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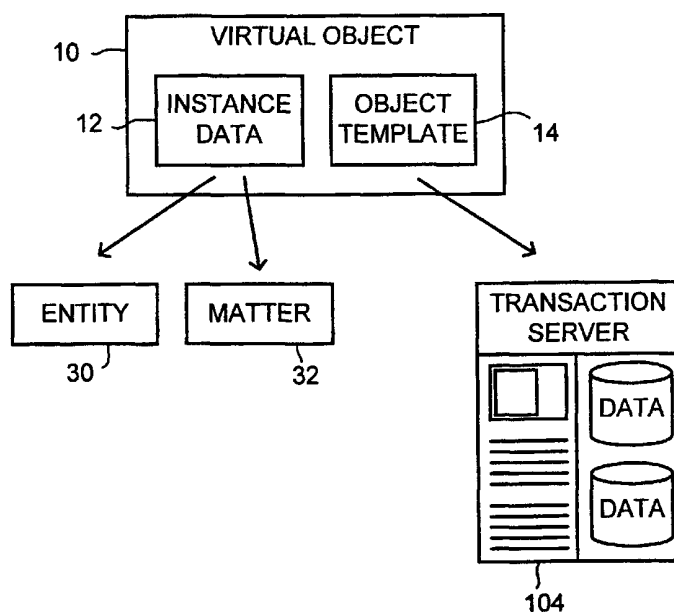
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(54) Title: METHOD AND SYSTEM FOR EXCHANGING INFORMATION



(57) Abstract: Method for exchanging virtual objects (10) between a plurality of entities via a communication network, the communication network including a transaction server (104), wherein each of the virtual objects (10) is constructed of an object template (14) and an object data (12), the transaction server (104) including a repository for storing copies of the object templates (14), the method including the steps of transmitting an object template identification, associated with the virtual object (10), from a first entity (30) to a second entity, via the communication network, detecting if the second entity includes an object template associated with the object template identification, and retrieving the object template from the repository when the second entity does not include the object template.



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METHOD AND SYSTEM FOR EXCHANGING INFORMATION

FIELD OF THE INVENTION

The present invention relates to methods and systems for
5 exchanging information, in general, and to electronic communication tools
and methods for exchanging information, in particular.

BACKGROUND OF THE INVENTION

Methods and systems for providing virtual communities are
10 known in the art. In general, two users who are members of such a
system, notify a special community server of their current condition such
as being on the web or being in connection with a selected web site
(according to its URL). If the two users are associated with the same group
within the community, then the community server can provide to each of
15 them information stating that the other is available or is at the same
location.

Conventional systems also provide the ability for such users to
communicate using conventional chat modules, where they can exchange
views.

20 Electronic-commerce (E-commerce) is known in the art.
Conventional web sites are like booths in a huge exhibition. Some sell
products, others provide information and brochures. There are millions of
visitors, at this "exhibition", visiting the sites that are "booths".

Unlike real life, the participants in this exhibition cannot
25 exchange physical items, which they would, had they met in reality, such
as business cards, credit cards, and the like. Such information has to be
keyed into the system every time. Even sites equipped with the latest
customer-care technology only allow limited interaction between the site
operator and visitor.

The immediate result is that on average only 1-2 percent of the visitors to any given web site become customers. Service sites are unable to conduct any business on the web, and average revenue per user per year is relatively low (under \$1200/year in 1999), as customers prefer to
5 turn to brick-and-mortar channels for the "human touch". (IDC Research '98).

According to a recent Jupiter Research survey, 40 percent of all respondents said that they would be more comfortable with online purchasing if there were more human contact.

10 US Patent No. 5,864,874, to Shapiro and entitled "Community Co-Presence System", is directed to a method for enabling a number of users who retrieve the same data object from a data base, to establish communication with one another. The users are each connected to a co-presence server and to a data server. A first user forwards a request to
15 the data server to retrieve a data object from a data repository, and it informs the server of this action. The server then creates a virtual place for the data object retrieved. If a second user analogously retrieves the same data object from the repository, the server informs the second user that a first user had retrieved the data object.

20 US Patent No. 5,862,330 issued to Anupam et al. and entitled "Technique For Obtaining and Exchanging Information on World Wide Web", is directed to a method for providing textual communication among users connected in a web, and accessing a specific web site. A user forwards a request to the server for initiating a session. The server greets
25 the user by displaying a web page on his display, offers the choice of a private or a public session, and starts the requested session. A second user may analogously forward a request to the server to join an ongoing session, at which point the server establishes a connection between the first and the second user.

30 US Patent No. 5,861,883 issued to Cuomo et al. and entitled "Method and System for Portably Enabling Awareness Touring, and

Conferencing Over the World-Wide-Web Using Proxies and Shared-State Servers", is directed to a method for providing connection among collaborators. A plurality of local area networks, each composed of a number of users, are connected to a network of servers. The web browser
5 of a user forwards a request to a first software, so as to join a session. The first software exchanges data with a web server, and in turn forwards the data to the web browser, which contains an applet. The applet in turn establishes a link with the network of servers through a second software, and furthermore enables the user to transmit data to other users.

10 US Patent No. 5,796,393 issued to MacNaughton et al. and entitled "System for Integrating an On-Line Service Community With a Foreign Service", is directed to a method for determining the preferences of a user, and facilitating an improved interaction with other users in the net. The method incorporates a community server connected to a plurality
15 of users. The community server notifies the user of preferences of other users who are on the same web page. Thus, a user is able to establish communication with another user concerning a desirable subject.

SUMMARY OF THE PRESENT INVENTION

It is an object of the present invention to provide a novel method and system for exchanging virtual objects, between different entities, over a communication network, which overcomes the prior art.

In accordance with the present invention, there is thus provided a method for exchanging virtual objects between a plurality of entities via a communication network. The communication network includes a transaction server, a web server, a co-browsing server, and a plurality of users. Each virtual object is constructed of an object template and an object data. The transaction server includes a repository for storing copies of the object templates, a personal inventory items data-base, a URL related items data base, a processor, and a communication interface.

The method includes the steps of transmitting an object template identification, from a first entity to a second entity, and detecting if the second entity includes an object template associated with the object template identification. The method further includes the step of retrieving the object template from the repository when the second entity does not include the object template. The object template identification is associated with the virtual object, and it is transmitted via the communication network.

The method can further include the step of transmitting the object instance data from the first entity to the second entity. The object instance data is associated with the virtual object, and it is used as input to the object template. The method can further include the step of initiating the retrieved template by the second entity, according to the received object instance data.

The step of transmitting can be initiated by a drag and drop operation of a visual representation of the virtual object onto a visual representation of the second entity by the first entity. The object template

identification can include a virtual object template type and a virtual object template repository location.

In accordance with another aspect of the present invention, there is thus provided a virtual object, which includes a virtual object template and instance data. The virtual object template defines an outline of the virtual object, and the instance data define a finite substance for the virtual object, when provided as input to the virtual object template. A copy of the virtual object template is stored in a remote repository, to be accessed and retrieved by a remote station, according to a virtual object template identification. The virtual object template can further include executable code, and the substance data includes virtual object information. The substance data can further include virtual object executable code, to be executed in association with the virtual object template.

The virtual object template can further include a virtual object interface for linking to other virtual objects. The combination of the virtual object template and the instance data can be unique, such as in the case of a virtual credit card. Alternatively the combination of the virtual object template and the instance data can be non-unique, such as in the case of a virtual book object. The virtual object can include a virtual object identification code, and a virtual object template identification code.

In accordance with a further aspect of the present invention, there is thus provided a transaction server, which includes a communication interface, a processor, and a virtual object template repository. The communication interface is connected to a communication network. The processor is connected to the communication interface and to the virtual object template repository. The virtual object template repository is designated for storing a plurality of virtual object templates.

The transaction server can further include a personal inventory virtual object data-base, which is connected to the processor. The personal inventory virtual object data-base is designated for storing data

related to virtual objects, wherein each of the virtual objects is associated with at least one entity. The transaction server can further include a location related virtual object data-base, which is connected to the processor. The location related virtual object data-base is designated for
5 storing data related to virtual objects, wherein each of the virtual objects is associated with at least one network location.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which:

5 Figure 1A is a schematic illustration of the general association structure of a virtual-object, constructed and operative in accordance with a preferred embodiment of the present invention;

 Figure 1B is a schematic illustration of an item data structure, constructed and operative in accordance with another preferred
10 embodiment of the present invention;

 Figure 2 is a schematic illustration of a communication system, and a transaction server, constructed and operative in accordance with a further preferred embodiment of the present invention;

 Figure 3 is an illustration in detail of transaction server of Figure
15 1;

 Figure 4, is an illustration of a method for operating the system of Figure 2, operative in accordance with another preferred embodiment of the present invention;

 Figure 5A is an illustration of a graphical user interface (GUI),
20 associated with a first user, at an initial stage, constructed and operative in accordance with a further preferred embodiment of the present invention;

 Figures 5B and 5C are illustrations of the graphical user interface of Figure 5A, at later stages;

 Figure 5E is an illustration of graphical user interface (GUI) of
25 Figure 5A, at a later stage, constructed and operative in accordance with another preferred embodiment of the present invention;

 Figure 6A is an illustration of a graphical user interface, associated with a second user, constructed and operative in accordance with a further preferred embodiment of the present invention;

Figure 6B is an illustration of a graphical user interface of Figure 6A, at a later stage, constructed and operative in accordance with another preferred embodiment of the present invention; and

5 Figure 7, is an illustration of a method for operating the system of Figure 2, operative in accordance with a further preferred embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention overcomes the disadvantages of the prior art by providing a novel method, system and data structure which enables defining virtual items and drag-and-drop operations of these virtual items, between users to other users and to web sites. A minimal form of such a virtual item is also referred to as a virtual-object. A virtual object is an item, which virtually materializes substance, and has the ability to be exchanged between two entities over a communication network. There can be many types of virtual objects such as credit card, business card, hotel voucher, a bulletin board, a message, a key and the like.

