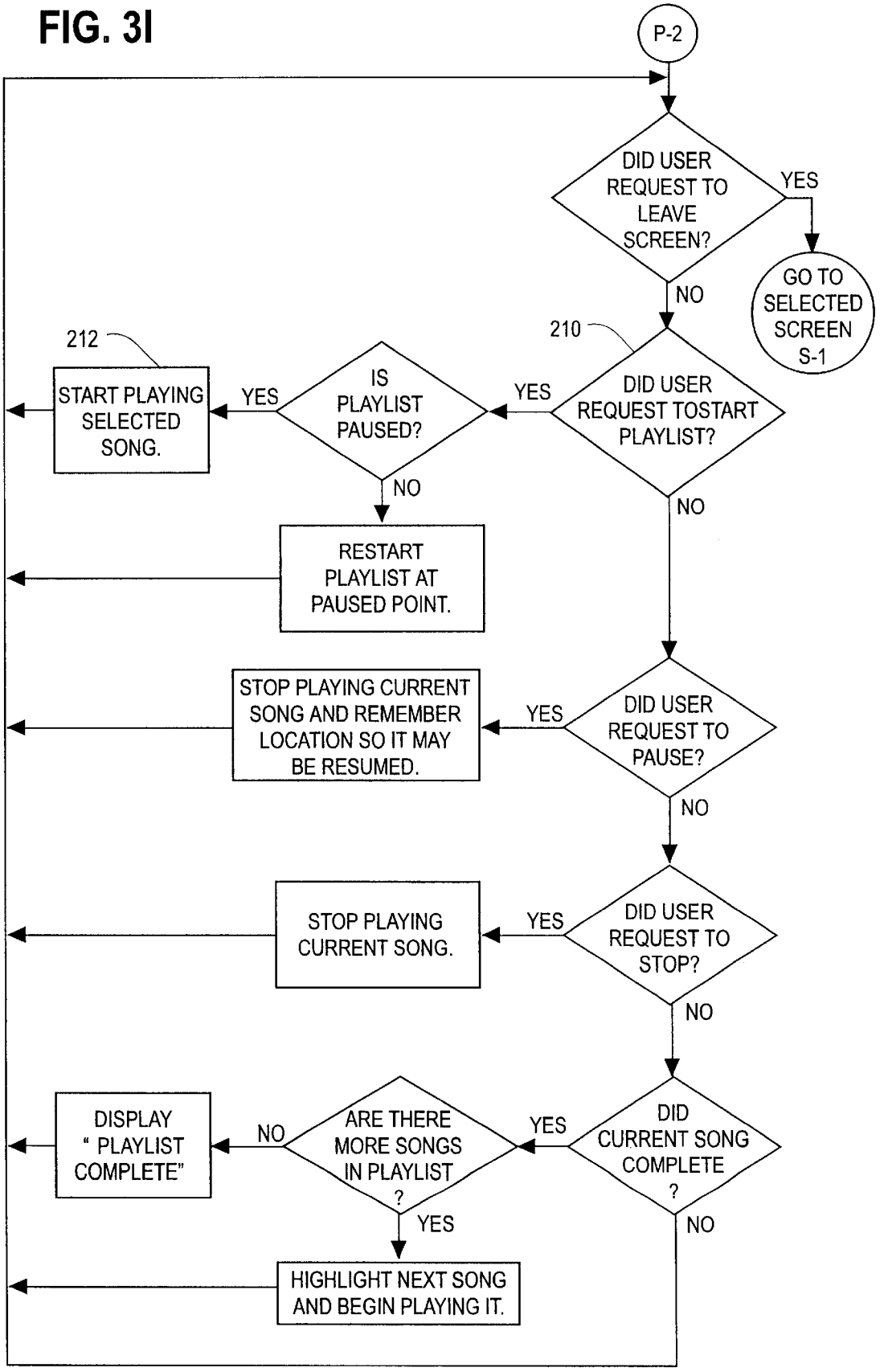

P-2
DID USER REQUEST TO LEAVE SCREEN?
YES
GO TO SELECTED SCREEN S-1
NO
210
DID USER REQUEST TOSTART PLAYLIST?
YES
IS PLAYLIST PAUSED?
YES
212
START PLAYING SELECTED SONG.
NO
RESTART PLAYLIST AT PAUSED POINT.
NO
DID USER REQUEST TO PAUSE?
YES
STOP PLAYING CURRENT SONG AND REMEMBER LOCATION SO IT MAY BE RESUMED.
NO
DID USER REQUEST TO STOP?
YES
STOP PLAYING CURRENT SONG.
NO
DID CURRENT SONG COMPLETE ?
YES
ARE THERE MORE SONGS IN PLAYLIST ?
NO
DISPLAY " PLAYLIST COMPLETE"
YES
HIGHLIGHT NEXT SONG AND BEGIN PLAYING IT.
NO

FIG. 3J

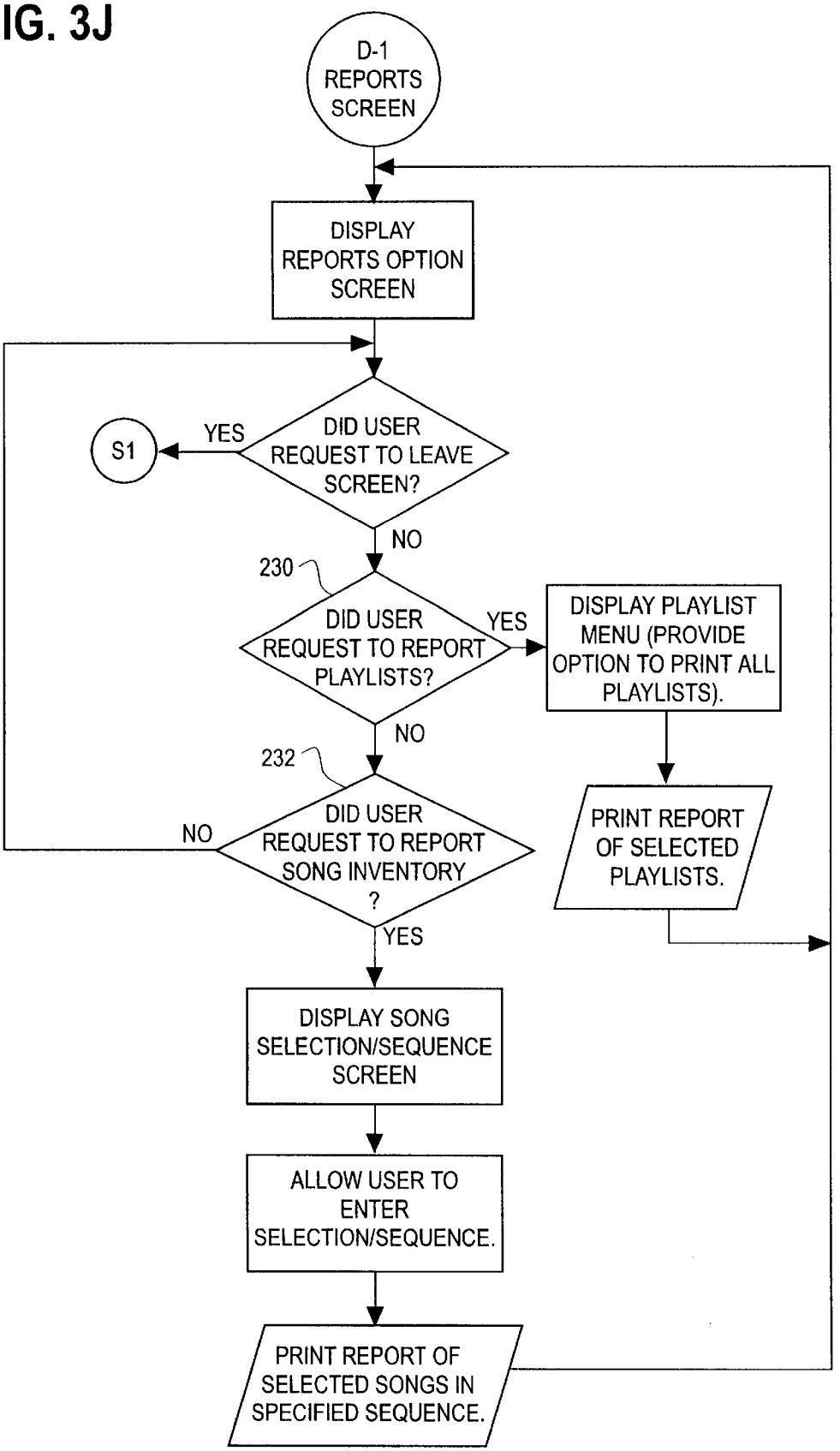

D-1 REPORTS SCREEN
DISPLAY REPORTS OPTION SCREEN
DID USER REQUEST TO LEAVE SCREEN?
YES
S1
NO
230
DID USER REQUEST TO REPORT PLAYLISTS?
YES
DISPLAY PLAYLIST MENU (PROVIDE OPTION TO PRINT ALL PLAYLISTS).
NO
232
DID USER REQUEST TO REPORT SONG INVENTORY ?
NO
PRINT REPORT OF SELECTED PLAYLISTS.
YES
DISPLAY SONG SELECTION/SEQUENCE SCREEN
ALLOW USER TO ENTER SELECTION/SEQUENCE.
PRINT REPORT OF SELECTED SONGS IN SPECIFIED SEQUENCE.

FIG. 3K

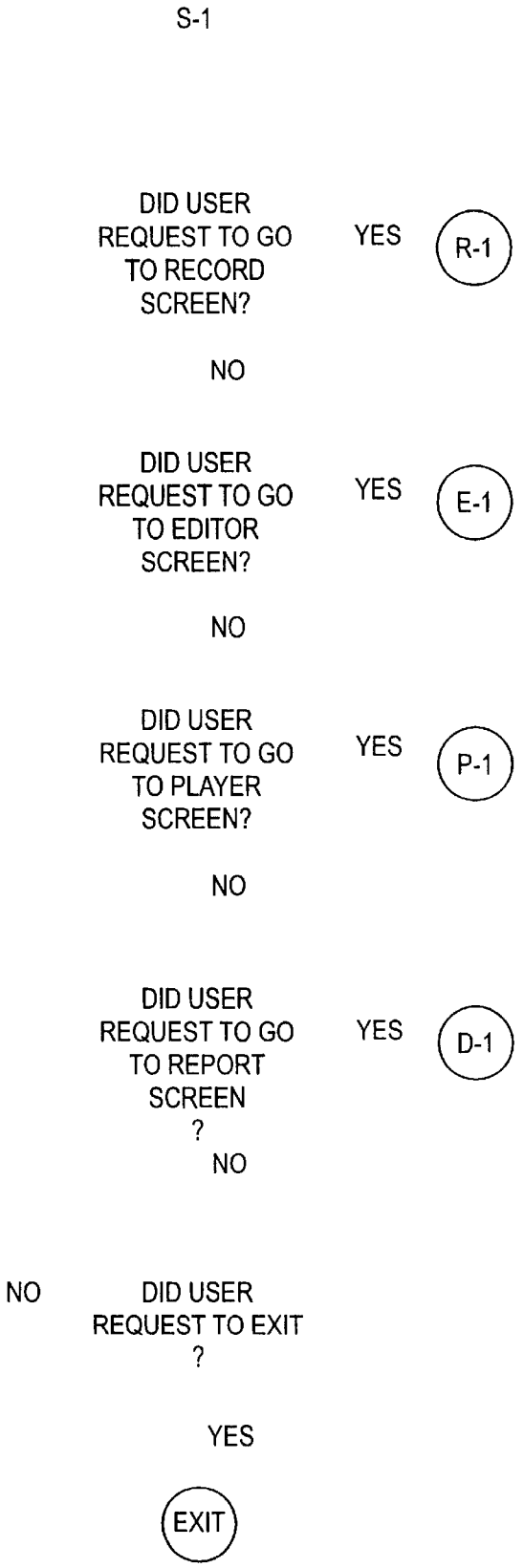

S-1
DID USER REQUEST TO GO TO RECORD SCREEN?
YES
R-1
NO
DID USER REQUEST TO GO TO EDITOR SCREEN?
YES
E-1
NO
DID USER REQUEST TO GO TO PLAYER SCREEN?
YES
P-1
NO
DID USER REQUEST TO GO TO REPORT SCREEN ?
YES
D-1
NO
NO
DID USER REQUEST TO EXIT ?
YES
EXIT

FIG. 3L

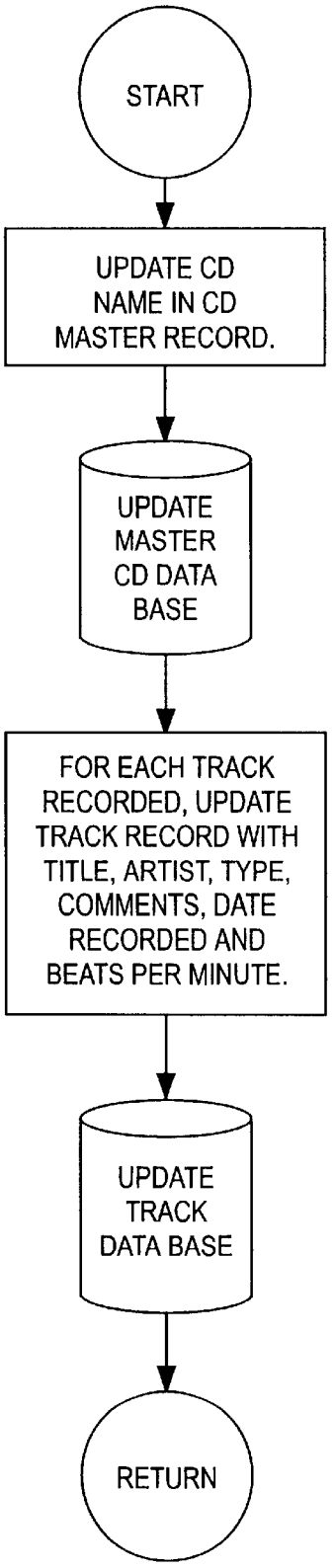

START
UPDATE CD NAME IN CD MASTER RECORD.
UPDATE MASTER CD DATA BASE
FOR EACH TRACK RECORDED, UPDATE TRACK RECORD WITH TITLE, ARTIST, TYPE, COMMENTS, DATE RECORDED AND BEATS PER MINUTE.
UPDATE TRACK DATA BASE
RETURN

FIG. 3M

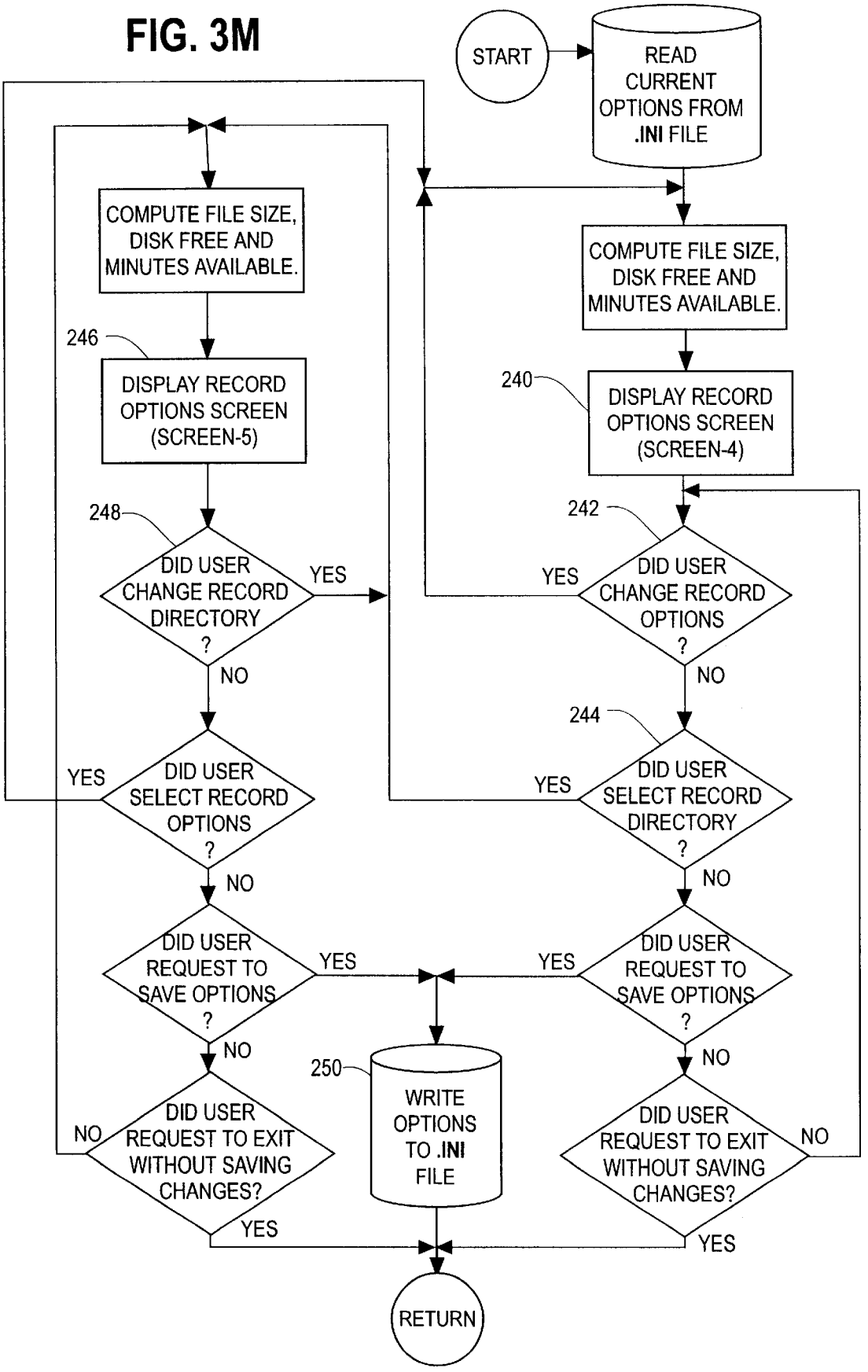

START
READ CURRENT OPTIONS FROM .INI FILE
COMPUTE FILE SIZE, DISK FREE AND MINUTES AVAILABLE.
COMPUTE FILE SIZE, DISK FREE AND MINUTES AVAILABLE.
246
DISPLAY RECORD OPTIONS SCREEN (SCREEN-5)
240
DISPLAY RECORD OPTIONS SCREEN (SCREEN-4)
248
DID USER CHANGE RECORD DIRECTORY ?
YES
NO
242
DID USER CHANGE RECORD OPTIONS ?
YES
NO
244
DID USER SELECT RECORD OPTIONS ?
YES
NO
DID USER SELECT RECORD DIRECTORY ?
YES
NO
DID USER REQUEST TO SAVE OPTIONS ?
YES
NO
DID USER REQUEST TO SAVE OPTIONS ?
YES
NO
250
WRITE OPTIONS TO .INI FILE
DID USER REQUEST TO EXIT WITHOUT SAVING CHANGES?
NO
YES
DID USER REQUEST TO EXIT WITHOUT SAVING CHANGES?
NO
YES
RETURN

FIG. 3N

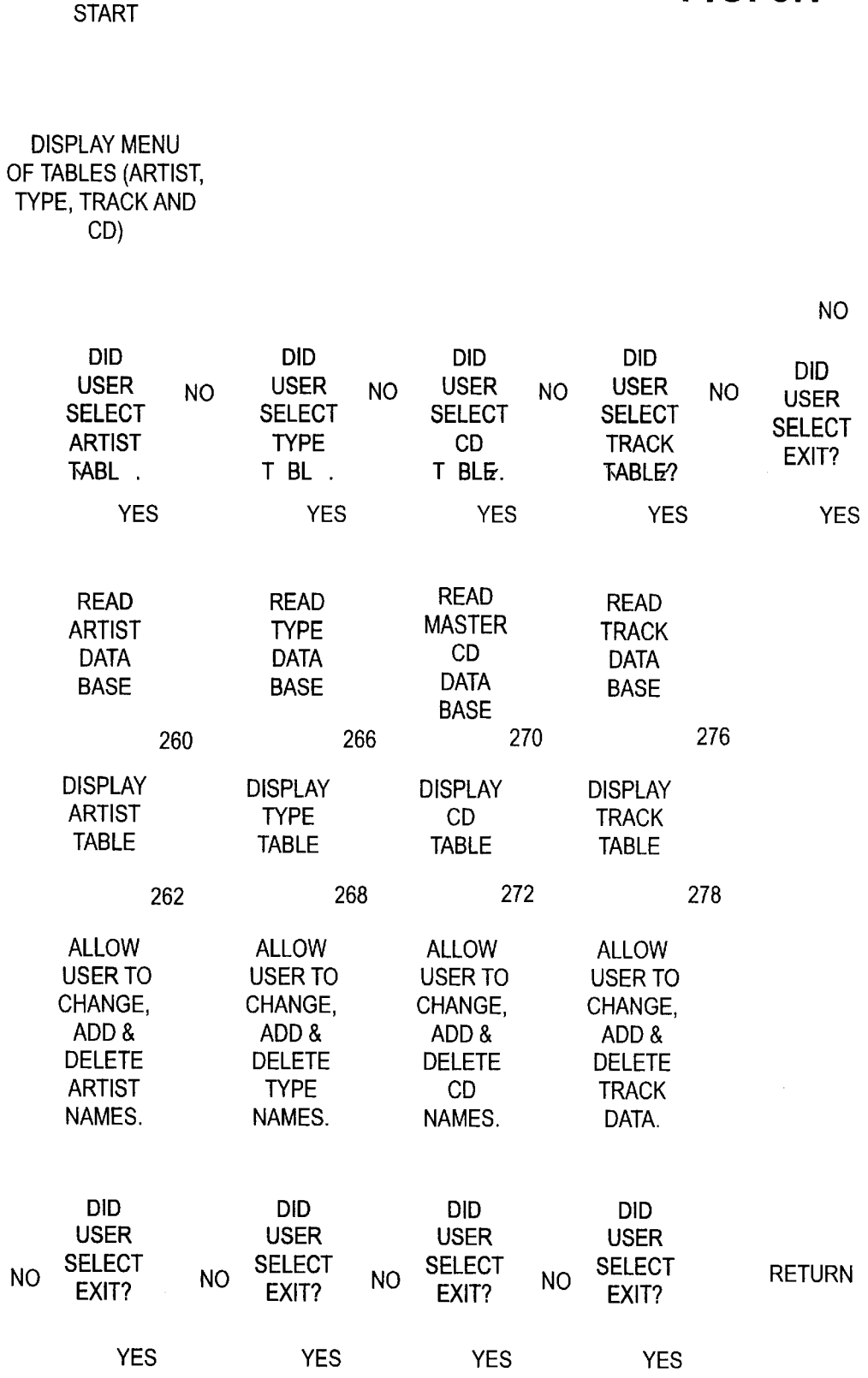

START
DISPLAY MENU OF TABLES (ARTIST, TYPE, TRACK AND CD)
DID USER SELECT ARTIST TABLE?
NO
YES
DID USER SELECT TYPE TABLE?
NO
YES
DID USER SELECT CD TABLE?
NO
YES
DID USER SELECT TRACK TABLE?
NO
YES
DID USER SELECT EXIT?
NO
YES
READ ARTIST DATA BASE
260
READ TYPE DATA BASE
266
READ MASTER CD DATA BASE
270
READ TRACK DATA BASE
276
DISPLAY ARTIST TABLE
262
DISPLAY TYPE TABLE
268
DISPLAY CD TABLE
272
DISPLAY TRACK TABLE
278
ALLOW USER TO CHANGE, ADD & DELETE ARTIST NAMES.
ALLOW USER TO CHANGE, ADD & DELETE TYPE NAMES.
ALLOW USER TO CHANGE, ADD & DELETE CD NAMES.
ALLOW USER TO CHANGE, ADD & DELETE TRACK DATA.
DID USER SELECT EXIT?
NO
YES
DID USER SELECT EXIT?
NO
YES
DID USER SELECT EXIT?
NO
YES
DID USER SELECT EXIT?
NO
YES
RETURN

FIG. 30

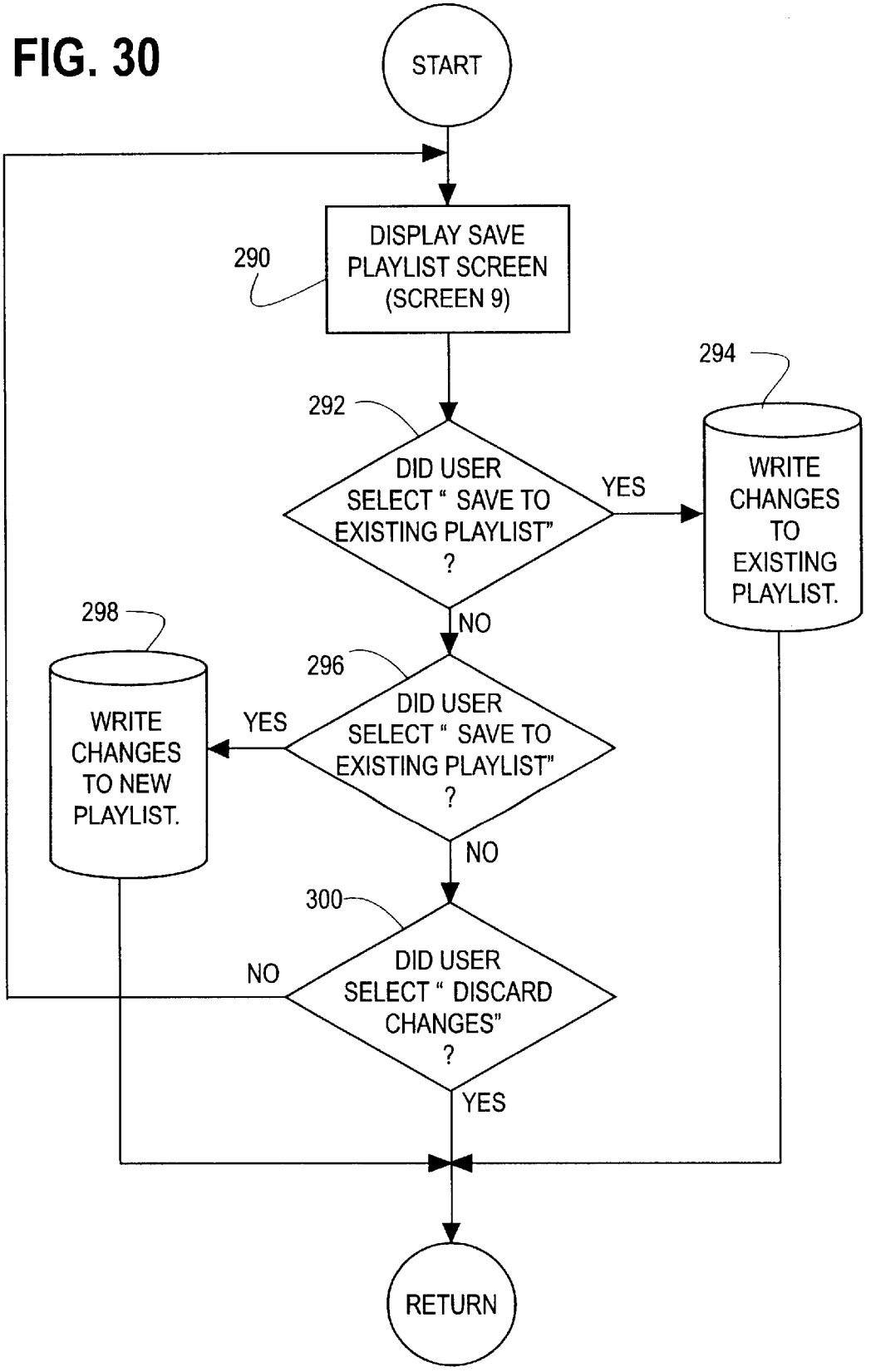

START
290
DISPLAY SAVE PLAYLIST SCREEN (SCREEN 9)
292
DID USER SELECT " SAVE TO EXISTING PLAYLIST" ?
YES
294
WRITE CHANGES TO EXISTING PLAYLIST.
NO
296
DID USER SELECT " SAVE TO EXISTING PLAYLIST" ?
YES
298
WRITE CHANGES TO NEW PLAYLIST.
NO
300
DID USER SELECT " DISCARD CHANGES" ?
NO
YES
RETURN

