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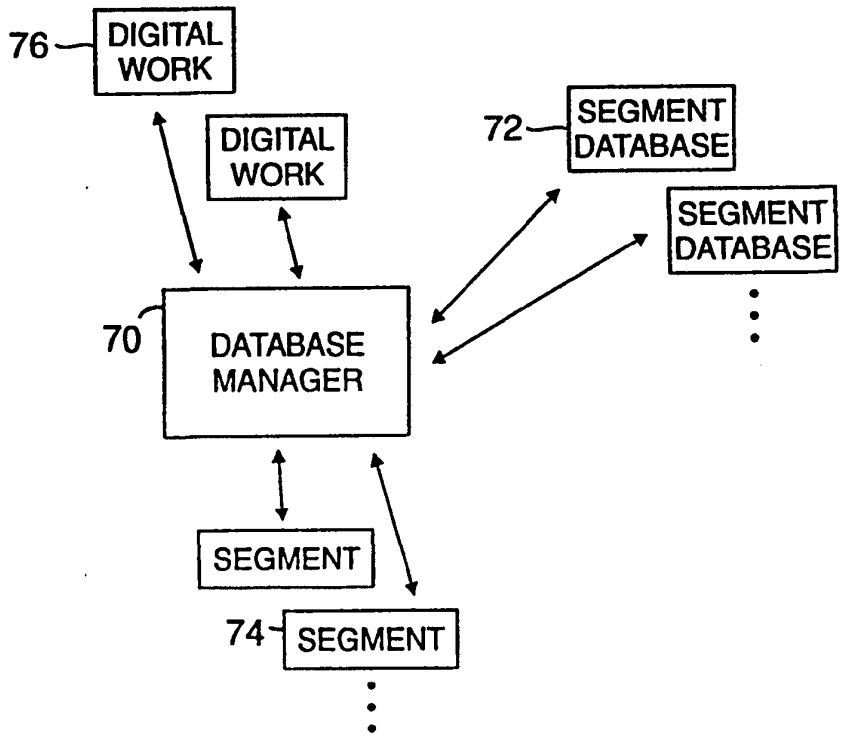
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(57) Abstract

A digital work (76) incorporates a call that identifies an associated digital advertising segment (74), the call being expressed in accordance with a predefined protocol, providing the digital advertising segment (74) in a format that can be located in response to the call, and during a use of the digital work (76), effecting the call by locating the associated digital advertising segment (74). A preliminary version of the digital work may include a hole for inclusion of an advertising segment (74) as an integrated element of an audio or visual portion of the digital work (76). The preliminary version is provided to a source of advertising segments (74) to permit review of the preliminary version. An advertising segment (74) to be included in the digital work (76) is received from the source of advertising segments. While a user is using the digital work (76), the advertising segment (74) is automatically included as an integrated element in the proposed place.



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ADVERTISING IN DIGITAL WORKS

Background

This invention relates to advertising in digital works.

The term "digital works" includes any digital information that is created, stored, transmitted, received, retrieved, or used, whether on tangible media such as magnetic disks or tapes, compact disks (CD's), or ROM, or through communication by wire or optical fiber, or wirelessly. The digital information may be an executable program, such as a word processing application or a football game, or non-executable information such as sounds, images, video frames, or text.

Advertisers have used digital works for advertising products and services. For example, an automobile company distributed diskettes containing a program and information (including car pictures) that allowed a user to explore different cars sold by the company. Software companies sometimes include, in their software packages, advertising about other products available from them.

United States patent 5,105,184 proposes integrating advertisements in screens displayed during the use of computer software. That patent also mentions a game, "The Duel: Test Drive II", in which "Ferrari F40 and Porsche 959 have been used as a part of the software."

Summary

In general, in one aspect, the invention features including, in a digital work, a call that identifies an associated digital advertising segment, the call being expressed in accordance with a predefined protocol, providing the digital advertising segment in a format

that can be located in response to the call, and during a use of the digital work, effecting the call by locating the associated digital advertising segment.

Implementations of the invention may include one or more of the following features. A call may also be included in another digital work. The other call may identify an associated digital advertising segment and may be expressed in accordance with the same predefined protocol. The two digital advertising segments associated with the two calls may be the same. The first digital work may include another call that identifies another associated digital advertising segment, the call being expressed in accordance with the predefined protocol. After the digital advertising segment is located, it may be exhibited to a user.

A generic digital segment may be provided in a format that permits it to be fetched in response to the call. During a use of the digital work, the call may be effected by locating the generic digital segment. The digital advertising segment may incorporated as part of the digital work, and copies of the digital work may then be distributed.