A virtual object can be associated with a persona of a user, a matter, an entity, a URL and the like. The present invention does not limit the type of virtual objects.

The present invention provides virtual items. These users can exchange these items between them and also provide them to web-sites, to which they are temporarily connected. Reference is now made to Figures 1A and 1B. Figure 1A is a schematic illustration of the general association structure of a virtual-object, constructed and operative in accordance with a preferred embodiment of the present invention. Figure 1B is a schematic illustration of an item data structure, constructed and operative in accordance with another preferred embodiment of the present invention.

With reference to Figure 1A, virtual-object 10 includes an object template 14 and instance data 12. The object template 14 is the structure of the virtual object 10 and includes the basic appearance thereof and any software module required to perform operations, which are related to the virtual object 10. The object template 14 is initially stored in and retrieved from a transaction server 104.

The instance data 12 includes all of the information, which provides substance to the virtual object 10. The instance data 12 is used as input to the object template 14, and can, for example, be used to

associate the virtual object 10 with a selected entity 30 such as a persona of a user (business card, credit card), a matter 32 (hotel or flight voucher) and the like.

It is noted that a certain person can assume several identities also called virtual existences, each being manifested in a different persona. Such a situation is common in large network societies, where a certain person has several user-names, each used for a different purpose. It is noted that a persona can also be associated with an entity, which is not human, either substantial (such as an organization) or virtual (such as a web site).

With reference to Figure 1B, the item data structure, generally referenced 50, which is transferred from a first entity (a user for example) to a second entity (a web site for example) includes at least the global unique identification of the item, the global unique identification of the template which is associated with the item, the location of the repository where the template can be retrieved from, and the instance data of the item.

Any user receiving these elements can retrieve the respective complete object (template and instance data) from a respective remote server. The relations between these elements will be explained herein below, in conjunction with Figure 4.

An object can be assigned with a globally unique identification (GUID) key, which can be stored on a remote global server such as the transaction server 104 (Figure 1).

One example for a virtual object is a credit card, where the object template includes a selected appearance of a credit card, with, for example, some animation thereon. The instance data of a credit card object can include several items such as the name of the card holder, the serial number of the card, the expiration date of the card, a maximal transaction amount, the issuing organization of this card, the identity of an

authorization entity to be used to verify the authenticity of the card, and the like.

It is noted that not all of the persona items have to be displayed as part of the appearance of the object. In the credit card example, only
5 the card issuing organization and the name of the card-holder can be displayed.

Another example for an object is a business card. Again, the object template includes the logical and visual outline of the object and the instance data includes the actual data, which is placed therein.

10 It is noted that an object template can include modules which are operative to produce sounds, via audio output devices, receive sounds via audio input devices, generate odors using special scent mechanisms (such as the Multimedia linked scent delivery system described in US Patent no. 5,949,522 to Manne), receive all types of multimedia input and
15 the like.

Another example for an object is a simple file, which includes properties such as the file name, the file type (text, binary), a representation of the data within the file (the text contained in the file for text files and a textual encoding of the content of the file, binary files) and
20 the like.

Reference is now made to Figure 2, which is a schematic illustration of a communication system, generally referenced 100, and a transaction server, generally referenced 104, constructed and operative in accordance with a further preferred embodiment of the present invention.
25 System 100 includes a plurality of users 102A, 102B, 102C, 102D and 102E, a web server 106, and a co-browsing server 108, where all of the above are connected to each other by a wide area network (WAN) 110. The transaction server 104 is a part of system 100, and is connected to each of the other elements of system 100, via WAN 110. Web server 106
30 stores and manages a plurality of web sites, each including a plurality of

web pages, some of which can be accessed by users 102A, 102B, 102C, 102D and 102E, each according to the access rights granted thereto.

It is noted that the transaction server 104 and the co-browsing server 108 can run on separate machines or on the same machine. It is further noted that the present invention is not limited to the type of network used, which can either be a LAN or WAN at any architecture, and the like.

Some of users 102A, 102B, 102C, 102D and 102E also connect to co-browsing server 108, which manages a virtual community therebetween. Transaction server 104 stores and manages a plurality of objects and object related items such as templates, for web-server 106, for co-browsing server 108 and for users 102A, 102B, 102C, 102D and 102E.

Reference is further made to Figure 3, which is an illustration in detail of transaction server 104 of Figure 2. Transaction server 104 includes a communication interface 130, a processor 132, an item template repository 138, a personal inventory items data-base 136 and a URL related items data-base 134. Processor 132 is connected to communication interface 130, item template repository 138, personal inventory items data-base 136 and to URL related items data-base 134.

The personal inventory items data-base 136 stores the inventory of registered users. The URL related items data-base 134 stores the URL related items. The item template repository 138 contains the physical representation of the item templates. Hence, any inventory record includes a pointer to a template at the item template repository 138.

Reference is further made to Figures 5A, 5B, 5C and 6A. Figure 5A is an illustration of a graphical user interface (GUI), generally referenced 200, associated with a first user, at an initial stage, constructed and operative in accordance with another preferred embodiment of the present invention. Figures 5B and 5C are illustrations of the graphical user interface of Figure 5A, at later stages. Figure 6A is an illustration of a graphical user interface, generally referenced 250, associated with a

second user, constructed and operative in accordance with a further preferred embodiment of the present invention.

With reference to Figure 5A, GUI 200 includes a navigation bar 204, a browsing area 202, a personal object area 206 and an area 208 which presents other entities which are currently present on the web and in contact with the machine running the GUI 200. For purposes of example, GUI 200 is operated by user 102A (Figure 2). Personal object area 206 includes presentations of a plurality of objects such as a credit card 210A, a business card 210E, two files 210B and 210C and a general object 210D.

Area 208 includes three persona representations 212B, 212C and 212D. Although a user can assume more than one persona, with respect to the present example, persona representations 212B, 212C and 212D are respectively associated with users 102B, 102C and 102D (Figure 2).

Browsing area 202 generally includes the presentation of a web page, which in the present example includes a payment area 214. The user operates GUI 200 by means of a pointing device, represented by arrow 216. It is noted that this pointing device can be replaced by other types of input devices such as keyboard, voice operated input devices, sight operated input devices, and the like.

With reference to Figure 6A, GUI 250 of the second user includes a navigation bar 254, a browsing area 262, a personal object area 226 and an area 258 which presents other entities which are currently present on the web and in contact with the machine running the GUI 250. Personal object area 226 includes presentations of a plurality of objects such as two files 252B and 252C and a general object 252A.

Reference is further made to Figure 4, which is an illustration of a method for operating system 100, operative in accordance with another preferred embodiment of the present invention.

In step 150, an object transfer is initiated from a first user to a second user. In the present example, user 102A (Figure 2) initiates a transfer of his own business card to user 102D. This is done by pointing on the business card representation 210E (Figure 5B) and dragging it onto the representation 212D of user 102D (Figure 5C). At this stage the background application transmits the item data structure which is associated with representation 210E to user 102D. It is noted that this step can further include a manual or automatic authorization of the virtual object transfer, by the receiving user, where automatic authorization is performed according to a plurality of parameters such as the identity of the sender, the nature of the virtual object, and the like.

In step 152, the application of the second user detects if the second user station already obtained the template, which is associated with the received item. With reference to Figure 2, the object management application of computer station of user 102D detects if it already obtained the respective template. If not, then the application of user 102D retrieves the respective object template from the repository location. In the present example, the second user retrieves (step 154) a business card template from item template repository 138 (Figure 3). It is noted that in the future, user 102D will proceed to step 156, since the answer to the above question will be positive.

In accordance with another aspect of the invention, a personal repository template is located at the transmitting user end. Accordingly, the receiving user can retrieve the object template from the transmitting user rather than from the transaction server.

In step 156, the object data is transmitted to the second user. It is noted that this data can either be provided from the first user or from the personal inventory items data base 136, in which case, the first user provides only a pointer to a selected record therein.