FIG. 3P

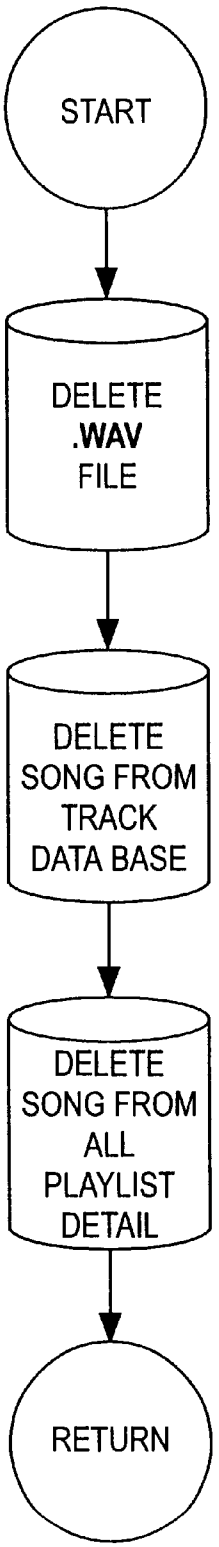

START
DELETE .WAV FILE
DELETE SONG FROM TRACK DATA BASE
DELETE SONG FROM ALL PLAYLIST DETAIL
RETURN

FIG. 4A

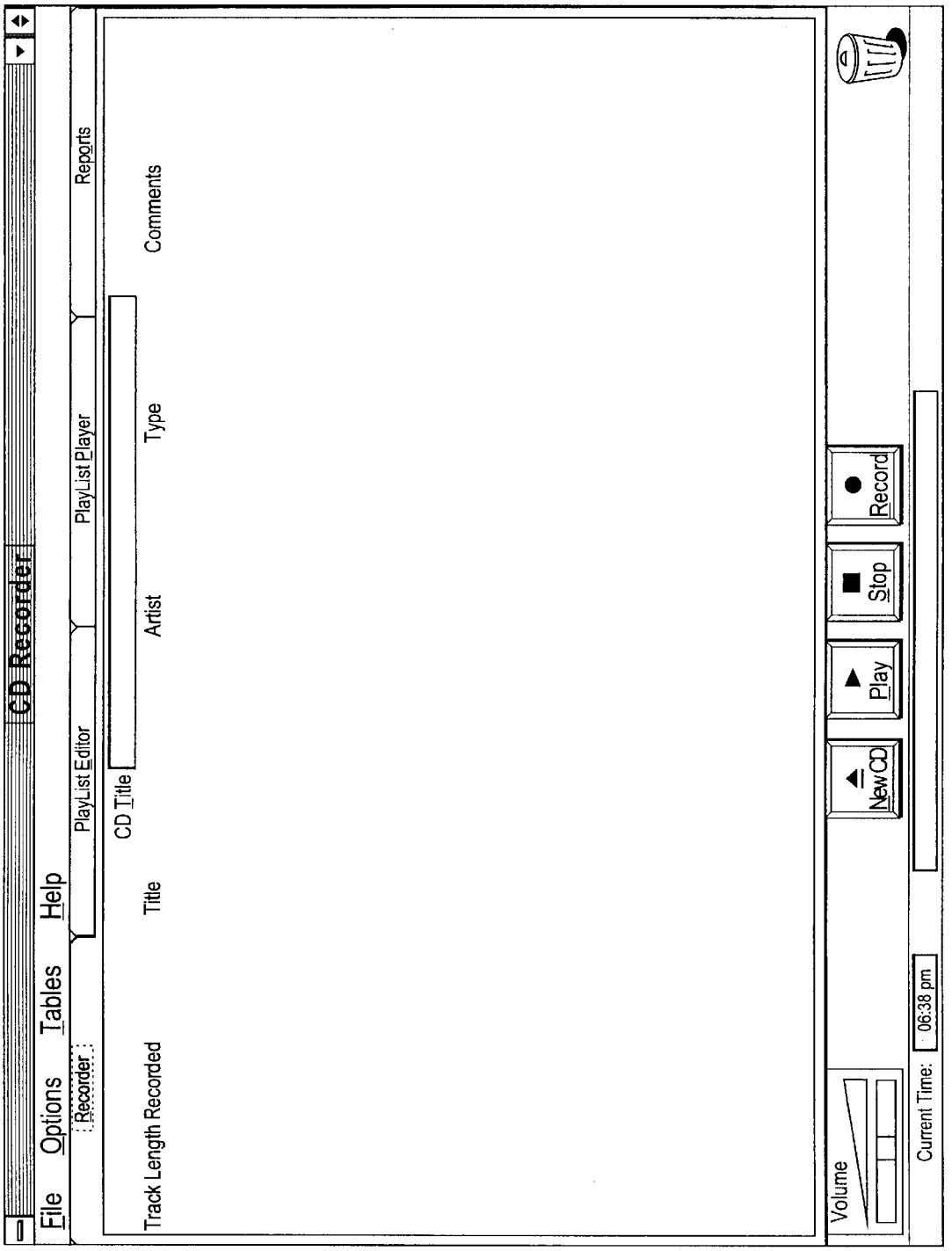

CD Recorder
File
Options
Tables
Help
Recorder
PlayList Editor
PlayList Player
Reports
CD Title
Track Length Recorded
Title
Artist
Type
Comments
Volume
Current Time:
06:38 pm
New CD
Play
Stop
Record

FIG. 4B

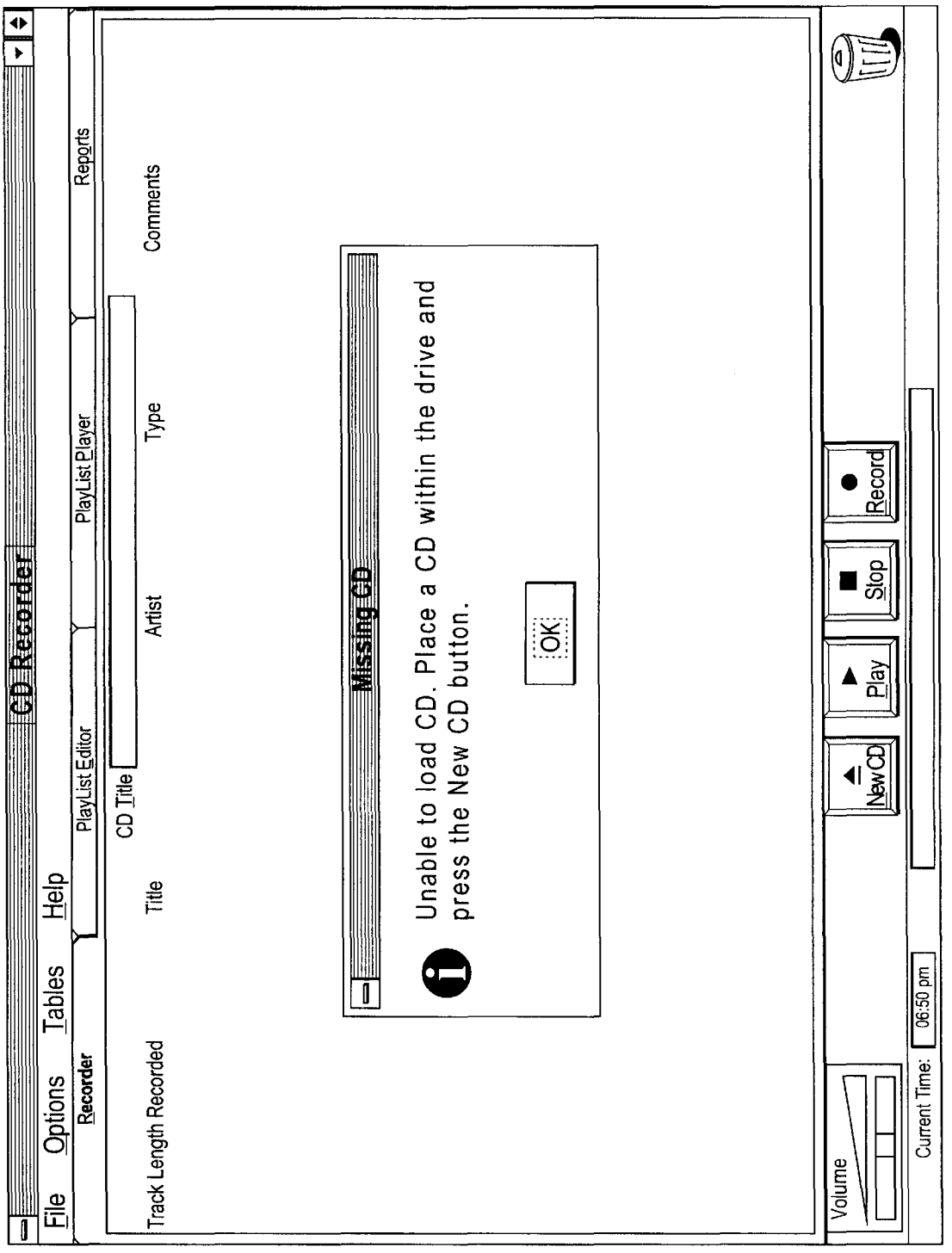

CD Recorder
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
CD Title
Track Length Recorded
Title
Artist
Type
Comments
Missing CD
Unable to load CD. Place a CD within the drive and press the New CD button.
OK
New CD
Play
Stop
Record
Volume
Current Time:
06:50 pm

FIG. 4C

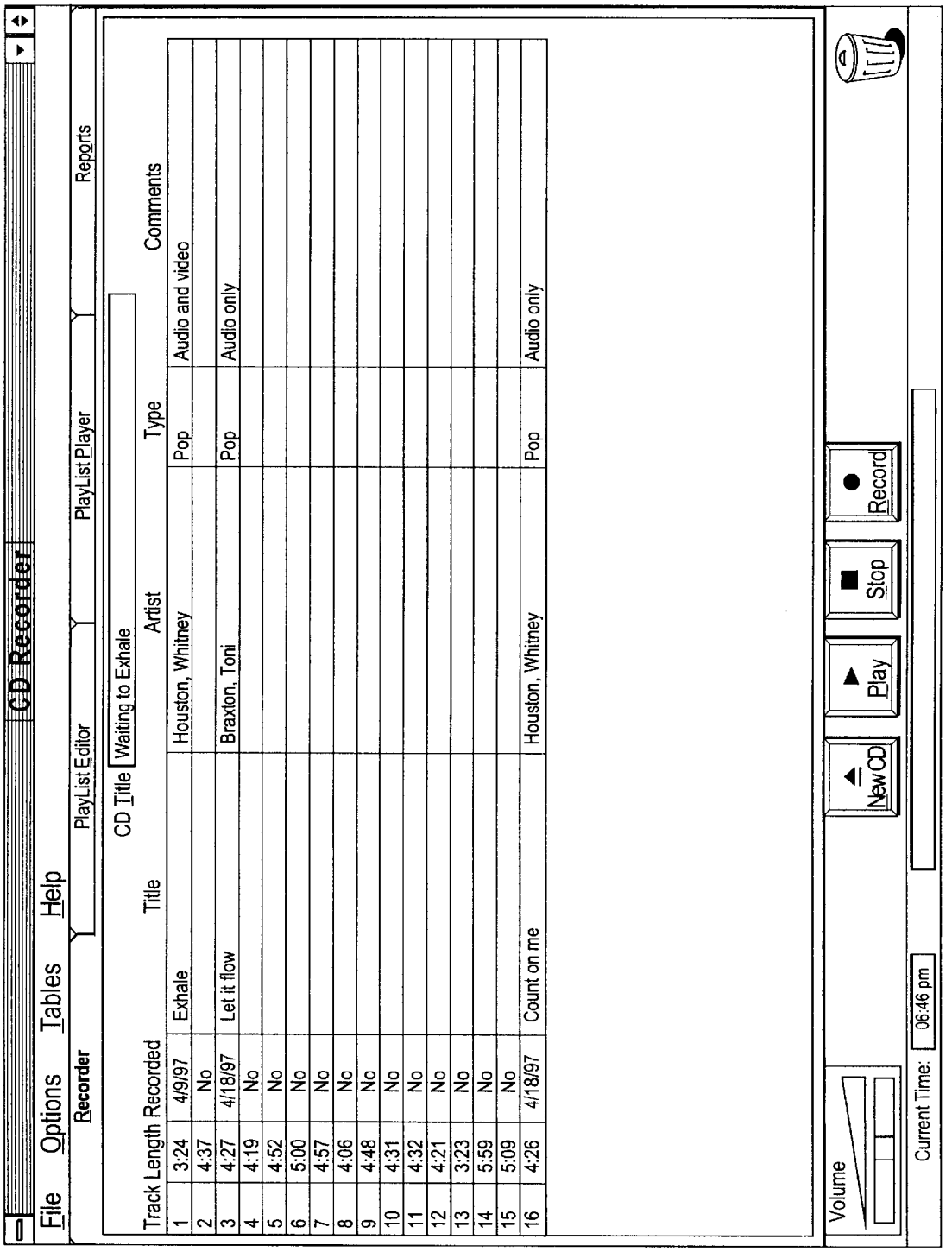

CD Recorder
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
CD Title Waiting to Exhale
Track Length Recorded Title Artist Type Comments
1 3:24 4/9/97 Exhale Houston, Whitney Pop Audio and video
2 4:37 No
3 4:27 4/18/97 Let it flow Braxton, Toni Pop Audio only
4 4:19 No
5 4:52 No
6 5:00 No
7 4:57 No
8 4:06 No
9 4:48 No
10 4:31 No
11 4:32 No
12 4:21 No
13 3:23 No
14 5:59 No
15 5:09 No
16 4:26 4/18/97 Count on me Houston, Whitney Pop Audio only
Volume
New CD
Play
Stop
Record
Current Time: 06:46 pm

FIG. 4D

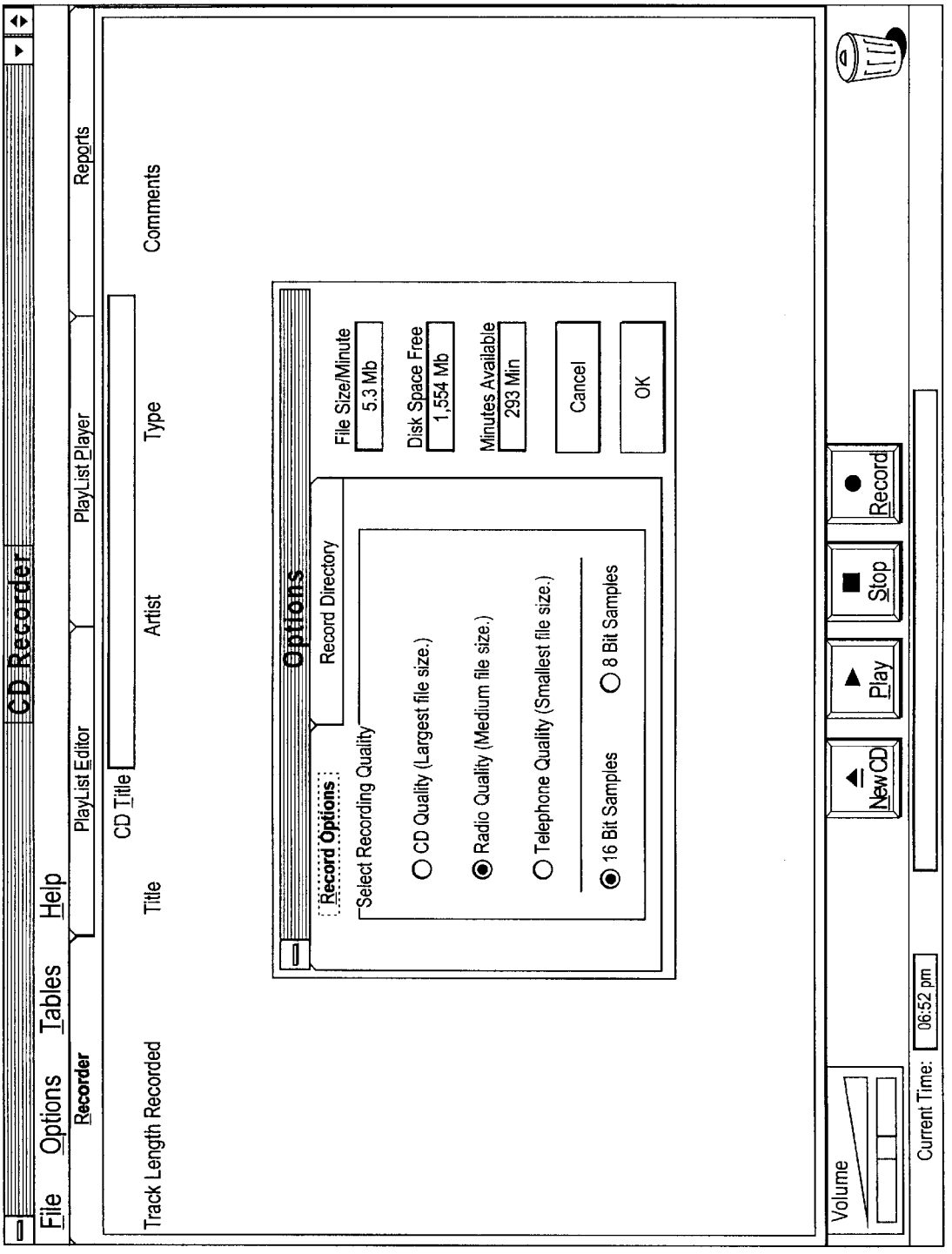

CD Recorder
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
CD Title
Track Length Recorded
Title
Artist
Type
Comments
Options
Record Options
Record Directory
Select Recording Quality
CD Quality (Largest file size.)
Radio Quality (Medium file size.)
Telephone Quality (Smallest file size.)
16 Bit Samples
8 Bit Samples
File Size/Minute
5.3 Mb
Disk Space Free
1,554 Mb
Minutes Available
293 Min
Cancel
OK
Volume
New CD
Play
Stop
Record
Current Time:
06:52 pm

FIG. 4E

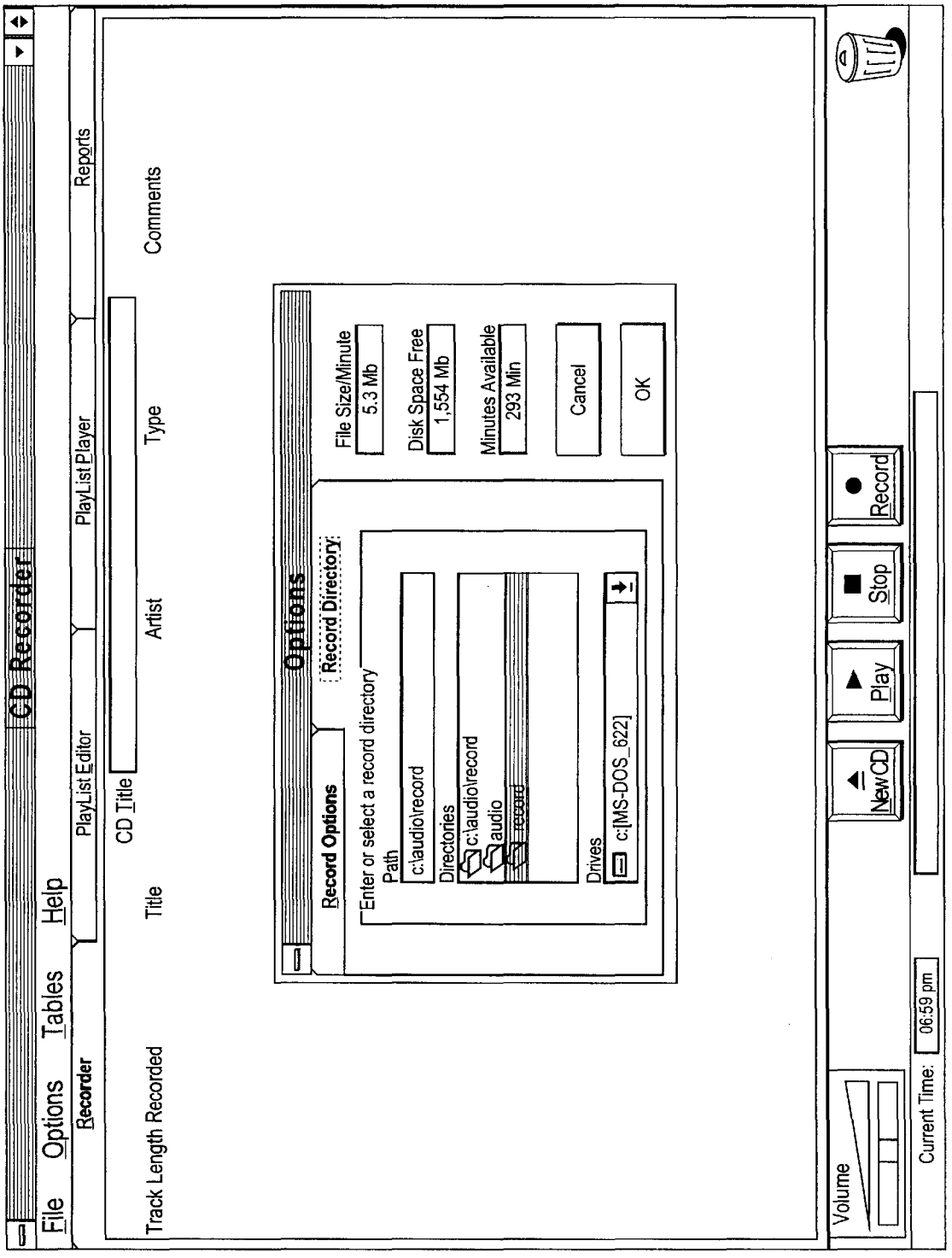

CD Recorder
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
CD Title
Track Length Recorded
Title
Artist
Type
Comments
Options
Record Options
Record Directory
Enter or select a record directory
Path
c:\audio\record
Directories
c:\audio\record
audio
record
Drives
c:[MS-DOS_622]
File Size/Minute
5.3 Mb
Disk Space Free
1,554 Mb
Minutes Available
293 Min
Cancel
OK
New CD
Play
Stop
Record
Volume
Current Time:
06:59 pm

FIG. 4F

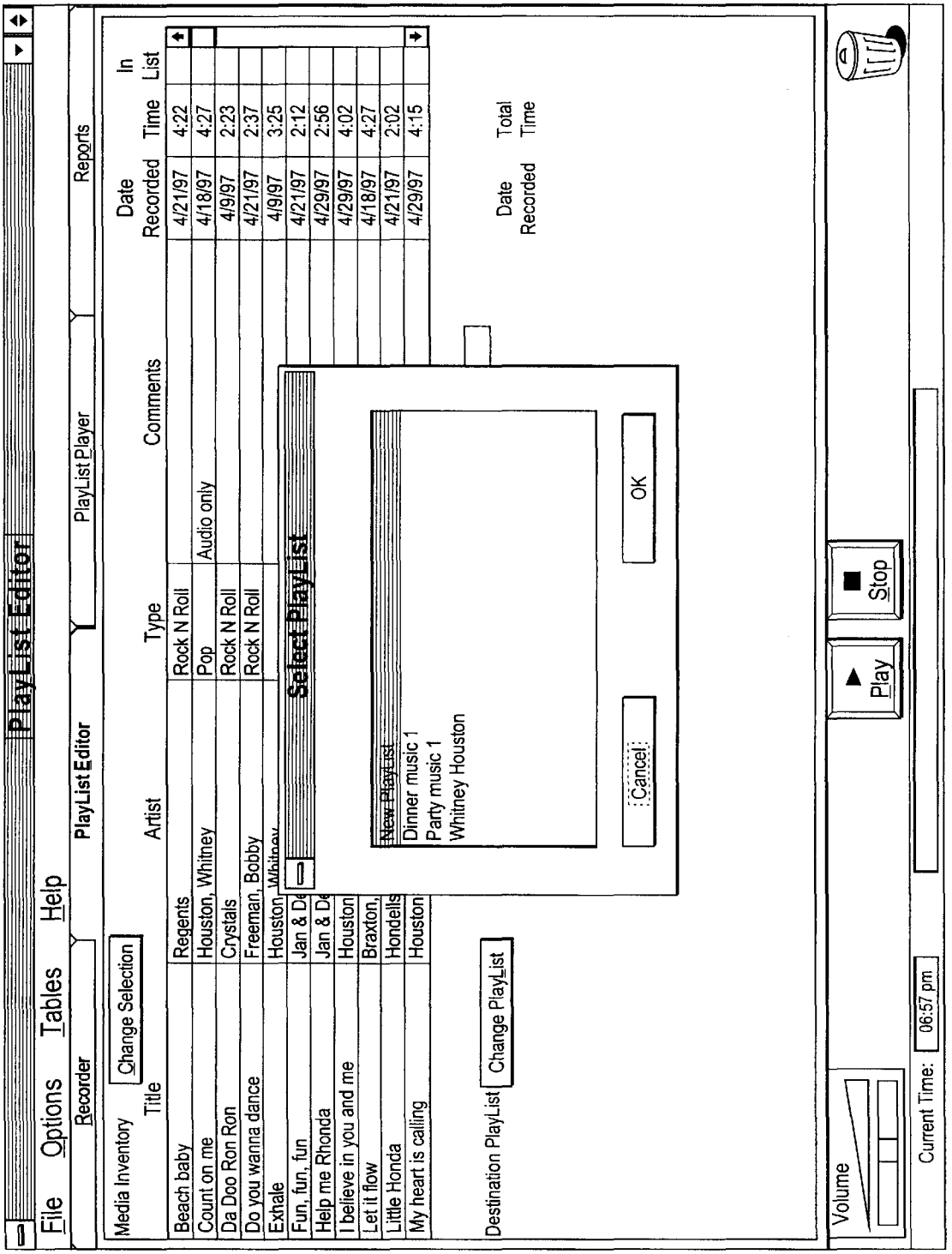

PlayList Editor
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
Media Inventory
Change Selection
Title
Artist
Type
Comments
Date Recorded
Time
In List
Beach baby Regents Rock N Roll 4/21/97 4:22
Count on me Houston, Whitney Pop Audio only 4/18/97 4:27
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 2:23
Do you wanna dance Freeman, Bobby Rock N Roll 4/21/97 2:37
Exhale Houston, Whitney 4/9/97 3:25
Fun, fun, fun Jan & De 4/21/97 2:12
Help me Rhonda Jan & De 4/29/97 2:56
I believe in you and me Houston 4/29/97 4:02
Let it flow Braxton, 4/18/97 4:27
Little Honda Hondells 4/21/97 2:02
My heart is calling Houston 4/29/97 4:15
Destination PlayList
Change PlayList
Select PlayList
New PlayList
Dinner music 1
Party music 1
Whitney Houston
Cancel
OK
Date Recorded
Total Time
Play
Stop
Volume
Current Time:
06:57 pm

