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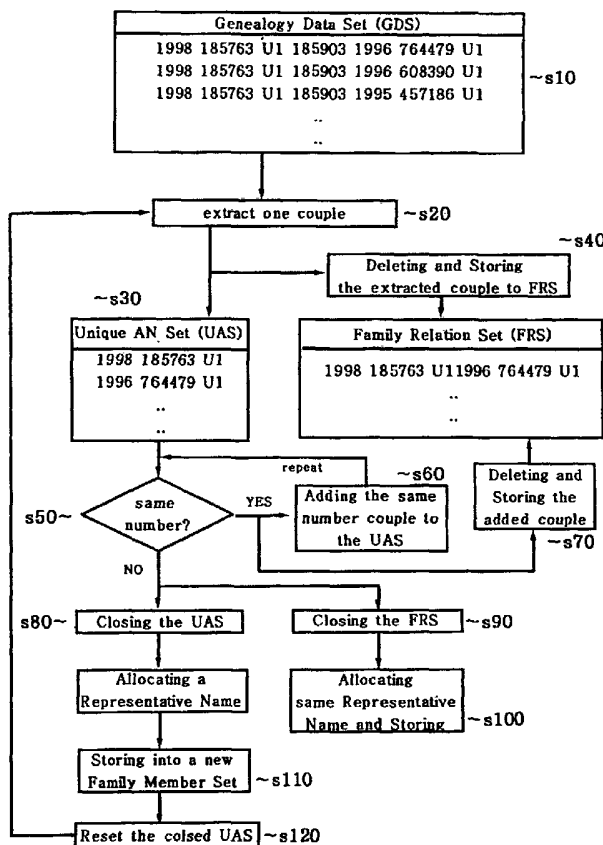
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(54) Title: A METHOD FOR FAST SEARCHING AND DISPLAYING A GENEALOGICAL TREE OF PATENTS FROM A PATENT DATABASE



(57) Abstract: The present invention discloses a method for fast searching a genealogical tree among patents recorded in a patent database and displaying the searched results. In details, the present invention extracts the patents having fields containing genealogical tree information from a patent database and makes the patent numbers in the same format and deletes the repeated paren patents and finally generates family relation sets and family member sets to generate the genealogical tree.

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**A METHOD FOR FAST SEARCHING AND
DISPLAYING A GENEALOGICAL TREE OF PATENTS
FROM A PATENT DATABASE**

5 **BACKGROUND OF THE INVENTION**

This invention relates to a method for fast searching a genealogical tree among patents recorded in a patent database and displaying the searched results.

10 **PRIOR ART OF THE INVENTION**

The more a society becomes industrialized, the more the information competition between companies resembles a war. Especially as the patent-related information has the information about technological rights of a corresponding company, it becomes more and more important. Accordingly now it became necessary to get more information from such patent-related information as soon as possible.

However so far most of commercial patent analysis systems have analyzed an object only based on the bibliographical information of each patent related to the object one-dimensionally and in fragments.

5

TECHNICAL SUBJECTS OF THE INVENTION TO BE SOLVED

The present invention provides new analysis objects and a new patent analysis method, whose analysis result level is different from the prior patent analysis systems'. Especially the present invention provides a patent analysis method can be easily find a genealogical route that shows a route of an object patent filed with a Patent Office from it's parent patents.

15

The information about such a genealogical tree could not be got at a time through the prior art but could be got after confirming the data investigated one

by one repeatedly through several methods. Therefore it took much time.

SIMPLE EXPLANATION OF DRAWINGS OF THE PRESENT

5 INVENTION

Figure 1 illustrates a whole flowchart of a method for analyzing a genealogical tree quickly and providing the analyzed results.

Figure 2 illustrates a table for explaining the
10 family relation set generated according to the present invention.

Figure 3 and 4 illustrate genealogical trees generated from a family relation set according to figure 2.

15 Figure 5 illustrates a screen layout of software made by using the present invention.

Figure 6 illustrates an enlarged genealogical tree according to the present invention.

COMPOSITION OF THE INVENTION

The present invention that was invented to solve the above subjects comprises the following steps.

5 A method for fast analyzing genealogical trees related to a patent from a patent database (hereinafter we call them as "prior patent database") with fields having information about that via which genealogical tree the patent was filed from its parent patent, and
10 for providing the analyzed results, the method comprises the steps for:

 extracting the filed year, the application number, the registered number about patents (hereinafter we call them as "child patent") having information in
15 their genealogical fields among patents stored in the prior patent databases;

 selecting one among the predetermined patent classifications (hereinafter we call them as "patent

classification") from the extracted child patent's registered number and application number in order to classify the corresponding patents' kinds;

extracting the filed year and the application
5 number of each patent (hereinafter we call them as "parent patent") corresponding to each application number recorded in each genealogical field of the child patent;

generating a genealogy data set that associates
10 each of the extracted child patents with its parent patent as an independent pair and arrayed the pairs in a table, and recording the generated genealogy data set in the form of 'child patent's filed year - child patent's application number - patent classification
15 (hereinafter we call it as "child patent number") - child patent's registered number - parent patent's filed year - parent patent's application number - patent classification (we call it as "parent patent

number") in order to standardize each patent number in the same format each other;

selecting a pair among the data pairs stored in the genealogy data set;