The advertising segment may include an image of a product as an integral part of an audio or visual impression exposed to a user of the digital work. The audio or visual impression may include an image or video sequence having visually related elements and the digital advertising segment may be one of the elements. The audio or visual impression may include a sequence of audio elements. The digital work may include an interactive audio-visual work, such as a game.

In general, in another aspect, the invention features creating a preliminary version of a digital work that includes a hole for inclusion of an advertising segment as an integrated element of an audio or visual

portion of the digital work. The preliminary version is provided to a source of advertising segments to permit review of the preliminary version. An advertising segment to be included in the digital work is received from the source of advertising segments. While a user is using the digital work, the advertising segment is automatically included as an integrated element in the proposed place.

Advantages of the invention may include one or more of the following.

The invention provides a common medium for exchange of (and thus a market for) advertisements between advertisers and developers of games or other software. The developer may develop a game with what are essentially advertising "holes" to be filled by willing advertisers. The advertisers can review the proposed games and see the nature and environment of the holes to be filled. They can then decide whether or not to place advertisements in the holes and, if so, when, where, and under what other circumstances the advertisements will be experienced by the user of the software. Delivery of the advertisement for inclusion in the software is made simpler because a standard format is defined that can be used by a range of advertisers who deal with a range of developers. Software developers have the opportunity to generate additional revenue from advertising place in their products. Because there is a common format for the holes in the products, a market will exist in which the developer may easily solicit advertising from a wide variety of advertisers and be able to show how the advertising would fit into the product. Use of generic holes in the product assure that the developer will be able to distribute the product even if not all of the holes are filled by actual advertising, and also enable

the developer to present a complete polished product to the advertiser.

Other advantages and features will become apparent from the following description and from the claims.

Description

Figure 1 is a screen display.

Figure 2 is a diagram of a database.

Figure 3 is a schematic block diagram of the operation of a database manager.

Figure 4 is a schematic flow diagram.

Figures 5 and 6 are flow diagrams.

As seen in the example of Figure 1, a developer of, e.g., a multimedia computer game in which the user navigates a town using a car 10, may include, in screen displays, images of retail stores 12 and a pedestrian 14. In an initial, development version of the game, the developer may include a variety of advertising "holes" where advertisers could add their advertising. For example, the car itself could represent a hole in the sense that a car maker could be solicited to have the car image be an image of one of its products. The shoes 16 worn by the pedestrian could represent another advertising hole. The names of the stores could also be holes. These would be of a different kind from the car and the shoes in that those holes would simply be names, rather than the products of the stores. However, the store fronts 20 could also be holes to be filled with images that suit the nature of the stores.

An advertising hole could also be in the form of a sound sequence or a video sequence to be experienced by the user. These holes could be indicated to the advertiser in an analogous way to the images of Figure 1. For example, a sentence spoken by pedestrian 14 could include a hole as follows: "Gee, look at that sporty

FRAZBEDINE car over there in front of the WHIMMIDIDDLE store." "FRAZBEDINE" and "WHIMMIDIDDLE" would represent the holes.

At least some of the holes (the car and the shoes, for example) are for advertising segments that represent elements that are integrated parts of the scene; that is, they are not separate standalone advertisements that might appear in a box somewhere on the screen. For example, the shoes are an integrated part of the pedestrian, and the car is an integrated part of the street scene. Also, the advertisements may be subliminal in the sense that the car or shoes may appear as normal parts of a real-world scene, without any accompanying advertising copy. That is, the product itself is the advertisement.

In the initial, development version of the game, the advertising holes would be represented by generic versions of the advertising to be included. For example, the car would be a generic image of a car, the shoes would be generic shoes, and the signs on the store fronts would be generic signs. In the case of the shoes, for example, the generic image would not simply be a white blank space in the image of the pedestrian, but would be an actual shoe bearing no particular trade dress or trademark. One advantage of providing generic images rather than blank spaces is that the developer can create a complete, marketable game without knowing for certain whether each hole will be filled by actual advertising. Even if a hole is not filled, the game can be marketed as developed, without more work by the developer on the holes.

The generic images could be created by the developer. But a possibly better approach would be to have a third party, perhaps an advertising agency, serve as an intermediary. The intermediary could provide

developers with a set of generic digital images (or sounds or video clips) of advertising holes that the intermediary believes would be salable to potential advertisers.

Once the developer had created the game with the generic advertising holes, the initial version would be provided to potential advertisers, either directly or through the intermediary. Unlike many advertising situations, the advertiser could then see exactly the context in which the advertising would appear and make a good judgment on whether to place advertisements in the holes, as well as the geographic location and timing of the advertising.

An advertiser that chose to place advertisements in the holes in such a product would then enter into an appropriate agreement with the developer, and would provide digital versions of the advertising segments to be used to replace the generic holes (for example an image of an actual car or a shoe). The developer would incorporate the segments into the product and distribute it to end users.