FIG. 4G

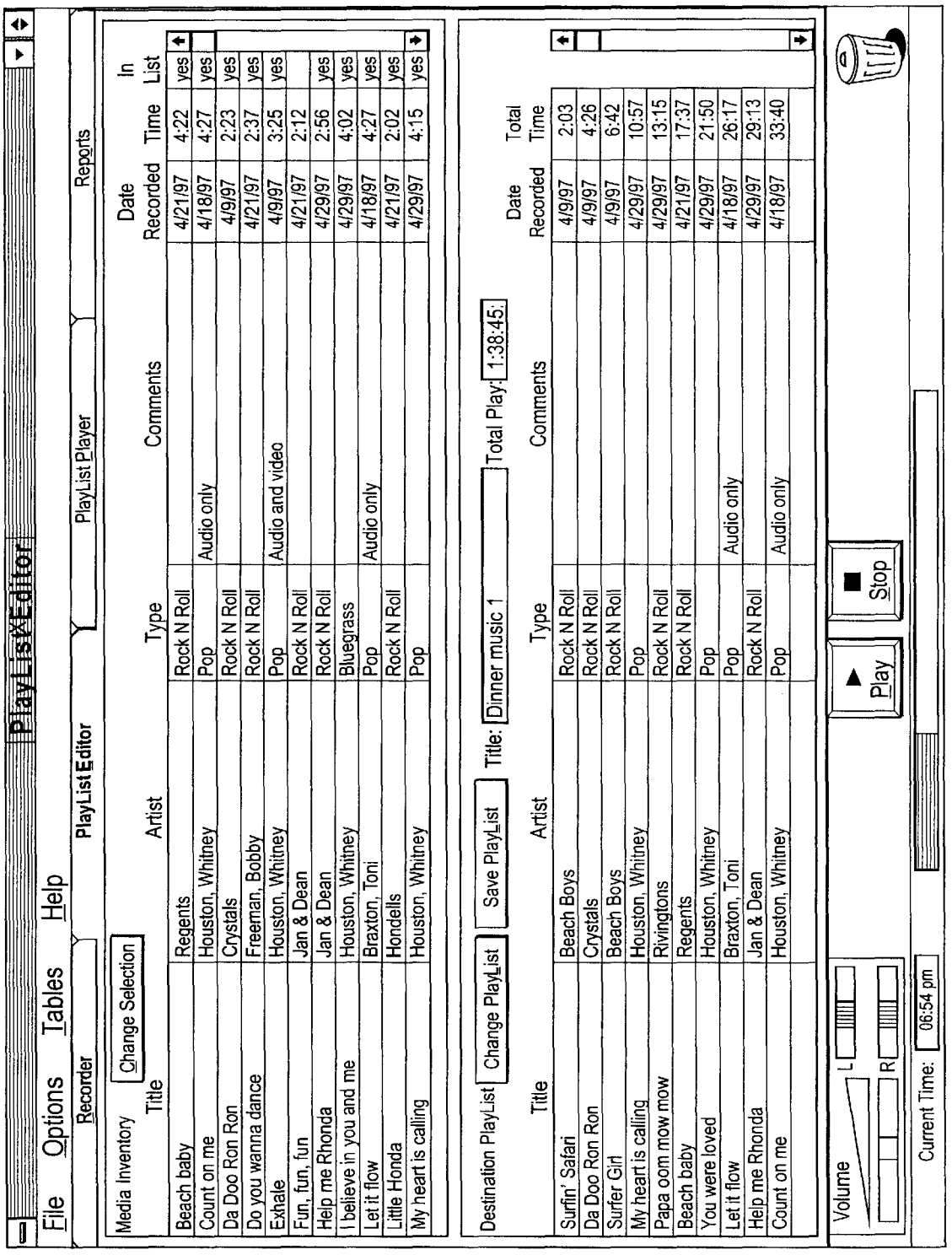

PlayList Editor
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
Media Inventory
Change Selection
Title
Artist
Type
Comments
Date Recorded
Time
In List
Beach baby Regents Rock N Roll 4/21/97 4:22 yes
Count on me Houston, Whitney Pop Audio only 4/18/97 4:27 yes
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 2:23 yes
Do you wanna dance Freeman, Bobby Rock N Roll 4/21/97 2:37 yes
Exhale Houston, Whitney Pop Audio and video 4/9/97 3:25 yes
Fun, fun, fun Jan & Dean Rock N Roll 4/21/97 2:12
Help me Rhonda Jan & Dean Rock N Roll 4/29/97 2:56 yes
I believe in you and me Houston, Whitney Bluegrass 4/29/97 4:02 yes
Let it flow Braxton, Toni Pop Audio only 4/18/97 4:27 yes
Little Honda Hondells Rock N Roll 4/21/97 2:02 yes
My heart is calling Houston, Whitney Pop 4/29/97 4:15 yes
Destination PlayList
Change PlayList
Save PlayList
Title: Dinner music 1
Total Play: 1:38:45:
Title
Artist
Type
Comments
Date Recorded
Total Time
Surfin' Safari Beach Boys Rock N Roll 4/9/97 2:03
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 4:26
Surfer Girl Beach Boys Rock N Roll 4/9/97 6:42
My heart is calling Houston, Whitney Pop 4/29/97 10:57
Papa oom mow mow Rivingtons Rock N Roll 4/29/97 13:15
Beach baby Regents Rock N Roll 4/21/97 17:37
You were loved Houston, Whitney Pop 4/29/97 21:50
Let it flow Braxton, Toni Pop Audio only 4/18/97 26:17
Help me Rhonda Jan & Dean Rock N Roll 4/29/97 29:13
Count on me Houston, Whitney Pop Audio only 4/18/97 33:40
Volume
L
R
Play
Stop
Current Time:
06:54 pm

FIG. 4H

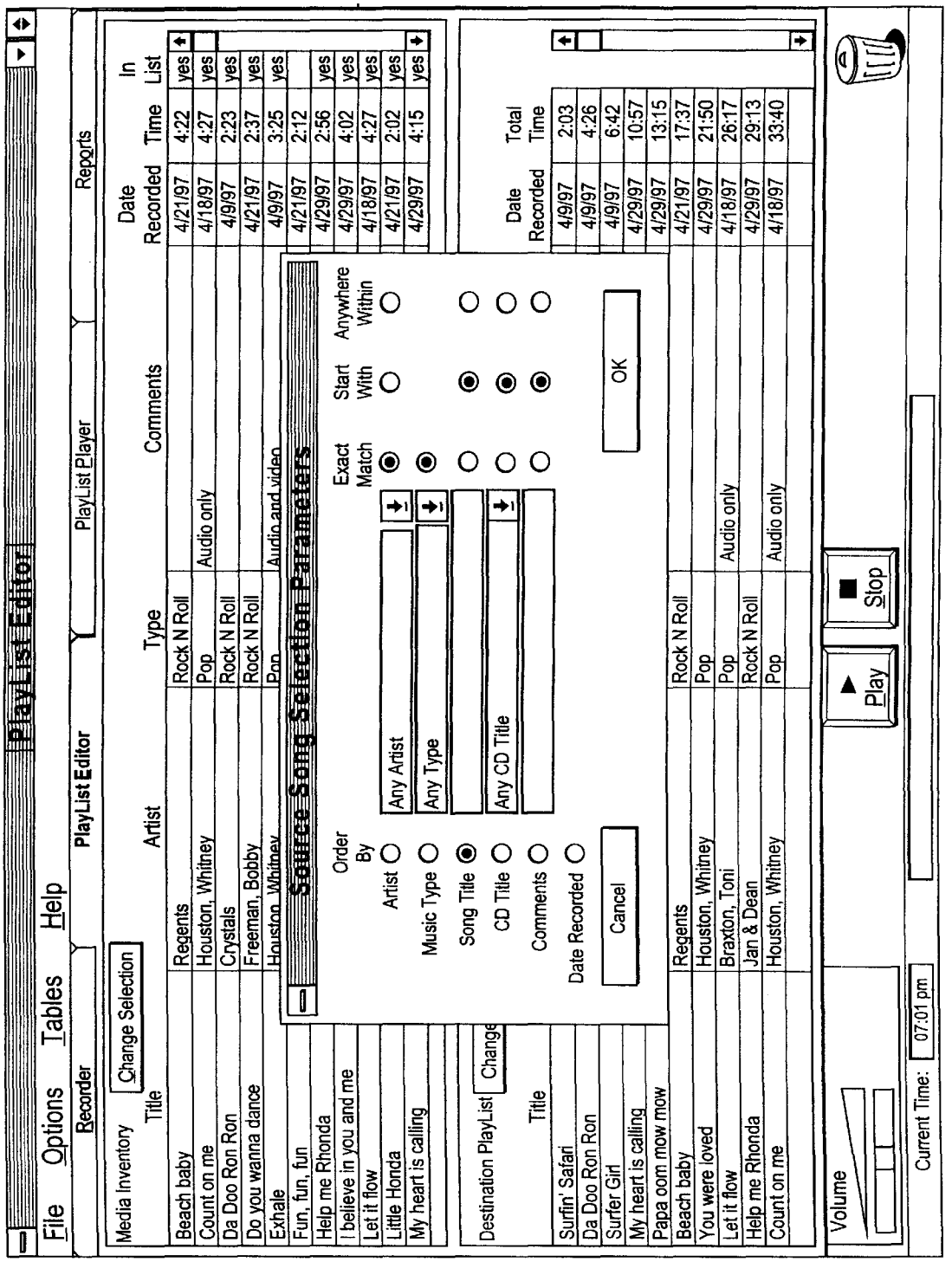

PlayList Editor
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
Media Inventory
Change Selection
Title
Artist
Type
Comments
Date Recorded
Time
In List
Beach baby Regents Rock N Roll 4/21/97 4:22 yes
Count on me Houston, Whitney Pop Audio only 4/18/97 4:27 yes
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 2:23 yes
Do you wanna dance Freeman, Bobby Rock N Roll 4/21/97 2:37 yes
Exhale Houston, Whitney Pop Audio and video 4/9/97 3:25 yes
Fun, fun, fun 4/21/97 2:12
Help me Rhonda 4/29/97 2:56 yes
I believe in you and me 4/29/97 4:02 yes
Let it flow 4/18/97 4:27 yes
Little Honda 4/21/97 2:02 yes
My heart is calling 4/29/97 4:15 yes
Source Song Selection Parameters
Order By
Artist
Music Type
Song Title
CD Title
Comments
Date Recorded
Any Artist
Any Type
Any CD Title
Exact Match
Start With
Anywhere Within
Cancel
OK
Destination PlayList
Change
Title
Surfin' Safari
Da Doo Ron Ron
Surfer Girl
My heart is calling
Papa oom mow mow
Beach baby
You were loved
Let it flow
Help me Rhonda
Count on me
Regents Rock N Roll
Houston, Whitney Pop
Braxton, Toni Pop Audio only
Jan & Dean Rock N Roll
Houston, Whitney Pop Audio only
Date Recorded
Total Time
4/9/97 2:03
4/9/97 4:26
4/9/97 6:42
4/29/97 10:57
4/29/97 13:15
4/21/97 17:37
4/29/97 21:50
4/18/97 26:17
4/29/97 29:13
4/18/97 33:40
Volume
Play
Stop
Current Time: 07:01 pm

FIG. 4I

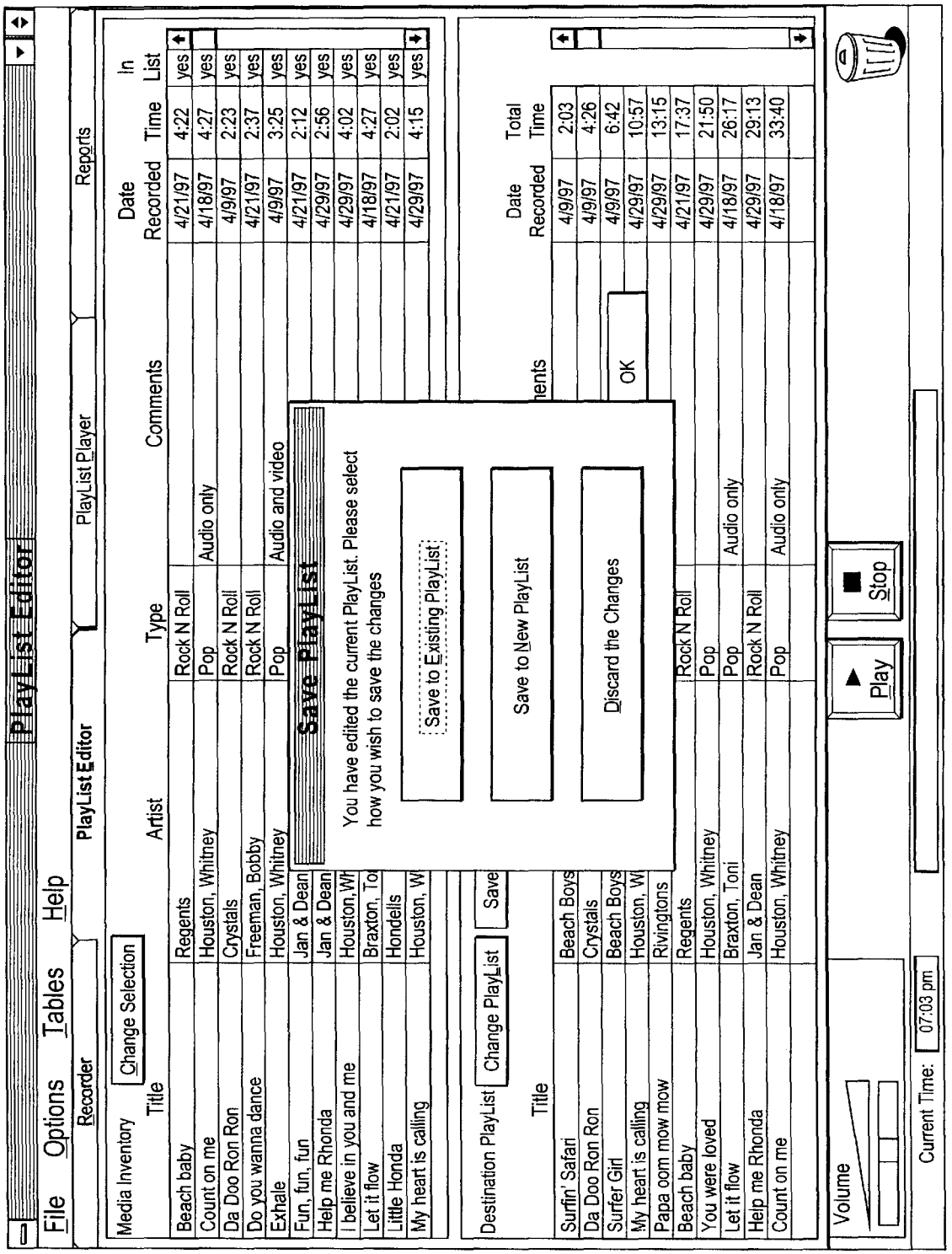

PlayList Editor
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
Media Inventory
Change Selection
Title
Artist
Type
Comments
Date Recorded
Time
In List
Beach baby Regents Rock N Roll 4/21/97 4:22 yes
Count on me Houston, Whitney Pop Audio only 4/18/97 4:27 yes
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 2:23 yes
Do you wanna dance Freeman, Bobby Rock N Roll 4/21/97 2:37 yes
Exhale Houston, Whitney Pop Audio and video 4/9/97 3:25 yes
Fun, fun, fun Jan & Dean 4/21/97 2:12 yes
Help me Rhonda Jan & Dean 4/29/97 2:56 yes
I believe in you and me Houston, Wh 4/29/97 4:02 yes
Let it flow Braxton, To 4/18/97 4:27 yes
Little Honda Hondells 4/21/97 2:02 yes
My heart is calling Houston, Wh 4/29/97 4:15 yes
Save PlayList
You have edited the current PlayList. Please select how you wish to save the changes
Save to Existing PlayList
Save to New PlayList
Discard the Changes
Destination PlayList
Change PlayList
Save
Title
Date Recorded
Total Time
Surfin' Safari Beach Boys 4/9/97 2:03
Da Doo Ron Ron Crystals 4/9/97 4:26
Surfer Girl Beach Boys 4/9/97 6:42
My heart is calling Houston, Wh 4/29/97 10:57
Papa oom mow mow Rivingtons 4/29/97 13:15
Beach baby Regents Rock N Roll 4/21/97 17:37
You were loved Houston, Whitney Pop 4/29/97 21:50
Let it flow Braxton, Toni Pop Audio only 4/18/97 26:17
Help me Rhonda Jan & Dean Rock N Roll 4/29/97 29:13
Count on me Houston, Whitney Pop Audio only 4/18/97 33:40
OK
Volume
Play
Stop
Current Time: 07:03 pm

FIG. 4J

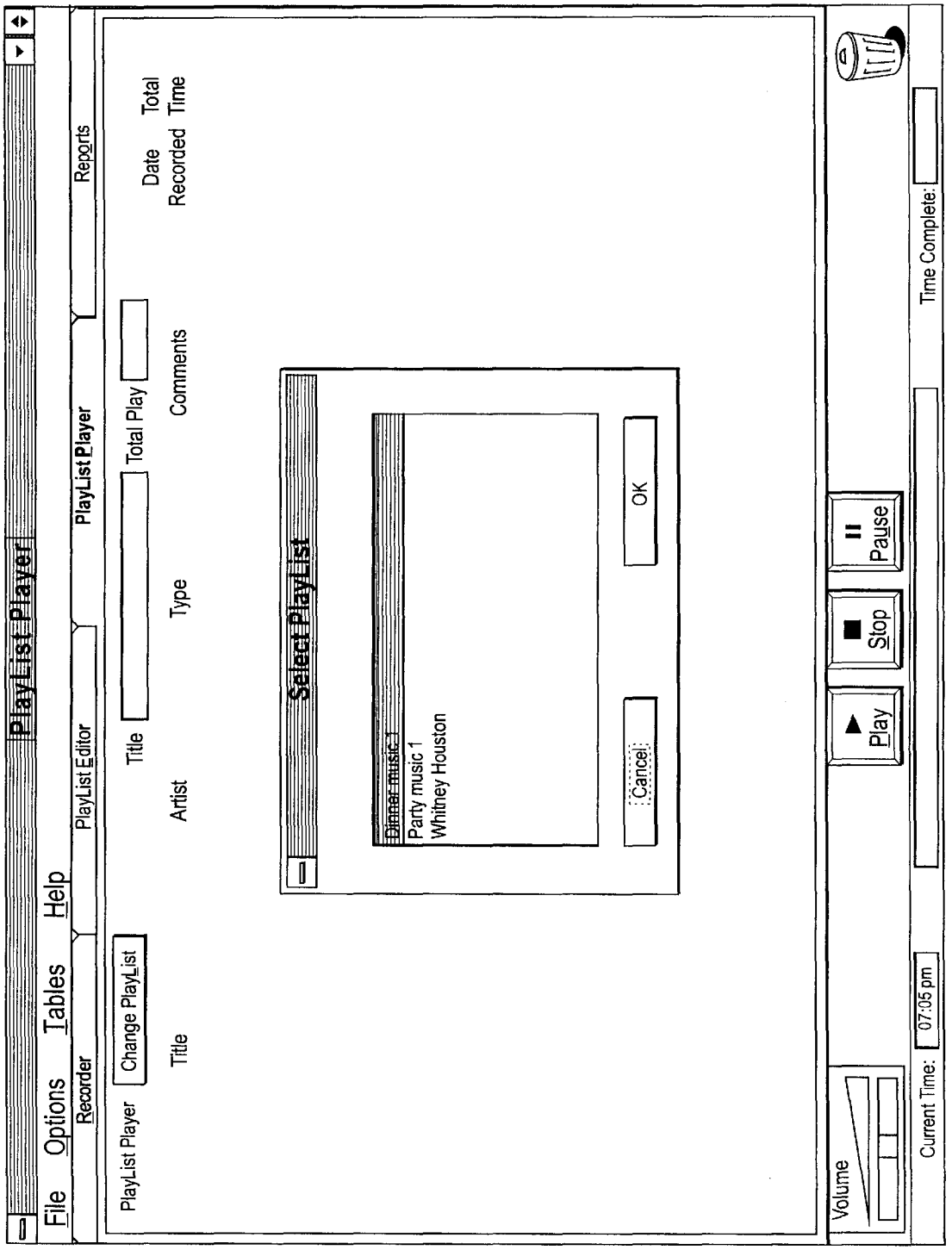
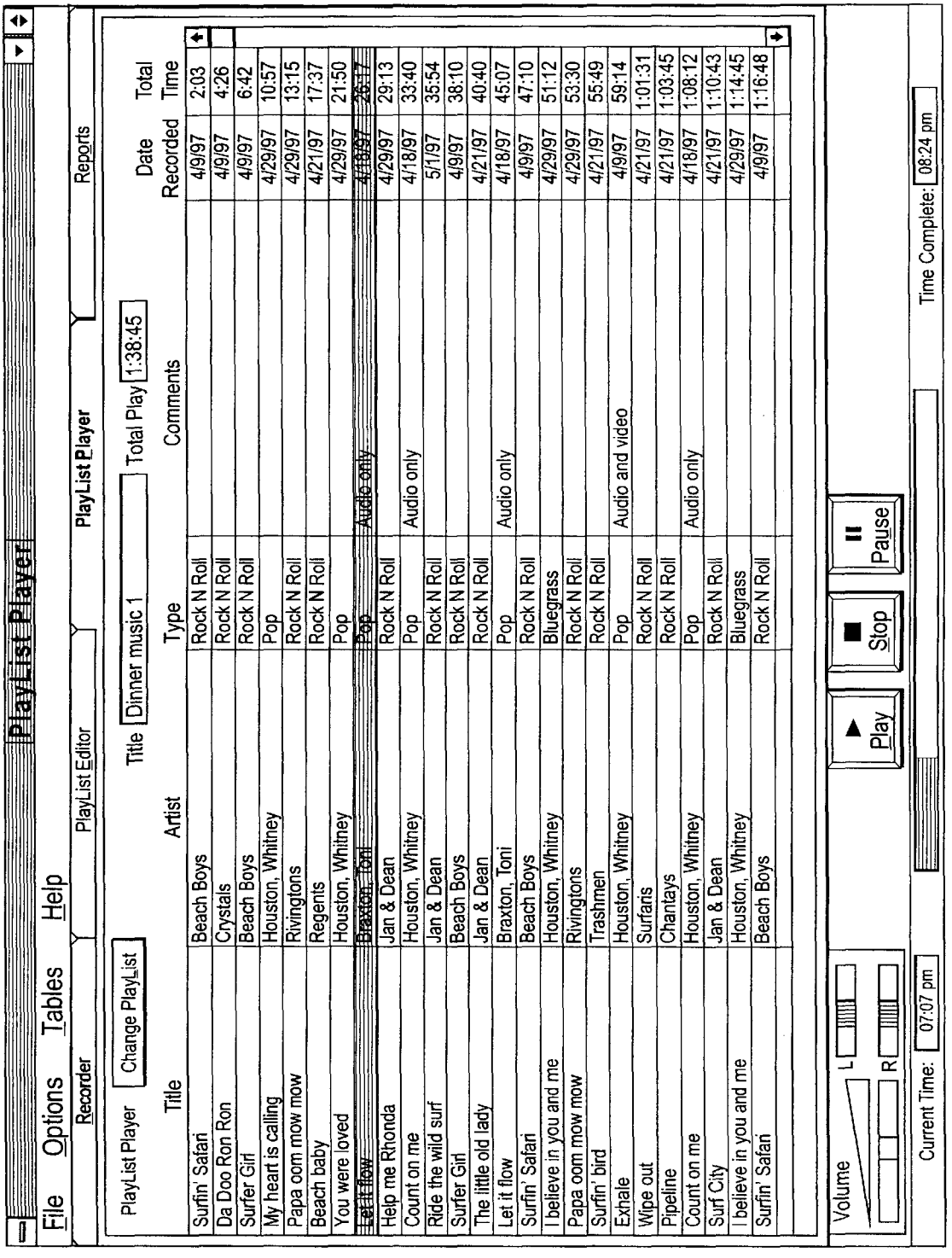

PlayList Player
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
PlayList Player
Change PlayList
Title
Artist
Title
Type
Total Play
Comments
Date Recorded
Total Time
Select PlayList
Dinner music 1
Party music 1
Whitney Houston
Cancel
OK
Play
Stop
Pause
Volume
Current Time:
07:05 pm
Time Complete:

FIG. 4K


PlayList Player
File Options Tables Help
Recorder
PlayList Editor
PlayList Player
Reports
PlayList Player
Change PlayList
Title
Dinner music 1
Total Play 1:38:45
Title
Artist
Type
Comments
Date Recorded
Total Time
Surfin' Safari Beach Boys Rock N Roll 4/9/97 2:03
Da Doo Ron Ron Crystals Rock N Roll 4/9/97 4:26
Surfer Girl Beach Boys Rock N Roll 4/9/97 6:42
My heart is calling Houston, Whitney Pop 4/29/97 10:57
Papa oom mow mow Rivingtons Rock N Roll 4/29/97 13:15
Beach baby Regents Rock N Roll 4/21/97 17:37
You were loved Houston, Whitney Pop 4/29/97 21:50
Let it flow Braxton, Toni Pop Audio only 4/18/97 26:17
Help me Rhonda Jan & Dean Rock N Roll 4/29/97 29:13
Count on me Houston, Whitney Pop Audio only 4/18/97 33:40
Ride the wild surf Jan & Dean Rock N Roll 5/1/97 35:54
Surfer Girl Beach Boys Rock N Roll 4/9/97 38:10
The little old lady Jan & Dean Rock N Roll 4/21/97 40:40
Let it flow Braxton, Toni Pop Audio only 4/18/97 45:07
Surfin' Safari Beach Boys Rock N Roll 4/9/97 47:10
I believe in you and me Houston, Whitney Bluegrass 4/29/97 51:12
Papa oom mow mow Rivingtons Rock N Roll 4/29/97 53:30
Surfin' bird Trashmen Rock N Roll 4/21/97 55:49
Exhale Houston, Whitney Pop Audio and video 4/9/97 59:14
Wipe out Surfaris Rock N Roll 4/21/97 1:01:31
Pipeline Chantays Rock N Roll 4/21/97 1:03:45
Count on me Houston, Whitney Pop Audio only 4/18/97 1:08:12
Surf City Jan & Dean Rock N Roll 4/21/97 1:10:43
I believe in you and me Houston, Whitney Bluegrass 4/29/97 1:14:45
Surfin' Safari Beach Boys Rock N Roll 4/9/97 1:16:48
Volume
L
R
Play
Stop
Pause
Current Time: 07:07 pm
Time Complete: 08:24 pm