5 storing the child patent and the parent patent of the selected pair without distinction in the temporary storing means a 'Unique application number set' in the form of 'filing year - application number - patent classification for each patent (hereinafter we call
10 each patent stored in the 'Unique application number set' as 'unique patent' and the number format recorded for each unique patent as 'unique number');

deleting the pair selected as the unique application number set from the genealogy data set and
15 storing the deleted pair in a separate storing means a 'Family relation set' in the form of 'child patent number - parent patent number';

selecting each unique patent from the 'Unique

application number set' one by one sequentially and
extracting all the pairs that the unique number of the
selected unique patent is equal to the number of the
child patent number or the parent patent number of the
5 genealogy data set;

deleting the extracted pair from the genealogy
data set with the same method;

storing the extracted pair in the 'Unique
application number set' and 'Family relation set'
10 without repeatedly storing the same unique number in
the 'Unique application number set';

repeating the steps until a new unique number is
not added into a 'Unique application number set';

closing the 'Unique application number set' when
15 a unique number is not added any more into a 'Unique
application number set';

closing a corresponding 'Family relation set' at
the same time with the close of the 'Unique application

number set' and storing the closed 'Family relation set' in the name of the child patent number having the oldest filing date, which is being regarded as the representative name;

5 copying and storing the closed 'Unique application number set' in the same name with the representative name of the stored 'Family relation set' into a separate storing means, a 'Family member set' in the form of 'filing year - application number - patent
10 classification - representative name' or 'filing year - application number - patent classification - registered
number - representative name';

resetting the data that were stored in the 'Unique application number set' temporarily after
15 completion of the storing into the 'Family member set';

selecting another pair from the pairs remaining in the genealogy data set and generating multiple Family relation sets and Family member sets;

arraying the generated the entire Family member set into a table set sequentially and storing;

checking if the number inputted by a user is one of the patent numbers, that is register number or application numbers, stored in the Family member set
5 and if the check result is true, extracting the representative name of the Family member set to which the patent number belongs; and

extracting the Family relation set having the
10 same representative name with the representative name extracted in the above step and reading the corresponding genealogical information from the extracted Family relation set and displaying the read information in the form of the genealogy tree to
15 provide users with.

At this time, the step for displaying the genealogy tree from the Family relation set comprises

the steps of:

arraying the patent pairs stored in a Family
relation set in the order $(C_1, C_2, \dots, C_i, \dots)$ of
application number of a child patent that was filed
5 quite recently;

arraying the parent patents corresponding to each
arrayed child patent $(C_i, i=1, 2, 3, \dots)$ in the order
 $(P_{i1}, P_{i2}, P_{i3}, \dots)$ of application number of the parent
patent that was filed quite recently;

10 searching a patent pair one by one sequentially
from the most recently filed child patent's application
number (C_1) through all the child patents' application
numbers (C_i) , wherein the search begins from the parent
patent's number (P_{i1}) which was most recently filed
15 among the corresponding parent patents' numbers $(P_{i1},$
 $P_{i2}, P_{i3}, \dots)$ and the searched patent pair has the child
patent numbers $(C_m, m=2, 3, 4, \dots)$ same to the parent
patent's number P_{i1} ;

comparing between the parent patent numbers (Pm1, Pm2, Pm3,..) recorded in the searched pair Cm and the parent patent numbers (Pi1, Pi2, Pi3,..) of a child patent number Ci and deleting the same parent patent
5 numbers from the parent patent numbers (Pi1, Pi2, Pi3,..) of the corresponding child patents;

repeating the above steps for a parent patent having next the most recently filed date among the yet remaining undeleted parent patent numbers and
10 continuing the steps for all child patents and parent patents; and

displaying only the remaining undeleted parent patent numbers for each child patent number stored in the Family relation set by connecting lines having the
15 filed year axis.

In the line connecting step, it is characteristic that if the patent to display was not filed by using a

regular application or the patent's right is not effective because of abandonment or cancellation, then the corresponding patent is not displayed only except when it is difficult to reveal that they have the same
5 genealogy tree because the line connecting the corresponding patent filed by an irregular application with other patents in the same genealogy tree is disconnected.

10 On the other hand, it is desirable that the present invention further comprises the steps of:

if the patent to display was not filed by using a regular application or the patent's right is not effective because of abandonment or cancellation,
15 storing the patent not to display on a genealogy tree into a separate storing means of a computer;

if a user wants, extracting the stored patents hidden on a genealogy tree and the child patents whose

parent patents are the stored patents hidden on a genealogy tree and further displaying the relationship of the extracted child patents and parent patents on a genealogy tree; and

5 if a user wants, displaying the list of the stored hidden patents.

And it is desirable that each patent to be displayed on a genealogical tree is displayed in a box
10 form having a constant size and if a user lays a mouse cursor on the box, then the bibliographical information about the corresponding patent is displayed.

At this time, it is desirable that if a user lays a mouse cursor on the box and clicks the right button
15 of the mouse, then a screen to ask whether the user wants to see the full text about the corresponding patent is displayed and if the user selects the full text, then the full text is provided.

And it is desirable that if a user lays a mouse cursor on the box and clicks the right button of the mouse, then a screen is displayed to ask whether the user wants only patents having the same applicants with the corresponding patent, the same inventors with the corresponding patent, the same IPC classification code with the corresponding patent or the same UPC classification code with the corresponding patent to be displayed emphatically on a genealogical tree being displayed currently, and if the user selects one of the same applicant, inventor, IPC classification code and UPC classification code, then the patents corresponding to the selected condition are displayed emphatically on the genealogical tree.