In step 158, the received object is initiated at the computer of the second user. With reference to Figure 6A, a representation of business

card 210E (Figure 5A) appears on GUI 250. With respect to the present example, the object representation appears underneath the representation 212A of user 102A (Figure 2). In accordance with another aspect of the invention, the virtual object representation can reappear within the object area 206 (Figure 5A), in a specified location of a directory-like structure (such as an inbox), and the like.

A virtual object can be set to incorporate various virtual behaviors such as the ability to be copied, be moved from one location to another, be deleted, to receive data from a remote entity, and the like.

With respect to the example presented in Figures 5A, 5B, 5C and 5D, the default behavior set for business card 210E and for credit card 210A, is the ability to be copied to the receiver end and not removed from the sender end. Hence, at the end of the virtual object transfer operation, a representation of credit card 210A reappears in personal object area 206.

On the other hand, the default behavior set for file 210B, is the ability to be moved from the transmitter end to the receiver end. Hence, when so dragged onto either of persona representations 212B, 212C and 212D, its own representation will cease to exist in personal object area 206.

Reference is further made to Figure 5D, which is an illustration of graphical user interface (GUI) 200 of Figure 5A, at a later stage, constructed and operative in accordance with a further preferred embodiment of the present invention. Here, the user drags the representation of his credit card 210A onto payment area 214, which indicates his will to pay for a specific service or item. No other operations are needed to complete the transaction. The credit card object properties are provided to the web-site which is associated with web server 106 (Figure 2) and a sequence of operations, similar to the one presented in conjunction with Figure 4, is undertaken.

Reference is further made to Figure 5E, which is an illustration of graphical user interface (GUI) 200 of Figure 5A, at a later stage, constructed and operative in accordance with another preferred

embodiment of the present invention. Here, area 208 includes an additional entity representation 212E, which represents a credit card machine, operative to initiate currency transactions or obtain access to selected services, such as bank information services, and the like.

5 The user drags the representation of his credit card 210A onto a credit card machine representation 212E, and virtually inserts it in the input slot thereof. Again, no other operations are needed to complete the operation. Nonetheless, it is noted that additional identification steps may be required according to the nature of the requested service or the service
10 providing entity.

 It is noted that the credit card machine can be associated with one or more selected web-sites or organization servers and provide the user payment information to a selected one thereof, for example, according to the URL, which the user is currently browsing.

15 In accordance with a further aspect of the present invention, the user retrieves a virtual object from a remote location. Reference is further made to Figures 6B and 7. Figure 6B is an illustration of the GUI 250 of Figure 6A, at a later stage. Reference is further made to Figure 7, which is an illustration of a method for operating system 100 of Figure 2, operative
20 in accordance with a further preferred embodiment of the present invention.

 The user initiates a retrieval of a server side object 264, by pointing on it with pointer 216, on browsing area 262 of a web site (Figure 6A) and performing a drag-and-drop operation of the server side object
25 264 to personal object area 226 (Figure 6B).

 In step 350, an object transfer, from a remote server to a user, is initiated. In the present example, user 102D initiates a transfer of a server side object 264 (Figure 6A) to his personal object area 226. This is done by pointing on the server side object 264 and dragging it onto the personal
30 object area 226. At this stage the server application transmits the item data structure which is associated with server side object 264 to user

102D. In step 352, the presence of an object template, associated with the retrieved object, is detected at the user end. With respect to the present example, the application on the user 102D end detects [RK01][RK02] if the user station already obtained the respective object template, which is
5 associated with the retrieved object. If it is not present, then the user application retrieves the respective object template from the repository location. In the present example, the user retrieves (step 354) a template from item template repository 138 (Figure 3). It is noted that in the future, when retrieving objects of the same type, the user will proceed directly to
10 step 356, since the answer to the above question will be positive. In step 356, the object data is retrieved from the web-server 106 (Figure 2), by the user. It is noted that this data is provided from the URL inventory items data base 134 (Figure 3).

In step 358, the received object is initiated at the computer of the
15 user. With reference to Figure 6B, the object representation of server side object 264 appears in personal object area 226 of the user.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Rather the scope of the present invention is
20 defined only by the claims, which follow.

CLAIMS

1. Method for exchanging virtual object between a plurality of entities via a communication network, the communication network further including a transaction server, each of the virtual objects being constructed of an object template and object data, the transaction server including a repository for storing copies of the object templates, the method comprising the steps of:

transmitting an object template identification, associated with said virtual object, from a first entity to a second entity, via said communication network;

detecting if said second entity includes an object template associated with said object template identification; and

retrieving said object template from said repository when said second entity does not include said object template.

2. The method according to claim 1, further comprising the step of transmitting object instance data, associated with said virtual object, from said first entity to said second entity, for use as input to said object template.

3. The method according to claim 2, further comprising the step of initiating said retrieved template by said second entity, according to said object instance data.

4. The method according to claim 1, wherein said step of transmitting is initiated by a drag and drop operation by said first entity, of a visual representation of said virtual object onto a visual representation of said second entity.

5. The method according to claim 1, wherein said object template identification comprises virtual object template type and virtual object template repository location.

5

6. Virtual object comprising:
virtual object template, defining an outline of a virtual object; and
instance data, defining a finite substance for said virtual object,
when provided as input to said virtual object template.

10

7. The virtual object of claim 6, wherein a copy of said virtual object template is stored in a remote repository, to be accessed and retrieved by a remote station, according to a virtual object template identification.

15

8. The virtual object of claim 6, wherein said virtual object template comprises executable code.

20

9. The virtual object of claim 8, wherein said instance data comprises virtual object information.

10. The virtual object of claim 8, wherein said instance data comprises virtual object executable code, to be executed in association with said virtual object template.

25

11. The virtual object of claim 6, wherein said virtual object template further comprises a virtual object interface for linking to other virtual objects.

30

12. The virtual object of claim 6, wherein the combination of said virtual object template and said instance data is unique.

13. The virtual object of claim 6, wherein the combination of said virtual object template and said instance data is not unique.

5 14. The virtual object of claim 6, further comprising a virtual object identification code.

15. The virtual object of claim 6, further comprising a virtual object template identification code.

10

16. Transaction server comprising:

a communication interface, for connecting to a communication network;

a processor connected to said communication interface; and

15

a virtual object template repository, connected to said processor, for storing a plurality of virtual object templates.

17. The transaction server according to claim 16, further comprising a personal inventory virtual object data-base, connected to said processor, for storing data related to virtual objects, each said virtual objects being associated with at least one entity.

20

18. The transaction server according to claim 16, further comprising a location related virtual object data-base, connected to said processor, for storing data related to virtual objects, each said virtual objects being associated with at least one network location.

25

19. Method for exchanging virtual object between a plurality of entities via a communication network, the communication network further including a transaction server, each of the virtual objects being constructed of an object template and object data, the transaction

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server including a repository for storing copies of the object templates, the method comprising the steps of:

retrieving an object template identification, associated with said virtual object, by one of said entities, from a remote server, via said communication network;

detecting if said entity includes an object template associated with said object template identification; and

retrieving said object template from said repository when said entity does not include said object template.

20. The method according to claim 19, further comprising the step of retrieving object instance data, associated with said virtual object, by said entity from said remote server, for use as input to said object template.

21. The method according to claim 20, further comprising the step of initiating said retrieved template by said entity, according to said retrieved object instance data.

22. The method according to claim 19, wherein said step of retrieving said object template identification is initiated by a drag and drop operation by said entity, of a visual representation of said virtual object onto a visual representation of said entity.

23. The method according to claim 19, wherein said object template identification comprises virtual object template type and virtual object template repository location.

24. Method for exchanging virtual object between a plurality of entities via a communication network, the communication network further including a transaction server, each of the virtual objects being

constructed of an object template and object data, the transaction server including a repository for storing copies of the object templates, the method comprising the steps of:

retrieving an object template identification, associated with said virtual object, by one of said entities, from a remote server, via said communication network;

detecting if said entity includes an object template associated with said object template identification; and

retrieving object instance data, associated with said virtual object, by said entity from said remote server, for use as input to said object template, when said entity includes said object template.

25. The method according to claim 24, further comprising the steps of:

retrieving said object template from said repository when said entity does not include said object template; and,

retrieving object instance data, associated with said virtual object, by said entity from said remote server, for use as input to said object template.

26. The method according to claim 25, further comprising the step of initiating said retrieved template by said entity, according to said retrieved object instance data.

27. The method according to claim 24, wherein said step of retrieving said object template identification is initiated by a drag and drop operation by said entity, of a visual representation of said virtual object onto a visual representation of said entity.

28. The method according to claim 24, wherein said object template identification comprises virtual object template type and virtual object template repository location.

29. A method according to any of the claims 1-5 substantially as described herein above.

5 30. A method according to any of the claims 1-5 substantially as illustrated in any of the drawings.

31. Virtual object according to any of the claims 6-15 substantially as described herein above.

10

32. Virtual object according to any of the claims 6-15 substantially as illustrated in any of the drawings.

15

33. Transaction server according to any of the claims 16-18 substantially as described herein above.

34. Transaction server according to any of the claims 16-18 substantially as illustrated in any of the drawings.

20 35. A method according to any of the claims 19-23 substantially as described herein above.