In a simple scheme, the game would forever exhibit the same advertising segments in the same holes. In a more flexible arrangement, the advertiser could specify periods of time during which and the geographic locations in which the advertisements would be exhibited. For example, the game used in the northeast United States could fill a car hole on weekdays with one car of one manufacturer, and on weekends with a different car of a different manufacturer. The advertising schedule could be varied in accordance with virtually any variable which the digital work is capable of detecting at the time it is being run on the computer, such as the system time, the hardware complement of the computer system, or even the number of times a user takes a certain action during

use of the game. For example, if the user repeatedly navigates the car of Figure 1 past a certain street intersection in the game, then the sign on one of the stores could be filled with one advertiser's marquee, otherwise with another.

As explained below, the formats for the software calls to the generic holes, and the generic holes and the advertising segments to fill them would be satisfy a common protocol. In this way, an advertiser or intermediary could create advertising segments in a single format and be able to distribute them easily to a variety of developers. Developers, on the other hand, would be able to write games or other digital works with common calls, knowing that they will be sufficient to cause incorporation into the program, as it is being used, of the advertising segments needed. The developer is then free to fully develop the game without needing to sell advertising and incorporate it by hard coding during the course of the development work.

When the developer distributes the digital work to users, the advertising segments may be included as part of the distribution medium, such as a CD-ROM. Alternatively, it may be possible to have the advertising segments delivered to user separately from the medium, e.g., by downloading them electronically from a central location to the user. The game may be itself be distributed to the user electronically and in that case, the advertising segments could also be downloaded, either in a batch mode, or conceivably in real time, as needed.

The distribution version of the digital work could include full files of all of the generic advertising holes and actual advertising segments, or the files could be culled to leave only those that are actually to be used in executing the digital work. As seen in Figure 2, the advertising segment database 50 would include

segments 52 and a mapping table 54. Each of the segments includes a flag 56 indicating whether the segment is a real one or a generic one, a file of compressed data 58 (e.g., a wavelet compressed version of the highest resolution image to be displayed), a format ID 60 indicating the format (e.g., .JPG) in which the segment is expressed and possibly also indicating the method by which the file had been compressed), and a size ID 62 indicating the size of the file.

Each entry 64 in the mapping table includes values for the LOCATION, MASTER NO., SYSTEM DATE, SYSTEM TIME, and SYSTEM SEGMENT variables, discussed below, and an associated pointer 68 to the corresponding segment which is to be used when the variables have that combination of values.

The advertising segment database may exist in a variety of different versions which have different combinations of the segments, and the associated mapping table. One version could be provided by an intermediary and contain a range of generic segments which could be included by a developer in any of a variety of digital works being prepared by him. The generic database could be circulated to a range of developers and to a range of potential advertisers.

Another version of the database could include real advertising segments generated by advertisers or intermediaries for use in digital works. In one scheme the real segments could be limited to those originated by a single advertiser and which are to be included with a specific digital work. In another scheme, the database could include the real segments of a single originating advertiser and which are to be included in digital works of several developers (for example, the database could be a "Ford Motor Company" database containing all of the segments that Ford wishes to have included in digital

works at a given time. Or the database could include multiple real segments from multiple originating advertisers and be distributed to developers by an intermediary.

Other versions of the database could be used by the developer. For example, the developer's version used during development could include all of or a selection of generic segments and real segments received from a variety of sources. The digital work to be distributed would have a database that could include only the real segments and generic segments needed to execute the digital work.

As seen in Figure 3, in order to manage, create, revise, and use the segment databases 72, advertisers, developers, and intermediaries would use a database manager 70. Manager 70 would have a convenient user interface and would run on a personal computer. The functions of manager 70 would include the following:

1. Read segments 74 and exhibit their contents to the user. This may require the ability to decompress the segments, convert their formats, adjust their sizes, and exhibit them.

2. Read mapping table entries and display their contents.

3. Permit revisions of the segments and mapping table entries. An appropriate interactive user interface could be provided for this purpose.

4. Extract or copy segments from a segment database. This would be necessary in order to build other databases.

5. Store of new segments onto a segment database. This may require the ability to compress the segments, convert their formats, and adjust their sizes.

6. Merge and partition segment databases.

7. Create a mapping table entries for segments. At the time that a segment is to be added to the database, a table entry must be created which would include values for the arguments mentioned below in the discussion of the GET SEGMENT routine.

8. Package a segment database and associated run-time routines and loading them into a digital work 76 for development or distribution purposes.