And at the present invention it is desirable that if a user selects a patent displayed on a genealogical tree by using a mouse cursor, then only the patents described directly in the fields for a genealogical

tree in prior patent databases are extracted and only the connection lines between the selected patents and the extracted patents on a genealogical tree are displayed emphatically.

5

As a preferred embodiment of the present invention, which is based on patent database according to the present invention, the prior patent database can be made from the US registered patent database.

10

In this case it is preferable that the genealogical tree information fields contain 'Patent application case text' of the first page of US patent application or contents recorded in 'Related US application data' or contents recorded between
15 'patent's title' of a patent application and 'background of the invention'.

And it is preferable that the objects of the right displayed on a genealogical tree comprises

utility patents including laid-opened or issued
patent/utility regular applications, provisional
applications, reissued patents, applications withdrawn
to avoid the duplicated right, applications canceled
5 because of the continuous application, and co-
applications and design patents.

And it is preferable that if the corresponding
patent corresponds to a utility classification, then
'U1' is allocated as a patent classification
10 information, or else if corresponding to a design
classification, then 'D1' is allocated, or else if
corresponding to a provisional application, then 'P1'
is allocated, wherein if the data recorded in the prior
patent databases is recorded incorrectly and the
15 different patents have the same number, then to the
last number of the above patent classification
information in order to distinguish the processed data
a new number like 2, 3, 4, ... , is allocated.

At this time it is preferable that the present invention further comprises the steps of:

by a user displaying the list of the related
5 patents on a screen after searching the patents using
the prior patent databases and especially for the
patents having the genealogical tree information among
the list making quick search by using the registered
number or application number of the family member set
10 and checking whether the number inputted by a user is
one of the registered patent number or application
number stored in the family member set and if the
inputted number is one of the registered patent number
or application number, then displaying the mark on a
15 screen; and

if a user selects a patent having the separately
displayed mark, then extracting the genealogical tree
of the selected patent from the family member set and

displaying or else if a user wants a genealogical tree,
then generating a genealogical tree from the family
relation set and displaying.

5 And also it is preferable that the present
invention further comprises a step of generating a
database from the prior patent databases, which stores
and operates only the genealogical tree information and
generating the genealogical tree information or
10 genealogical tree according to the user's search
results and displaying.

 And it is preferable that in case of displaying
and providing a genealogical tree, according to a
15 user's selection each patent displayed on a
genealogical tree is displayed by using one of
application number, registered year, registered number,
inventor, IPC classification, UPC classification,

applicant and provided.

Hereinafter we explain the present invention more detailed by referencing the attached drawings.

5 Figure 1 illustrates a whole flowchart of a method for analyzing a genealogical tree quickly and providing the analyzed results.

At first in the present invention the filed year, the application number, the registered number about 10 patents (hereinafter we call them as "child patent") having information in their genealogical tree fields among patents stored in the prior patent database are extracted and one among the predetermined patent 15 classifications (hereinafter we call them as "patent classification") from the extracted child patent's registered number and application number in order to classify the corresponding patents' kinds is selected.

Figure 1 is explaining about a case the prior

patent database were constructed based on US registered patent database.

At this time, the genealogical tree information fields contain 'Patent application case text' of the first page of US patent application or contents recorded in 'Related US application data' or contents recorded between 'patent's title' of a patent application and 'background of the invention'.

If the corresponding patent corresponds to a utility classification, then 'U1' is allocated, or else if corresponding to a design classification, then 'D1' is allocated, or else if corresponding to a provisional application, then 'P1' is allocated, or else if the data recorded in the prior patent databases is recorded incorrectly and the different patents have the same number, then to the last number of the above patent classification information in order to distinguish the processed data a new number like 2, 3, 4, ... , is

allocated.

A genealogy data set is generated, wherein the genealogy data set is associated each of the extracted child patents with a parent patent of each extracted child patent as an independent pair and arrayed the pairs in a table.(step 10)

And the generated genealogy data set is recorded in the form of 'child patent's filed year - child patent's application number - patent classification - child patent's registered number - parent patent's filed year - parent patent's application number - patent classification in order to standardize each patent number in the same format each other.

A pair is selected among the data pairs stored in the genealogy data set.(step 20)

The child patent and the parent patent of the selected pair are stored without distinction in the temporary storing means a unique application number

set.(step 30)

At this time, each patents is stored in the form of 'filing year - application number - patent classification for each patent. And the set selected as
5 the unique application number set from the genealogy data set is deleted and the deleted pair is stored in a separate storing means a family relation set in the form of 'child patent number - parent patent number'.(step 40)

10 Each unique patent is selected from the unique application number set one by one sequentially and it is examined whether the selected patent number is equal to the child patent number of the genealogy data set. After the examination, it is examined whether the
15 selected patent number is equal to the parent patent number of the genealogy data set. (step 50)

If the selected patent number is equal to the number of the child patent number or the parent patent

number of the genealogy data set, then extracts corresponding pairs and stores in the unique application number set without repeatedly storing the same patent number in the unique application number
5 set.(step 60)