36. A method according to any of the claims 19-23 substantially as illustrated in any of the drawings.

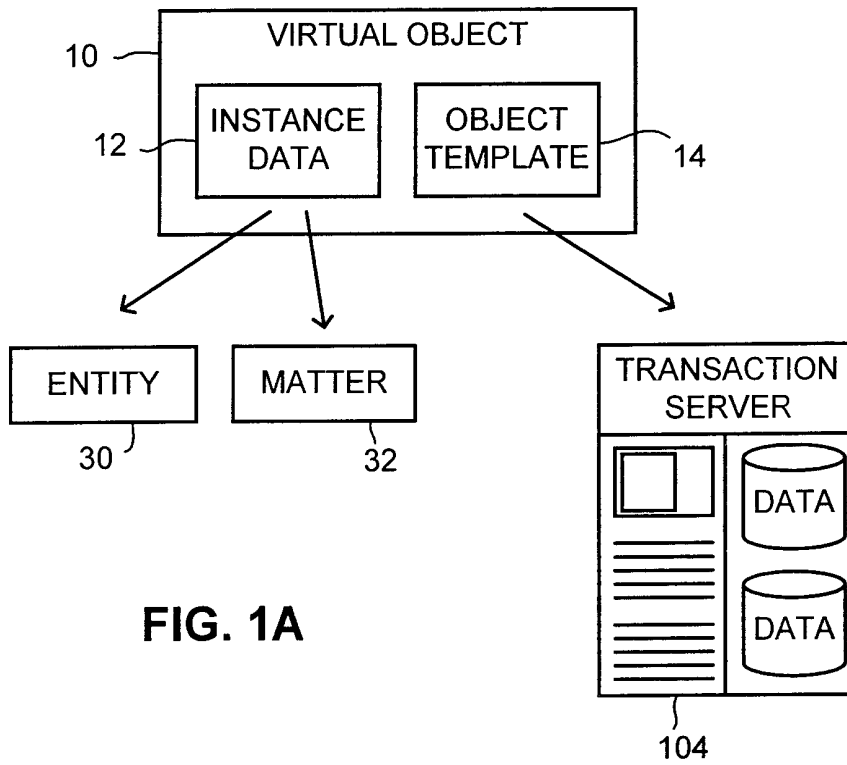
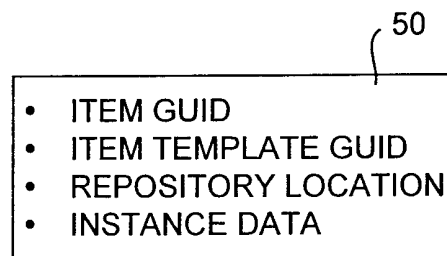
25