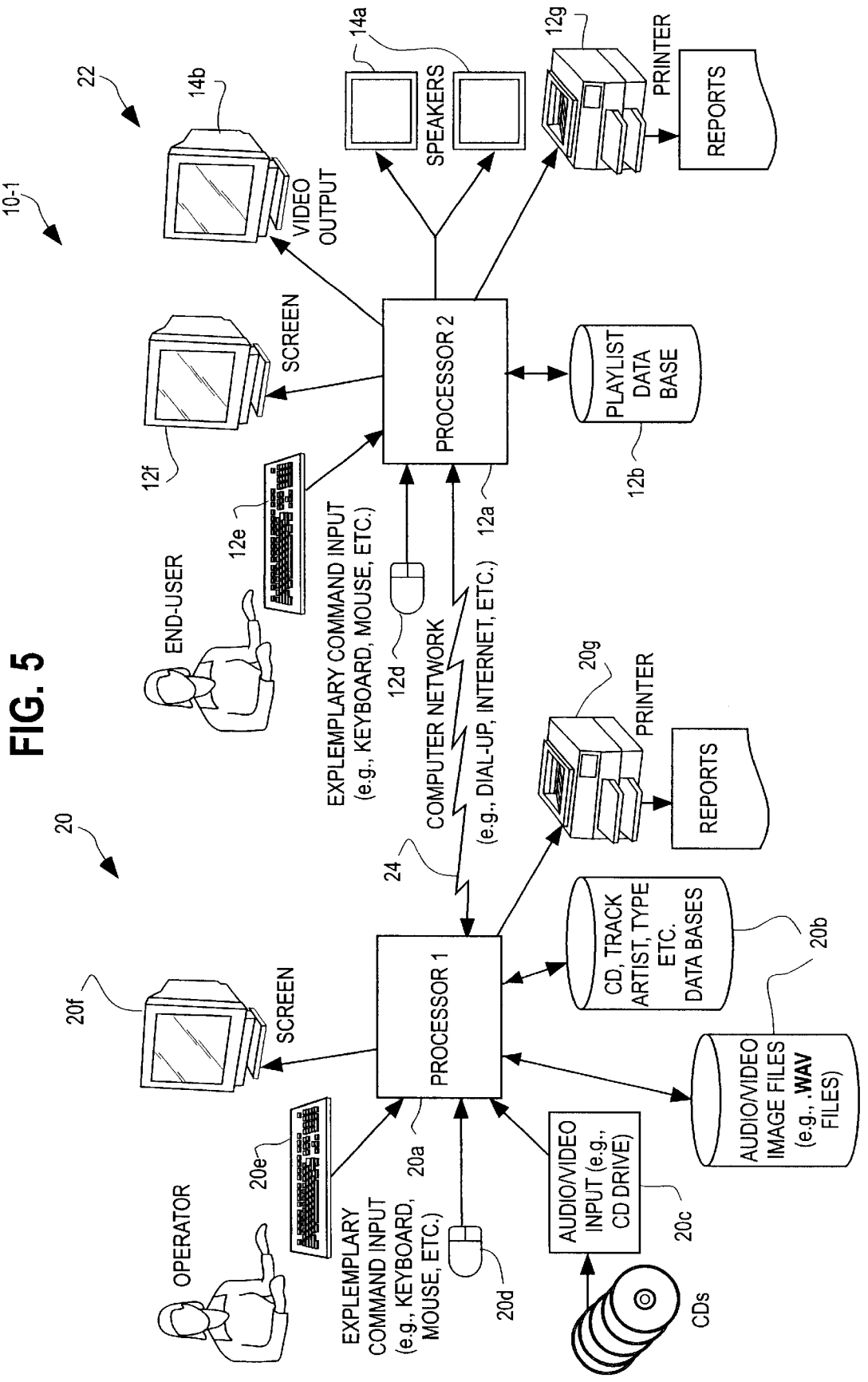

10-1
22
14b
VIDEO OUTPUT
14a
SPEAKERS
12g
PRINTER
REPORTS
SCREEN
12f
PROCESSOR 2
PLAYLIST DATA BASE
12b
END-USER
12e
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
12d
COMPUTER NETWORK (e.g., DIAL-UP, INTERNET, ETC.)
12a
20g
PRINTER
REPORTS
20
24
20f
SCREEN
PROCESSOR 1
CD, TRACK ARTIST, TYPE ETC. DATA BASES
20b
AUDIO/VIDEO IMAGE FILES (e.g., .WAV FILES)
OPERATOR
20e
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
20a
20d
AUDIO/VIDEO INPUT (e.g., CD DRIVE)
20c
CDs

FIG. 5

FIG. 6

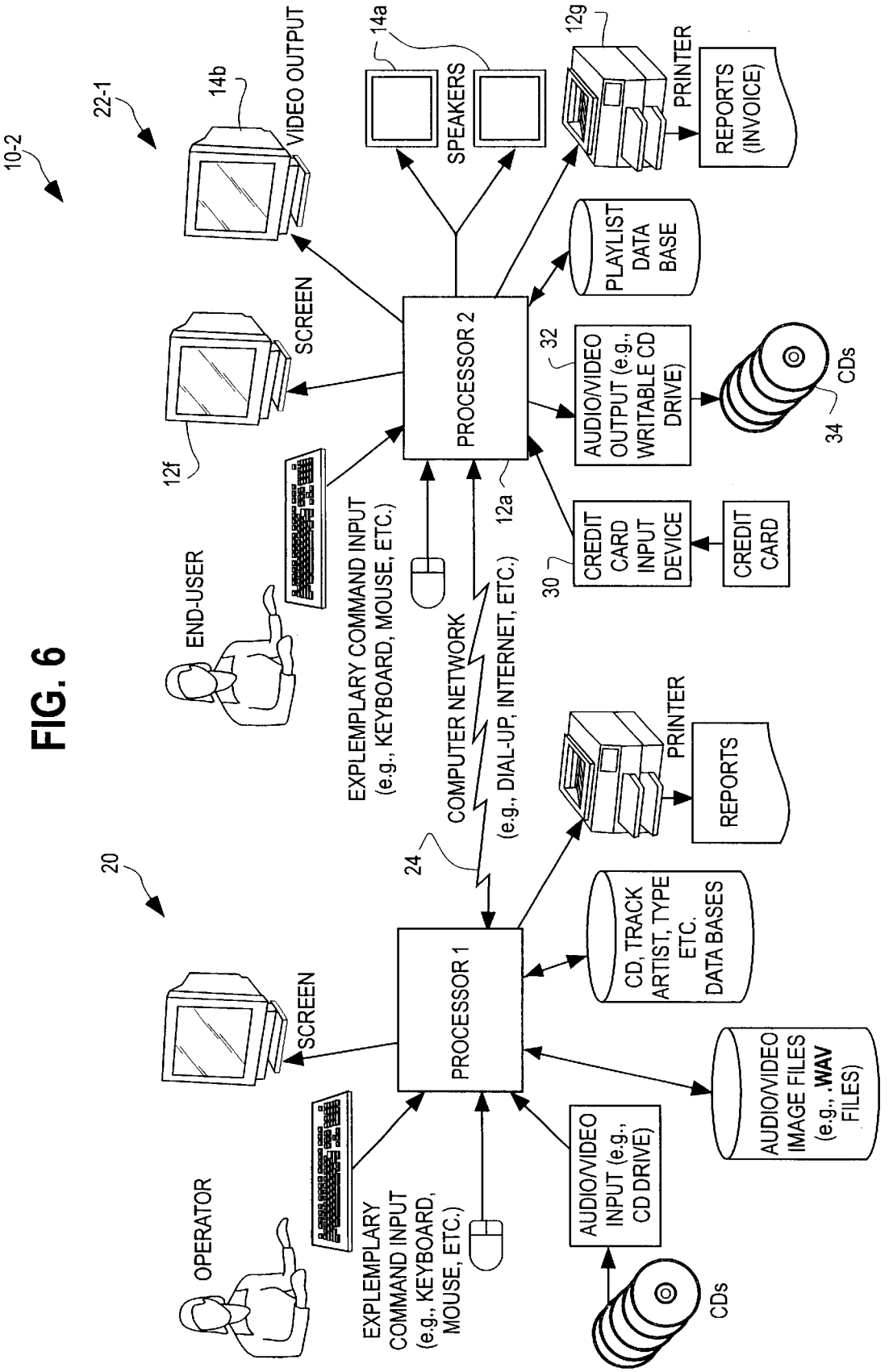
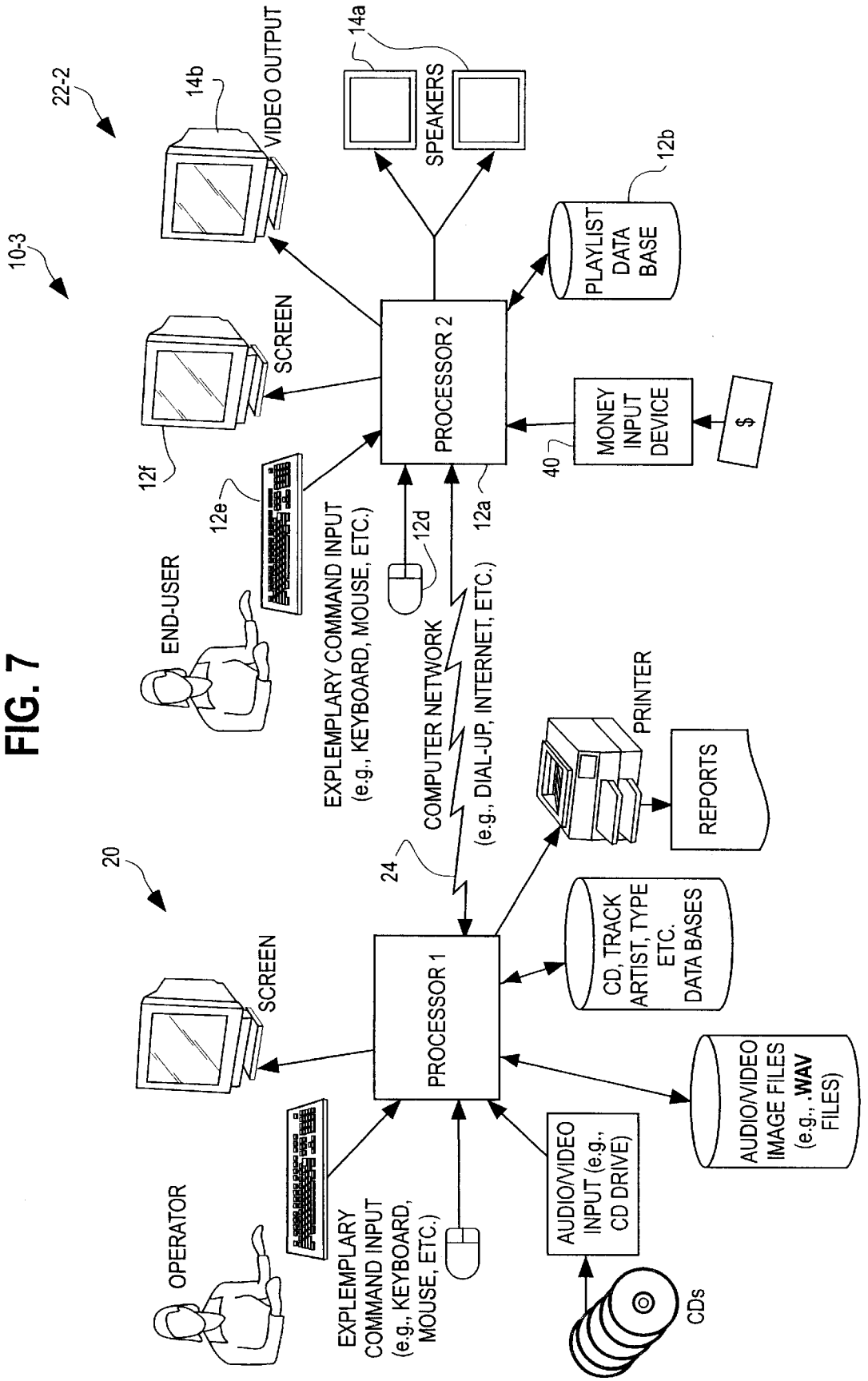

10-2
22-1
14b
VIDEO OUTPUT
14a
SPEAKERS
12g
PRINTER
REPORTS (INVOICE)
SCREEN
12f
PROCESSOR 2
PLAYLIST DATA BASE
32
AUDIO/VIDEO OUTPUT (e.g., WRITABLE CD DRIVE)
CDs
34
END-USER
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
12a
CREDIT CARD INPUT DEVICE
30
CREDIT CARD
COMPUTER NETWORK
(e.g., DIAL-UP, INTERNET, ETC.)
PRINTER
REPORTS
20
24
SCREEN
PROCESSOR 1
CD, TRACK ARTIST, TYPE ETC. DATA BASES
AUDIO/VIDEO IMAGE FILES (e.g., .WAV FILES)
OPERATOR
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
AUDIO/VIDEO INPUT (e.g., CD DRIVE)
CDs

FIG. 7


22-2
14b
VIDEO OUTPUT
14a
SPEAKERS
10-3
12b
PLAYLIST DATA BASE
SCREEN
PROCESSOR 2
12f
12e
12d
12a
40
MONEY INPUT DEVICE
$
END-USER
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
COMPUTER NETWORK (e.g., DIAL-UP, INTERNET, ETC.)
PRINTER
REPORTS
20
24
SCREEN
PROCESSOR 1
CD, TRACK ARTIST, TYPE ETC. DATA BASES
AUDIO/VIDEO IMAGE FILES (e.g., .WAV FILES)
OPERATOR
EXPLEMPLARY COMMAND INPUT (e.g., KEYBOARD, MOUSE, ETC.)
AUDIO/VIDEO INPUT (e.g., CD DRIVE)
CDs

LIST BUILDING SYSTEM

This is a continuation of U.S. patent application Ser. No. 08/859,995, filed May 21, 1997, now U.S. Pat. No. 6,243,725 entitled List Building System.

FIELD OF THE INVENTION

The invention pertains to software driven systems and methods for developing audio/video sequences. More particularly, the invention pertains to such system and methods wherein a user can create an editable list of works which can be presented.

BACKGROUND OF THE INVENTION

With the advent of CDs a wide variety of music, music videos or video sequences are conveniently available for a user in a non-analog, digital format. The advantages of digital recording of both audio and video have been recognized and are to a great extent realized with the ready availability of pre-recorded CDs.

While convenient, pre-recorded CDs present a problem to a user in that while it is possible to select sequentially between the pre-recorded works on a given CD, to switch to another artist or group it is necessary to have multiple drives available or to remove one CD and insert another at the appropriate time. While possible, such arrangements are at the very least inconvenient. In addition, because of the delays inherent in switching from one CD to another, the audio or video output might be lost for an undesirably long period of time thereby detracting from the ambiance afforded by the performance. In addition, listeners at times are only interested in one or two of the tracks on a CD in a given situation.

There thus continues to be a need for systems and methods which will make it possible to combine works by a variety of performers or artists in a relatively arbitrary fashion and to present those works in a given sequence in a fashion that is convenient but which at the same time is cost effective. It would also be desirable to be able to use widely available personal computers as control elements in such systems.

SUMMARY OF THE INVENTION

A system and a method of arranging media elements for later replay make it possible to create new sequential presentations of the elements. The elements can be obtained from a local medium such as a CD, or a video tape. Alternately, the elements can be obtained from a remote location via wired or wireless transmission. Elements can include audio works such as music or audio/visual works including advertisements, music videos or other types of elements.

The elements can be stored on a readable digital storage medium. Some or all of the elements can be played back or performed individually.

A collection of separate elements can be identified and arranged. One form of arrangement is a list. Another is a non-linear tree-like arrangement.

The collection can be played back or performed sequentially as specified in a list. Alternately, the elements can be performed interactively as specified in a tree. In this embodiment, tree nodes represent decision points for a viewer or a listener.

A graphically-oriented editor is provided for building or editing lists or trees. The lists or trees can be stored and

subsequently retrieved for editing or performing the collected media elements.

Output can, in one aspect, be an audible or a visible performance of the elements in accordance with a selected list or tree. In another aspect, the collection can be written to a medium. Hence, a CD or other digital medium can be written, or audio or video tapes can be recorded. The output medium is not a limitation of the invention.

In yet another aspect, a system incorporating a card reader or a vending unit can be used to build a list of elements. In this instance an appropriate credit needs to be established before an element can be added to an on-going collection being performed.

Subsequent to a credit being established and a selection or selections made in accordance with the credit, elements can be added to the list and performed. Elements can be exclusively audio. Alternately, elements can include both audio and video components without limitation.

In yet another aspect, the method includes building a list of media elements which can come from a variety of sources. Preferably, the media elements are storable in a digital format.

Subsequently, the list can be reviewed visually by a user and either modified or edited for the purpose of creating a sequence of media elements to be replayed or presented. Subsequently, the list is executed and the elements are either presented audibly or visually or both in accordance with their characteristics.

In a further aspect, a digitized inventory of media elements can be created by either reading a local digital medium, such as a CD ROM or by receiving, via wireless transmission, digitized sequence of works which can then be stored in the inventory. If desired, the user can preview some or all of any element in the inventory.

Numerous other advantages and features of the present invention will become readily apparent from the following detailed description of the invention and the embodiments thereof, from the claims and from the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an overall flow diagram of a method in accordance with the present invention;

FIG. **2** is a block diagram of a system useable for practicing the method of FIG. **1**;

FIGS. **3**A through **3**P taken together illustrate a flow diagram of a control program useable with the system of FIG. **2**;

FIGS. **4**A through **4**K illustrate various screens presentable by the control program illustrated in FIGS. **3**A through **3**P;

FIG. **5** is a block diagram of a system intended to receive audio or visual works from a remote source;

FIG. **6** is a diagram of a system intended to provide a custom written medium of works obtained from a remote source and in response to establishing a predetermined credit; and

FIG. **7** is a diagram illustrating a system for presenting works on demand from either a local or a remote source.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

While this invention is susceptible of embodiment in many different forms, there are shown in the drawing and

will be described herein in detail specific embodiments thereof with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the specific embodiments illustrated.

Systems and methods which embody the present invention enable the user to acquire, for example, digitized audio or audio and video works, which are of interest and which are to be represented either in real time as an audio or an audio/visual work or to be written onto a digital storage medium as part of a sequence selected by the user. Functional capability is provided enabling the user to create one or more composite play or presentation lists which incorporate a plurality of titles or designations of the works in a user selected order. The works could come from a variety of different sources and could include other types of sensory outputs without limitation.

As part of the list preparation process, the user can listen to or view some or all of any of the works. A new list can be graphically created. An existing list can be edited to revise existing works identified in the list, change the order of presentation or to add new ones. Subsequently, the list can be executed and the works performed.

Execution of the list will present the works in the determined sequential order audibly or visually and audibly depending on the nature of the work. Alternately, the works represented on the list can be written to a digital storage medium, such as a CD or DVD for subsequent presentation.

FIG. **1** illustrates steps of a method **10** for preparing executable playlists in accordance with one aspect of the invention. In an initial step, selected audio or video elements can be loaded into a digital database, a media inventory, for review and subsequent presentation. Media elements can be obtained from locally played sources or by wireless signals received from a remote source, such as via an antenna, which are demodulated and stored in digital form in the media inventory.

In the next step, a plurality of playlists can be created by graphically selecting media elements to be entered into a selected list from the inventory. As part of the step, one or more playlist records can be built and stored.

In a subsequent step, the lists in the playlist database can be viewed and various reports concerning the subject list can be created.

In a subsequent step, one or more of the lists can be graphically edited thereupon rearranging items in a list, adding items or deleting items as desired.

Finally, a particular list can be selected and executed. Audio works are presented sequentially, in accordance with the selected list, via audio output transducers, typically speakers. Video works or audio/video works or presented in accordance with the selected list on a video display in combination with speakers.

If desired, a selected list or lists can be written to a storage medium such as a CD ROM for later use. If desired, the associated media elements can also be written on to the medium.

A variety of services can be provided to a user while carrying out the steps of the method **10**. Analysis can be conducted of the characteristics of various works. For example, beats per minute can be determined and audio works can be sorted accordingly. A list or lists can be created in accordance with a pre-selected tempo or beats per minute.

Sorting or selecting based on other features of audio or video characteristics of the works can also be included. Presentations via a selected list can be controlled based on selected features.

For record keeping purposes, the number of times a given media element is presented or executed can be logged along with date and time information. Reports reflecting any lists created based on any of the above selection features or characteristics can also be printed for invoicing, billing or royalty payment purposes.

FIG. **2** illustrates in block diagram form a system **10'** for implementing the method **10** of FIG. **1**. The system **10'** incorporates a programmable processor **12***a*, for example, a personal computer of a selected variety. Coupled to the processor **12***a* is a mass digital storage medium **12***b*, such as a hard disk drive for storage of various databases and programs.

Coupled to the processor **12***a* is a source of digitized audio or audio/visual input signals such as a CD ROM drive **12***c*. Media elements or works can also be received wirelessly. Also coupled to the processor **12***a* are user input devices such as a mouse **12***d* and a keyboard **12***e*. Other input devices could also be used without limitation.

Output devices include a display screen **12***f* of a type conventionally used with programmable processors to present visual display of ongoing programs being executed to the user. A printer **12***g* is available to provide reports.

Audio and video output devices for media elements include speakers **14***a* and video output device **14***b* which can be of a size and quality suitable for the type of works being displayed. Other output devices could also be used.

The hardware components of the system **10'** interact in accordance with the user inputs and under the control of a control program **16** stored in one of the storage devices **12***b*. The control program **16** includes pre-created commands for carrying out the method **10** illustrated in FIG. **1**.

The control program **16** is described in a set of flow diagrams illustrated in FIGS. **3**A . . . **3**M. FIGS. **4**A–**4**K illustrate various exemplary displays presented on the display unit **12***f* while the control program **16** is executing.

FIG. **3**A illustrates the initial steps in reading a source of digitized works, such as a CD and in selecting either the record sequence, FIGS. **3**B, **3**C, and **3**D, the list player sequence FIGS. **3**H and **3**I, or the playlist editor sequence FIGS. **3**E, **3**F and **3**G. In step **100** a determination is made if a CD is present in the drive **12***c*. If so, the program **16** initiates record steps illustrated in FIGS. **3**B, **3**C and **3**D. If not, the playlist master database is checked in a step **101**. If playlists had previously been created, the playlist screen sequence is executed, FIGS. **3**H and **3**I in step **102**. Alternately the editor sequence can be entered, FIGS. **3**E, **3**F and **3**G in step **103**.

With respect to the record sequence FIG. **3**B, during the process of recording information off of the respective CD, in a step **110** an initial screen, FIG. **4**A is displayed. If the processor **12***a* determines in a step **112** that a CD is not present, then a CD missing display, FIG. **4**B is presented in a step **113**.

In the event that a CD is present, in a step **114**, information will be read off of it as to track numbers and play times and displayed in a step **116** as in FIG. **4**C. In a step **118**, the master CD database is checked and if a corresponding record is found, in a step **120** the name of the CD is displayed, as indicated in FIG. **4**C. Where tracks off of the respective CD had been previously recorded, in step **122**, that information will be retrieved from the track database and displayed also as illustrated in FIG. **4**C. The length of

each track, recording date, title artist and type of work all can be displayed.

With respect to FIGS. **3**C and **3**D, in a step **124** the control program **16** determines whether or not the user has selected a track to play. If so, the selected track is played in a step **126**. If desired, as illustrated in a step **126***a* characteristics of the work such as beats per minute can be computed and displayed for the user.

In a step **128**, the control program **16** checks to determine whether or not the user requested restart of a work at a specified point. If not the system determines in a step **130** if the user has selected one or more tracks to be recorded. If so, in a step **132**, selected tracks are recorded.

The system control program **16** also determines whether or not the user has requested a deletion in a step **134** or requested that a new CD be loaded in a step **136**, select options in a step **138**, a tables function in a step **140** or an exit function in a step **142**. In each of steps **136**, **138**, **140** and **142**, the requested respective procedure is carried out.

Where a user has selected the edit screen, illustrated in FIGS. **3**E, **3**F and **3**G, one or more pre-existing playlists can be retrieved and edited. In a step **150**, a playlist selection menu is displayable by the control program **16**, in accordance with FIG. **4**F. Using the selection menu a particular playlist can be selected and the detail retrieved in a step **152** for the selected playlist. The selected playlist can be displayed for editing as illustrated in FIG. **4**G in a step **154**. For the convenience of the user, the editor screen, FIG. **4**G, illustrates in an upper section, an inventory list of available works currently in inventory which can be selected and entered into the destination playlist, in the lower portion of the display illustrated on FIG. **4**G.

As illustrated in FIG. **3**F, in a step **160**, a user can edit or revise selections or the sequence of selections in the subject list using an editor selection screen as illustrated in FIG. **4**H. In the event that the user requested a change in the play sequence in a step **162**, an update procedure is executed in a step **164** corresponding to FIG. **3**D and FIG. **41**. It will be understood that standard editing-type functions will be available to the user as would be known to those of skill in the art.

In a step **166** the user can request that a particular selected work be played or presented. The works can be restarted in a step **168** at a particular point.

The user can insert a work or a song in playlist in a step **170**. With respect to FIG. **3**G, a work or song can be moved within the playlist in a step **172**. A particular song or work can be removed from the selected playlist in a step **174**. The entire playlist can be deleted in a step **176**.

In the event that the user desires to select a particular playlist for execution, in a step **102**, FIG. **3**A, the playlist master database is read in a step **200**, FIG. **3**H. The playlist player selection menu FIG. **4**J is displayed in a step **202**. If the user selects a playlist in a step **204**, the playlist detail is read from the appropriate database in a step **206**. The selected playlist is then displayed, FIG. **4**K, in a step **208**.

With respect to FIG. **3**I, the user can exit the player screen sequence or can request execution of the playlist in a step **210** at the beginning of the list or at a specified work or song. The list is then executed in a step **212**.

In the event that one or more reports are to be created using the printer **12***g*,the process of FIG. **3**J can be used to request reports as to existing playlists in a step **230**. Alternately, the user can request a report of the existing inventory of media elements in a step **232**.

Screen selection is carried out in accordance with the process illustrated in FIG. **3**K. Updating of data from the record screen is carried out in a process illustrated in FIG. **3**L.

FIG. **3**M illustrates steps associated with carrying out requests for various optional functions. For example, in a step **240** an option screen, FIG. **4**D, can be displayed for a user.

The user can subsequently in a step **242** change the record options. In the event that the user in a step **244** selects a record directory, the record directory screen FIG. **4**E can be displayed in a step **246**. The displayed screen can be altered by the user in a step **248**. The revised record options can be stored in a step **250** for subsequent use.

FIG. **3**N illustrates steps of a process wherein the user is able to select and display various tables. In a step **260** an artist table can be displayed and edited in a step **262**. In a step **266** the type table can be displayed and edited in a step **268**. In a step **270**, the CD table can be displayed and edited in a step **272**. The track table can be displayed in a step **276** and edited in a step **278**.

FIG. **30** illustrates the steps in a process of saving the playlist screen, FIG. **4**I. In a step **290** the playlist save screen is displayed. In a step **292**, if the user has selected to save the existing playlist, the changes are written to the respective database in a step **294**. If the user elected to save the new playlist in a step **296**, the changes are written to the new playlist database in a step **298**. Finally, the user can discard the changes and exit in a step **300**.

FIG. **3**P illustrates the steps of a procedure for deleting a selected work or track.

Hence, as described above, the system **10'** can be used to create new or modified playlists, and execute same thereby presenting the sequence of works to a user. Alternately, pre-existing playlists can be edited and additional new playlists created which then subsequently be executed.

Those of skill in the art will understand that other functions as illustrated in FIGS. **3**A–**3**P will also be provided by the control program **16**. Attached hereto is a preferred data structure for use with the flow diagrams of FIGS. **3**A–**3**P.

FIGS. **5** through **7** illustrate alternate types of list building systems. FIG. **5** illustrates a system **10-1** which is a network based playlist creating and executing system. The system **10-1** incorporates a remote source **20** of works which are to be assembled and played or presented at a user's unit or terminal **22**. The unit **20** is intended to be an element or a location accessible via a network. For example, the unit **20** can be a location on an internet or the internet or any other network. It can be accessed via a land line or wireless communication link **24** without limitation.

The system **20** incorporates a processor **20***a*, and databases **20***b*. The databases **20***b* include stored digital representations of a variety of works which can be obtained off of local drives, such as the drive **20***c* without limitation. The remote system operator has available standard input control devices such as mouse **20***d*, keyboard **20***e* or other desired input devices. A display screen **20***f* of the conventional variety is also provided. The remote system **20** also includes an optional printer **20***g* for purposes of creating hard copy reports for invoicing, billing or royalty payment purposes without limitation.