And the extracted pair is deleted from the genealogy data set and the extracted pair is stored in the family relation set. (step 70)

The above steps are repeated until a new unique
10 number is not added into a unique application number set and the unique application number set is closed when a unique number is not added any more into the unique application number set.(step 80)

And the corresponding family relation set at the
15 same time with the close of the unique application number set is closed (step 90) and the closed family relation set is stored in the name of the child patent number having the oldest filing date, which is being

regarded as the representative name. (step 100)

The closed unique application number set is copied and stored in the same name with the representative name of the stored family relation set into a separate storing means, a family member set in the form of 'filing year - application number - patent classification - representative name' or 'filing year - application number - patent classification - registered number - representative name'. (step 110)

The data that were stored in the unique application number set temporarily is reset after completion of the storing into the family member set. (step 120)

Another pair is selected from the pairs remaining in the genealogy data set and generating multiple family relations set and family member set and all generated the family member sets are arrayed into a table set sequentially and stored.

And the invention checks if the number inputted by a user is one of the patent numbers, register numbers and application numbers stored in the family member set and if the check result is true, then
5 extracts the representative name of a family member set which the patent number belongs to and extracts the family relation set having the same representative name with the representative name extracted in the above step and reads the corresponding genealogical
10 information from the extracted family relation set and displays the read information in the form of the genealogy tree to provide users with.

Figure 2 illustrates a table for explaining the
15 family relation set generated according to the present invention. As shown in the figure 2, child patents and parent patents are arrayed. For convenience, we define a patent with greater number was filed more recently

than other patents.

According to the left table of the figure 2, a child patent '9' has parent patents '7', '4', '3', '2', '1' and a child patent '8' has parent patents '5', '2', '1'. Other child patents '7', '6', '5', '3', '2' has
5 parent patents as shown in the table of the figure 2.

The present invention searches a patent pair one by one sequentially from the quite recently filed child patent's application number '9' through all the child
10 patents' application numbers, wherein the search begins from the parent patent number '7' which was filed quite recently among the parent patent numbers of the child patent '9' and checks whether the parent patent number '7' is consisting of the child patent numbers ('8', '7',
15 '6', '5', '3', '2') of other pairs.

According to figure 2, a parent patent '7' of a child patent '9' is used as a child patent of other patent pairs. Therefore in this case the invention

compares the parent patents (4, 3, 2, 1) of another child patent '9' except the corresponding number '7' with the parent patents (4, 3, 2, 1) of the child patent '7' and if there are the same numbers, the same
5 numbers are deleted from the parent patent group of a child patent '9'.

As shown in the right table of the figure 2, the patents '4, 3, 2, 1' were deleted from a parent patent group of a child patent '9' because the patents '4, 3,
10 2, 1' are the same patents.

If the above steps were finished for a parent patent ('7'), which was filed most recently among the parent patents of a child patent '9', then the invention repeats the above steps for a parent patent
15 having the most recently filed date among the parent patent numbers remaining undeleted yet.

At the table illustrated in the figure 2 there are no such parent patents for a child patent '9' and

so the invention moves to a child patent '8', which was filed at the next recent date and deletes a parent patent '5' of a child patent '8' as described in the above.

5 In the figure 2 the parent patents remaining undeleted were displayed thickly and the deleted parent patents were displayed blurredly.

 Like the above method only for the remaining undeleted parent patents for each child patent number
10 stored in the family relation set a genealogical tree is made by connecting lines having the filed year axis.

 Figure 3 and 4 illustrate genealogical trees generated from a family relation set according to figure 2.

15 If a patent to display was not filed by using a regular application or the patent's right is not effective because of abandonment or cancellation, then the corresponding patent is not displayed only except

when it is difficult to show that they have the same
genealogy tree because the line connecting the
corresponding patent filed by an irregular application
with other patents of the same genealogy tree is
5 disconnected.

That is, in figure 3 a patent '2' is a patent
corresponding to a provisional application or is not
effective because the patent was abandoned or canceled.
Accordingly if the patent '2' is not displayed as in
10 figure 4, then the genealogical relationship with other
patents of patents '5' and '8' cannot be seen.

Accordingly in this case although the
corresponding patent was filed via a non-regular
application or its right is not effective any more
15 because of the abandonment or cancellation for the
patent, if they are not displayed on a genealogical
tree, then the connection lines with other patents are
cut and it may be difficult to display that they belong

to the same genealogical tree, they are displayed on a genealogical tree as in figure 3.

Figure 5 illustrates a screen constitution of software made by using the present invention.

And figure 6 illustrates an enlarged genealogical tree according to the present invention.

As shown, it is preferable that each patent displayed on a genealogical tree is displayed in a certain sized box. And also it is preferable that in this case, if a user lays a mouse cursor upon the box, then the bibliographic information corresponding to the patent is displayed.

At this time, it is desirable that if a user lays a mouse cursor on the box and clicks the right button of the mouse, then a screen to ask whether the user wants to see the full text about the corresponding patent is displayed and if the user selects the full

text, then the full text is provided.

And it is desirable that if a user lays a mouse cursor on the box and clicks the right button of the mouse, then a screen is displayed to ask whether the user wants that only the patent having the same applicants with the corresponding patent or the same inventors with the corresponding patent or the same IPC classification code with the corresponding patent or the same UPC classification code with the corresponding patent are displayed emphatically on a genealogical tree being displayed currently, and if the user selects one of the same applicants, inventors, IPC classification code and UPC classification code, then the patents corresponding to the selected conditions are displayed emphatically on a genealogical tree.