37. A method according to any of the claims 24-28 substantially as described herein above.

30

38. A method according to any of the claims 24-28 substantially as illustrated in any of the drawings.

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**FIG. 1A****FIG. 1B**

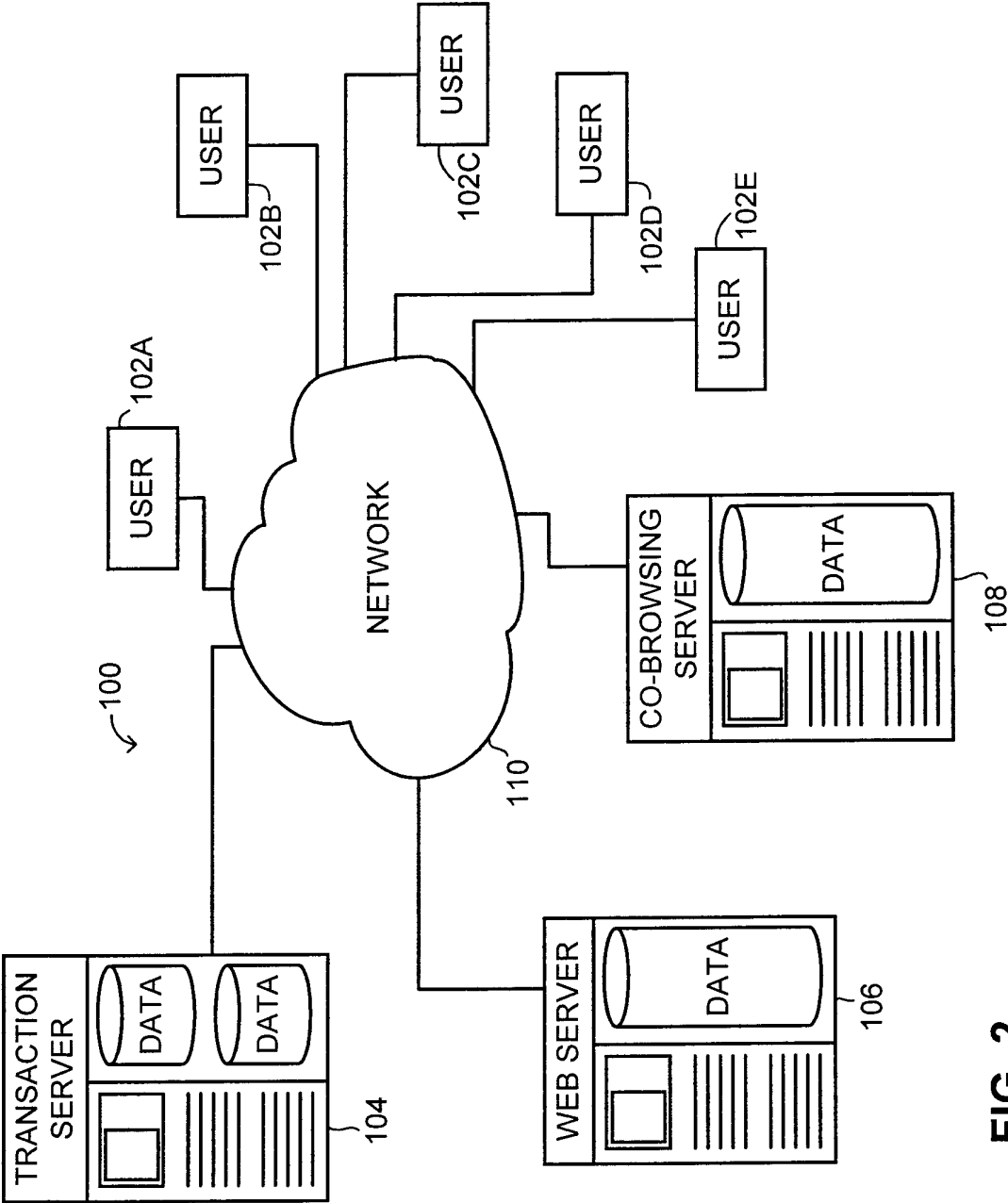


FIG. 2

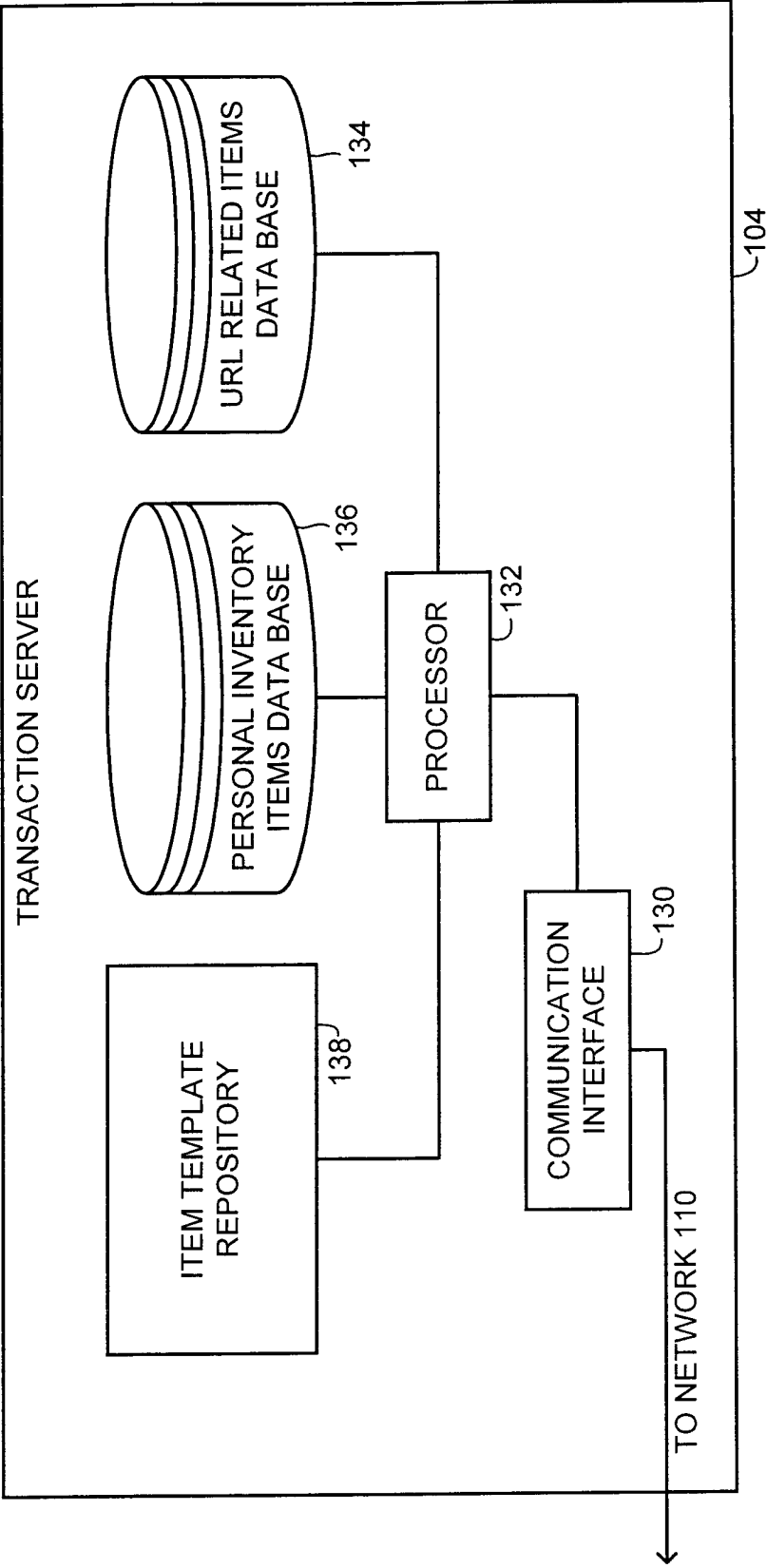
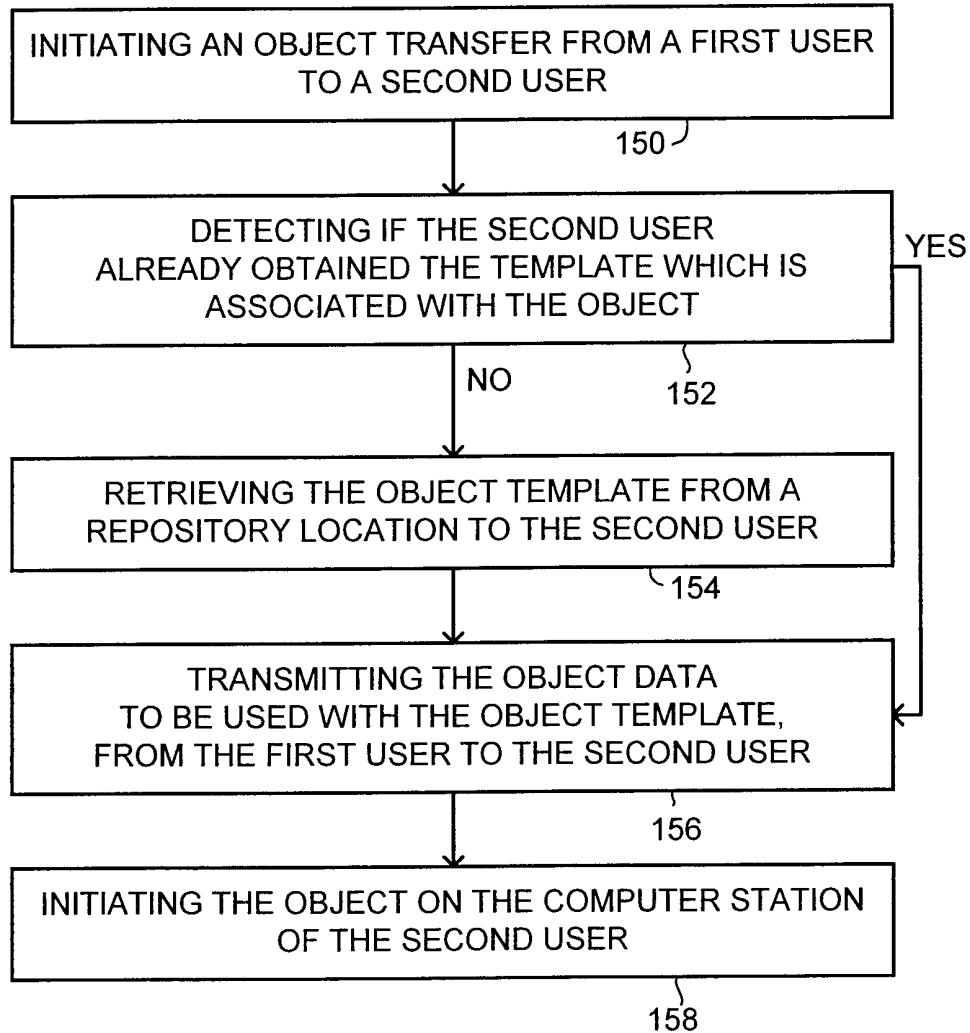


