United States Patent [19]

Cohen et al.

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[54] **DATA PROCESSING METHOD TO PROVIDE A GENERALIZED LINK FROM A REFERENCE POINT IN AN ON-LINE BOOK TO AN ARBITRARY MULTIMEDIA OBJECT WHICH CAN BE DYNAMICALLY UPDATED**

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[52] U.S. Cl. 395/154; 395/144; 395/148; 395/275; 395/600

[58] Field of Search 395/153, 154, 275, 600, 395/148, 144; 340/717, 721, 345; 345/1, 2; 364/282.1

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(List continued on next page.)

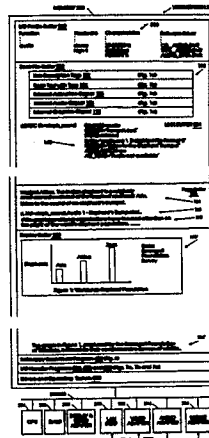Primary Examiner—Heather R. Herndon
Assistant Examiner—Joseph H. Feild
Attorney, Agent, or Firm—John E. Hoel; Edward H. Duffield

[57] **ABSTRACT**

A generalized link is provided in a data processing system to enable referencing from a point within an organized hierarchy of an on-line softcopy text, to an arbitrary multimedia object. The multimedia object may be represented by data which is also contained within the softcopy book or alternately which may be separate from the book as a separate file or a separate data base. This enables an author at the time of writing the softcopy book, to specify specific multimedia hardware and software support for the display of multimedia presentations accompanying the text in the book. Provision is made for the author to specify alternate forms of multimedia presentation, where a particular specified multimedia apparatus or supporting software is not present at a workstation. An improved method for dynamically updating a softcopy book to a new edition is also disclosed.

8 Claims, 18 Drawing Sheets

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FIG. 1

100

FILE INDEX 105	
LINK DESCRIPTION TAGS 102	(FIG. 1a)
BOOK TEXT WITH TAGS 104	(FIG. 1b)
INTERNAL ANIMATION OBJECT 106	(FIG. 1c
INTERNAL AUDIO OBJECT 108	(FIG. 1d)
INTERNAL GRAPHICS OBJECT 110	(FIG. 1e)

FIG. 1c

106

OBJECT='family_clip.anm'   Motion Picture in Bit Map Animation Sequence

```
1111111111111111  1111111111111111  1111111111111111       1111111111111111
1100111111111111  1111111111111111  1111111111111111  ...  1111111111111111
1111001111111111  1111001111111111  1111111111111111       1111111111111111
1111110011111111  1111110011111111  1111110011111111       1111111111001111
1111111100111111  1111111100111111  1111111100111111       1111111100111111
1111111111111111  1111111111001111  1111111111001111       1111111111001111
1111111111111111  1111111111111111  1111111111110011  ...  1111111111110011
1111111111111111  1111111111111111  1111111111111111       1111111111111111
```

180a   180b   180c   180i

...

FIG. 1d

108

OBJECT='trumpet.aud'   Audio Data 184

```
0001  0010  0011  0100  0101  0110  0111  0111  0111
0110  0101  0100  0100  0101  0110  0110  0110  0101
0100  0010  0010  0010  0001  0000  0000  0000  0000
```