The system **20** provides a remote pre-stored inventory which the unit **22** can access via communication link **24**. The unit **20** provides supervisory and billing services in response to requests by the end user's unit **22** for access to one or more of the works stored in the inventory in the databases **20***b*.

Subsequent to the request being authorized, the selected works can be made available to the terminal **22** via the communication link **24**. The unit **22** can in turn be used as described previously to create new playlists, edit existing lists and then execute the lists under the control of the local end user. The terminal **22** is especially convenient for the end user in that the works can all be acquired electronically and there is absolutely no need for acquiring and keeping a plurality of CDs.

If desired, processor **12***a* in system **10-1** can keep track of the number of plays and total play time and transmit that information to processor **20***a*, for billing purposes. Reports producible by the processor **20***a* include total plays and play time along with invoices for end users. Documentation for royalty payments to the appropriate recipients can also be created. Finally, the reports can list those works by demand or popularity by day, week or month.

FIG. **6** illustrates a system **10-2** which includes a remote source, such as the remote source **20** and a local terminal **22-1**. Terminal **22-1** includes elements similar to the terminal **22** previously discussed. Corresponding elements are identified with the same identification numeral.

The terminal **22-1** additionally includes a credit establishing input such as a credit card reader **30**. The reader **30** can be used by a user to make a credit card account number available to the terminal **22-1** for billing purposes.

Once a credit line has been established, the user will be able to use the terminal **22-1** to create and/or modify one or more playlists into write the selected media elements via an output drive **32** to a removable medium **34** which could be a CD or a DVD.

The terminal **10-2** could be located in a business establishment and users interested in obtaining a custom combination of works can access the services of the terminal **22-1** via the reader **30** for purposes of creating and writing the desired sequence of works on the medium **34**. Other services made available by the terminal **22** can also be made available by the terminal **22-1** in response to the established credit line.

Additional services that can be made available by the terminal **22-1** include printing invoices via the printer **12***g*. Report information can be transmitted to the system **20** for billing purposes with respect to the commercial establishment where the terminal **22-1** is located as well as making royalty payments to appropriate recipients.

FIG. **7** illustrates an alternate system **10-3** which can be used for entertainment purposes in public establishments. The system **10-3** provides jukebox-like services at the terminal **22-2**. These are under the supervision and control of remote system **20**.

The terminal **22-2** includes a credit establishing device which could be a coin or a bill receiving unit **40** of a type used with vending machines. Alternately, the unit **40** could also accept credit cards if desired.

Upon establishing an appropriate credit via the unit **40**, the terminal **22-2** enables a user to select one or more works whose titles might be displayed on the control screen **12***f* via the input devices **12***d*, **12***e*.

The selected works could be resident at the local database **12***b* or could be acquired from the remote unit **20** via the communication link as discussed previously. The system **22-2**, unlike conventional jukeboxes, has an unlimited selection of audio or audio/video works available to it via communication link **24**. In addition, for security purposes, the terminal **22-2** does not include an inventory of valuable CD or DVD media. The works could include audio works, such as music, audio/visual works such as advertisements, music videos or others.

The terminal **22-2** presents a rolling playlist on the screen **12***f* which can be reviewed by the end user or individual selecting the works to be presented. Newly selected or identified works are added at the end of the playlist and are presented via speakers **12***a* and video output **12***b* in sequence depending on the nature of the work. Hence, the terminal **22-2** makes possible the presentation of arbitrarily selected works, in an arbitrary order in response to the credit established by the unit **40**.

The remote system **20** via the link **24** monitors the works being presented and the frequency thereof. Billing information can be generated for purposes of charging the entity where the terminal **22-2** is located for each work which is presented. Reports can be produced at the system **20** identifying royalties to be paid to the appropriate recipients based on the works selected for presentation at the terminal **22-2** or for any other desired purpose. It will be understood that the appropriate file type would be used with the appropriate type of work.

From the foregoing, it will be observed that numerous variations and modifications may be effected without departing from the spirit and scope of the invention. It is to be understood that no limitation with respect to the specific apparatus illustrated herein is intended or should be inferred. It is, of course, intended to cover by the appended claims all such modifications as fall within the scope of the claims.

DATA STRUCTURE

Table	Field Name	Data Type	
Master	CD Number	Long Integer	Created by the track times
CD	CD Title	Text 50	
Track	CD Number	Long Integer	Link to Master CD table
	Track	Byte	Track number found on the CD
	Artist Code	Integer	Link to the Artist table
	Type Code	Long Integer	Link to the Type table
	Track Title	Text 50	
	Track Time	Long Integer	Actual time recorded in seconds
	File Name	Text 255	Path/File Name of stored WAV file
	Beats	Integer	Beats per minute
Playlist	Number	Counter	Database assigned key
Master	Title	Text 50	
Playlist	Number	Integer	Link to Playlist table
Detail	Play Order	Integer	Order the track was placed within the playbook
	CD Number	Long Integer	Link to Track table
	Track	Byte	Link to Track table
Artist	Artist Code	Counter	Database assigned Artist index
	Artist Name	Text 255	
Type	Type Code	Counter	Program assigned index to Music Type
	Music Type	Text 50	

What is claimed:

1. A system for creating a list of selected works comprising:

a source of works which may include at least in part, an audio component;

a visual output device;

circuitry, coupled to the source and the output device, including executable instructions for building a displayable inventory of works and for creating and displaying an executable play list of works on the output device, including at least some of the works in the

inventory, at the same time that a portion of the inventory is being displayed; and

additional instructions for creating an editing command overlay for editing the displayed list of works.

2. A system as in claim **1** which includes an output device coupled to the building circuitry for presenting the works on the play list to the output device.

3. A system as in claim **2** which includes a device for storage of digital representations of a plurality of works.

4. A system as in claim **3** which includes circuitry for presenting the works on a selected, edited list to one of an audio output device or a video output device.

5. A system as in claim **4** wherein the circuitry includes a programmable processor.

6. A system as in claim **3** which includes instructions for conducting analysis of the characteristics of works on a selected list.

7. A system as in claim **6** which includes executable instructions for sorting works in accordance with a pre-selected parameter.

8. A system as in claim **7** which includes instructions to present works, sorted in accordance with the pre-selected parameter, to the output device.

9. A system as in claim **3** which includes instructions establishing information pertaining to at least one of invoicing, royalty paying, demand analysis, or, popularity of selected works.

10. A system as in claim **3** which includes instructions to download a work on a selected play list wherein the work is not available locally.

11. A system for creating a list of selected titles comprising:

a source of works which may include, at least in part, an audio component;

a visual output device;

circuitry, coupled to the source and the output device, for building an inventory list of works and for creating a displayable list of works of at least some of the inventory on the output device wherein the circuitry includes instructions for selecting works to be included in the displayable list in accordance with a selected characteristic, and, for executing a plurality of such selected works.

12. A system as in claim **11** which includes executable instructions for selecting works to be included in the displayable list in accordance with one of a selected audio characteristic, a selected video characteristic, or a selected popularity indicium.

13. A system as in claim **12** which includes circuitry for editing a selected list.

14. A system as in claim **13** which includes instructions for displaying at least part of the inventory list simultaneously with displaying at least part of the edited list.

15. A system as in claim **14** which includes instructions for downloading a work not locally available.

16. A system as in claim **14** which includes instructions for presenting downloaded advertisements.

17. A system as in claim **14** which includes instructions for establishing at least one of royalty payments, or, billing information.

18. A system as in clam **17** which includes instructions for downloading a work not locally available.

19. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating at least one play list; and

executable instructions for presenting works on the at least one play list and for maintaining information pertaining to royalty payments for at least some of the presented works.

20. A system as in claim **19** which includes additional instructions for maintaining information as to popularity of various presented works.

21. A system as in claim **19** which includes instructions for presenting advertisements.

22. A system as in claim **19** which includes executable instructions for maintaining the source, at least in part, locally.

23. A system as in claim **19** which includes executable instructions for obtaining, from a remote source, selected works not locally available.

24. A system as in claim **23** which includes executable instructions for visually presenting at least one play list.

25. A system as in claim **24** which includes executable instructions for simultaneously displaying at least part of an inventory of works and at least part of a selected play list.

26. A system as in claim **24** which includes instructions for creating and storing a plurality of different play lists.

27. A system as in claim **19** which includes executable instructions for selecting a plurality of works in accordance with a predetermined performance parameter.

28. A system as in claim **27** wherein the executable instructions select works in accordance with pre-specified beats per time interval.

29. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating and storing multiple play lists;

executable instructions for executing a selected play list and for maintaining popularity information pertaining to works from at least one executed play list, which includes executable instruction whereby works are selected in accordance with pre-established criterion; and

wherein the criterion corresponds to beats per unit time and the executable instructions select works in accordance therewith.

30. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating and storing multiple play lists;

executable instructions for executing a selected play list and for displaying advertisements, which includes instructions for selecting works in accordance with a predetermined criterion; and wherein the criterion corresponds to beats per unit time and the executable instructions select works in accordance therewith.

31. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating at least one play list by selecting works in accordance with a predetermined criterion; and

executable instructions for executing the play list and for maintaining information pertaining to at least one of billing information; royalty payments and popularity of works.

32. A system comprising:

first software executable at least in part at a user station enabling a user to create a plurality of play lists of multiple works; and

second software executable at least in part at the user station for downloading at least some of the works on a selected play list, via a communications network available at least intermittently, from a remote source, to the user station.

33. A system as in claim **32** wherein at least some of the works on the list are presented at the user station at substantially the same time they are downloaded.

34. A system as in claim **32** wherein at least some of the works on the list are downloaded each time they are presented on the user station.

35. A system as in claim **32** wherein at least one work on the list is downloaded after determining that the work is not available at the user station.

36. A system as in claim **32** wherein works available at the user station may be included on the list.

37. A system as in claim **32** which includes collection software to collect information used for royalty-related payments that result from presenting works on the list, wherein the software is located, at least in part, at one of the user station or the remote source.

38. A system as in claim **32** which includes collection software to collect information used to keep track of the popularity of at least some of the presented works, wherein the software is located, at least in part, at one of the user station or the remote source.

39. A system as in claim **32** wherein the user station graphically displays simultaneously at least some of an inventory of available works at the remote source and at least a part of the list.

40. A system as in claim **39** which includes control software enabling a local user to select works from the remote inventory for insertion in the list, wherein the software is located, at least in part, at one of the user station or the remote source.

41. A system as in claim **32** which includes control software enabling a local user to sort at least some works in a remote inventory based on user specified selected characteristics of the works and view a screen containing at least some of the sorted works, wherein the control software is located, at least in part, at one of the user station or the remote source.

42. A system as in claim **32** which includes control software enabling a local user to restrict the works displayed from a remote inventory based on user specified selected characteristics of the works and view a screen containing at least some of the selected works, wherein the control software is located, at least in part, at one of the user station or the remote source.

43. A system as in claim **32** which includes software for controlling a media writing device, coupled to the user station, whereby selected works on the list can be written to a removable medium after the works are downloaded.

44. A system as in claim **32** which includes software for controlling a media writing device, coupled to the user station, whereby selected works on the list can be written to a removable medium at substantially the same time the works are downloaded.

45. A system as in claim **32** which includes software enabling a user to preview at least a part of a work, wherein the software is located, at least in part, at one of the user station or the remote source and, wherein the work to be previewed is one of, on the list, or, in an inventory of works at the remote source.

46. A system as in claim **32** wherein at least some of the works on the list include advertisements.

47. A system as in claim **32** wherein additional works comprising advertisements are presented at the user station at substantially the same time that works on the list are downloaded to the user station.

48. A system as in claim **33** wherein additional works comprising advertisements are presented at the user station at substantially the same time that works on the list are presented at the user station.

49. A system as in claim **32** which includes software to collect information used for billing-related purposes based on works on the list that have been presented wherein the software is located, at least in part, at one of the user station or the remote source.

50. A system as in claim **32** which includes software to collect information used for billing-related purposes based on presented advertisements, wherein the software is located, at least in part, at one of the user station or the remote source.

51. A system as in claim **32** which includes software to calculate beats per minute for at least some works on the list, wherein the software is located, at least in part, at one of the user station or the remote source.

52. A system as in claim **32** which includes software to monitor one of billing or credit.

53. A system as in claim **32** which includes software for controlling a credit establishing unit comprising at least one of a card reader or a vending unit.

54. A system as in claim **32** which includes software enabling a local user to produce a report at least in part, of the works on the list.

55. A system as in claim **32** wherein at least some of the downloaded works on the list comprise video.

56. A system as in claim **32** wherein at least some or the downloaded works on the list are selected from a class which includes at least one of audio works, moving video works, still video works, and other predetermined sensory works.

57. A method comprising:

creating a plurality of play lists with each list including multiple works;

presenting the works on a selected play list to a user, including downloading at least some of the works on the list from a remote source, via a communications network that is available at least intermittently, at a user station.

58. A method as in claim **57** wherein at least some of the works are presented at the user station at substantially the same time they are downloaded.

59. A method as in claim **57** wherein at least some of the works are downloaded each time they are presented on the user station.

60. A method as in claim **57** wherein at least one work is downloaded after determining that the work is not available at the user station.

61. A method as in claim **57** wherein works available at the user station may be included on the list.

62. A method as in claim **57** which includes collecting information pertaining to presented works to be used for royalty-related payments.

63. A method as in claim **57** which includes collecting information used to keep track of the popularity of at least some of the works presented to the user.

64. A method as in claim **57** including graphically displaying simultaneously at least some of the inventory of available works at the remote source and at least a part of the list.

65. A method as in claim **64** which includes enabling a local user to select works from the remote inventory for insertion in the list.

66. A method as in claim **57** which includes enabling a local user to sort at least some works in a remote inventory

based on user specified characteristics of the works and to view a screen containing at least some of the sorted works.

67. A method as in claim **57** which includes enabling a local user to select at least some works in a remote inventory based on user specified characteristics of the works and to view a screen containing at least some of the selected works.

68. A method as in claim **57** which includes controlling a media writing device, coupled to the user station, whereby selected works can be written to a removable medium after the works are downloaded.

69. A method as in claim **57** which includes controlling a media writing device, coupled to the user station, whereby selected works on the list can be written to a removable medium at substantially the same time the works are downloaded.

70. A method as in claim **57** which includes enabling a user to preview at least a part of a work, and, wherein the work to be previewed is one of, on the list, or, in an inventory of works at the remote source.

71. A method as in claim **57** wherein at least some of the works on the list include advertisements.

72. A method as in claim **57** including presenting at the user station additional works comprising advertisements at substantially the same time that works on the list are downloaded to the user station.

73. A method as in claim **58** including presenting at the user station additional works comprising advertisements at substantially the same time that works on the list are presented at the user station.

74. A method as in claim **57** including collecting information used for billing-related purposes based on the presented works.

75. A method as in claim **57** which includes collecting information used for billing-related purposes based on presented advertisements.

76. A method as in claim **57** which includes calculating beats per minute for at least some works on the list.

77. A method as in claim **57** including monitoring one of billing or credit based on presented works.

78. A method as in claim **57** including controlling a credit establishing unit comprising at least one of a card reader or a vending unit.

79. A method as in claim **57** which includes enabling a local user to produce a report of at lest some of the works on the list.

80. A method as in claim **57** wherein at least some of the downloaded works comprise video.

81. A method as in claim **57** wherein at least some of the downloaded works are selected from a class which includes at least one of audio works, moving video works, still video works, and other predetermined sensory works.

82. A system comprising;

a first plurality of pre-stored instructions enabling a user to identify a selected plurality of works;

a second plurality of pre-stored instructions for presenting members of the plurality of works at a presenting station;

a third plurality of pre-stored instructions for establishing at least intermittently, a communications link between a source of works and the presenting station with at least some of the works provided at the presenting station, via the link, each time they are presented; and

a fourth plurality of pre-stored instructions responsive to the presented works for at least one of collecting royalty payment information, establishing a credit, collecting information for billing, accumulating popularity information or generating selected reports with at least a portion of the first plurality of instructions located at one of the presenting station or the source.

83. A method comprising:

creating at least one list of multiple works;

presenting the works on the list to a user, including downloading at least some of the works on the list, via a communications network, that is available at least intermittently, from a remote source, to a user station; and

including controlling a credit establishing unit comprising at least one of a card reader or a vending unit.

84. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating at least one play list;

executable instructions for executing the at least one play list and for maintaining popularity information pertaining to works from the at least one executed play list;

which includes executable instructions whereby works are selected in accordance with a pre-established criterion; and

wherein the criterion corresponds to beats per unit time and the executable instructions select works in accordance therewith.

85. A system comprising:

executable instructions for accessing at least one source of works;

executable instructions for creating at least one play list;

executable instructions for executing the play list and for displaying advertisements, which includes instructions for selecting works in accordance with predetermined criterion, and

wherein the criterion corresponds to beats per unit time and the executable instructions select works in accordance therewith.

86. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list, available at least intermittently via a communications network, from a remote source, to the user station; and

which includes collection software to collect information used for royalty-related payments that result from presenting works on the list, and wherein the software is located, at least in part, at one of the user station or the remote source.

87. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list, via a communications network, available at least intermittently from a remote source, to the user station; and

which includes collection software to collect information used to keep track of the popularity of at least some of the presented works, wherein the software is located, at least in part, at one of the user station or the remote source.

88. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list, via a communications network, available at least intermittently, from a remote source, to the user station; and

which includes software to collect information used for billing-related purposes based on presented advertisements, wherein the software is located, at least in part, at one of the user station or the remote source.

89. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list; via a communications network, available at least intermittently, from a remote source, to the user station; and

which includes software to calculate beats per minute for at least some works on the list, wherein the software is located, at least in part, at one of the user station or the remote source.

90. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list, via a communications network, available at least intermittently, from a remote source, to the user station; and

which includes software to monitor one of billing or credit.

91. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works;

second software executable at least in part at the user station for downloading at least some of the works on the list, via a communications network, available at least intermittently from a remote source, to the user station; and

which includes software for controlling a credit establishing unit comprising at least one of a card reader or a vending unit.

92. A method comprising:

creating at least one list of multiple works;

presenting the works on the list to a user, including downloading at least some of the works on the list, via a communications network, available at least intermittently from a remote source, to a user station; and

which includes collecting information pertaining to presented works to be used for royalty-related payments.

93. A method comprising:

creating at least one list of multiple works;

presenting the works on the list including downloading at least some of the works on the list, via a communications network, available at least intermittently, from a remote source, to a user station; and

which includes collecting information used to keep track of the popularity of at least some of the works presented to the user.

94. A method comprising:

creating at least one list of multiple works;

presenting the works on the list including downloading at least some of the works on the list, via a communications network, available at least intermittently, from a remote source, to a user station; and

which includes calculating beats per minute for at least some works on the list.

95. A method comprising:

creating at least one list of multiple works;

presenting the works on the list including downloading at least some of the works on the list, via a communications network, available at least intermittently, from a remote source, to a user station; and

including monitoring one of billing or credit based on presented works.

96. A system comprising:

first software executable at least in part at a user station for creating at least one list of multiple works; and

second software executable at least in part at the user station for downloading at least some of the works on the list, via a communications network available at least intermittently, from a remote source, to the user station which includes software to collect information used for billing-related purposes based on works on the list that have been presented wherein the software is located, at least in part, at one of the user station or the remote source.

* * * * *

EXHIBIT 2

US005864868A

United States Patent [19]

Contois

[11] Patent Number: 5,864,868

[45] Date of Patent: Jan. 26, 1999

[54] **COMPUTER CONTROL SYSTEM AND USER INTERFACE FOR MEDIA PLAYING DEVICES**

[76] Inventor: **David C. Contois**, 217 Pearl St., Essex Jct., Vt. 05452

[21] Appl. No.: **600,328**

[22] Filed: **Feb. 13, 1996**

[51] **Int. Cl.**[6] **G06F 17/30**

[52] **U.S. Cl.** **707/104**; 84/609; 84/610; 84/622

[58] **Field of Search** 364/130, 400; 235/375; 395/902, 328, 615; 194/217; 84/602, 462, 609, 610, 622, 726; 369/30; 379/101.01; 707/104

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,104,950	8/1978	Finley	84/462
4,351,221	9/1982	Starnes	84/609
4,667,802	5/1987	Verduin et al.	194/217
4,744,281	5/1988	Sozaki .	
4,766,581	8/1988	Korn et al.	369/30
4,790,230	12/1988	Sanderson	84/462
5,046,004	9/1991	Tsumura et al. .	
5,083,491	1/1992	Field .	
5,127,303	7/1992	Tsumura et al.	84/609
5,142,961	9/1992	Paroutaud .	
5,146,833	9/1992	Lui .	
5,153,829	10/1992	Furuya et al. .	
5,194,682	3/1993	Okamura et al. .	
5,208,421	5/1993	Lisle et al. .	
5,212,733	5/1993	DeVitt et al. .	
5,237,157	8/1993	Kaplan	395/210
5,247,126	9/1993	Okamura et al. .	
5,262,940	11/1993	Sussman .	
5,266,735	11/1993	Shaffer et al.	84/609
5,281,754	1/1994	Farrett et al. .	
5,283,638	2/1994	Engnerg et al. .	
5,286,907	2/1994	Okamura et al. .	
5,307,456	4/1994	MacKay	395/328
5,317,732	5/1994	Gerlach, Jr. et al. .	
5,355,762	10/1994	Tabata	84/609
5,388,264	2/1995	Tobias, II et al. .	
5,390,138	2/1995	Milme et al. .	
5,393,926	2/1995	Johnson .	
5,402,501	3/1995	Silfvajt et al. .	
5,475,835	12/1995	Hickey	395/615

(List continued on next page.)

OTHER PUBLICATIONS

"21st Century 'Video Jukebox' XVN Ssytem Debuts in New York", PR Newswire, p. 1130NYTH005, Nov. 1995.

"MCI to Sell Music CDs By Phone, Internet", Newsbytes, Nov. 1995.

Turner, S.R. "Digital Optical Technology—What it can do for Multi–Media", IEE Colloq. (1990) No. 144: Interactive Video Applications, 1990.

"BT Interactive TV Delivering Multimedia Services to the Home", IEE Colloq. (1996), No. 005:Impact of Multimedia Services on the Home Environment, 1996.

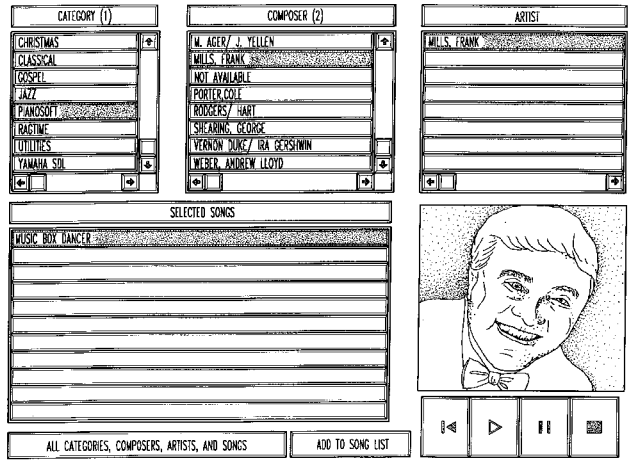
Rajapakshe et al. "Video on Demand", http:/www–dse-.doc.ic.ac.uk/~nd/surprise_95/journal/vol4/shr/report.html, pp. 1–15, Jun. 1995.

Primary Examiner—Thomas G. Black
Assistant Examiner—Charles L. Rones
Attorney, Agent, or Firm—Michael W. Starkweather; Valerie L. Starkweather

[57] **ABSTRACT**

A computer system and method for controlling a media playing device. The system provides a user interface for allowing a user access to media pieces stored in a media database. The interface is also for controlling a media playing device, like a player piano or movie playing video device, that is coupled to the computer to play the accessed or selected piece of media. In one embodiment there is a computer interface that allows a user to display only music that relates to a selected category, like jazz or classical music. Another embodiment allows the user to direct the media playing device to automatically play selected music pieces that are related to a selected music category. Another embodiment allows a user to direct the media playing device to automatically play selected music pieces that are related to the selected music composer or artist.

