

# Writing Patent Specifications

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The purpose of this document is to explain the drafting practices for patent application documents.

First, the person who drafts patent application documents (hereinafter, the “documenter”) collects materials for the drafting of such patent application documents. The principle materials are the related technical data and market research data concerning the product of the invention.

The documenter specifies the invention to be claimed in consultation with the inventor and the applicant. The claims are the center or the heart of any granted patent because they define the protection which is the purpose of the patent. The claimed invention is determined based on the essential parts of the invention and the scope to be protected by the patent right.

The documenter drafts patent application documents according to the standardized section titles, and provides the description and drawings that clearly and fully explain the claimed invention as a whole.

## **1. Patent Application Documents**

The contents of the patent application are 5 documents; a request, a description, one or more claims, an abstract, and one or more drawings (where required) (Article 36(1), (2) of the Japanese Patent Act).

### **(1) Request**

The matters to be stated in a patent application are stipulated by domestic law. The documenter shall prepare the application form pursuant to such domestic laws.

The Japanese Patent Act stipulates that the application shall at least state the name and domicile or residence of the applicant(s) for the patent and those of the inventor(s) (Article 36(1) of the Japanese Patent Act).

Particularly, in the case of a special patent application, such information should be stated in the application form. Such cases include, for example, an application of exception to lack of novelty of invention, priority claim, divisional application, etc. It is difficult to add such statements by amendment, etc.

### **(2) Claims**

The purpose of the claims is to determine the scope of protection that is the purpose of the patent, and to clearly define the scope of exclusive rights provided by the patent rights (Article 70(1) of the Japanese Patent Act). Thus, it can be said that the claims are the center or heart of a granted patent (WIPO HANDBOOK 2.52).

### **(3) Description and Drawing**

The description and drawings serve mainly as technical literature and disclose the technical contents of the claimed invention (Article 36(3) of the Japanese Patent Act).

The purpose of the patent system is to protect the invention by granting an exclusive right, called the patent right, to the person who has developed and published a new technology, for a certain period and under certain conditions, as well as to provide opportunities for third parties to utilize the said invention by publicizing the technical contents of the invention.

Matters stated in the description and drawings serve as the basis on which the patent right is granted for the scope of protection of the claimed invention. Therefore, the description and drawings must fully and clearly explain the claimed invention as a whole (Article 36(4)(i) of the Japanese Patent Act).

### **(4) ABSTRACT**

The purpose of the abstract is to enable third parties to quickly obtain information about the essential contents of the invention (Article 36(7) of the Japanese Patent Act). The abstract, therefore, should be a brief summary of the contents of the claimed invention.

## **2. Preliminary Preparations**

First, the documenter should collect the materials required for the drafting of the description. In general, such materials comprise the technical data and market research data concerning the product of the invention.

### **(1) Technical data**

Technical data includes, for example, specification of the product of the invention, academic theses concerning the invention, and so forth. They are usually provided by the inventor.

The documenter classifies the technical data into a section stating the ideas of the inventor and the remaining sections. Then, the essential parts of the invention should be clarified based on the technical data.

It is important for the documenter to collect data concerning the state of the art at the time of application filing, and particularly to have a good understanding of the common general technical knowledge. Generally the common general technical knowledge is not stated as data, so the documenter needs to check this with the inventor.

The state of the art shall serve as criteria for judging whether or not the claimed invention is sufficiently and adequately explained by the description and drawings.

Further, the state of the art shall be necessary when the documenter makes a judgment concerning the novelty and inventive step of the claimed invention. The novelty and inventive step are critical requirements that significantly affect whether patent is granted or refused. When objecting to an examiner's decision to deny the novelty or inventive step in a patent examination, the source of objection, in principle, needs to be stated in the patent application documents as of the filing. When claiming the novelty and inventive step of the invention in the patent examination, it is very important for the documenter to know the state of the art as of the filing.

## **(2) Market research**

It is not sufficient for the documenter to assess the invention technically. He/she should also discover whether there is an adequate market for the product covered by the invention (WIPO HANDBOOK 2.124).

Market research is important for the future protection and usage of the invention. It is true that market research before the patent application is difficult since it needs to be done in secret, and the result of such market research is usually not stated explicitly in the patent application documents. However, it is important that the product covered by the invention is welcomed by the market in order for the applicant to make effective use of the patented invention in the future.

Therefore, the documenter, the inventor, and the applicant should develop a common view concerning the role of the technical features of the invention in maintaining a competitive advantage of the product covered by the invention. If such a common view has been developed, the documenter can then clarify the technical scope to be protected by the claims.

## **(3) Notes concerning the materials not stated in the patent application documents**

The documenter should clarify for the inventor or the applicant the materials not stated in the patent application documents.