FIG. 3

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**FIG. 4**

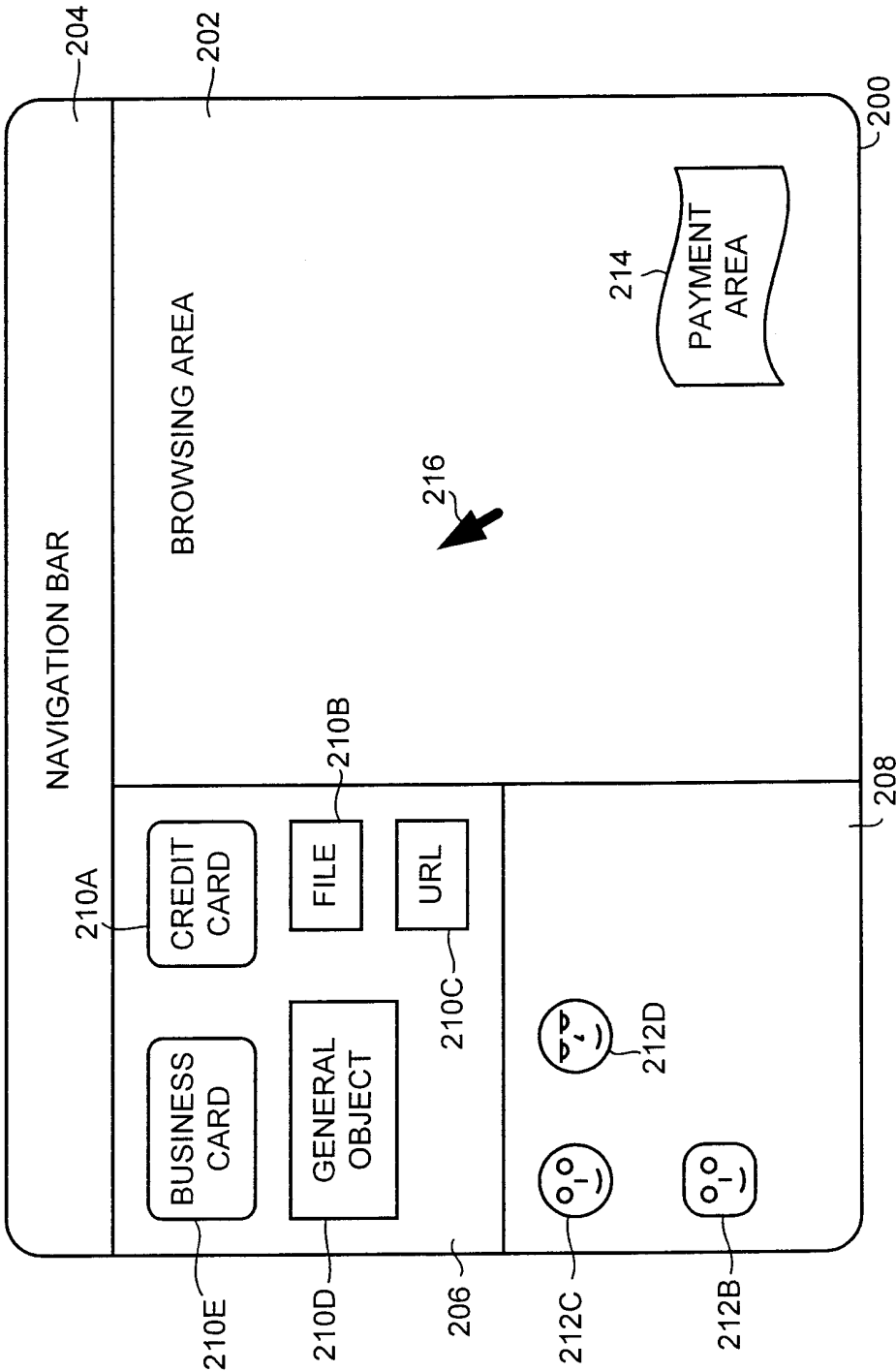


FIG. 5A

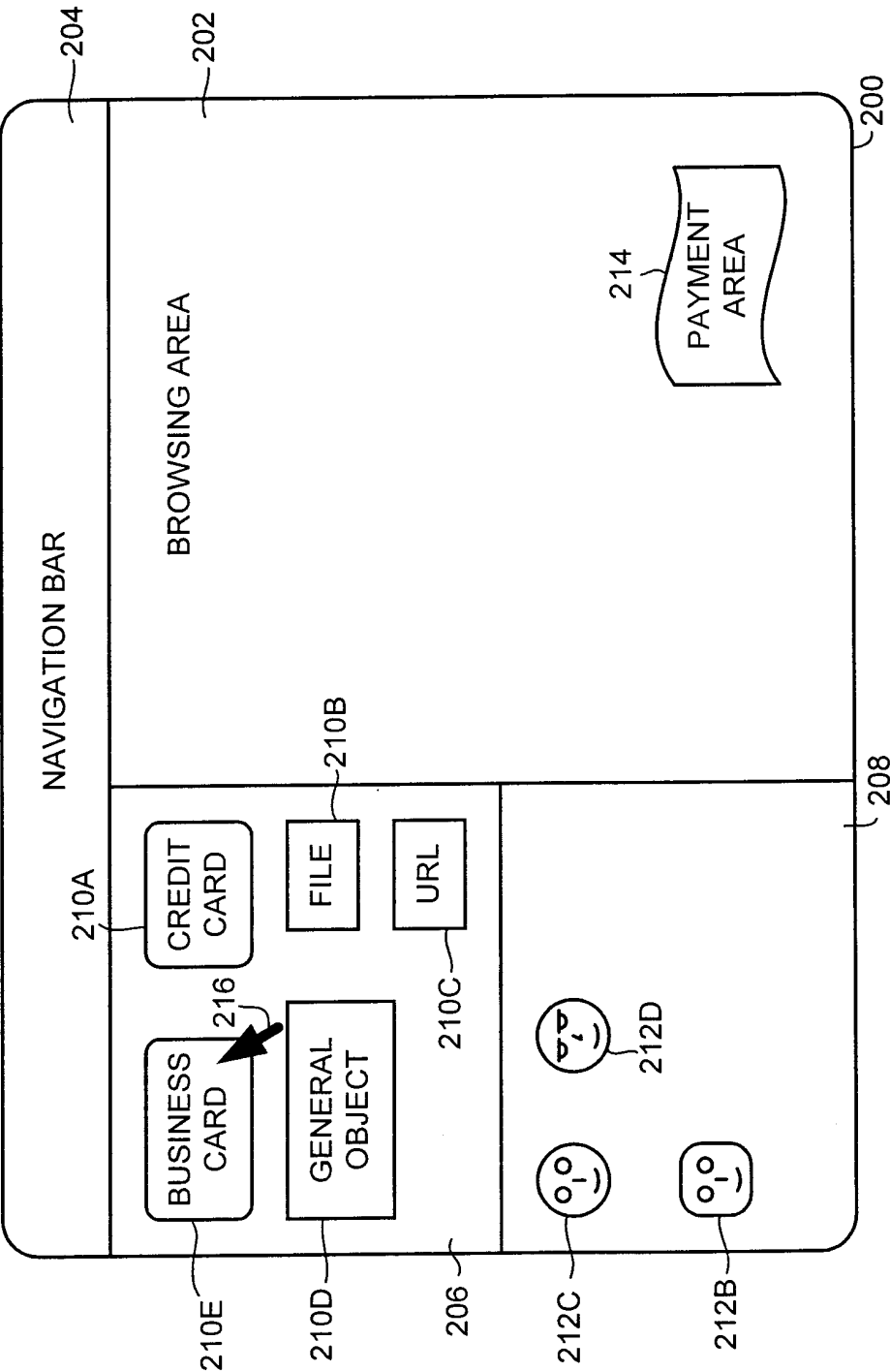


FIG. 5B