9. Read a segment database from a digital work and displaying segments and mapping table entries from it.

As seen in Figure 4, for using the segments on the database, the digital work includes: a SETUP call 80 in the initialization part of the digital work instruction sequence 82; GET SEGMENT calls 84 located in the places in the digital work where advertising segments are to be performed; a SETUP routine 86 that responds to the SETUP call; a GET SEGMENT 88 routine that responds to the GET SEGMENT calls; and the segment database 90. The GET SEGMENT and SETUP routines can be provided to the developers by a third party for linking to their digital works at the time the works are committed to disk or other storage medium.

The format of the GET SEGMENT call instruction would be:

GET SEGMENT (SEGMENT TYPE, FORMAT, SIZE).

SEGMENT TYPE is an identification of the nature of the segment, e.g., a value indicating that the segment is an head-on image of a shoe.

SIZE is the size in pixels of the segment to be returned. Its purpose is to assure that the returned segment will be suitable for display by the digital work.

FORMAT is the format of the segment to be returned, e.g., .JPG, .BMP. Its purpose is to assure

that the returned segment is in a format suitable for use by the digital work.

As seen in Figure 5, the GET SEGMENT call is executed 102, the arguments are passed 104 to the GET SEGMENT routine 88, which is begun 106. The GET SEGMENT routine then fetches 108 additional parameters, including LOCATION, SYSTEM DATE, SYSTEM TIME, MASTER NUMBER, discussed below. The SYSTEM DATE and SYSTEM TIME are obtained from the operating system. The LOCATION and MASTER NUMBER are fetched from memory.

The GET SEGMENT routine uses a combination of the SYSTEM DATE, SYSTEM TIME, LOCATION, MASTER NUMBER, and SEGMENT TYPE as indices into the mapping table of the data base to lookup 110 the pointer to the corresponding advertising segment in the database. For example, if the SYSTEM DATE is October 23, the SYSTEM TIME is 8:03 PM, the LOCATION is Northeastern United States, the MASTER NUMBER indicates this is the game called Black Dynamite, and the SEGMENT TYPE is a candy bar, the pointer may be to a top view of a Snickers candy bar.

LOCATION represents the geographic location to which the game has been distributed and therefore specifies the relevant advertising segment to be displayed. A digital work could be distributed, for example, to six different geographic markets and six different advertisement segments could be provided for use in a given hole in the six different markets. The different advertising segments could be in different languages.

MASTER is the identity of the digital work which is making the call. In the case where the digital work carries with it a full range of advertising segments for use with a range of different digital works, MASTER will identify the segments of the current digital work.

In the candy bar example, the mapping table would have entries that would set a range of system dates, such as October 1 through February 1, a range of times, such as 7:00 AM to 11:00 PM, a range of locations, such as northeastern and central United States, and a specific segment type, e.g., a candy bar. The combinations of those entries would be associated with the Snickers candy bar.

Using the pointer, the GET SEGMENT routine then fetches 112 the segment. The GET SEGMENT routine then decompresses 114 the segment, converts 116 the format to the one defined by FORMAT, adjusts 118 the pixel size to one defined by SIZE, and returns 120 the processed segment to the digital work.

This process would be repeated each time another segment is needed in the digital work.

As seen in Figure 6, the SETUP CALL 130 triggers the SETUP routine to begin 132. The SETUP routine fetches the SYSTEM TIME and SYSTEM DATE from the operating system 134, and fetches 136 the MASTER NUMBER and the LOCATION from special storage locations in the database. It stores the MASTER NUMBER and LOCATION values in memory for use when the digital work runs.

Suppliers of advertising segments would supply them in the format of the records of the advertising segment database and would include the location, master number, and segment type information sufficient to build the entries of the mapping.

Thus, the definition of the GET SEGMENT call and subroutine would serve as a common protocol usable by any developer, and the format of the database and mapping table entries would serve as a common protocol for delivery of the advertising segments from any advertiser.

Other embodiments are within the scope of the following claims. For example, the scheme could be used

with any digital work, not only a game. And the same advertising segment may be used in more than one digital work.

Claims

1. A method comprising

in a digital work, including a call that identifies an associated digital advertising segment, the call being expressed in accordance with a predefined protocol,

providing the digital advertising segment in a format that can be located in response to the call, and

during a use of the digital work, effecting the call by locating the associated digital advertising segment.

2. The method of claim 1 further comprising

including, in another digital work, a call that identifies an associated digital advertising segment, the call being expressed in accordance with the predefined protocol.

3. The method of claim 2 wherein the two associated digital advertising segments are the same.

4. The method of claim 1 further comprising

including in the digital work another call that identifies an associated digital advertising segment, the call being expressed in accordance with the predefined protocol,

providing the other digital advertising segment in a format that can be located in response to the call, and

during a use of the digital work, effecting the other call by locating the other associated digital advertising segment.