The inventor or the applicant usually checks the matters stated in the patent application documents before the filing. However, it is difficult for the inventor and the applicant to check matters not stated in the patent application documents. Further, in principle, matters not stated in the patent application documents cannot be added after filing of the application. Thus, the documenter should clarify the materials not stated in the patent application, so that the inventor and the applicant can effectively check the patent application documents.

## **3. Identification of the Invention**

The first task in drafting a patent application is the identification of the

invention (WIPO HANDBOOK 2.38).

The invention to be stated in the patent application documents is not decided unambiguously. It should be decided through discussions between the documenter, the inventor and the applicant.

The documenter specifies the essential parts of the invention and the scope of patent protection to be sought through discussions with the inventor and the applicant. In these discussions, the inventor may explain his/her previous inventions. The applicant may explain his/her forecast for the future of the product covered by the invention to be welcomed by the market. The documenter needs to develop a common view with the inventor and the applicant concerning the invention that can be stated in the patent application documents.

These discussions also serve an important role in the patent examination. For example, due to the shift amendment prohibition, the essential parts of the invention cannot be changed, in principle, in the patent examination process (Article 17-2(4) of the Japanese Patent Act). The documenter should therefore ensure that the description of the essential parts of the invention will not require alteration.

The documenter should also consult with the applicant concerning the number of patent applications. One application can state only one group of inventions that have a technical relationship (Article 37 of the Japanese Patent Act). This is called the requirements of “unity of invention.” The documenter should consult with the applicant concerning the number of patent applications based on the essential parts of the invention.

#### **4. Drafting of the Claims, Description, and Drawings**

It is important that the contents of patent application documents are clearly understood by readers.

The claims serve as a basis on which the scope of the patent is defined. The scope of the patent cannot be defined if the claims are unclear.

The description and drawings serve as the basis of the patent right, by disclosing the technical contents of the claimed invention. Where the description and drawings are unclear, it may be deemed that the technology is not disclosed therefore it is possible the patent will not be granted.

It is important for the documenter not only to express details of the invention but also to properly convey the invention to readers.

In Japan, the United States, and Europe, section titles of patent application documents have been standardized in accordance with the PCT rules. The

documenter, in principle, shall express the claimed invention in accordance with the standardized section titles.

The following is an explanation concerning the matters to be stated under each section title. In order to specifically describe the practical approaches taken to improve the statements in patent application documents, we provide samples of patent application documents and give an explanation of each section title. This sample is based on Part VII, Chapter 1, 3.3, example 3-1 of the Examination Guidelines for Patent and Utility Models.

The following is a sample of patent application documentation.

[ SAMPLE ]

## DESCRIPTION

### TITLE OF INVENTION

Apparatus for retrieving chemical substances

### TECHNICAL FIELD

[0001]

This invention relates to a system for retrieving and ordering chemical substances to be used for specific purposes in the chemical industry, pharmacies, and others.

### BACKGROUND ART

[0002]

The information retrieval technology in general is applied for various purposes, and also in the field of retrieving chemical substances, the technology is known to store names of chemical substances, chemical structure formulae, purposes, etc. in correspondence to stored items, to retrieve them by one item as a retrieval key and to extract other related information.

[0003]

However, in the conventional chemical substance retrieval system, since trading information such as prices and vendors which have no direct relationship with the chemical substance characteristics have not been stored, this information had to be acquired using other systems.

### SUMMARY OF INVENTION

#### TECHNICAL PLOBLEM

[0004]

The purpose of this invention is to provide a chemical substance retrieval

system, which is useful for ordering required chemical substances, enabled to extract trading information such as prices and vendors, by retrieving chemical substances based on required use purpose of chemical substance and chemical structure formula.

#### SOLUTION TO PROBLEM

[0005]

A chemical substance retrieval system of this invention is structured in such a manner that a storage means to store names of chemical substances, use purposes of chemical substances and chemical structure formulae in their correspondence and a storage means to store names of chemical substances, prices and vendors in their correspondence are separately provided, and after retrieving the name of a chemical substance based on a use purpose of chemical substance or chemical structure formula as the retrieval, a price and vendor are retrieved using the retrieved name of the chemical substance. This configuration is decided taking into consideration easiness of data transfer from a conventional type of chemical substance retrieval system and easiness of data maintenance.

#### ADVANTAGEOUS EFFECT OF INVENTION

[0006]

According to this invention, by retrieving a use purpose of chemical substance or chemical structure formula for a certain chemical substance, and enabling the extraction of trading information such as prices or dealing vendors, it is possible to provide a chemical substance retrieval system which offers convenience in ordering or in other trading activities of a required chemical substance.