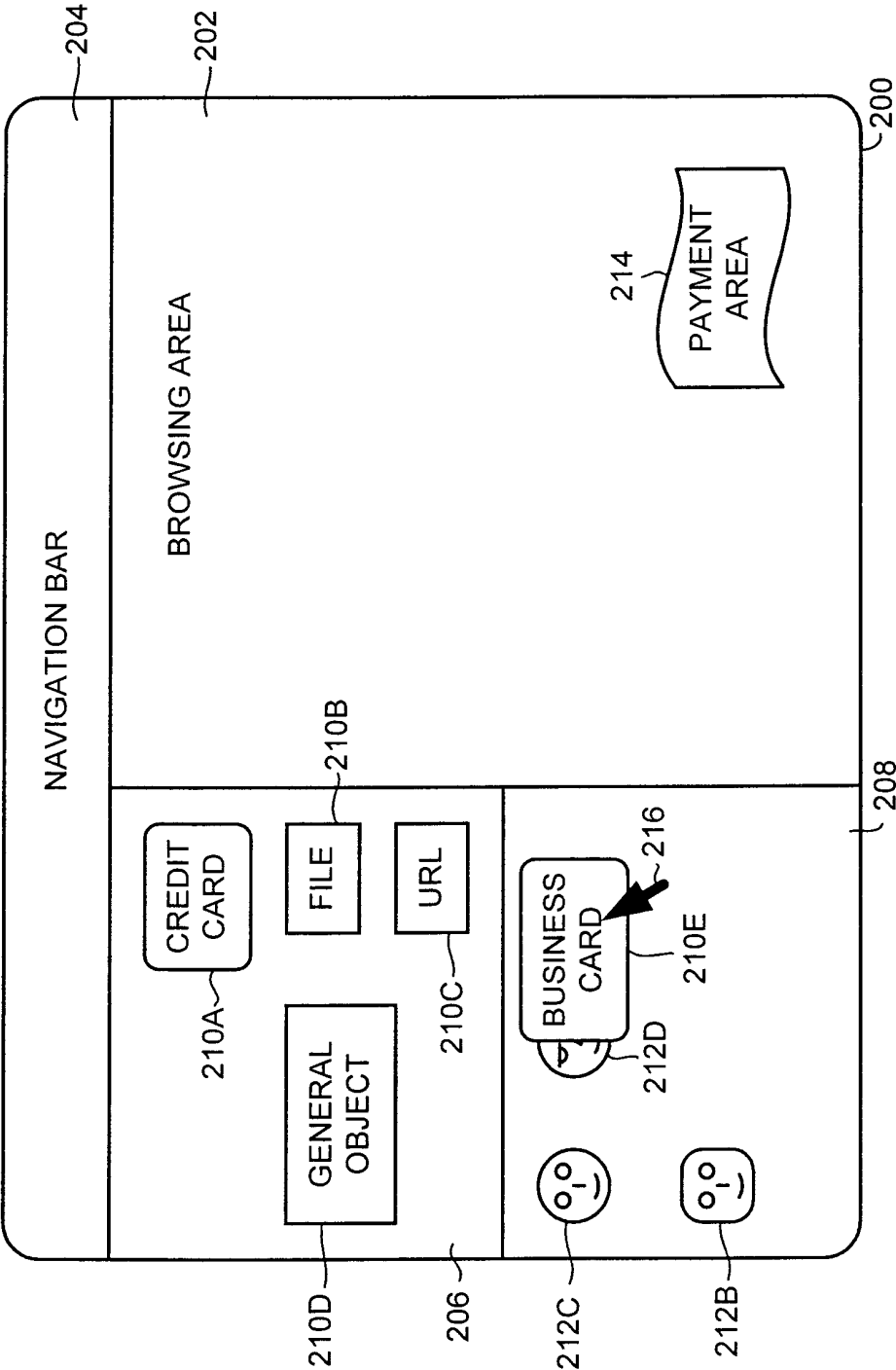


FIG. 5C

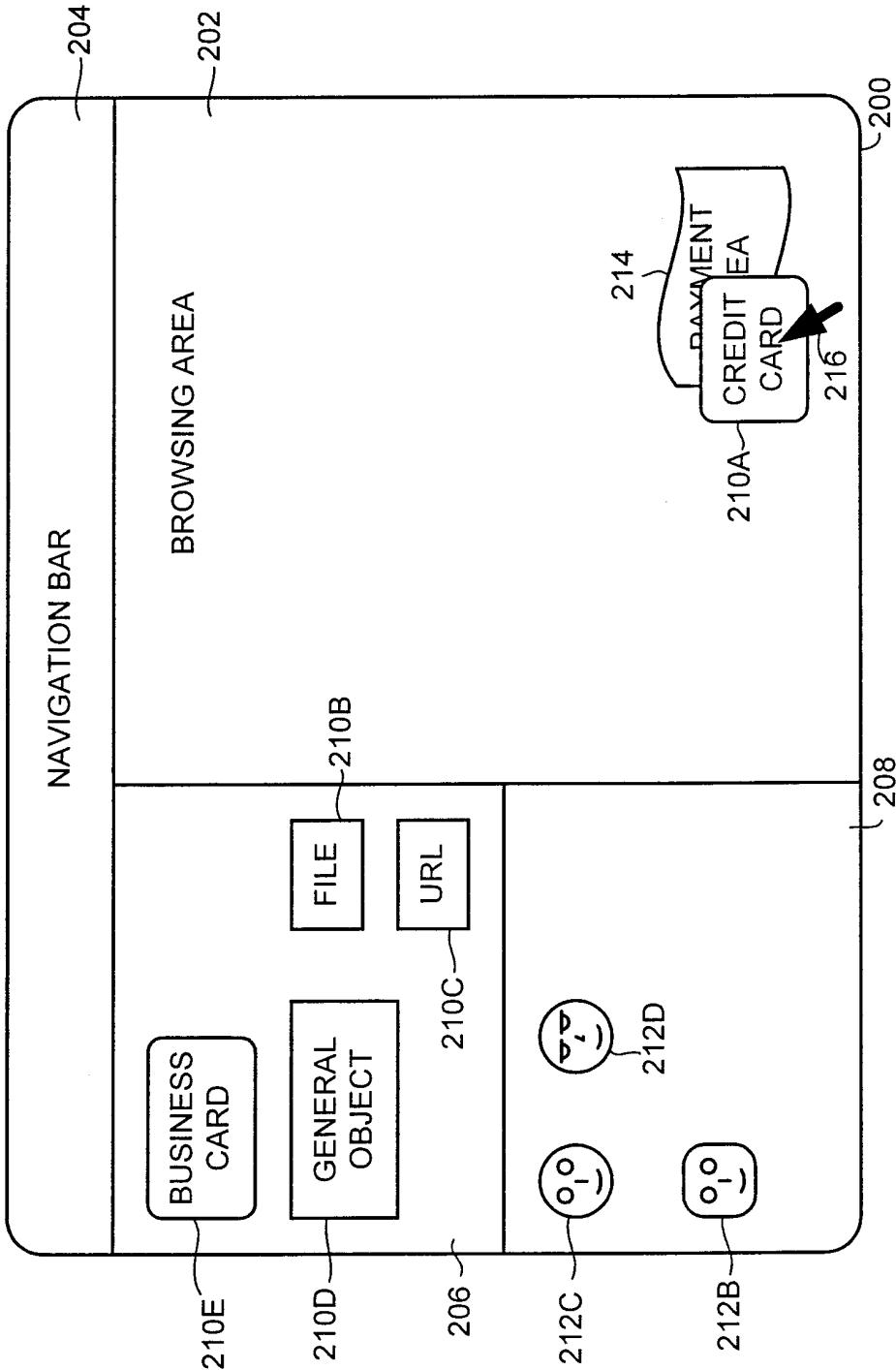


FIG. 5D

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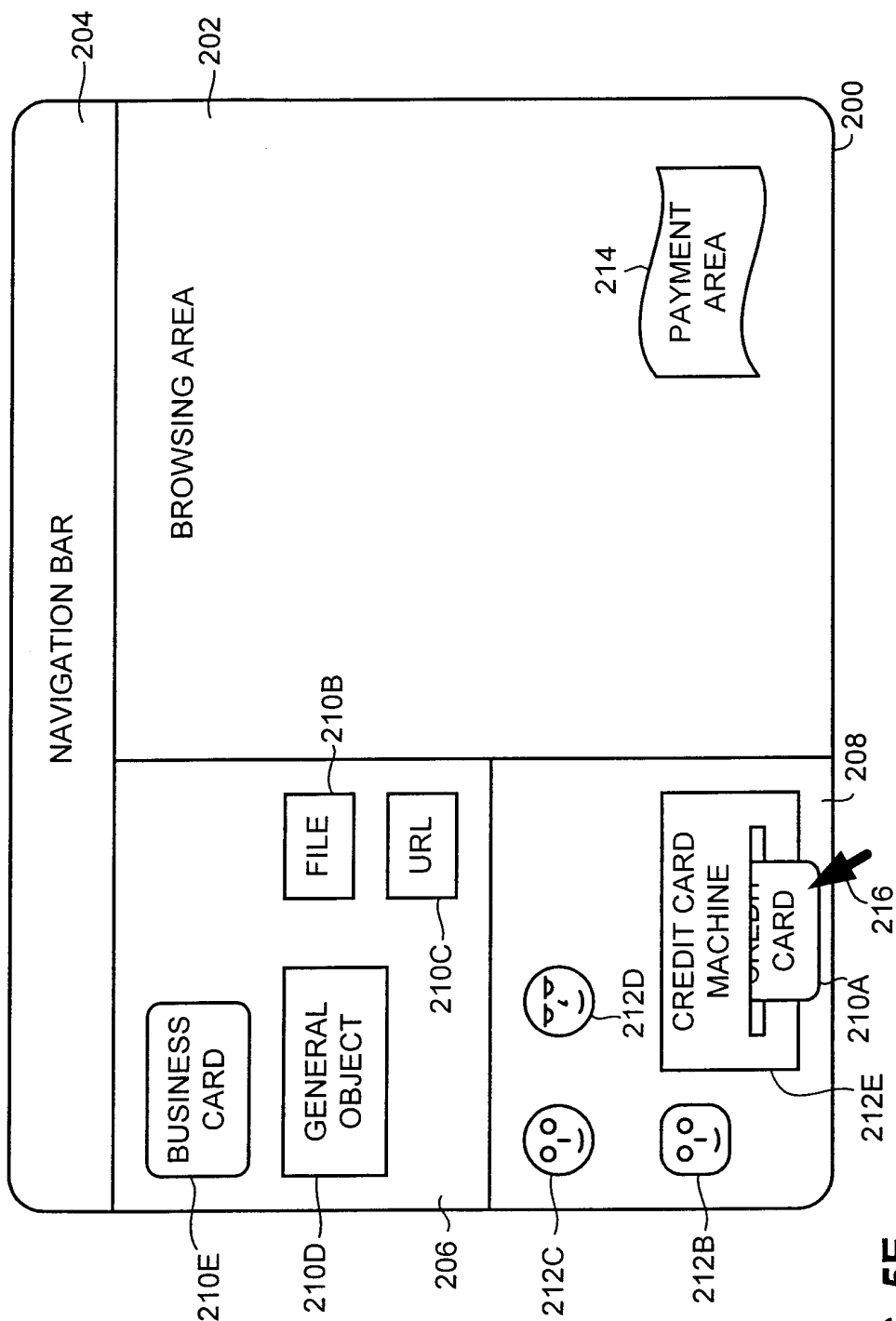