FIG. 1a

102

:LDESC ID=eleph_movie   OBJTYPE=video   120

                                      OBJECT='family_clip.vid'
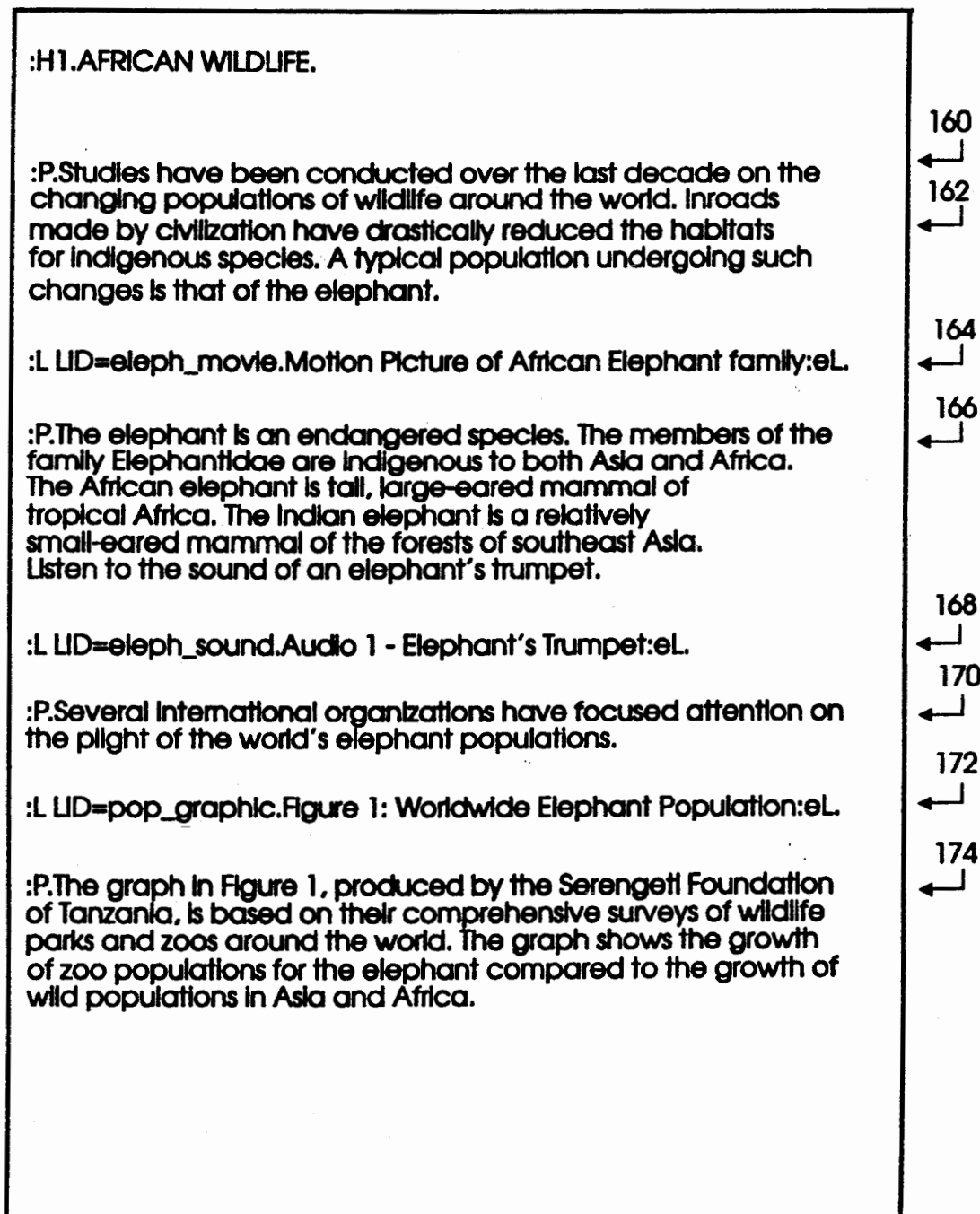   STORE=external
                                      DATA='video.exe \ CD Video File Format A'
                                      RUNTEXT='African Elephant Family Video'

                                      AUTOLAUNCH=no
                                      VIEW=center
                                      STYLE=2

                                      ALT_OBJECT='family_clip.anm'
                                      ALT-STORE=internal
                                      ALT_DATA='\Animation; 100 frames; B/W bitmap'
                                      ALT_TEXT='African Elephant Family Animation'

                                      ALT_TEXT2='Video not available'

:LDESC ID=eleph_sound   OBJTYPE=audio   140

                                      OBJECT='trumpet.aud'
                                      STORE=internal
                                      DATA='audio.exe \ DeltaMod File Format B'
                                      RUNTEXT='Listen to the Elephant Trumpet'

                                      AUTOLAUNCH=no

                                      ALT_TEXT2='Audio not available'

:LDESC ID=pop_graphic   OBJTYPE=graphic   150

                                      OBJECT='population.gph'
                                      STORE=internal
                                      DATA='graph.exe \ GOCA Format C'

                                      AUTOLAUNCH=yes
                                      VIEW=bottom
                                      STYLE=2

                                      ALT_TEXT2='Graphics not available'

FIG. 1b

104

:H1.AFRICAN WILDLIFE.

160

:P.Studies have been conducted over the last decade on the
changing populations of wildlife around the world. Inroads
made by civilization have drastically reduced the habitats
for indigenous species. A typical population undergoing such
changes is that of the elephant.

162

:L LID=eleph_movie.Motion Picture of African Elephant family:eL.

164

:P.The elephant is an endangered species. The members of the
family Elephantidae are indigenous to both Asia and Africa.
The African elephant is tall, large-eared mammal of
tropical Africa. The Indian elephant is a relatively
small-eared mammal of the forests of southeast Asia.
Listen to the sound of an elephant's trumpet.

166

:L LID=eleph_sound.Audio 1 - Elephant's Trumpet:eL.

168

:P.Several International organizations have focused attention on
the plight of the world's elephant populations.

170

:L LID=pop_graphic.Figure 1: Worldwide Elephant Population:eL.

172

:P.The graph in Figure 1, produced by the Serengeti Foundation
of Tanzania, is based on their comprehensive surveys of wildlife
parks and zoos around the world. The graph shows the growth
of zoo populations for the elephant compared to the growth of
wild populations in Asia and Africa.

174

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