And it is desirable at the present invention that if a user selects a patent in a box displayed on a genealogical tree using a mouse cursor, then the only

patents described directly in the fields for a
genealogical tree in prior patent databases are
extracted and the only connection lines between the
selected patents and the extracted patents on a
5 genealogical tree are displayed emphatically.

But software developers can modify such a
function variously and it is apparent that any
modifications of the present invention belong to the
present invention as far as they apply the present
10 invention.

THE EFFECTS OF THE PRESENT INVENTION

It is possible to see whether an object patent
was filed from any parent patent via any genealogical
tree at a glance according to the present invention.

15 Accordingly it is possible to catch the
competitor's technology development strategy at a
glance only by simple operation according to the
present invention.

WHAT IS CLAIMED:

1. A method for fast analyzing genealogical trees related to a patent from patent database (hereinafter we call them as "prior patent database") with fields
5 having information about that via any genealogical tree the patent was filed from its parent patent, and for providing said analyzed results, the method comprising the steps of:

extracting the filed year, the application number,
10 the registered number about patents (hereinafter we call them as "child patent") having information in their genealogical tree fields among patents stored in the prior patent database;

selecting one among the predetermined patent
15 classifications (hereinafter we call them as "patent classification") from said extracted child patent's registered number and application number in order to classify the corresponding patents' kinds;

extracting the filed year and the application number of each patent (hereinafter we call them as "parent patent") corresponding to each application number recorded in each genealogical tree field of the
5 child patent;

generating a genealogy data set that associated each of said extracted child patents with a parent patent of each extracted child patent as an independent pair and arrayed the pairs in a table, and recording
10 the generated genealogy data set in the form of 'child patent's filed year - child patent's application number - patent classification (hereinafter we call it as "child patent number") - child patent's registered number - parent patent's filed year - parent patent's
15 application number - patent classification (we call it as "parent patent number") in order to standardize each patent number in the same format each other;

selecting a pair among the data pairs stored in

the genealogy data set;

storing the child patent and the parent patent of
said selected pair without distinction in the temporary
storing means a unique application number set in the
5 form of 'filing year - application number - patent
classification for each patent (hereinafter we call
each patent stored in the unique application number set
as 'unique patent' and the number format recorded for
each unique patent as 'unique number');

10 deleting the pair selected as the unique
application number set from the genealogy data set and
storing the deleted pair in a separate storing means a
family relation set in the form of 'child patent number
- parent patent number';

15 selecting each unique patent from the unique
application number set one by one sequentially and
extracting all the pairs where the unique number of
said selected unique patent is equal to the number of

the child patent number or the parent patent number of
the genealogy data set;

deleting said extracted pair from the genealogy
data set with the same method described in the above;

5 storing said extracted pair in the unique
application number set and the family relation set
without repeatedly storing the same unique number in
the unique application number set;

repeating said steps until no unique number is
10 newly added into the unique application number set;

closing the unique application number set when a
unique number is not added any more into the unique
application number set;

closing the corresponding family relation set at
15 the same time with the close of the unique application
number set and storing said closed family relation set
in the name of the child patent number having the
oldest filing date, which is regarded as the

representative name;

copying and storing said closed unique
application number set in the same name with the
representative name of said stored family relation set
5 into a separate storing means, a family member set in
the form of 'filing year - application number - patent
classification - representative name' or 'filing year -
application number - patent classification - registered
number - representative name';

10 resetting the data that were stored in the unique
application number set temporarily after completion of
the storing into the family member set;

selecting another pair from the pairs remaining
in the genealogy data set and generating multiple
15 family relation set and family member set;

arraying all the generated family member sets
into a table set sequentially and storing;

checking if the number input by a user is one of

the patent numbers, that is a registered number or an application number stored in the family member set and if the check result is true, extracting the representative name of a family member set which the
5 patent number belongs to; and

extracting the family relation set having the same representative name with the representative name extracted in the above step and reading the corresponding genealogical information from said
10 extracted family relation set and displaying said read information in the form of the genealogy tree to provide users with.

2. A method as set forth in claim 1, wherein said
15 step for displaying the genealogy tree from the family relation set comprises the steps of:

arraying the patent pairs stored in a family relation set in the order (C1, C2,.. Ci,..) of

application number of a child patent that was filed quite recently;

arraying the parent patents corresponding to each arrayed child patent (C_i , $i=1, 2, 3, \dots$) in the order
5 ($P_{i1}, P_{i2}, P_{i3}, \dots$) of application number of the parent patent that was filed quite recently;

searching a patent pair one by one sequentially from the quite recently filed child patent's application number (C_1) through all the child patents' application numbers (C_i), wherein the search begins
10 from the parent patent's number (P_{i1}) which was filed quite recently among the corresponding parent patents' numbers ($P_{i1}, P_{i2}, P_{i3}, \dots$) and the searched patent pair has the parent patent's number P_{i1} consisting of the
15 child patent numbers (C_m , $m=2, 3, 4, \dots$) of other pairs;

comparing the parent patent numbers ($P_{m1}, P_{m2}, P_{m3}, \dots$) recorded in the searched pair C_m and the parent patent numbers ($P_{i1}, P_{i2}, P_{i3}, \dots$) of a child patent

number C_i and deleting the same parent patent numbers from the parent patents numbers ($P_{i1}, P_{i2}, P_{i3}, \dots$) of the corresponding child patents;

repeating the steps for a parent patent having
5 next the most recently filed date among the yet remaining undeleted parent patent numbers and continuing the steps for all child patents and parent patents; and

displaying only the remaining undeleted parent
10 patent numbers for each child patent number stored in the family relation set by connecting lines having the filed year axis.