#### BRIEF DESCRIPTION OF DRAWINGS

[0007]

Fig 1 shows a chemical substance retrieval system realizing the claimed invention.

#### DESCRIPTION OF EMBODIMENTS

[0008]

This invention realizes a chemical substance retrieval system using a computer system constituting a CPU, memory means, an input device such as a keyboard and a display means such as a display unit. A conceptual drawing is shown in Fig. 1.

[0009]

A flow of the chemical substance retrieval system is as described below.

[0010]

First, a storage means of a computer system is loaded with chemical



substance characteristics data including names of chemical substances, use purposes of said chemical substances, and chemical structure formulae in their correspondence, and another storage means is stored with chemical substance trading data including names of chemical substances, prices of said chemical substances per gram and vendor names in their correspondence. These storage means can use memory means such as RAM and ROM or a recording medium such as a magnetic disk and/or CD-ROM.

[0011]

Then, when a chemical structure formula or a component of chemical substance is inputted from an input means, the CPU of the computer system retrieves the chemical substance characteristics data stored in one of the storage means of the computer system by the inputted retrieval key and extracts the data which includes the retrieval key.

[0012]

Further, the CPU of the computer system, using the name of the chemical substance existing in the extracted chemical substance characteristics data as the retrieval key, retrieves the chemical substance trading data stored in another storage means of the computer system, extracts the data which includes the retrieval key, and displays the name of the chemical substance, use purpose of chemical substance, chemical structure formula, price per gram, and dealing vendor name on the display means.

## CLAIMS

[Claim 1]

An apparatus for retrieving chemical substances, comprising:

chemical substance characteristics data storage unit for storing names, uses and structure formulae of a plurality of chemical substances in their correspondence;

chemical substance trading data storage unit for storing names, prices per gram, and vendor names of a plurality of chemical substances in their correspondence;

input unit for inputting a use of chemical substance or a structure formula as a retrieval key;

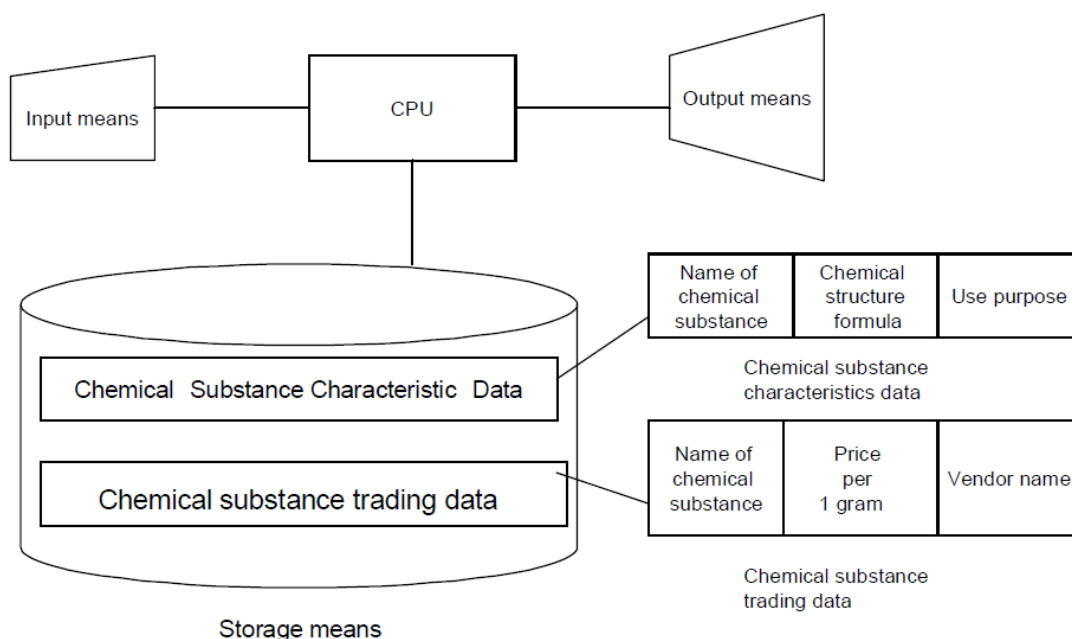
chemical substance characteristics data retrieval unit for extracting the name, the use and the structure formula of the chemical substance corresponding to the retrieval key inputted from said chemical substance characteristics data storage unit based on the retrieval key inputted from said input unit;

chemical substance trading data retrieval unit for extracting the price per gram and the vendor name of the corresponding chemical substance from said chemical substance trading data storage unit based on the name of chemical substance extracted from said chemical substance characteristics data retrieval unit; and

display unit for displaying the name, the use and the structure formula of the chemical substance extracted by said chemical substance characteristics data retrieval unit, and the price per gram and the vendor name of the chemical substance extracted from said chemical substance trading data retrieval unit in their correspondence on a display screen.