5. The method of claim 1 further comprising

after locating the digital advertising segment, exhibiting the digital advertising segment to a user.

6. The method of claim 1 further comprising

providing a generic digital segment in a format that permits it to be fetched in response to the call, and

during a use of the digital work, effecting the call by locating the generic digital segment.

7. The method of claim 1 further comprising

incorporating the digital advertising segment into the digital work, and

distributing copies of the digital work.

8. The method of claim 1 wherein the advertising segment comprises an image of a product.

9. The method of claim 1 wherein the digital advertising segment is an integral part of an audio or visual impression exposed to a user of the digital work.

10. The method of claim 9 wherein the audio or visual impression comprises an image or video sequence having visually related elements and the digital advertising segment comprises one of the elements.

11. The method of claim 1 wherein the audio or visual impression comprises a sequence of audio elements and the digital advertising segment comprises one of the elements.

12. The method of claim 1 wherein the digital work comprises an interactive audio-visual work.

13. The method of claim 12 wherein the digital work comprises a game.

14. The method of claim 1 wherein the digital work comprises a selection of images, video sequences, or sounds.

15. A method comprising

creating a preliminary version of a digital work that includes a hole for inclusion of an advertising segment as an integrated element of an audio or visual portion of the digital work,

providing the preliminary version to a source of advertising segments to permit review of the preliminary version,

receiving from the source of advertising segments an advertising segment to be included in the digital work, and

while a user is using the digital work, automatically including the advertising segment as an integrated element in the proposed place.