3. A method as set forth in claim 2, wherein in
15 said step for line connecting, it is characteristic that if the patent to display was not filed by using a regular application or the patent's right is not effective because of abandonment or cancellation, then

the corresponding patent is not displayed only except
when it is difficult to show that they have the same
genealogy tree because the line connecting the
corresponding patent filed by an irregular application
5 with other patents of the same genealogy tree is
disconnected.

4. A method as set forth in claim 3, wherein said
method further comprises the steps of:

10 if the patent to display was not filed by using a
regular application or the patent's right is not
effective because of abandonment or cancellation,
storing the patent not to display on a genealogy tree
into a separate storing means of a computer;

15 if a user wants, extracting the stored patents
not to display on a genealogy tree and the child
patents whose parent patents are the stored patents not
to display on a genealogy tree and further displaying

the relationship of the extracted child patents and parent patents on a genealogy tree; and

if a user wants, displaying the list of the stored patents not to display.

5

5. A method as set forth in any one of claims 1 - 4, wherein in case said prior patent database was constructed by using US registered patent databases,

the genealogical tree information fields contain
10 'Patent application case text' of the first page of US patent application or contents recorded in 'Related US application data' or contents recorded between 'patent's title' of a patent application and 'background of the invention',

15 and the objects of the right displayed on a genealogical tree comprises utility patents including laid-opened or issued patent/utility model regular applications, provisional applications, reissued

patents, applications withdrawn to avoid the duplicated right, applications canceled because of the continuous application and co-applications, and design patents,

and if the corresponding patent corresponds to a utility classification, then 'U1' is allocated, or else
5 if corresponding to a design classification, then 'D1' is allocated, or else if corresponding to a provisional application, then 'P1' is allocated, or else if the data recorded in the prior patent databases are
10 recorded incorrectly and the different patents have the same number, then to the last number of the above patent classification information in order to distinguish the processed data a new number like 2, 3, 4, ... , is allocated.

15

6. A method as set forth in claim 5, wherein said method further comprises the steps of:

by a user displaying the list of the related

patents on a screen after searching the patents using the prior patent databases and especially for the patents having the genealogical tree information among the list making quick search by using the registered
5 number or application number of the family member set and checking whether the number inputted by a user is one of the registered patent number or application number stored in the family member set and if the inputted number is one of the registered patent number
10 or application number, then displaying the mark on a screen; and

if a user selects a patent having the separately displayed mark, then extracting the genealogical tree of the selected patent from the family member set and
15 displaying or else if a user wants a genealogical tree, then generating a genealogical tree from the family relation set and displaying.

7. A method as set forth in claim 5, wherein said method further comprises a step of generating a database from the prior patent databases, which stores and operates only the genealogical tree information and
5 generating the genealogical tree information or genealogical tree according to the user's search results and displaying.

8. A method as set forth in claim 5, wherein it
10 is characteristic that in case of displaying and providing a genealogical tree, according to a user's selection each patent displayed on a genealogical tree is displayed by using one of application number, registered year, registered number, inventor, IPC
15 classification, UPC classification, applicant and provided.

9. A method as set forth in any one of claims 1 -

4, wherein it is characteristic that each patent to be displayed on a genealogical tree is displayed in a box form having a constant size and if a user lays a mouse cursor on the box, then the bibliographical information
5 about the corresponding patent is displayed.

10. A method as set forth in claim 9, wherein it is characteristic that if a user lays a mouse cursor on the box and clicks the right button of the mouse, then
10 a screen to ask whether the user wants to see the full text about the corresponding patent is displayed and if the user selects the full text, then the full text is provided.

15 11. A method as set forth in claim 9, wherein it is characteristic that if a user lays a mouse cursor on the box and clicks the right button of the mouse, then a screen is displayed to ask whether the user wants the

only the patents to be displayed emphatically on a
genealogical tree being displayed currently having the
same applicants with the corresponding patent or the
same inventors with the corresponding patent or the
5 same IPC classification code with the corresponding
patent or the same UPC classification code with the
corresponding patent, and if the user selects one of
the same applicants, inventors, IPC classification code
and UPC classification code, then the patents
10 corresponding to the selected conditions are displayed
emphatically on the genealogical tree.

12. A method as set forth in claim 9, wherein it
is characteristic that if a user selects a patent
15 displayed on a genealogical tree by using a mouse
cursor, then the only patents described directly in the
fields for the genealogical tree in prior patent
databases are extracted and the only connection lines

between the selected patents and the extracted patents on the genealogical tree are displayed emphatically.