20 Claims, 8 Drawing Sheets



U.S. PATENT DOCUMENTS

5,488,196	1/1996	Zimmerman	84/612
5,510,573	4/1996	Cho et al.	84/610
5,517,407	5/1996	Weiner	364/419.01
5,523,525	6/1996	Murakami et al.	84/602
5,559,707	9/1996	DeLorme et al.	364/443
5,583,763	12/1996	Atcheson et al.	364/551.01
5,588,842	12/1996	Nishimura et al.	434/307 A
5,616,876	4/1997	Cluts	84/609
5,661,787	8/1997	Pocock	379/101.01

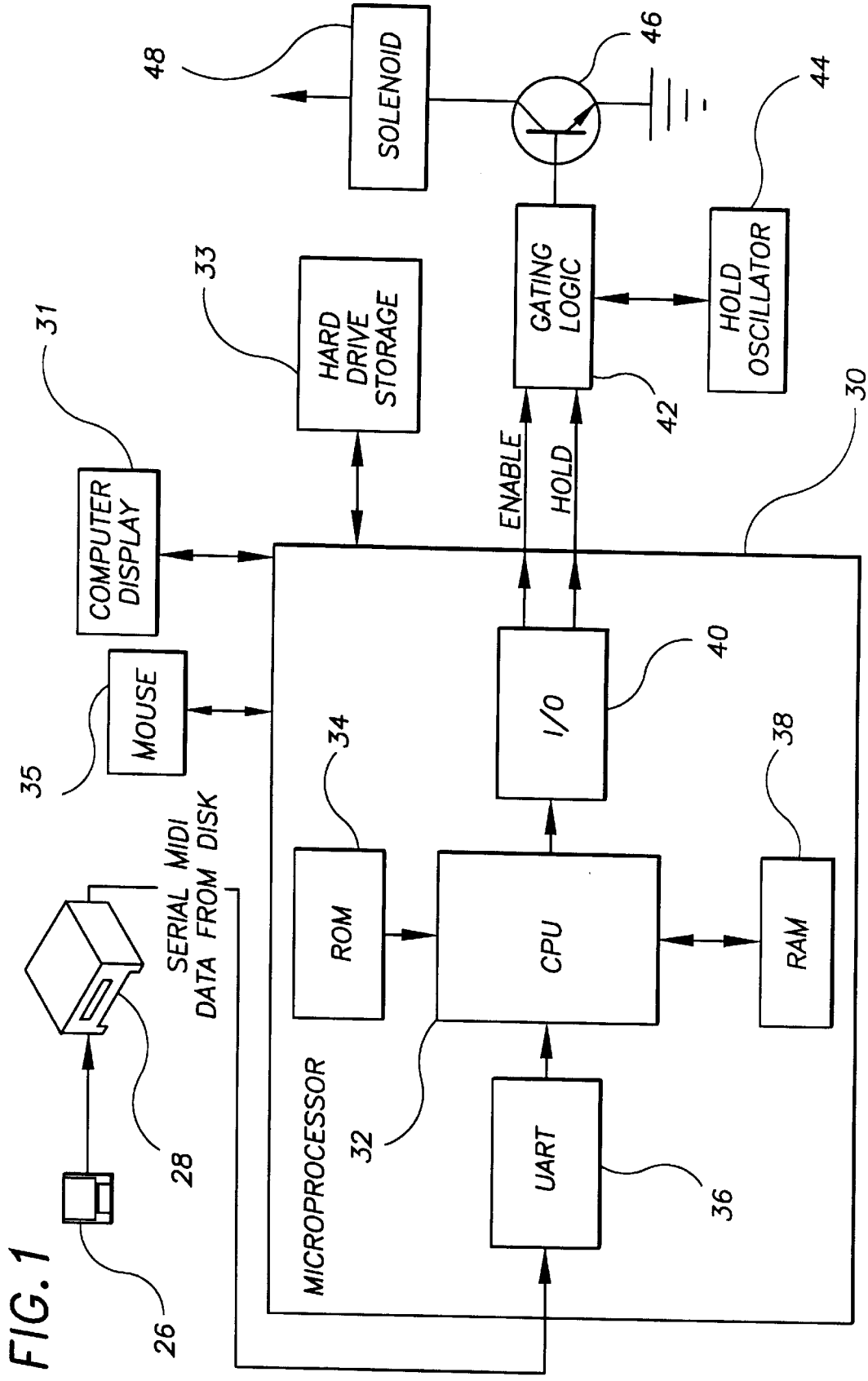

48
SOLENOID
46
44
33
HARD DRIVE STORAGE
GATING LOGIC
HOLD OSCILLATOR
31
42
30
ENABLE
HOLD
COMPUTER DISPLAY
MOUSE
35
I/O
40
34
38
SERIAL MIDI DATA FROM DISK
ROM
CPU
RAM
MICROPROCESSOR
32
UART
36
28
26

FIG. 1

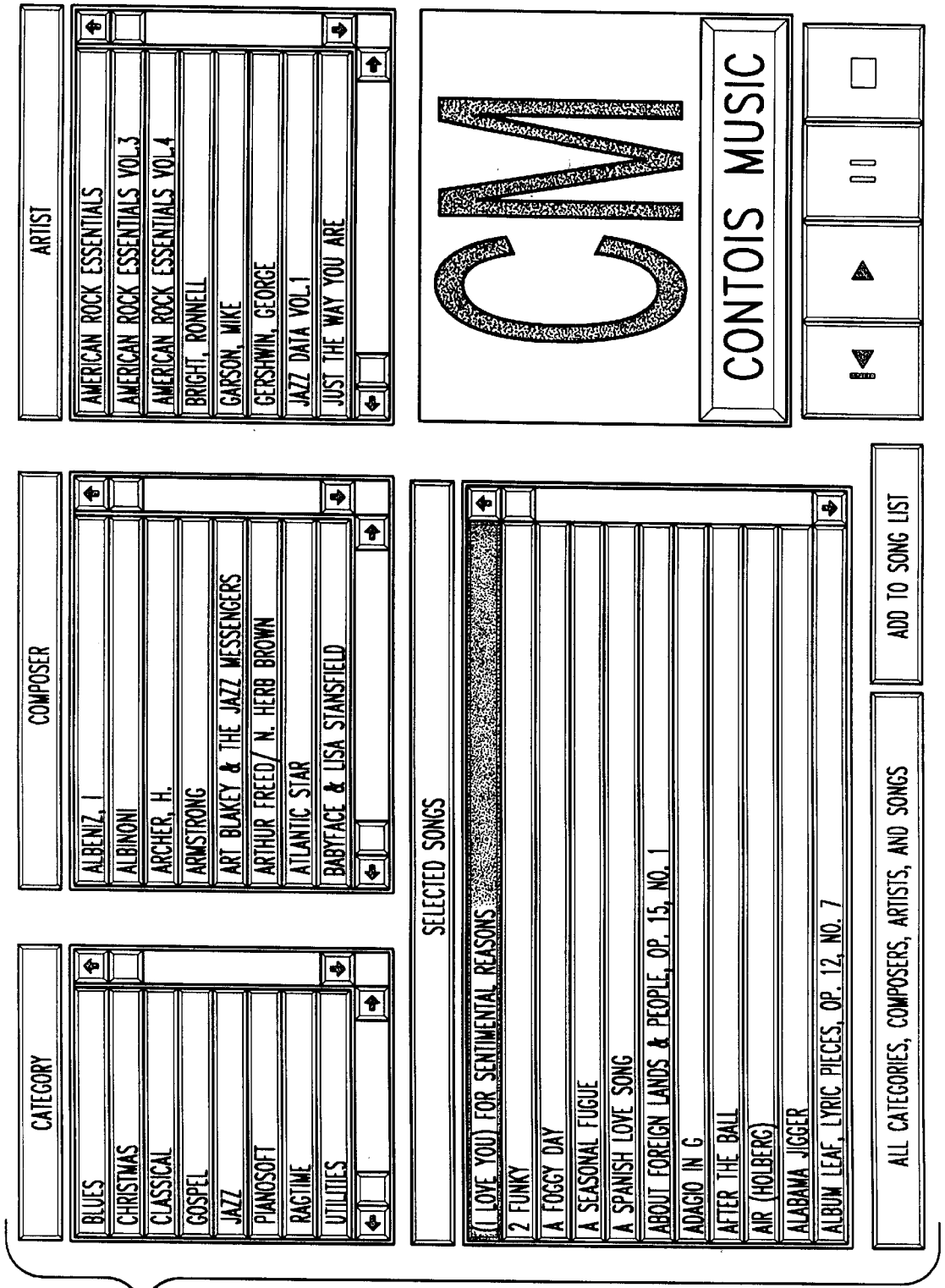

ARTIST
AMERICAN ROCK ESSENTIALS
AMERICAN ROCK ESSENTIALS VOL.3
AMERICAN ROCK ESSENTIALS VOL.4
BRIGHT, RONNELL
GARSON, MIKE
GERSHWIN, GEORGE
JAZZ DATA VOL.1
JUST THE WAY YOU ARE
CONTOIS MUSIC
COMPOSER
ALBENIZ, I
ALBINONI
ARCHER, H.
ARMSTRONG
ART BLAKEY & THE JAZZ MESSENGERS
ARTHUR FREED/ N. HERB BROWN
ATLANTIC STAR
BABYFACE & LISA STANSFIELD
CATEGORY
BLUES
CHRISTMAS
CLASSICAL
GOSPEL
JAZZ
PIANOSOFT
RAGTIME
UTILITIES
SELECTED SONGS
(I LOVE YOU) FOR SENTIMENTAL REASONS
2 FUNKY
A FOGGY DAY
A SEASONAL FUGUE
A SPANISH LOVE SONG
ABOUT FOREIGN LANDS & PEOPLE, OP. 15, NO. 1
ADAGIO IN G
AFTER THE BALL
AIR (HOLBERG)
ALABAMA JIGGER
ALBUM LEAF, LYRIC PIECES, OP. 12, NO. 7
ALL CATEGORIES, COMPOSERS, ARTISTS, AND SONGS
ADD TO SONG LIST

FIG. 2

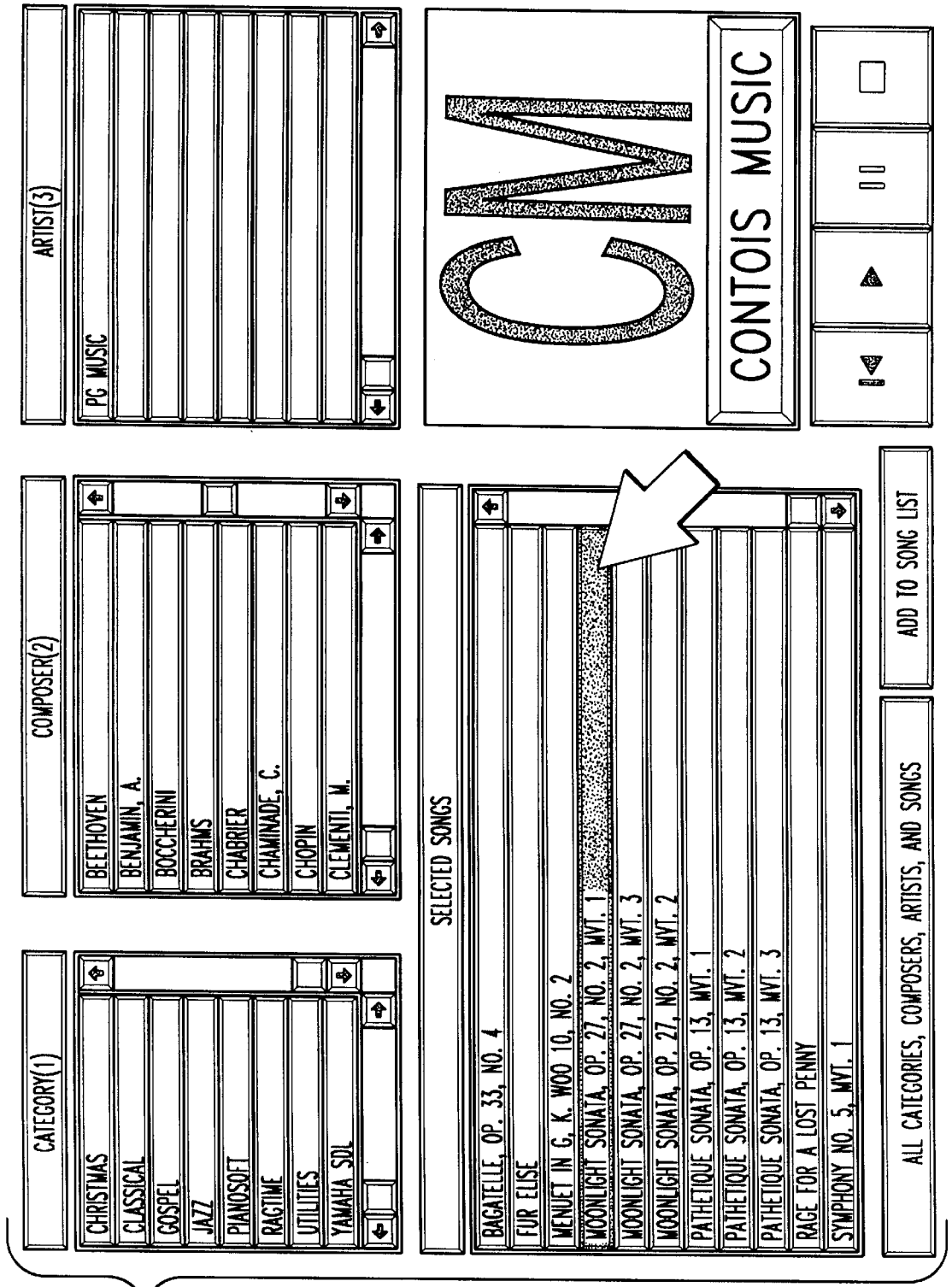

ARTIST(3)
PC MUSIC
CONTOIS MUSIC
COMPOSER(2)
BEETHOVEN
BENJAMIN, A.
BOCCHERINI
BRAHMS
CHABRIER
CHAMINADE, C.
CHOPIN
CLEMENTI, M.
CATEGORY(1)
CHRISTMAS
CLASSICAL
GOSPEL
JAZZ
PIANOSOFT
RAGTIME
UTILITIES
YAMAHA SDL
SELECTED SONGS
BAGATELLE, OP. 33, NO. 4
FUR ELISE
MENUET IN G, K. WOO 10, NO. 2
MOONLIGHT SONATA, OP. 27, NO. 2, MVT. 1
MOONLIGHT SONATA, OP. 27, NO. 2, MVT. 3
MOONLIGHT SONATA, OP. 27, NO. 2, MVT. 2
PATHETIQUE SONATA, OP. 13, MVT. 1
PATHETIQUE SONATA, OP. 13, MVT. 2
PATHETIQUE SONATA, OP. 13, MVT. 3
RAGE FOR A LOST PENNY
SYMPHONY NO. 5, MVT. 1
ADD TO SONG LIST
ALL CATEGORIES, COMPOSERS, ARTISTS, AND SONGS

FIG. 3

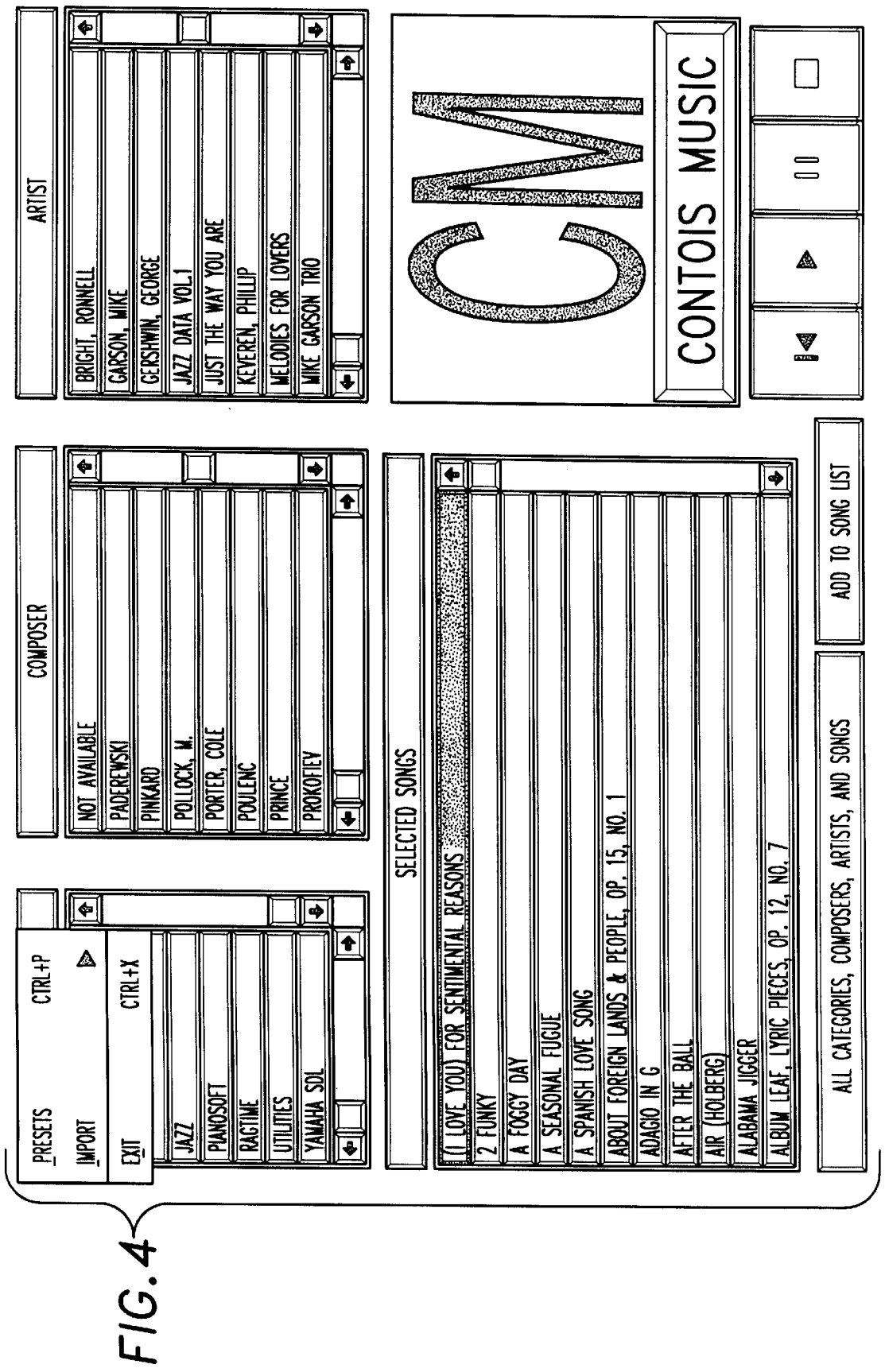

PRESETS CTRL+P
IMPORT
EXIT CTRL+X
JAZZ
PIANOSOFT
RAGTIME
UTILITIES
YAMAHA SDL
COMPOSER
NOT AVAILABLE
PADEREWSKI
PINKARD
POLLOCK, M.
PORTER, COLE
POULENC
PRINCE
PROKOFIEV
SELECTED SONGS
(I LOVE YOU) FOR SENTIMENTAL REASONS
2 FUNKY
A FOGGY DAY
A SEASONAL FUGUE
A SPANISH LOVE SONG
ABOUT FOREIGN LANDS & PEOPLE, OP. 15, NO. 1
ADAGIO IN G
AFTER THE BALL
AIR (HOLBERG)
ALABAMA JIGGER
ALBUM LEAF, LYRIC PIECES, OP. 12, NO. 7
ARTIST
BRIGHT, RONNELL
GARSON, MIKE
GERSHWIN, GEORGE
JAZZ DATA VOL.1
JUST THE WAY YOU ARE
KEYEREN, PHILLIP
MELODIES FOR LOVERS
MIKE GARSON TRIO
CMI
CONTOIS MUSIC
ALL CATEGORIES, COMPOSERS, ARTISTS, AND SONGS
ADD TO SONG LIST

FIG. 4

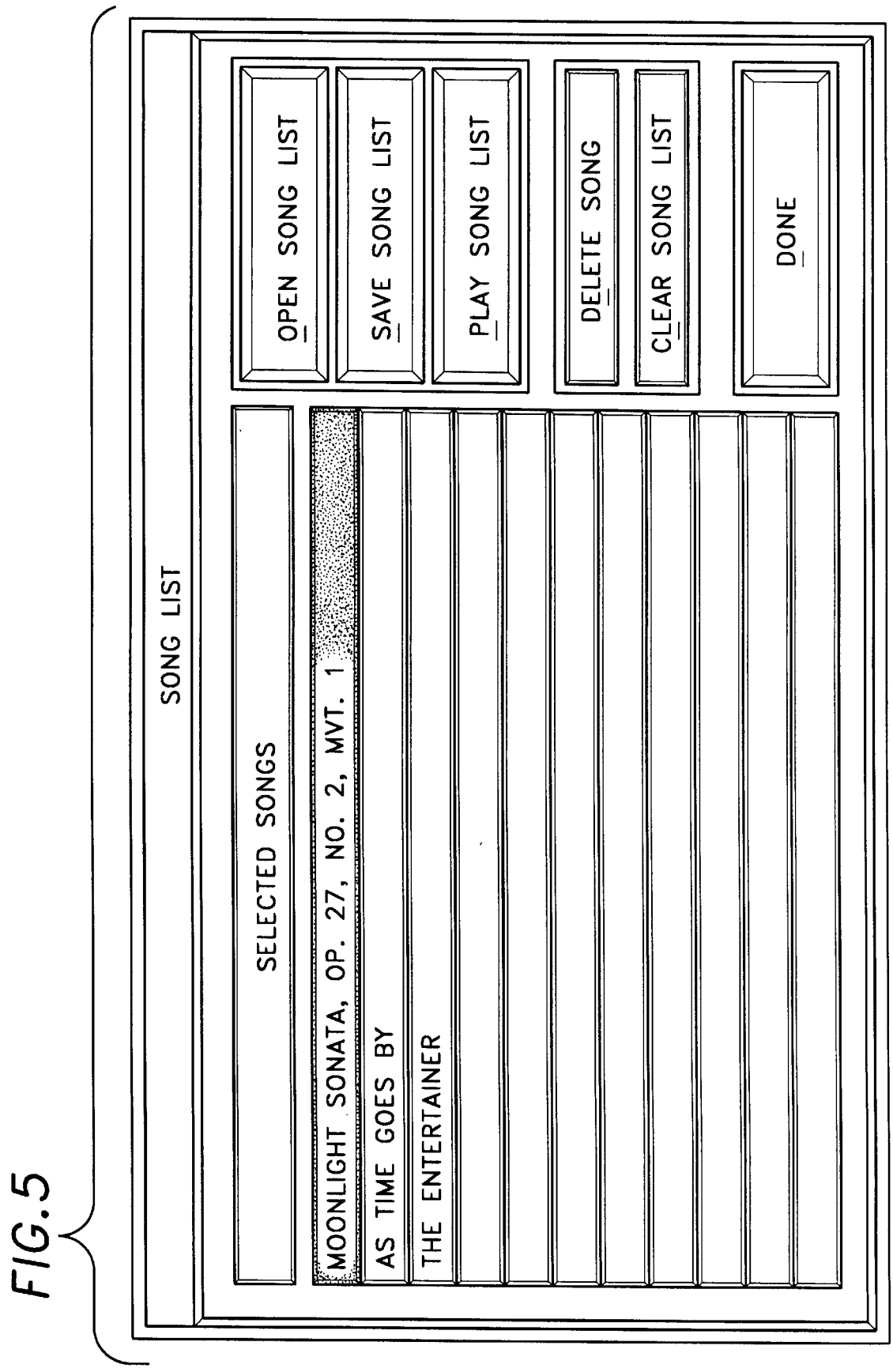

SONG LIST
SELECTED SONGS
MOONLIGHT SONATA, OP. 27, NO. 2, MVT. 1
AS TIME GOES BY
THE ENTERTAINER
OPEN SONG LIST
SAVE SONG LIST
PLAY SONG LIST
DELETE SONG
CLEAR SONG LIST
DONE

FIG. 5

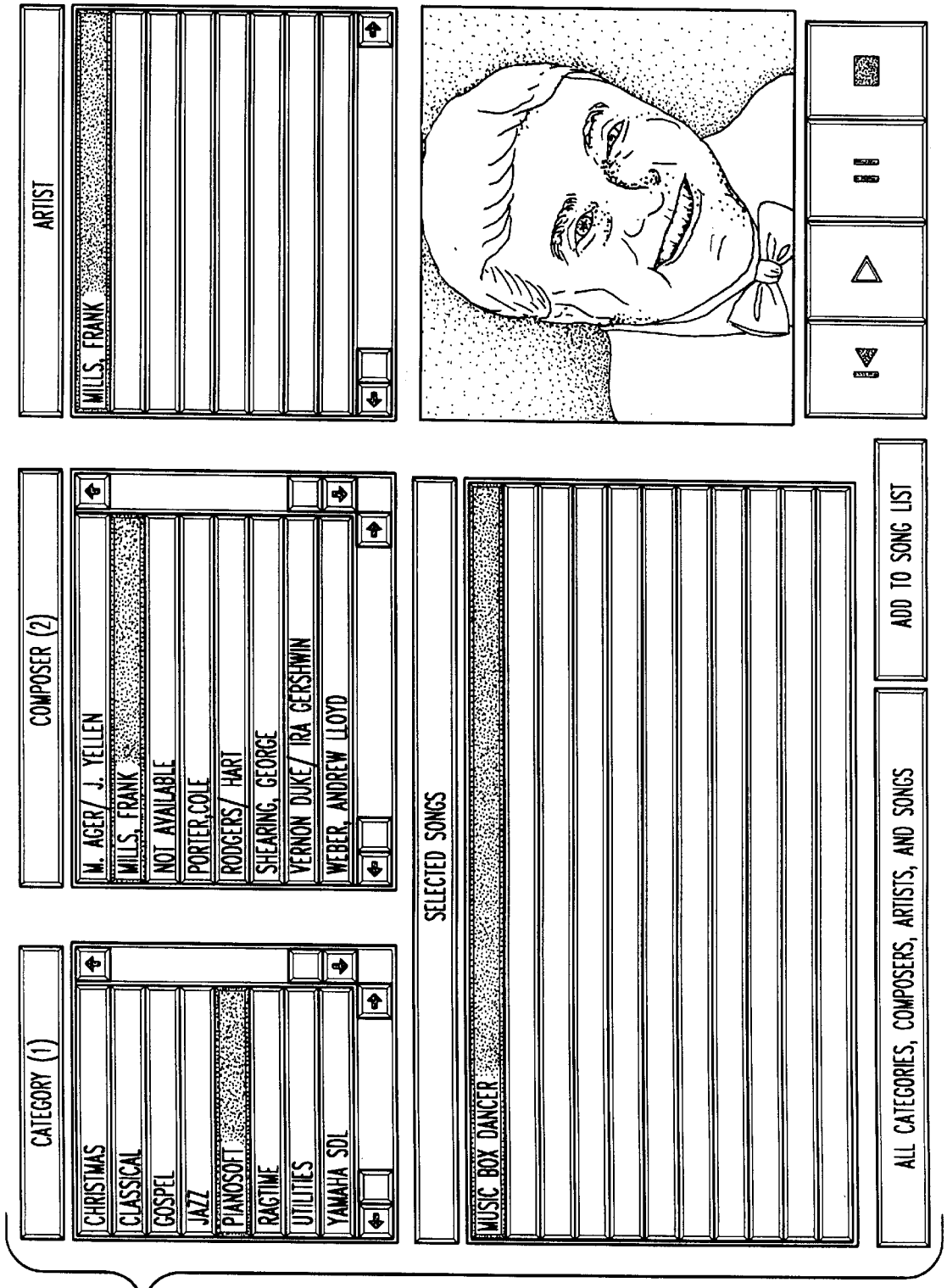

ARTIST
MILLS, FRANK
CATEGORY (1)
CHRISTMAS
CLASSICAL
GOSPEL
JAZZ
PIANOSOFT
RAGTIME
UTILITIES
YAMAHA SDL
COMPOSER (2)
M. AGER/ J. YELLEN
MILLS, FRANK
NOT AVAILABLE
PORTER,COLE
RODGERS/ HART
SHEARING, GEORGE
VERNON DUKE/ IRA GERSHWIN
WEBER, ANDREW LLOYD
SELECTED SONGS
MUSIC BOX DANCER
ADD TO SONG LIST
ALL CATEGORIES, COMPOSERS, ARTISTS, AND SONGS