FIG. 5E

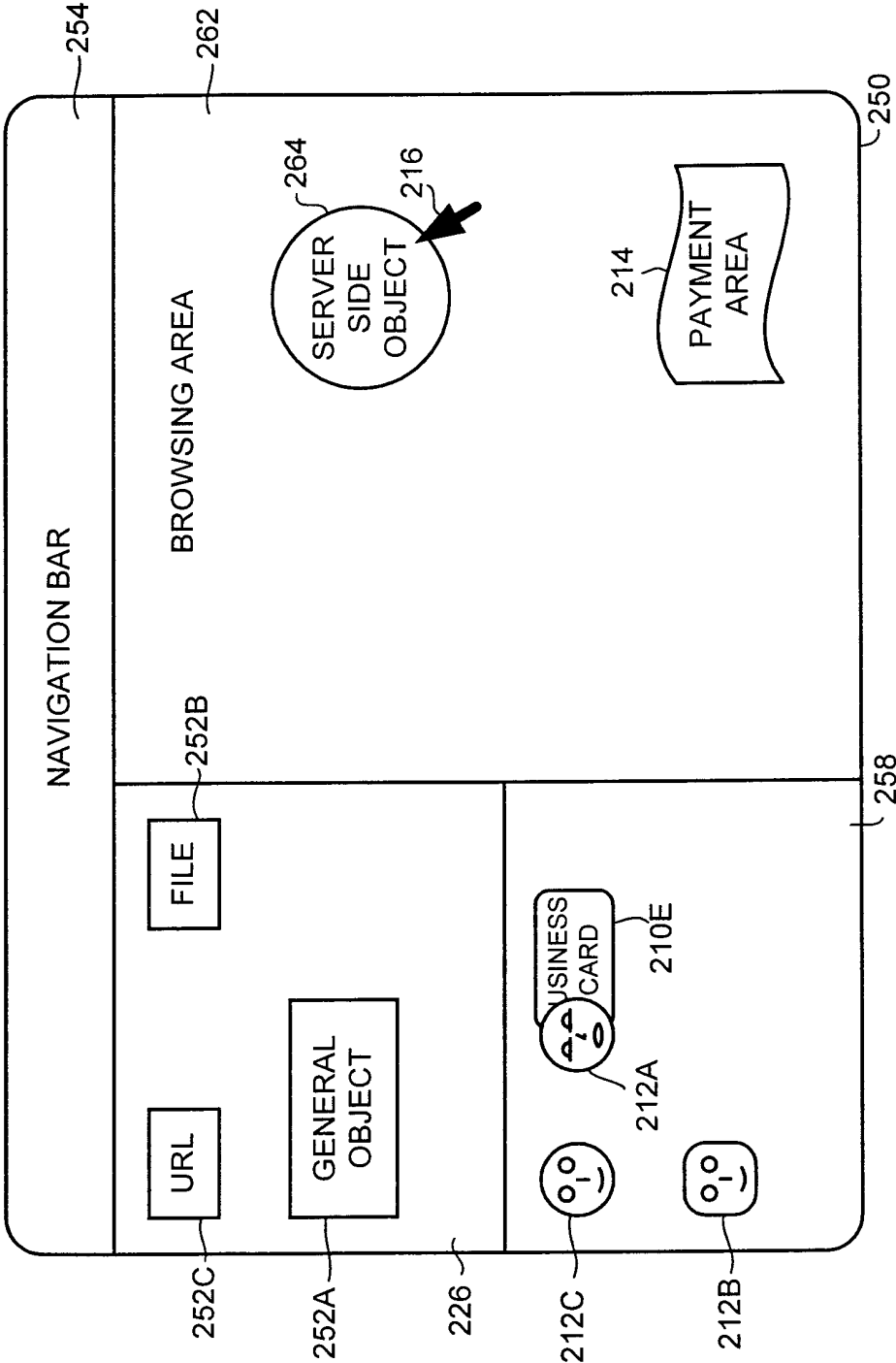


FIG. 6A

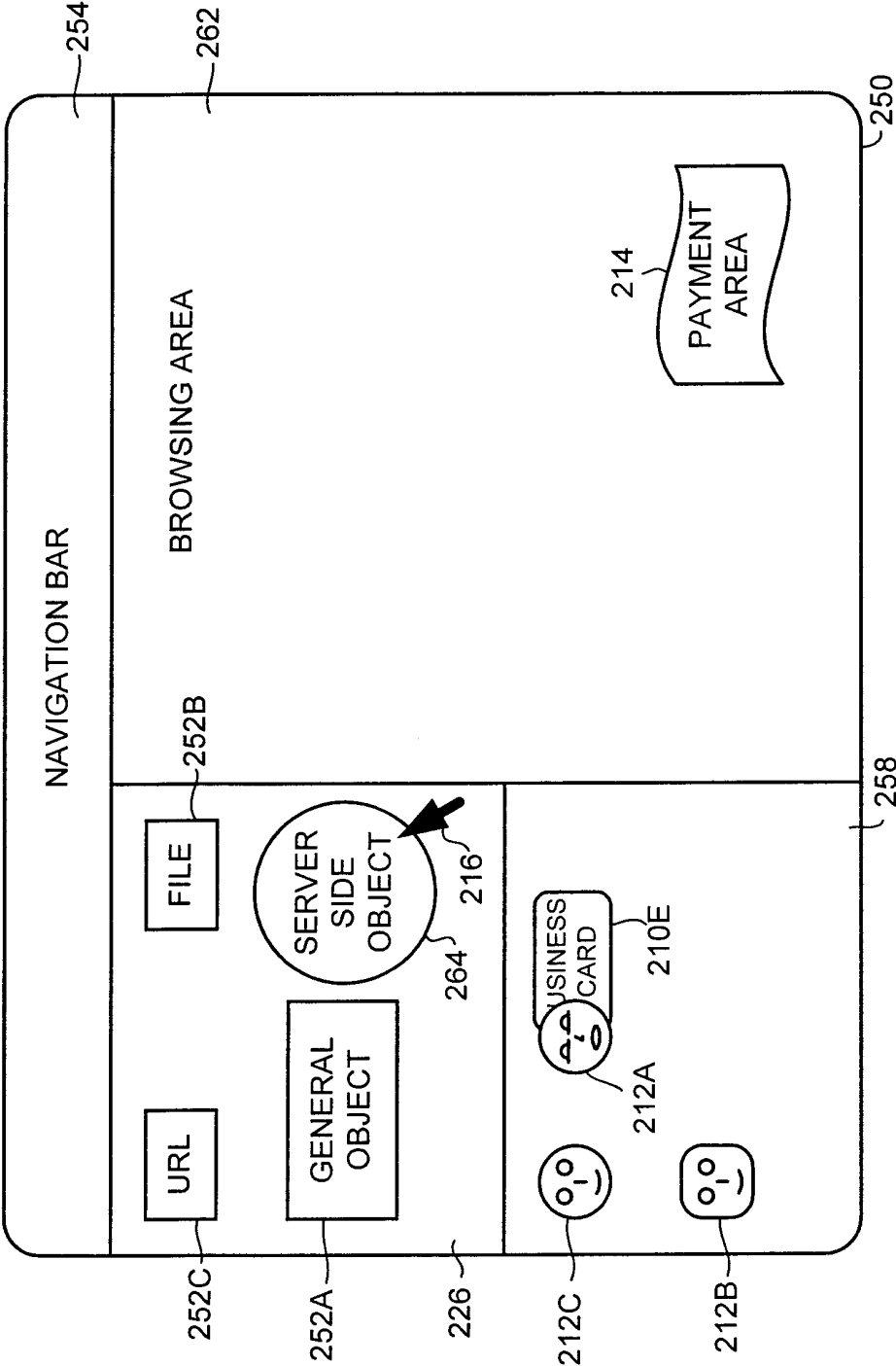


FIG. 6B

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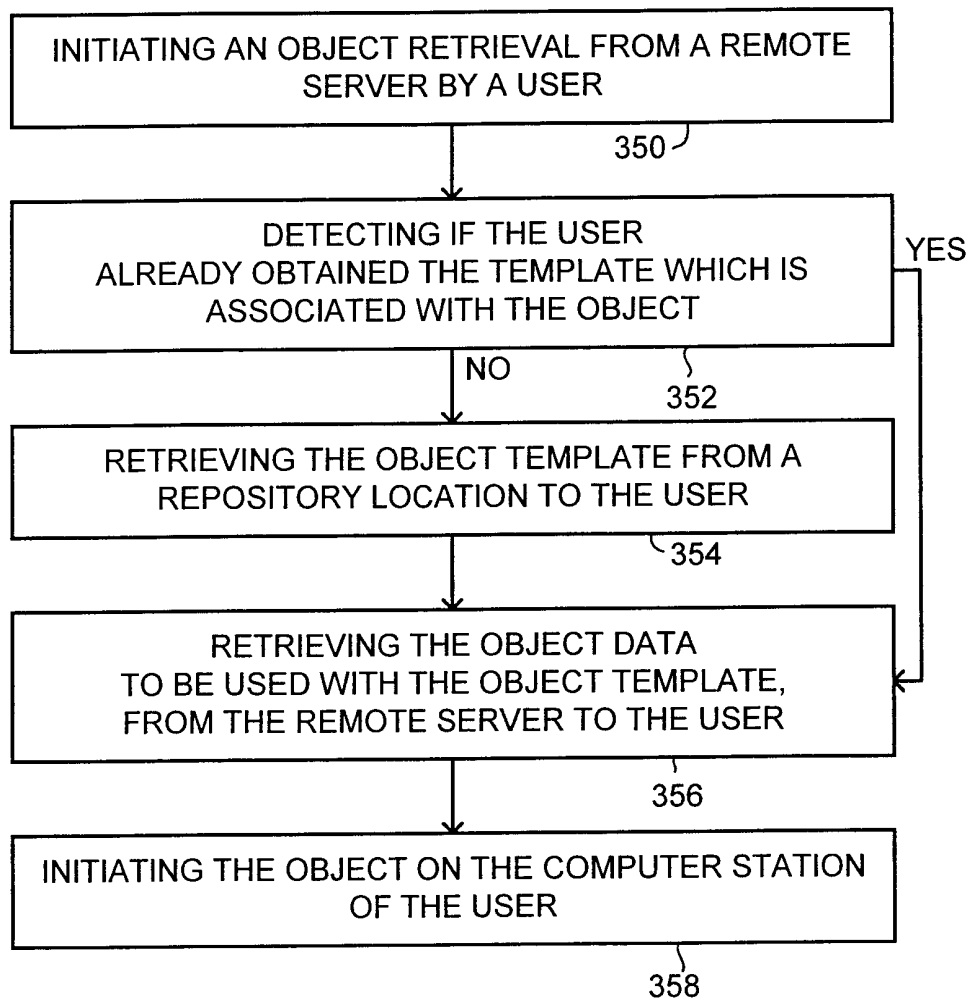


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL00/00804

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/30

US CL : 707/201

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. : 707/201

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 5,864,874 A (SHAPIRO) 26 Jan. 1999 (26.01.1999), see abstract.	1-38
Y	US 5,347,632 A (FILEPP et al.) 13 Sep. 1994 (13.09.1994) col.5 lines 45-55, col.86	1-38
Y,P	US 6,029,182 A (NEHAB et al.) 22 Feb. 2000 (22.02.2000), see abstract.	1-38

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

* Special categories of cited documents:

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"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand principle or theory underlying the invention

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document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

10 March 2001 (10.03.2001)

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