FIG. 1

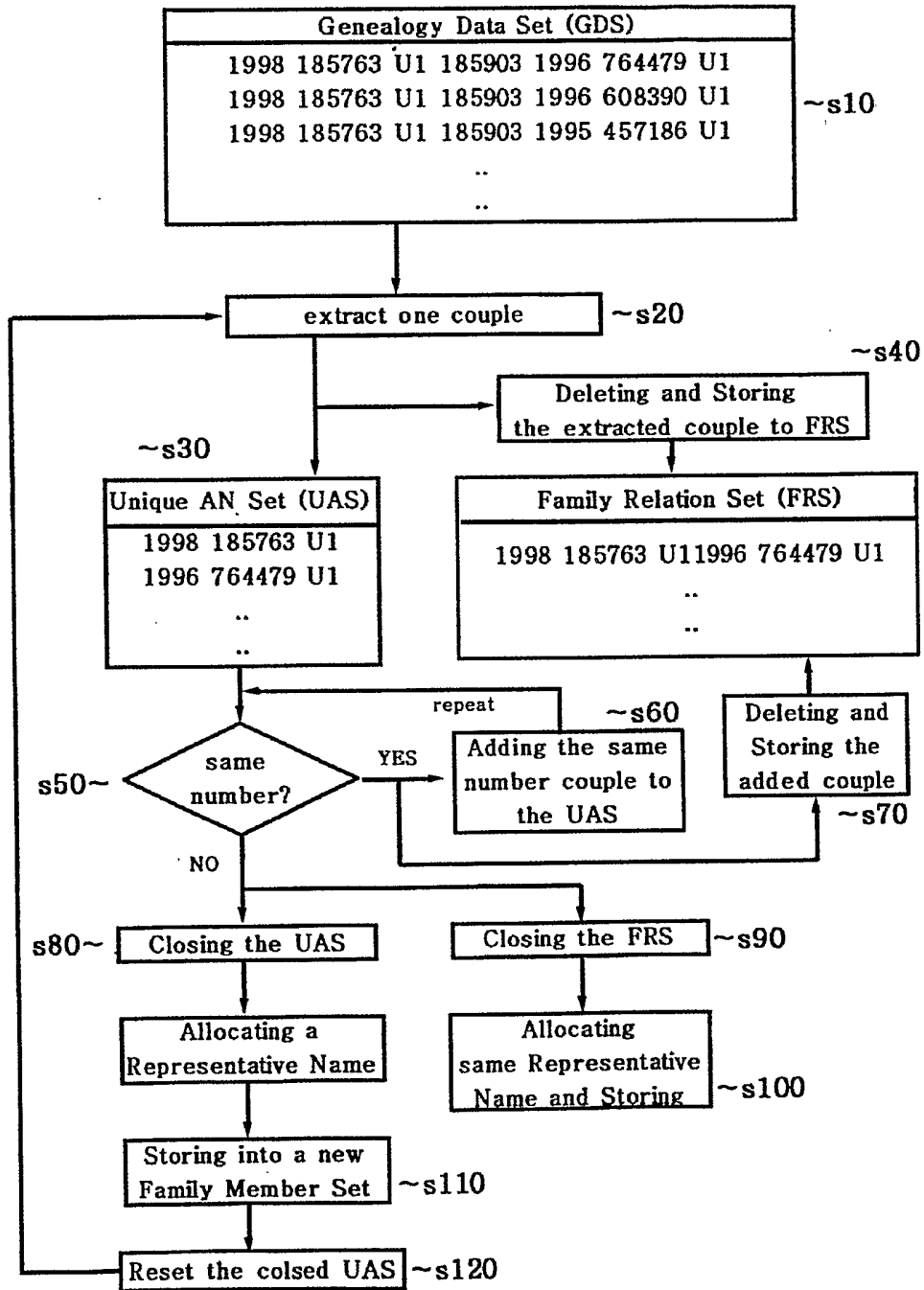


FIG. 2

Child Patent	Parent Patent		Child Patent	Parent Patent
9	7		9	7
9	4		9	4
9	3		9	3
9	2		9	2
9	1		9	1
8	5		8	5
8	2		8	2
8	1		8	1
7	4	⇒	7	4
7	3		7	3
7	2		7	2
7	1		7	1
6	3		6	3
6	2		6	2
6	1		6	1
5	2		5	2
5	1		5	1
3	2		3	2
3	1		3	1
2	1		2	1

FIG. 3

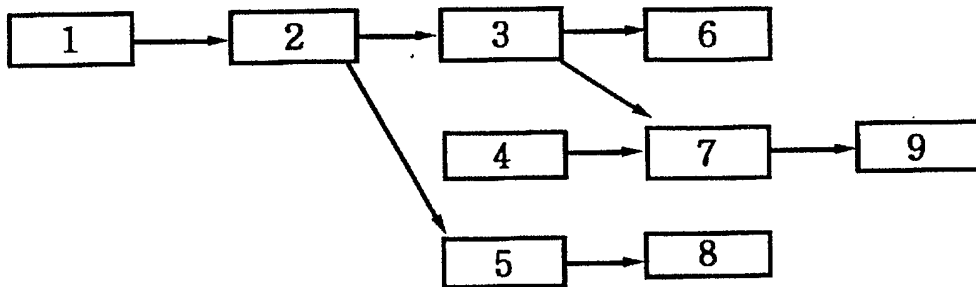
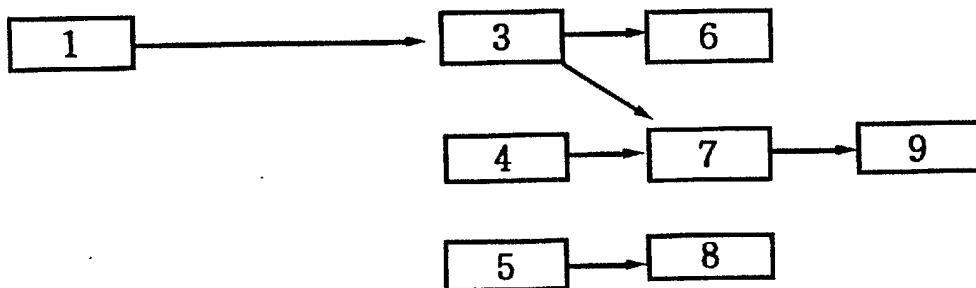