FIG. 6

FIG. 7

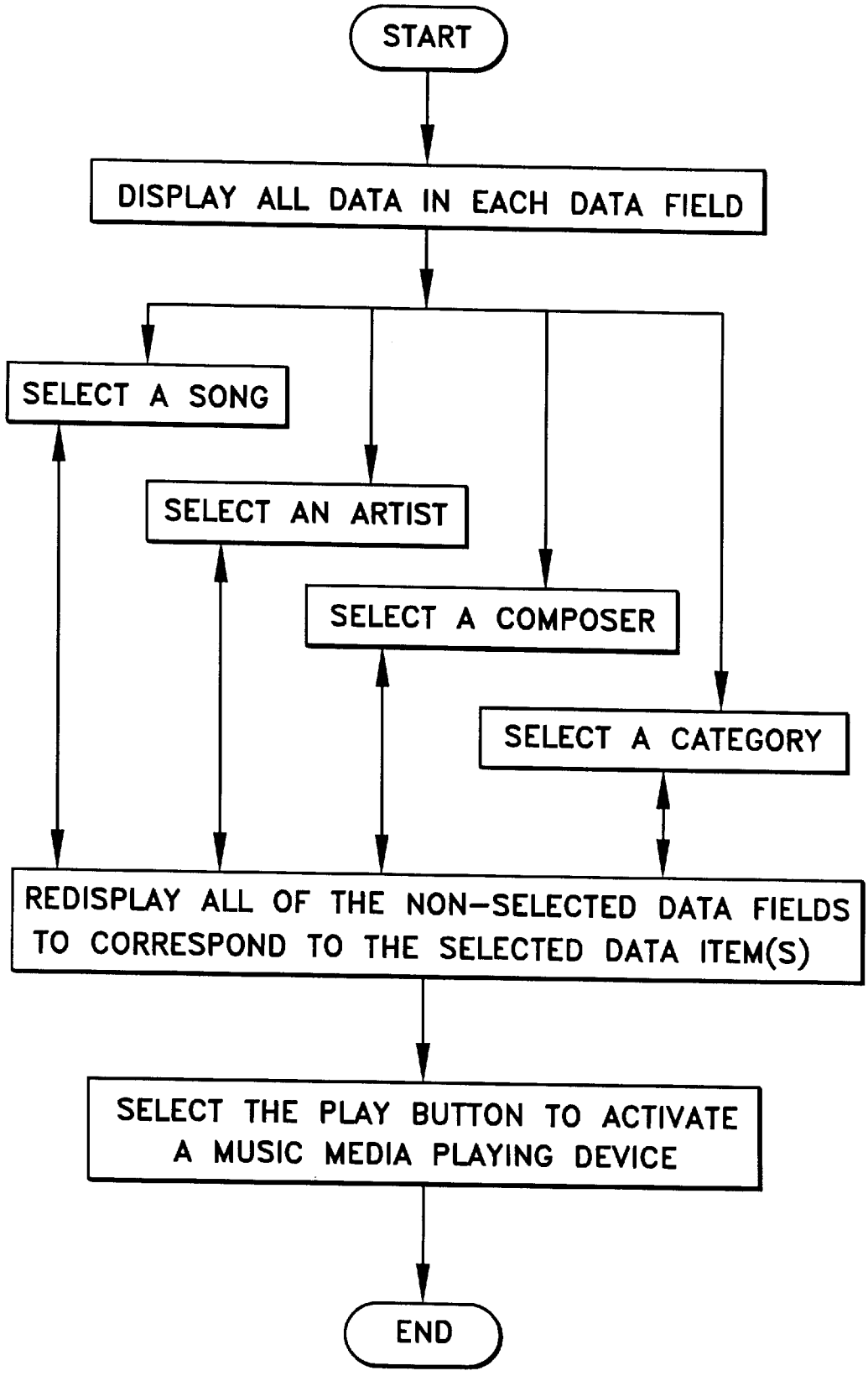
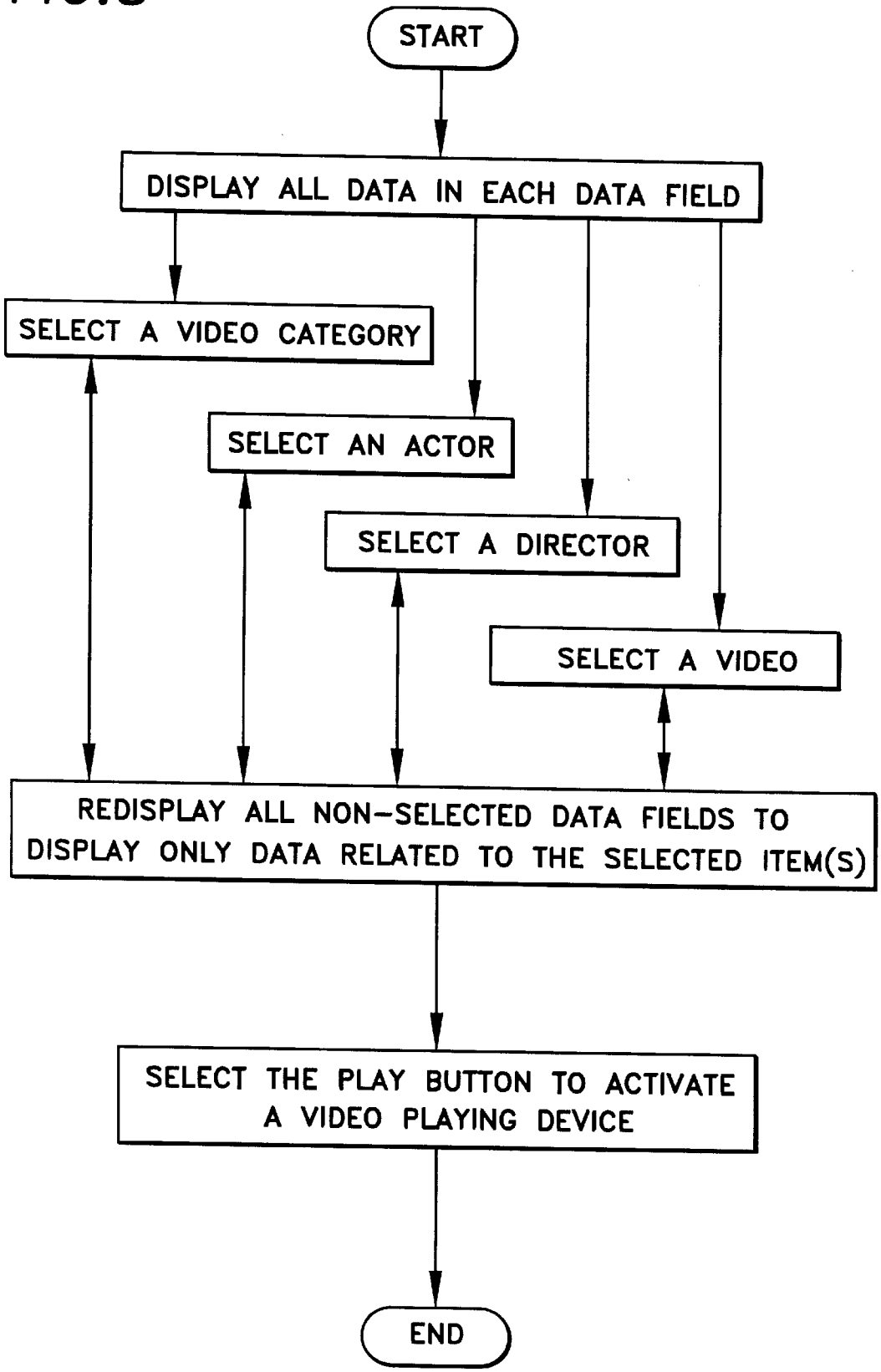

START
DISPLAY ALL DATA IN EACH DATA FIELD
SELECT A SONG
SELECT AN ARTIST
SELECT A COMPOSER
SELECT A CATEGORY
REDISPLAY ALL OF THE NON-SELECTED DATA FIELDS TO CORRESPOND TO THE SELECTED DATA ITEM(S)
SELECT THE PLAY BUTTON TO ACTIVATE A MUSIC MEDIA PLAYING DEVICE
END

FIG. 8


START
DISPLAY ALL DATA IN EACH DATA FIELD
SELECT A VIDEO CATEGORY
SELECT AN ACTOR
SELECT A DIRECTOR
SELECT A VIDEO
REDISPLAY ALL NON-SELECTED DATA FIELDS TO DISPLAY ONLY DATA RELATED TO THE SELECTED ITEM(S)
SELECT THE PLAY BUTTON TO ACTIVATE A VIDEO PLAYING DEVICE
END

COMPUTER CONTROL SYSTEM AND USER INTERFACE FOR MEDIA PLAYING DEVICES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to a computer system and user interface for allowing a user access to a selection of media pieces stored in a media database and for directing and controlling a media playing device to play the selected media piece.

2. Description of the Prior Art

There are many media mediums that have been developed in the last few decades. For example, there are several music mediums, like records, tapes, or CDs, there is the movie video medium, and there is the digital medium. For the purpose of this disclosure and illustration of an embodiment of the invention, the music media and a media playing device such as a player piano will be focused upon. The movie video medium will also be briefly discussed in the specification.

The advent of the player piano was a tremendous breakthrough in the music world. Whether someone was relaxing at home or entertaining a houseful of guests, a player piano would give someone the best of both worlds—a fine acoustic instrument for a pianist to perform on, and a way to enjoy the same vibrant sounds when no pianist was available or willing. Even Hotels, restaurants, clubs and other establishments could have live music on call at all hours of the day or night, using prerecorded music.

Those who are familiar with player pianos of old would not recognize its predecessor, being equipped with a whole selection of newly developed digital electronic musical innovations. The old music scroll containing only one song has been replaced by a computer disc storing many pieces of music. Player pianos can now record music and play it back with such preciseness that all but the most accomplished music listeners could be fooled. Music students can determine if they only want the left or right hand keyboard playing to assist them in learning music pieces. Music pieces can even be electronically transposed into most any key and moved up or down two octaves from the original key by the touch of a button. Even the old metronome has been replaced by a digitized version that can show elapsed time on a liquid crystal display (LCD). And for the recording studios and electronic musicians, the ability to link an acoustic piano with musical instrument digital interface (MIDI) equipment has lifted the king of instruments into a whole new realm.

Examples of patents that are related to the present embodiment of the music medium are as follows, wherein each of the following patents are herein incorporated by reference for the supporting teachings:

U.S. Pat. No. 5,393,926, is a virtual music system. There is included a multi-element actuator that generates a plurality of signals in response to being played by a user. The system also has an audio synthesizer that generates audio tones in response to control signals. There is a memory storing a musical score for the multi-element actuator, the stored musical score including a sequence of lead notes and an associated sequence of harmony note arrays. Each harmony note array of the sequence corresponding to a different one of the lead notes and contain zero, one or more harmony notes. The instrument also includes a digital processor receiving the plurality of signals from the multi-element

actuator and generating a first set of control signals therefrom. The digital processor is programmed to identify from among the sequence of lead notes in the stored musical score a lead note which corresponds to a first one of the plurality of signals. The digital processor is also programmed to map a set of the remainder of the plurality of signals to whatever harmony notes are associated with the selected lead note, if any. Moreover, the digital processor is programmed to produce the first set of control signals from the identified lead note and the harmony notes to which the signals of the plurality of signals are mapped. The first set of control signals causes the synthesizer to generate sounds representing the identified lead note and the mapped harmony notes.

U.S. Pat. No. 5,390,138, is a system for connecting an audio object to various multimedia objects to enable an object-oriented simulation of a multimedia presentation using a computer with a storage and a display. A plurality of multimedia objects are created on the display including at least one connection object and at least one audio object. Multimedia objects are displayed, including at least one audio object. The multimedia object and the audio object create a multimedia presentation.

U.S. Pat. No. 5,388,264, is a system for connecting a Musical Instrument Digital Interface (MIDI) object to various multimedia objects to enable an object-oriented simulation of a multimedia presentation using a computer with a storage and a display. A plurality of multimedia objects are created on the display including at least one connection object and at least one MIDI object in the storage. The multimedia object and the MIDI object are connected, and information is routed therebetween to create a multimedia presentation.

U.S. Pat. No. 5,317,732 is a process performed in a data processing system that includes receiving an input selecting one of a plurality of multimedia presentations to be relocated from a first memory to a second memory, scanning the linked data structures of the selected multimedia presentation to recognize a plurality of resources corresponding to the selected multimedia presentation, and generating a list of names and locations within the selected multimedia presentation corresponding to the identified plurality of resources. The process also includes renaming the names on the generated list, changing the names of the identified plurality of resources in the selected multimedia presentation to the new names on the generated list, and moving the selected multimedia presentation and the resources identified on the generated list to the second memory.

U.S. Pat. No. 5,262,940 is a portable audio/audio-visual media tracking device.

U.S. Pat. No. 5,247,126, is an image reproducing apparatus, image information recording medium, and musical accompaniment playing apparatus.

U.S. Pat. No. 5,208,421, is a method and apparatus for audio editing of MIDI files. The invention may be utilized to ensure the integrity of a source MIDI file, a copied or lifted section or a target file by automatically inserting matching note on or note off messages into a file or file section to correct inconsistencies created by such editing. Additionally, program status messages are automatically inserted into source files, copied or lifted sections, or target files to yield results that are consistent with the results that may be obtained by editing digital audio data. Timing information is selectively added or maintained such that MIDI files may be selectively edited without requiring a user to learn a complex MIDI sequencer.

U.S. Pat. No. 5,153,829, is an information processing apparatus. The invention has a unit for displaying on a

screen a musical score, keyboard, and tone time information to be inputted. There is also a unit for designating the position of the keyboard, and tone time information, respectively displayed on the display unit. Moreover, the invention includes a unit for storing musical information produced through designation by the designating unit of the position of the keyboard and tone time information displayed on the display unit. Additionally, there is a unit for controlling the display of the musical score, keyboard, and tone time information on the screen of the display unit. The unit also is for controlling the display of a pattern of musical tone or rest on the musical score on the display unit in accordance with the position of the keyboard and tome time information respectively designated by the designating unit. Finally, there is a unit for generating a musical tone by reading the musical information stored in the storage unit.

U.S. Pat. No. 5,142,961, is a method for storage, transcription, manipulation and reproduction of music on system-controlled musical instruments which faithfully reproduces the characteristics of acoustic musical instruments. The system comprises a music source, a central processing unit (CPU) and a CPU-controlled plurality of instrument transducers in the form of any number of acoustic or acoustic hybrid instruments. In one embodiment, performance information is sent from a music source MIDI controller to the CPU, edited in the CPU, converted into an electrical signal, and sent to instrument transducers via transducer drivers. In another embodiment, individual performances stored in a digital or sound tape medium are reproduced at will through the instrument transducers, or converted into MIDI data by a pitch/frequency detection device for storage, editing or performance in the CPU. In still another embodiment, performance information is extracted from an electronic recording medium or live performance by a pitch/frequency detection device, edited in the CPU, converted into an electrical signal, and sent to any number of instrument transducers. The device also eliminates typical acoustic musical instrument delay problems.

U.S. Pat. No. 5,083,491, is a method and apparatus for re-creating expression effects on solenoid actuated music producing instruments contained in musical renditions recorded in MIDI format for reproduction on solenoid actuated player piano systems. Detected strike velocity information contained in the MIDI recording is decoded and correlated to strike maps stored in a controlling microprocessor. The strike maps contain data corresponding to desired musical expression effects. Time differentiated pulses of fixed width and amplitude are directed to the actuating solenoids in accordance with the data in the strike maps, and the actuating solenoids in turn strike the piano strings. Thereafter, pulses of uniform amplitude and frequency are directed to the actuating solenoids to sustain the strike until the end of the musical note. The strike maps dynamically control the position of the solenoid during the entire duration of the strike to compensate for non-linear characteristics of solenoid operation and piano key movement, thus providing true reproduction of the original musical performance.

U.S. Pat. No. 5,046,004 is a system using a computer and keyboard for reproducing music and displaying words to the music. Data for reproducing music and displaying words are composed of binary-coded digital signals. Such signals are downloaded via a public communication line, or data corresponding to a plurality of musical pieces or songs are previously stored in an apparatus, and the stored data are selectively processed by a central processing unit of a computer. In the instrumental music data, trigger signals are existent for progression of processing the words data, whereby the reproduction of music and the display of words are linked to each other. The music thus reproduced is utilized as background music or for enabling the user to sing to the accompaniment thereof while watching the words displayed synchronously with such music reproduction.

U.S. Pat. No. 4,744,281, is an automatic music player system having an ensemble playback mode of operation using a memory disk having recorded thereon a piece of music composed of at least two combined parts to be reproduced separately of each other. The parts being recorded in the form of at least two data subblocks, comprising a first sound generator to mechanically generate sounds when mechanically or electrically actuated, at least one second sound generator to electronically generate sounds when electronically actuated and a control unit connected to the first and second sound generators. One of the two or more subblocks of the data read from the disk is discriminated from another, whereupon the discriminated one of the data subblocks is transmitted to the first sound generator and another data subblock transmitted to the second sound generator. Additionally, the transmission of data to the second sound generator is continuously delayed by a predetermined period of time from the transmission of data to the first sound generator so that the two sound generators are enabled to produce sounds concurrently and in concert with each other.

These incorporated by reference patents reflect the state of the art of which the applicant is aware and are tendered with a view toward discharging applicant's acknowledged duty of candor in disclosing information which may be pertinent in the examination of this application. It is respectfully stipulated, however, that none of these patents teach or render obvious, singly or when considered in combination, applicant's claimed invention.

SUMMARY OF THE INVENTION

It is a feature of the invention to provide a computer user interface. The interface is for providing a user access to media pieces stored in a media database. The interface is also for controlling a media playing device, like a player piano or movie playing video device, that is coupled to the computer to play the accesses or selected piece of media.

It is another feature of the invention to provide a computer interface that allows a user to display only music that relates to a selected category, like jazz or classical. Where the user is then able to direct the media playing device to automatically play the selected music pieces related to the selected music categories.

A further feature of the invention is to provide a computer interface that allows a user to display music selections that are related only to a selected composer, like Duke Ellington or Gershwin. Where the user is then able to direct the media playing device to automatically play the selected music pieces related to the selected music composer.

Another feature of the invention is to provide a computer interface that allows a user to display only music that is related to a selected artist, like Dave Contois, or your own personal recordings. Where the user is then able to direct the media playing device to automatically play the selected music pieces related to the selected music artist.

Another feature of the invention is to provide a computer interface that allows a user to display only music that is related to a selected song or music piece, like Alexander's Rag Time Band or Andante & Rondo Capriciosso, Op. 14. Where the user is then able to direct the media playing device to automatically play the selected music piece.

A feature of the invention is also to provide a computer system that can access others media recording data bases from other sources like internet or world wide web.

Yet a further feature of the invention is to provide a computer system that can access all types of media, like movie videos or music videos, from any multimedia data base source.

It is a further feature of the invention to provide a system for playing media information and implementing a computer as a control means. There is included therein a media playing means for playing media information for a user. Additionally, the control means is coupled to the media playing means. The control means is for allowing a user to automatically control the media playing means in playing the media information. The control means has a display means for displaying information to the user. The control means further has a data storage means for storing first and second categories and a respective first and second data fields, and for enabling data used for enabling the control means to control the media playing means in playing a selected item. Additionally, the control means has a user interface means, displayed on the display means, for displaying to the user at least a first category of media information, a respective first data field listing items related to the first category, and a second category of media information, a respective second data field listing items related to the second category.

The invention resides not in any one of these features per se, but rather in the particular combination of all of them herein disclosed and claimed and it is distinguished from the prior art in this particular combination of all of its structures for the functions specified.

There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto. Those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, neither is it intended to be limiting as to the scope of the invention in any way.

Other features of the present invention will become more clear from the following detailed description of the invention, taken in conjunction with the accompanying drawings and claims, or may be learned by the practice of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a functional block diagram of one type of computer system capable of controlling a media playing device.

FIG. **2** illustrates a window displaying a control screen for a preferred embodiment.

FIG. **3** illustrates a window displaying a control screen for a preferred embodiment.

FIG. **4** illustrates a window displaying a control screen for a preferred embodiment.

FIG. **5** illustrates a window displaying a basic Song List screen with the associated operational buttons.

FIG. **6** illustrates a control window displaying a nested graphical window.

FIG. **7** is a partial flowchart illustrating an embodiment of the invention related to a player piano and a music data base.

FIG. **8** is a partial flowchart illustrating another embodiment of the invention related to a movie video media and a videos data base.

It is noted that the drawings of the invention are not to scale. The drawings are merely schematic representations, not intended to portray specific parameters of the invention. The drawings are intended to depict only typical embodiments of the invention, and therefore should not be considered as limiting the scope of the invention. The invention will be described with additional specificity and detail through the use of the accompanying drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Charter by the U.S. Constitution

This disclosure of the invention is submitted in furtherance of the constitutional purposes of the United States Patent Laws "to promote the progress of science and useful arts," as stated in Article 1 of the United States Constitution.

Introduction

The first embodiment relates to the use of a computer system and user interface to control which music is to be played upon a player piano. Although one skilled in the art will know how a MIDI system works and how a computer controlled solenoid operated player piano operates, these two topics are provided for background purposes. A second embodiment of the invention relates to the use of a computer system and user interface for allowing a user to select which movie video will be played upon a computer controlled video media playing device or the like. One skilled in the art of computers and video control will understand how the system operates in view of the discussion of the player piano operation.

MIDI Background

Musical Instrument Digital Interface (MIDI) defines an interface for exchanging information between electronic musical instruments, computers, sequencers, lighting controllers, mixers, and tape recorders as discussed in MIDI Manufacturers Association publication entitled, *MIDI* 1.0 *Detailed Specification* (1990). MIDI is extensively used both in the recording studio and in live performances and has had enormous impact in the areas of studio recording and automated control, audio video production and composition. By itself and in conjunction with other media, MIDI plays an integral role in the application of computers to multimedia applications. In comparison to digital audio, MIDI files take up much less space, and the information is symbolic for convenient manipulation and viewing. For example, a typical three minute MIDI file may require 30 to 60 Kilobytes on a disk, whereas a CD quality stereo audio file requires about two hundred Kilobytes per second, or 36 Megabytes for three minutes. MIDI data may appear as musical notation, graphical piano-roll, or lists of messages suitable for editing and reassignment to different instruments. Gen-

eral MIDI has standardized instrument assignments to greatly motivate the multimedia title producer.

MIDI input and output ports are used to route time-stamped MIDI packets from one media component to another. MIDI ports act as mailboxes for the communication of MIDI packets across address spaces. Many interesting MIDI applications can be created by connecting media components that contain MIDI ports. For example, a MIDI player and a MIDI interface, can be used to play a music device, like an electronic player piano, connected to a computer. MIDI packets are sent from the MIDI player to the MIDI interface. The MIDI interface converts the MIDI packets to MIDI data that is sent to the player piano for playback.

Background for the Operation of a Solenoid Actuated Player Piano

Solenoid actuation of a player piano key is a complex set of mechanical interactions. The mass of the key mechanism is accelerated by the magnetic force created in the solenoid. The solenoid must be dynamically controlled during the entire period of the key strike for two significant reasons. First, the force of the solenoid is non-linear because it changes as the plunger travels. Second, the mass of the key is also non-linear since the key damper increases the mass of the key to accurately recreate music with true reproduction of expression effects.

Each of the eighty-eight keys on a typical player piano is actuated by a vertical solenoid working on the far end of the key. The solenoids are arranged so as to lift the end of the key, and thus accelerate the key mechanism and hammer to strike the string. The force produced by the solenoid is non-linear and can vary as much as ten to one from the start to the end of the strike; of course the shape of the force curve varying according to the solenoid design and construction.

Each piano key includes a damper mechanism which can ride on the key to dampen the string after the strike. The damper interaction takes effect at some point during the key travel, and thus throws an increased mass onto the key when it is engaged. In addition, the damper may be raised by the pianist so that it will not interact with the key, thus allowing the string to sustain after being struck by the hammer.

Each of the solenoid actuators typically consists of a wound coil housed in a steel frame. The solenoid plunger travels within the center of the winding, and exerts mechanical force to lift the piano key. Flexible rubber tips are used between the plunger push-rod and the bottom of the key to reduce the impact noise of the mechanism. However, this also introduces an additional non-linear component into the key travel.

In general terms, it is necessary to "map" the travel of the solenoid into discrete steps of time, or intervals. The mapped information takes into account the foregoing non-linear characteristics of solenoid operation and key movement. Typically, one strike of the solenoid may contain over fifty such intervals. Each of these intervals is then selectively activated by a controlling microprocessor. The microprocessor determining the configuration of the map by analysis of various key interactions. Also, the microprocessor, using instructions stored in memory, translates recorded musical information into driving signals for each solenoid, the object being to reproduce the recorded music as accurately as possible. Essentially, it is the velocity information contained in the recording that is processed into driving signals. Since velocity is the combination of force and mass, the microprocessor is able to determine the force of the solenoid at any given point in time and, in combination with the known key mass, determine the required change in force to produce the desired key acceleration and velocity.

The force required to accelerate the key can be substantial. Therefore, it is essential to provide for a high power strike period, followed by a low power holding period. This allows maximum force during the critical strike period, while still allowing key hold down times without excessive power dissipation.

This system must convert the recorded musical information into discrete driving signals representing strike velocity. The driving signals are then separated in strike signals and hold signals. The strike signals consisting of time differentiated pulses of fixed width and amplitude, the number and timing of the pulses being dependent upon the information in the drive map that controls the recreation of the expression of the musical notes. The pulses are then directed to the solenoid that in turn, causes the strike hammer to strike the piano string. When the strike period is over, a hold signal that comprises pulses of uniform amplitude and timing are directed to the solenoid so that the strike hammer can be held fixed in place until the end of the musical note.

Background for a Computerized Player Piano System

FIG. **1** illustrates a functional block diagram of a possible computerized player piano system of the preferred embodiment. A recorded media **26** containing music to be reproduced is read by a playback unit **28**. Coupled to playback unit **28** is control microprocessor **30** that selects the strike map for each driving signal **10** corresponding to a particular velocity factor of a hammer to hit a piano string. A core element of control microprocessor **30** is central processing unit (CPU) **32**. Coupled to CPU **32** is ROM **34**, which is a read only memory, and contains the strike maps for the various velocity factors as well as the operating software for CPU **32**. Also coupled to CPU **32** is UART **36**, a serial data receiver that receives the serial MIDI data from playback unit **28** and routes it to CPU **32**. RAM **38**, which contains changeable program data, is also coupled to CPU **32**, as are drivers **40**, which couple control microprocessor **30** to gating logic **42**. Microprocessor **30** is coupled to a computer display terminal **31** for allowing a user to access the information stored in the microprocessor memory and hard drive storage **33**. Conventional circuitry and circuit elements are utilized throughout.

Control microprocessor **30** decodes the velocity factor from the recorded media **26** and assigns a particular driving signal **10** to the velocity factor. During the period of strike signal **12**, control microprocessor **30** sends an enable signal to gating logic **42**. Individual strike pulses **18** activate switch **46** that energizes solenoid **48** according to the strike map. At the end of strike signal **12**, control microprocessor **30** switches gating logic **42** to accept hold signal **14** that consists of hold pulses **22** produced by hold oscillator **44**.

The ROM **34** contains all programs that the CPU uses to interface with all of the present invention's circuits. This ROM memory also contains all of the programs required to enter, store, retrieve, edit and delete all items in the data base stored on the hard drive **33**.

The mouse delivers its coded output to the microprocessor in response to a user actuating buttons and location sensors thereon. In response to receiving the coded output from the mouse, the microprocessor senses the meaning of the output and develops an output representative of its results, that is interpreted by the CPU.

The microprocessor controls the computer display by sending control signals from the CPU to the display. Thus, when the mouse **35** is activated, signals are sent to the CPU where the signals are interpreted. The CPU interpreted signals are sent to the display to cause changes to the information that is displayed thereon. Thus, by double

clicking a mouse button at a certain location on the display screen, it is possible to cause many changes to the displayed information. More specifically, data stored in the hard drive can be accessed and displayed, and by properly selecting with the mouse, new stored data can be displayed where the old data was once displayed.

The platform or form that the display uses to present the information that is stored in a data base, for example, is often referred to as a graphical user interface, or user interface. The interface design is often the most important part of a computer system, since a poor interface will prevent all but the most skilled to gain access to the stored information. Poor performance of an interface has caused many products to fail in the market place. Thus, it is essential to provide an interface that is both intuitive and easy to operate. The next sections will primarily deal with the design of the interface used to allow users access to a stored data base through the use of a mouse and cursor.

Computer Interface For A User To Control the Operation of A Player Piano

FIGS. **2** through **6** are graphical illustrations of user interface computer screens that may be used to access the music database and control the operation of a player piano.

It is noted that references to the phrase "data field" is meant to mean a listing of items relating to a category of information found in the data base. For example, the illustrated "Composer" category can list in the data field all of the composers found in the music data base, like Liszt, Debussy, Gershwin, Mendelssohn, etc.

It is pointed out that term of "selecting" means that a pointer or cursor, which is illustrated as a white arrow in FIG. **3** that is located on a song title, is placed over the desired item while the user usually clicks a mouse button once or twice. The pointer is also known as a selection means.

It is also noted that the word "item" is meant to mean a single piece of data found in the data field related to a selected category. For example, "Jazz" is an item found in the data field related to the category of music Category (labeled as Category for short), or "A Foggy Day" is an item found in the data field related to the category of "Selected Songs."

The interface has a button, labeled "All Categories, Composers, Artists, and Songs," also known as a "select all" button. This button can be activated any time by the user to enable the user to display all of the individual items in each data field that is found in the entire data base. This feature of "select all" is activated when first starting the user interface screen, thus allowing a user to view all of the available data in each data field before making any item selections.