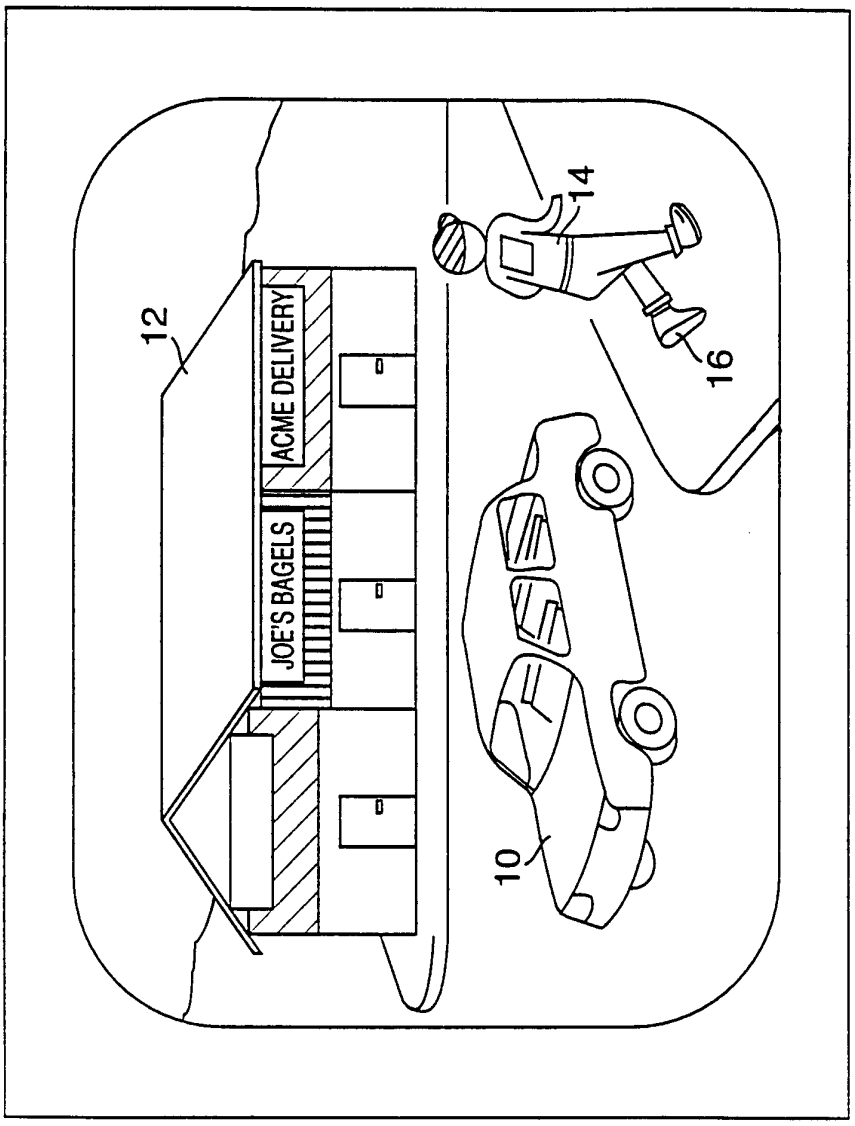


FIG. 1

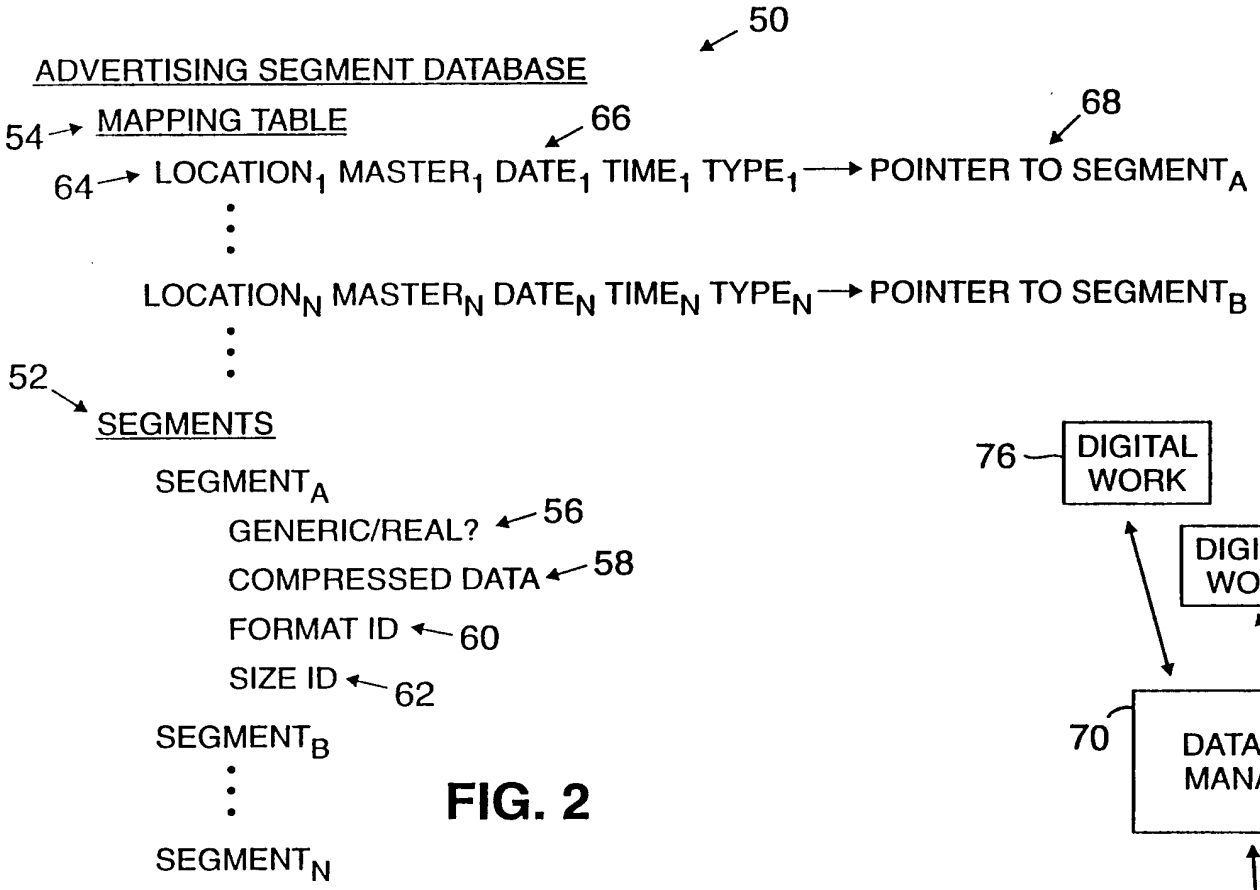

50
ADVERTISING SEGMENT DATABASE
54
MAPPING TABLE
66
68
64
LOCATION1 MASTER1 DATE1 TIME1 TYPE1
POINTER TO SEGMENTA
LOCATIONN MASTERN DATEN TIMEN TYPEN
POINTER TO SEGMENTB
52
SEGMENTS
SEGMENTA
GENERIC/REAL?
56
COMPRESSED DATA
58
FORMAT ID
60
SIZE ID
62
SEGMENTB
SEGMENTN