FIG. 4



FOCUS Wisdomain Inc.

Project: Genealogy View all EP JP PCT Help
 Enter search word or phrase: All patents of project
 User Defined Field: 1

No. 1 Search Term (View Selection History)
 5 All patents of project

field [10] matches per page

PN	Title	Year
US 57263013	Fast tracking of PN reproduction in a direct sequence spread-spectrum digital communication system	1994
US 5799225	Image forming apparatus using variable transfer and attraction voltage	1995
US 5762631	Intermittent HV module with variable composition and process for the preparation thereof	1996
US 5761570	Color toner density sensor and image forming apparatus using the same	1997
US 576837	Digital modulation for use with sequential sampling of metric-derived samples of image intensity	1998

Patent No.

WIPO Patent Class.

1994 1995 1996 1997 1998

US 5800445 US 5882972 US 5839458 US 5761570 US 5855396
 US 576837 US 5848642 US 5860038 US 6048386

FIG. 5

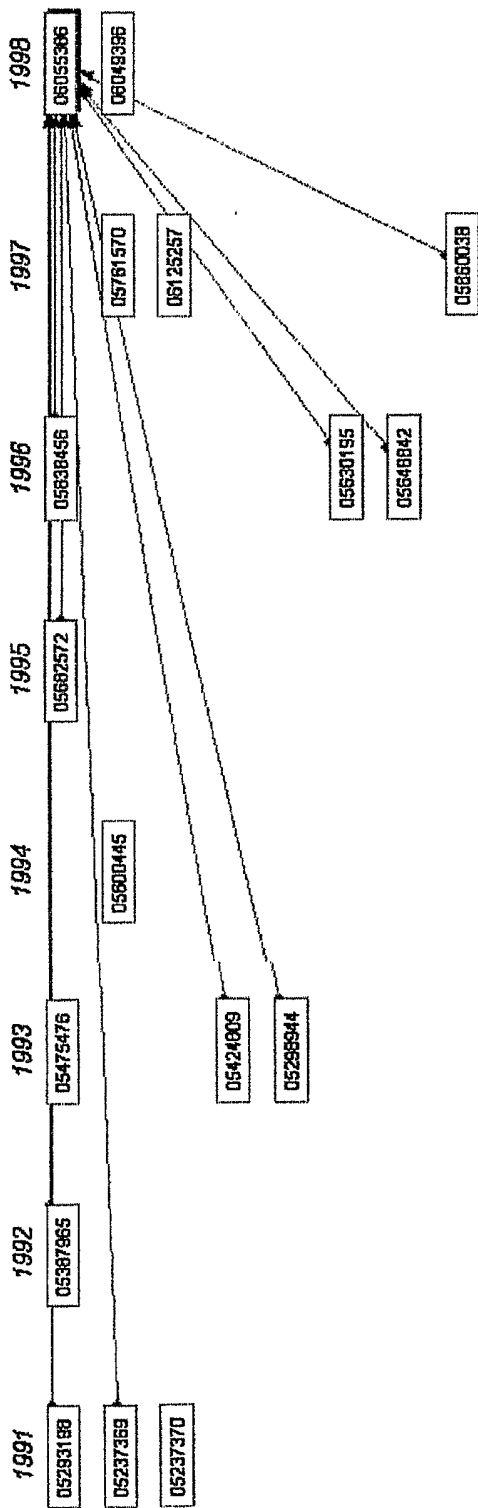


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR02/01044

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 G06F 17/30**

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)

IPC7 G06F 17/30

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

KOREAN PATENTS AND APPLICATIONS FOR INVENTIONS SINCE 1975

KOREAN UTILITY MODELS AND APPLICATIONS FOR UTILITY MODELS SINCE 1975

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

FPD, KIPASS, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1139238 (NISSAN MOTOR COMPANY, LIMITED) Oct. 4, 2001 See the whole document	1-12
A	KR 2001-38078 (WIPS CO.) May. 15, 2001 See the whole document.	1-12
A	JP 2001-92851 (KOTO GI JITSU KUMIAI) APR. 6, 2001 See the whole document.	1-12
A	JP 06-231141 (HITACHI SOFTWARE ENG CO LTD) Aug. 19, 1994 See the whole document.	1-12
A	JP 08-221435 (HITACHI LTD) Aug. 30, 1996 See the whole document.	1-12

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"I." document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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

"X" 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

"Y" 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

21 DECEMBER 2002 (21.12.2002)

Date of mailing of the international search report

23 DECEMBER 2002 (23.12.2002)

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