Operation of Data Fields

Displayed on the user interface screens of FIGS. **2**, **3**, **4**, and **6** are four categories of data that may be accessed from the player piano data base. Specifically, the data base categories are labeled as: Category (a short form for music category), Composer, Artist, and Selected Songs. Located below each data base category is a respective data field that list the items or data found in the data base that are associated with the particular category. A description of each data field will now be provided.

The data field labeled as "Category," as the title signifies, displays all of the general music category items found in the data base. For example, blues, Christmas, classical, gospel, jazz, pianosoft, and ragtime music category items are illustrated. Selection of a single or multiple items in this data field provides the user with control over what items may be displayed in the other data fields. For example, in reference to FIG. **3**, a user has selected the music category of "Classical." As a result, all of the remaining data fields would replace the currently displayed items in the data field list and display only items found in the music data base that are directly related to the music category of "Classical."

It is pointed out that "displaying a data field" is automatically accomplished by the player piano control system and the relevant software control. Displaying of data is accomplished after a selection of an item is made. First, once a user has selected an item with the mouse, the CPU interprets the coding sent from the mouse and determines which item has been selected and thus highlights the selected item on the display. Second, the player piano control system eliminates the current list or lists of items found in the remaining relevant data fields. Third, the control system will search for all data related to the selected item. Forth, the control system receives signals from the various data storage devices and uses this information to direct the display to display those identified items that will be related to the selected item in the proper data fields.

The data field labeled as "Composer," as the title indicates, can display all of the original composers of each piece of music found in the data. For example, the items of Albeniz, Albinoni, Archer, and Armstrong etc. are illustrated in FIG. **2**. This data field also allows the user to control what may be displayed in the other data fields in the same fashion as the music "Category" operation. For example, regarding FIG. **3**, by selecting Beethoven as shown, all of the other data fields may be directed to only display data found in the data base that pertains to the composer Beethoven. The user may now display only items in the Artist and Selected Songs categories that are related to Beethoven. By providing a user with these features, hundreds or thousands of items are eliminated from being displayed on the user display, thereby allowing the user to more easily make selections of music to be played upon the player piano.

The "Artist" data field, as the title suggests, would display all of the artists that have played the various pieces of music that are found in the entire music data base. For example, Dave Contois, Phillip Keveren, and PG Music are illustrated. When this data field is selected, it allows the user to control what may be displayed in the other data fields. The Artist data field operated just as the composer and category data fields have. For example, by selecting with the selection means by clicking with the mouse button while the cursor is located over Phillip Keveren, for instance, all of the other data fields may only display data that pertains to this artist if it were the first item selected. In an illustrated example, both the Categories and Composer data fields have already had selections. Thus only the Selected Songs data field will be redisplayed to relate to all of the above selections of Artist, Composer, and Category.

The "Selected Songs" data field, as the title indicates, allows the user to display all of the songs or music pieces found in the music data base. As with the previously described data fields, a user can select at least one of the music pieces in the selected songs data field. As before, once a certain item has been selected, only information related to that selection may be displayed in the other data fields that did not have previously selected items. Besides determining what items may be displayed in the associated data fields, this data field allows the user to select specific Songs that will be played by the attached media playing device, i.e.. the player piano.

Operation of Play Buttons

Further regarding FIGS. **2**, **3**, **4**, and **6**, are four media playing device control buttons illustrated on the bottom right

side of the interface screen. The operation of each button works much like a typical tape recorder. The first button on the left is typically known to one skilled in the art as the "play" button. This play button is shaped as an arrow pointing to the left. When the play button is actuated, the player piano will begin to play the first selected music piece as indicated in the Selected Songs data field.

The second from the left button, called the rewind button, will cause the selected item, the song "All I Ask of You," to stop playing and "rewind" the music selection. The rewind button is an arrow pointing to the right. By rewind, it is meant to cause the music to stop at the current frame, lets say frame **80** of the music piece, and move back a given number of music frames and potentially all the way back to the beginning. As with a tape recorder, the amount of time that the rewind button is actuated will control how far back in the music the user wants to restart the player piano.

The next button is typically known as the "pause" button. The pause button is indicated by two vertical lines. This button allows the user to temporarily suspend the playing of the player piano. Upon activating the pause button again or by reactuation of the play button, the player piano will start playing at the exact spot that it had been stopped.

The last button on the right is typically recognized as the "stop" button. The stop button is indicated by a square shape. This button is used when the user is finished listening to the selected piece of music and is no longer interest in listening any further. To restart the player piano another music piece is generally selected from the music data fields and the start button is then reactivated.

Process of Creating Lists of Songs

Another feature of the preferred embodiment regards the creation of a specialized list of music pieces to be played on the player piano. In operation, once a piece of music is selected, a user may activate the button labeled "Add to Song List," which is located at the bottom center of each screen. By using this button, a user can create their own personal record album or compact disk that contains only those songs that have been individually selected. Thereby, the player piano can be directed to play each song one after the other in sequence or in a random order.

Once a list of songs has been selected using the "Add to Song List" button, the user can view, customize, and edit the created list. A user selects "File" from the menu bar as illustrated in FIG. **4**, and selects "Song List" or by actuating the control and S keys simultaneously.

FIG. **5** illustrates a basic Song List screen with the associated operational buttons. Note, that the songs listed under the Selected Songs heading (Moonlight Sonata, As time Goes By, and The Entertainer) were recently added to the song list. The user has several options to use on these newly listed songs. First, by activating the "Save Song List" button, the user could save the song list and give the list a name that could be used latter to both identify and access this newly created list. Second, by activating the Play Song List button, the user could also play the displayed list of songs on the player piano without ever having saved the created song list. Third, the user could edit the song list by using the "Delete Song" button, thereby eliminating any song that was highlighted or selected.

There are additional features provided by the Song List screen or window. For instance, the user could select the "Open Song List" button to get a list of all previously created song lists. The user could either edit individual song lists by eliminating or adding individual songs or play selected song lists. When a user wishes to create a new song list from scratch, the "Clear Song List" button would be selected, which would clear the screen of any listed song titles.

The feature of creating your own music lists allows the every-day computer user to create their own music albums or collections and not be limited by what is prepackaged by music companies. For example, the user can now create whole musical events, like a list of children's birthday party music, teenager party music, young couples wedding music, old couples anniversary music, or all renditions of "A Foggy Day" by Dave Contois performed in the year 1995. It is even possible for a restaurant to program music for an entire evening beginning with lively after work music for happy hour and gradually changing the song selections to be quieter for the dinner crowd.

Regarding FIG. **6**, there is a window illustrating the operation of the preferred embodiment and the use of a graphics window. As shown in the bottom right portion of the window above the play buttons, there is a graphics window. In operation, once a song title is selected to be played upon the player piano, the graphic window will display a picture of something associated with the selected piece of music. In this case, there is illustrated a portrait of the Artist and Composer, Frank Mills.

Overview of the Operation of the Preferred Embodiment

FIG. **7** is a partial flow chart of the general sequence of operation for the graphical user interface of FIGS. **2**, **3**, **4** and **6**. Upon first accessing the interface window, all of the data in each data field will be displayed. More precisely, all of the data can be viewed by scrolling through the individual data fields. The user is then able to select what items are needed to find the specific song titles that are desired to be played upon the player piano. As illustrated, there is shown an interaction between the selection of an item in a data field and the redisplaying of all non-selected data field items to correspond to the selected items. The interactive process may continue with multiple rounds of selection and de-selection stages. Finally, the user will have a song title selected and will then select the play button to activate the music media playing device, or player piano.

Computer Interface For A User To Operate A Video Player

Reference is made to FIG. **8** for the following discussion. Specifically, there is a partial flow chart of the general sequence of operation for the illustrated embodiment related to a video player. Just as the previous embodiment related to the control of a player piano, the embodiment of the video player anticipates the operation of a substantially similar interface screen. However, the difference being that the new interface screen will have different categories with different data fields of items. Specifically, the paired categories and data fields would be labeled as: Video Category, Actor, Director, and Selected Videos.

The illustrated data fields are as follows: The "Movie Category" data field allows the user to view a complete list of all of the movie categories found in the accessed movie videos data base. For example, items such as Westerns, War, Romance, Comedy, and Documentaries might be listed. Similarly, for the "Actor" data field, items such as Robin Williams, and Sylvestor Stalone may be listed. For the "Directors" data field you would find items like Penny Marshall, or Ron Howard. Of course, the data field of "Video" would show the titles of videos found in the data base, like Hook, or Die Hard.

The operation of the Video user interface in controlling the operation of a video player device is substantially like the operation of the player piano operation and control. Specifically, by selecting either single or multiple items in each data field a user may narrow down the listed items in the Video category to allow the user to find a movie video for viewing. Whereby, the user may then use the same four

control tape recorder-like buttons as with the player piano interface. The main differences from the music data base interface is that there are different data field titles and that different information is stored in the video data base.

Remarks About The Preferred Embodiment

It is noted that the selective displaying of data field items is sensitive to the item selection sequence. For example, if a Composers item was the first selected item, then the Categories items would be redisplayed to show only items related to the selected composer. For this reason, to assist the user to keep track of which category was selected in what order, a number in parentheses is displayed next to the category title after an item has been selected in that data field. Specifically, referring to FIG. **3**, Category has a (1) next to it since Classical was the fist selected item, Composer has a (2) next to it to indicate that Beethoven was the second item selected, and Artist has a (3) next to it to indicate that PG Music was the third item in the sequence of selection.

It is possible to select songs in a any order of categories. For example, it is possible to select songs in the order of a Composer, then an Artist, followed by a Category. It is even provided for a user to take back a selection with out starting from the beginning of the selection sequence. This is typically called "deselecting and item." As the phrase indicates, the third item selected can be deselected, then the second item could be deselected. In this situation, all of the remaining data fields would only have items related to the first selected item and not the other two previously selected items that had been canceled. This operation allows the use a large degree of flexibility in choosing songs to be played on the player piano.

The user interface embodiment further provides for the user to select multiple items in a given data field in a very similar fashion to the selection on single items. Thus, for example, it is possible to select both classical or jazz music composed by both Liszt or Duke Ellington, and being played by Dave Contois.

Variations In The Preferred Embodiment

Although this embodiment focuses upon the application of the software to control a player piano or video player, one skilled in the art will realize that this software interface could be used on any media playing device where a user needs to select what media item is to be played from a vast media data base. For example, it is contemplated to operate an electric guitar, a computer controlled multimedia system, a pipe organ, a television, a movie video player, or a computer screen.

The current embodiment of the invention also anticipates the use of the invention to play all types of media information that needs to be accessed by the user. For example, other media information that can be accessed using the present invention are: music videos, homemade videos, computer games, or software programs (accounting, drawing, writing, etc.).

Although the embodiment only discusses the process of selecting a single piece of music or video it is easily understood that a user could have the music or video playing device to play a long pre-selected list of selected items in either a random or sequential order.

The preferred embodiment of the invention discusses the control of only a single media playing device, like a player piano. However, one skilled in the art would easily understand how to simultaneously control several media playing devices with the same control system in view of this disclosure. For example, the coordination of the control of a player piano along with a music video is contemplated.

One skilled in the art will also understand that a computer hard drive storage device is not the only storage medium for storing accessible media data. For example, additional media data bases could be found on a world wide web, a satellite receiver, or an internet link system.

Although there are four specific data fields displayed in FIG. **2**, it is also contemplated to have different and additional data fields. For example, another category and related data field could display a list of what year the music was created. Thus, for example, a user could request jazz music created on or after 1980 and before 1990.

It is noted that the embodiment of the invention discusses the use of a standard known computer, where in fact all components of the computer can be replaced with any new advancing technologies, like holographics or voice activated systems and still not depart from the intent of the invention of allowing easier user access to the underlying media data base information.

One skilled in the art will recognize that it is not essential to have the computer system separate from the media playing device. It is conceivable to have the computer system physically incorporated in part or in whole into the media playing device.

It is equally anticipated that a skilled artisan would be able to provide variations to the graphics window, as shown in FIG. **6**. For example, it is anticipated to provide a motion picture of the artist playing the selected song. It is equally anticipated, for example, to provide a view of the musical score in the graphics window as the music is being played.

While the invention has been taught with specific reference to these embodiments, someone skilled in the art will recognize that changes can be made in form and detail without departing from the spirit and the scope of the invention. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Patent is:

1. A computer user interface menu selection process for allowing the user to select music to be played on a music device controlled by a computer, comprising the steps of:

a) simultaneously displaying on a display device, at least two individual data fields selected from music categories, composers, artists, and songs;

b) selecting at least one item from at least one of the data fields;

c) in response to step b), redisplaying all data fields not having an item selected therefrom with data related only to the at least one item selected in step b), and simultaneously maintaining all items originally displayed in the data fields with at lest one item selected therefrom;

d) selecting an item in the songs data field in response to step c), and

e) playing the selected song item from step d) on the computer responsive music device.

2. The process of claim **1**, wherein the step of playing the selected song item comprises:

a) activating a play button located on the computer screen;

b) sending a data stream from the computer to the computer controlled music device in response to step a) for controlling the playing of the selected song;

c) receiving the data stream by the computer controlled music device from the computer; and

d) playing the selected song item on the computer controlled music device.

3. A method of enabling a user to select a song, which is stored in a music data base, that will be played on a player piano that is controlled by a computer, wherein the method comprising the steps of:

a) simultaneously displaying, on a display device, both a songs data field that displays a list of song titles found in the music data base, and a music categories data field that displays a list of music category items of the song titles found in the music data base; and

b) selecting, by the user, a single music category item from the music category data field;

c) redisplaying the songs data field, and not the music category data field which still displays the list of music category items as previously displayed, to display only song titles that are related to the selected music category item, in response to performing step b);

d) selecting, by the user, a song that is displayed in the songs data field after performing step c); and

e) playing the selected song title on the player piano.

4. The method of claim **3**, wherein the displaying step further comprises:

displaying a composers data field for displaying a list of composers of the song titles found in the music data base.

5. The method of claim **4**, further comprising the steps of:

f) selecting, by the user, a composer from the composers data field before performing step e); and

g) redisplaying the songs data field with only song titles relating directly to both the selected composer and music category, in response to performing step f) and before performing step e).

6. The method of claim **5**, wherein the displaying step further comprising:

displaying an artists data field for displaying a list of artists of the song titles found in the music data base.

7. The method of claim **6**, further comprising the steps of:

h) selecting, by the user, an artist listed in the artists data field before performing step e); and

i) redisplaying the songs data field only with song titles relating to the selected artist, composer, and category, in response to performing step h).

8. The method of claim **7**, wherein the step of playing, further comprises:

a) selecting, by the user, a play button that will enable the player piano to receive a data stream that will control the operation of the player piano in playing the selected song title.

9. The methods of claim **8**, wherein the step of playing, further comprises:

b) selecting, by the user, a pause play button that will temporarily suspend the player piano from receiving the data stream;

c) selecting, by the user, the pause play button a second time to enable the player piano to continue to receive the data stream.

10. The method of claim **9**, wherein the step of playing, further comprises:

d) selecting, by the user, a stop play button that will disable the player piano from receiving the data stream.

11. A system for playing media information on a media playing means, the system comprising:

a) the media playing means for playing the media information for a user where the playing means is capable of playing musical sound; and

b) control means, coupled to the media playing means, for allowing the user to select media information and to automatically control the media playing means in playing the selected media information, the control means having:

b1) data storage means for storing the media information, the media information including:

1) a first category of media information and a respective first data field containing a first list of items found in the data storage means that are related to the first category, and

2) a second category of media information and a respective second data field containing a second list of items found in the data storage means that are related to the second category;

b2) display means for simultaneously visually displaying the first and second category of media information to the user; and

b3) user interface means, displayed on the display means, for displaying the first and second list of items so the user may

i) select at least one item from the first list of items and in response redisplaying the second list of items with items that are related only to the at least one item selected in the first list, and simultaneously maintaining all items originally displayed in the first list; and

ii) play the selected item from the first list on the media playing means, which is a capable of playing music.

12. The system of claim **11**, wherein the user interface means further comprises:

selection means for allowing the user to select a first data field item and thereby automatically change the second data field to display second data field items that are only related to the selected first data field item.

13. The system of claim **12**, wherein the media information further includes a third category of media information and a respective third data field containing a third list of items related to the third category;

the user interface means displays the third list of items so the user may select items therefrom for allowing the user to control what media information will be played on the media playing means; and

the selection means will automatically change the third data field to display third data field items that are both i) only related to the selected first data field item and ii) are found in the data storage means.

14. The system of claim **13**, wherein the media information includes movie videos and the media playing means is a video player.

15. The system of claim **13**, wherein the first category is a music category, and the first list of items is a list of music categories found in the data storage means, and the second category is a songs category, and the second list of items is a list of song titles found in the data storage means.

16. The system of claim **15**, wherein the third category is a composers category, and the third list of items is a list of music composers found in the data storage means.

17. The system of claim **16**, wherein the media information includes piano music and the playing means is a player piano.

18. The system of claim **17**, wherein the storage means is a hard disk drive for a computer.

19. The system of claim **18**, wherein the data storage means is located remote to the display means and media playing means.

20. The system of claim **19**, wherein the display means is a computer monitor.

* * * * *

EXHIBIT 3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hempleman et al	)
For:	List Building System	)
Serial No.:	09/770,882	)
Filed:	January 26, 2001	)
Examiner:	Alfred W. Kindred	)
Art Unit:	2632	)
Docket No.	8376/86291	)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on the date listed below:

_____

_____
(Date)

DECLARATION OF JAMES D. HEMPLEMAN

I, James D. Hempleman, one of the named inventors of the above identified application hereby declare that:

1. I have been involved in the design, development and management of business information systems for over thirty years.
2. I am a named inventor of two issued U.S. Patents that relate to software based systems, namely 5,038,316 and 6,243,725.
3. I have reviewed and am familiar with the disclosure, figures and pending claims of the above identified application.
4. I have reviewed and am familiar with Contois, US Patent No. 5,864,868.
5. I have reviewed and am familiar with Bernard et al., US Patent No. 5,918,213.
6. I have reviewed and am familiar with an outstanding Final Office action mailed September 23, 2002 rejecting the pending claims of the above identified application.
7. Contois discloses and describes a computer based system for the creation of play lists. The works that are available for selection for inclusion in the play lists are based on a locally available inventory prestored on a hard drive 33 or readable via

local disk drive 28. Contois has no disclosure of automatically downloading from a remote source those works on a play list that are not locally available.

7.1 The disk drive 28 disclosed in Contois is, in my opinion, intended to be connected to UART 36 by a cable. It would be local to and in relatively close proximity to the computer 30. Disk drive 28 would not be considered a remote source of works relative to computer 30. Contois does not even describe any functionality for acquiring works off of a disk 26, via drive 28 where those works have not been stored on hard drive 33.

7.2 Contois does not disclose, teach, or, suggest the accumulation of information pertaining to those works on a play list which have been presented to a user. Information not addressed or considered by Contois includes, information pertaining to invoicing, billing information, royalty paying or royalty payments, demand analysis or popularity of selected works. In this regard, Contois is completely silent in connection with collecting such information for works on a list which have been presented to a user.

7.3 Contois presents works to a user which are listed on a media inventory stored on hard drive 33. Contois is silent with respect to and includes no teaching as to how works not listed on the media inventory can be incorporated into a user created play list.

7.4 Contois is completely silent as to advertisements. There is no disclosure, teaching or suggestion in Contois of presenting advertisements to a user. Nor is there any disclosure or suggestion in Contois of downloading advertisements from a remote source for presentation to a user.

7.5 Contois is completely silent as to instructions for selecting a plurality of works for a list in accordance with a predetermined performance parameter, such as beats per time-interval.

7.6 Fig. 5 of Contois is a song list display screen. Lists are manually created by a user using the screen of Fig. 5.

8.0 Bernard et al. is an automated product purchasing system. Fig. 1 of Bernard et al. discloses a telephone based call-in system for the automated purchase of products.

8.1 Bernard et al. describe provisions for order fulfillment. In Figs 29, 30 of Bernard et al a customer can specify "rush shipping", see step 2926 Fig. 29 or step 3008 Fig. 30. Col 43, lines 15-24 discuss "rush shipping" of product in connection with Fig. 29. Col 43 lines 39-.47 discussing shipping options such as same, next or five day delivery of purchased product.

8.2 Fig. 41Bernard et al disclosed a particular form of a retail store. Even here, physical product delivery is described in Col. 58 line 65-col 59 line 7. This type of process is also illustrated in step 4216 of Fig. 42. The order fulfillment process, step 4216 is described in Col 60, lines 7-29 and describes the customer going to the "order processing center 4116 to pick up the order when it is ready."

8.3 Fig. 44 of Bernard et al describes an automated fulfillment process wherein in step 4420 an automated in-store vending machine receives the purchased items such that once "the order is completed, the customer can open an access door and retrieve the selected items." (Col. 61 lines12-13).

8.4 Bernard et al. is completely silent as to the creation and execution of play lists.

8.5 Bernard et al., is completely silent as to the collection of billing information, royalty payment information or popularity information pertaining to presented works from a play list.

8.6 Bernard et al. does not download works on a user created play list.

8.7 Bernard et al. is completely silent as to the creation of play lists and the writing of the works on such lists to a removable medium. Bernard et al. is completely silent as to the establishment of a credit for the purpose of writing works on a list to a removable medium.

9.0 I understand that under U.S. Patent Law for a prior art document to anticipate a claim it must disclose all of the limitations of that claim. Further, those limitations must be configured as claimed.

10.0 I have reviewed claim 40 as amended. Unlike claim 40 as amended, Contois requires a user to manually build play lists using the screen of Fig. 5 thereof, one song at a time. Contois has no disclosure of automatically building a list of works in accordance with a selected characteristic. For at least this reason, clam 40 as amended is not anticipated by Contois.

10.1 Claim 43 includes:

> "instructions for displaying at least part of the inventory list simultaneously with displaying at least part of the edited list".

In Contois, only the screen of Fig. 5 displays a song list. That screen does not display any of the inventory list as claimed. For at least this reason claim 43 is not anticipated.

10.2 Claim 44 includes:

> "instructions for downloading a work not locally available".

As noted above, disk drive 28 of Contois is locally connected to Contois' computer 30. Contois has no disclosure of automatically downloading works on a play list, that are not locally available, from a remote source.

10.3 Claim 45 includes:

> "instructions for presenting downloaded advertisements."

As noted above, Contois has no disclosure of downloading works not available locally. Further, Contois is completely silent as to advertisements. Contois system simply does not address "presenting downloaded advertisements" as claimed.

11.0 Claim 67 includes the following limitation:

> "second software executable at least in part at the user station for downloading at least some of the works on the list, via a communication network available at least intermittently, from a remote source, to the user's station."

Neither Contois nor Bernard, alone or read together, suggest or make obvious the above limitation. Contois is completely silent as to obtaining works on a play list

that are not locally available. Bernard et al, as noted above, is a product purchasing system where the purchased product is physically delivered to the buyer. Bernard et al do not create play lists. They are silent as to providing missing works on a play list. Bernard et al do not teach or suggest downloading works as claimed above.

11.1 For the above reasons, I am of the opinion, because of the above noted differences, that one of skill in designing play list systems would not have found claim 67 obvious given Contois read in view of Bernard et al. My conclusion is also supported by the Examiner's technically incorrect characterization of the disk drive of Contois. Claim 39 requires:

> "instructions to download a work on a selected play list wherein the work is not available locally".

In rejecting claim 39, the Examiner stated:

> 'Contois teaches "download a work on a selected play list (see Fig. 1, whereas the serial MIDI(28) is used to download MIDI files).'

Contois' disk drive is local to and physically near his computer, attached to that computer by a cable. Any work loaded into Contois' computer, via that disk drive, is a locally available work. Contois does not

> "download a work on a selected play list wherein the work is not available locally".

As noted above, neither Contois nor Bernard et al have any disclosure or suggestion of downloading works on a list for presentation to a user.

12.0 There is no disclosure or suggestion in either Contois or Bernard et alone or in combination directed to the additional limitations of claims 68-70.

Claim 68 adds to claim 67 the limitation:

> "wherein at least some of the works are presented at the user station at substantially the same time as they are downloaded".

Claim 69 add:

"wherein at least some of the works are downloaded each tiem they are presented on the user station".

Claim 70 adds"

"wherein at least one work is downloaded after determining that the work is not available at the user station."

Silence in both Contois and Bernard et al does not make any of the above claims obvious.

13.0 Various pending claims are directed to collecting information as to works on a list that have been presented. These include:

"information used for royalty payments" (claim 72);

"information used to keep track of the popularity of ... presented works" (claim 73)

"information used for billing purposes based on presented works on the list" (claim 84)

Contois collects no information at all relative to presented works. Bernard et al do not in any way address presenting works on a display list. Bernard et al is a product purchasing system which is quite different and unlike Contois or the claimed invention. Nothing in Contois or Bernard et al, alone or read in combination, make up for the complete silence of each to suggest or teach accumulating information as claimed relative to works from a list that have been presented to a user.

14.0 Analogous comments to the above apply to rejected method claims 92-116. For example, claim 92 requires:

"presenting the works on the list to a user, including downloading at least some of the work on the list from a remote source, via a communications network that is available at least intermittently, at a user station."

The above limitation is not addressed at all in Contois which only presents locally available works. As noted above, Bernard et al do not address presenting works on a play list to a user nor "downloading at least some of the works on the

list from a remote source, via a communications network that is available at least intermittently, at a user station." Instead, Bernard et al include a fulfillment system where purchased product is delivered to the purchaser. The complete silence in both Contois and Bernard et al as to the above-quoted limitation from claim 92 does not provide the necessary suggestion or motivation to modify that combination so as to make claim 92 obvious.

14.1 Claim 93 adds to claim 92 the following limitation:

> "wherein at least some of the works are presented at the user station at substantially the same time they are downloaded."

Neither Contois nor Bernard et al alone or in combination address a method as in claim 93. No specific suggestion, teaching or motivation has been provided in the rejection of claim 93 which would make the above-quoted limitation of claim 93, including the limitations of base claim 92, obvious.

Similar comments apply to claims 94 and 95 which respectively require:

> "wherein at least some of the works are downloaded each time they are presented on the user station." (claim 94). "wherein at least one work is downloaded after determining that the work is not available at the user station." (claim 95).

Neither Contois nor Bernard et al alone or in combination disclose or suggest methods as in claims 94 and 95. As noted above, Contois deals strictly with locally available works. Bernard et al do not address presenting works on a display list for a user. No specific suggestion, teaching or motivation has been articulated in the rejections of claims 94 and 95 relative to modifying Contois in view of Bernard et al so as to make the methods of either one of those claims obvious.

14.2 Claims 97 and 98 are directed to methods for collecting information pertaining to presented works. In this regard, the respective limitations require:

"collecting information pertaining to presented works to be used for royalty-related payments." (claim 97).

"collecting information used to keep track of the popularity of at least some of the works presented to the user." (claim 98).

The rejections of claims 97 and 98 have not provided any specific suggestion, teaching or motivation as to modifying Contois read in view of Bernard et al so as to make the limitations of claims 97 or 98 obvious. Both of those prior art systems are completely silent relative to the subject matter of the methods of claims 97 and 98.

14.3 Claims 109, 110 and 112 are also directly to information pertaining to presented works. These limitations respectively state:

"collecting information used for billing-related purposes based on presented works." (claim 109).

"collecting information used for billing-related purposes based on presented advertisements. (claim 110).

"monitoring one of billing or credit based on presented works." (claim 112).

Neither of Contois nor Bernard et al address the subject matter of the above-noted claims. The rejections of those claims included no specific suggestion, teaching or motivation as modifying Contois read in Bernard et al so as to make any of those claims obvious.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

J D Hempleman

James D. Hempleman

2/10/03

Date