FIG. 2

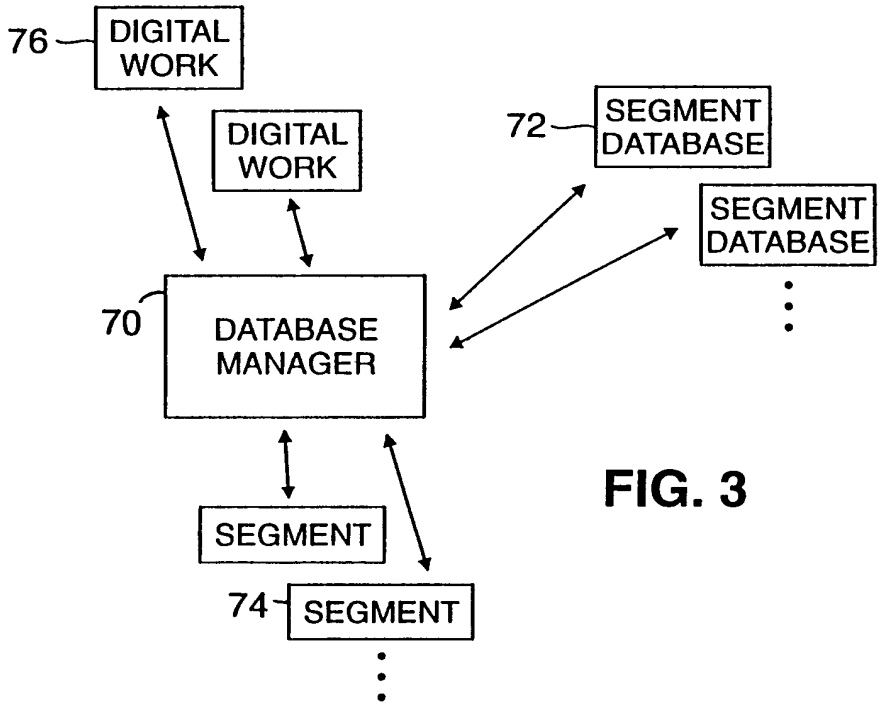
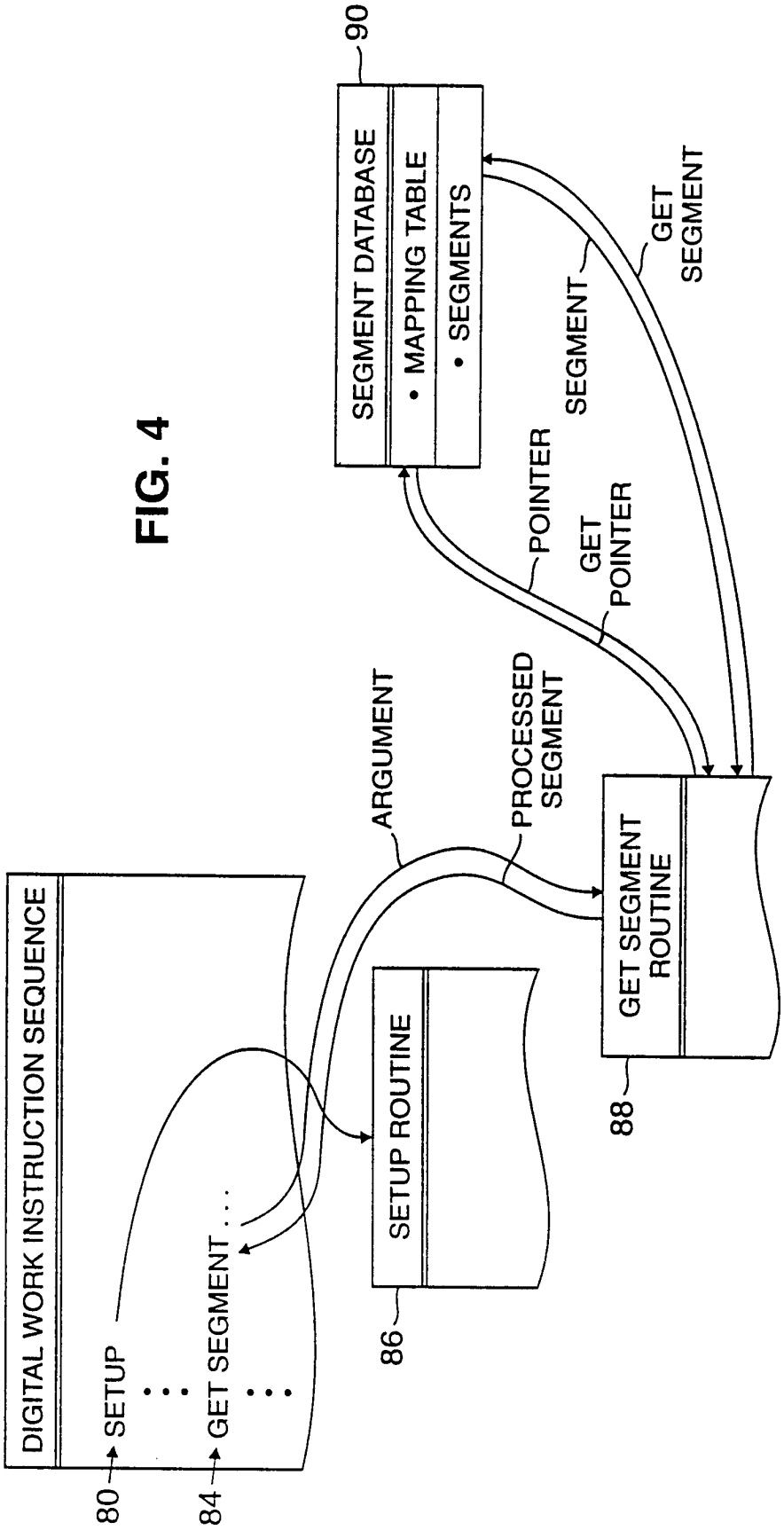

76
DIGITAL WORK
DIGITAL WORK
72
SEGMENT DATABASE
SEGMENT DATABASE
70
DATABASE MANAGER
SEGMENT
74
SEGMENT

FIG. 3

FIG. 4


DIGITAL WORK INSTRUCTION SEQUENCE
SETUP
GET SEGMENT . . .
80
84
SETUP ROUTINE
86
GET SEGMENT ROUTINE
88
ARGUMENT
PROCESSED SEGMENT
POINTER
GET POINTER
SEGMENT
GET SEGMENT
SEGMENT DATABASE
• MAPPING TABLE
• SEGMENTS
90

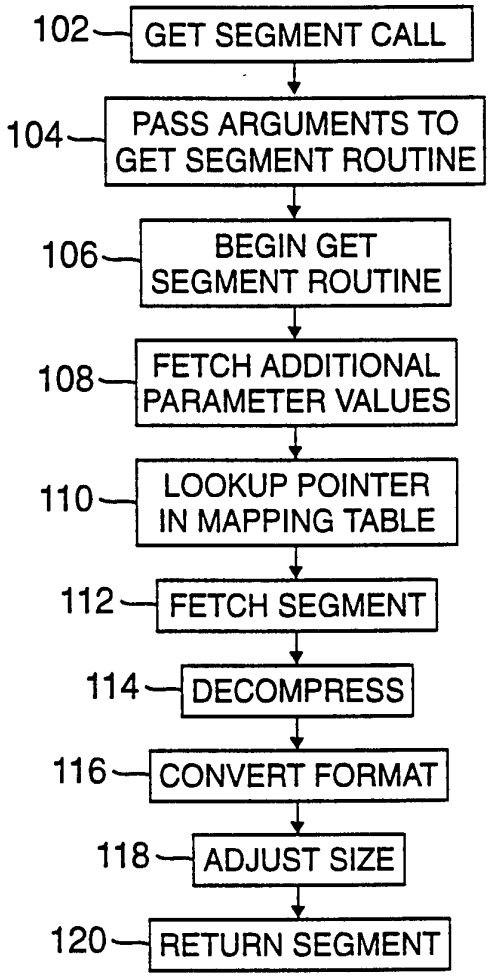

102
GET SEGMENT CALL
104
PASS ARGUMENTS TO GET SEGMENT ROUTINE
106
BEGIN GET SEGMENT ROUTINE
108
FETCH ADDITIONAL PARAMETER VALUES
110
LOOKUP POINTER IN MAPPING TABLE
112
FETCH SEGMENT
114
DECOMPRESS
116
CONVERT FORMAT
118
ADJUST SIZE
120
RETURN SEGMENT

FIG. 5

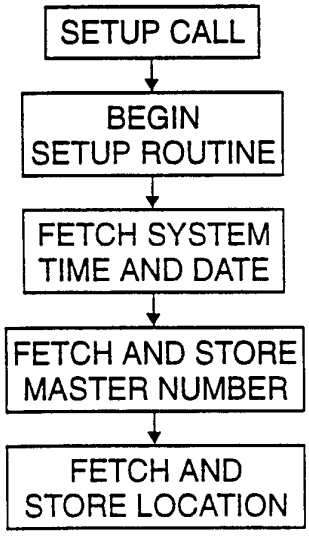

SETUP CALL
BEGIN SETUP ROUTINE
FETCH SYSTEM TIME AND DATE
FETCH AND STORE MASTER NUMBER
FETCH AND STORE LOCATION

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/14263

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G09G 5/00
US CL :345/115, 133
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 345/1, 2, 115, 116, 119, 120, 133, 141, 185, 201, 202, 203

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 5,105,184 (PIRANI ET AL) 14 April 1992, col. 3, line 47 to col. 4, line 44.	1-15
Y	US, A, 4,782,463 (SANDERS ET AL) 01 November 1988, col. 9, line 3 to col. 10, line 13.	1-15

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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