#### DRAWINGS

[Fig. 1]



#### (1) Claims

The claims define the scope of protection of the patent right; that is to say, they are the center or the heart of the granted patent. Whether or not a product, etc. is covered by the scope of patent protection should be clearly judged based on the expression stated in the claims.

Terms appearing in the claims shall be used in their normal meanings (Form 29bis 9). For technical terms, academic terms should be used (Form 29bis 8). Concerning the words stated in claims, the documenter should check their definition in dictionaries, handbooks, etc. When using terms with special meanings in claims, the documenter should define the terms explicitly in the patent application documents.

For example, in the case where comparative expressions, such as “big,” are used in a claim, the subject of comparison should be clarified by using expressions such as “bigger than –.”

In the claims, there shall be set forth, by statements separated on a claim by claim basis, all the matters that an applicant for a patent considers necessary in defining the invention for which a patent is sought (Article 36(5) of the Patent Act).

Each claim shall be preceded by a sign that shows that it is a claim (“Claim”) space and with an Arabic numeral that designates the specific claim (E.g. Claim 1, Claim 2, etc.).

#### **A. General method for drafting claims**

Following is an explanation of the general method for drafting claims:

Generally, each claim is broken down into multiple constituent features when interpreted. In order to clearly express the multiple constituent features in claims, the statement is devised, for example, by starting each constituent feature on a new line.

The documenter clarifies the overall technical feature of the claimed invention by specifying multiple constituent features and their combinations in each claim.

There are no fixed rules for the process of determining the constituent features. Usually, in claims, they are at least broken into publicly known constituent feature(s) and publicly unknown constituent feature(s). When stating an identical constituent feature in multiple places, the documenter generally clarifies that they indicate the identical constituent feature by using expressions such as “the said...” and “the...”

The series of claims generally commences with a broad main claim followed by a number of claims of narrower scope. The statement of the narrower claims usually includes citations from the broad main claim; therefore, they are usually called dependent claims.

Generally, dependent claims are expressed by adding new constituent features to the cited claims or by restricting constituent features stated in the cited claims.

Each claim should be made as simple as possible. The documenter should state the minimum specifications necessary for solving the problem. Unnecessary limitations in the claim may limit the scope of protection by the claim.

However, the documenter should notice that simplified statements in the claims give rise to two risks.

One risk is that publicly known technology may be included in the scope of protection of the claim and, therefore, novelty and inventive step may be denied. In practice, the main claim is simplified, while concrete specifications are stated

in dependent claims, so that they can be amended should their novelty or inventive step be denied in the patent examination.

Another risk is that the extended scope of right is not supported by the description or drawings. The description and drawings should describe the claimed invention as a whole, clearly and sufficiently. If the scope of right is extended, there is a risk that the statement of the description and drawings may become insufficient. Sufficient statement of the description and drawings is generally called the support requirement. Where the documenter judges that the statement is not sufficient to support the claimed invention as a whole, s/he should ask the inventor to prepare new technical data.

Concerning the matters stated in the claims, the documenter should explain to the inventor and the applicant the reasons why they have been included in the claims. Further, concerning the matters excluded from the claims, the documenter should explain the reasons why they have been excluded. This is because the inventor and the applicant are generally unaware of the matters excluded from the claim, unless explained by the documenter.

## **B. Categories of claims**

The Japanese Patent Act specifies three categories of claims: the invention of a product; the invention of a process; and the invention of a process of producing a product.

Inventions are categorized because the scope of protection by the patent right varies. That is, in the case of an invention of a product, it is protected from the acts of producing, using, assigning, etc., exporting or importing, or offering for assignment, etc. In the case of an invention of a process, it is protected from the acts of using the process. In the case of an invention of a process of producing a product, it is protected from the acts of using the process, as well as the acts of using, assigning, etc., exporting or importing, or offering for assignment, etc. of the product produced by the process.

Inventions are also categorized because the extent of the explanation required for the description and drawings varies. According to the Japanese patent examination guidelines, the invention of a product needs to be explained clearly so that the product can be made and used; the invention of a process needs to be explained clearly so that the process can be used; and the invention of a process for producing a product needs to be explained clearly so that a product can be made by the process. Therefore, where only a specific category is stated, amendments may not be made concerning the invention in other categories.

The documenter needs to decide the category of the claimed invention as of the filing of the application.

### C. Consideration of sample claims

Next, we will look at some sample claims and explain the claim drafting practices more specifically.

#### (a) Scope of sample claims

The following is a sample of the scope of claims. Each constituent feature of the claim is shown in bold and italics and is underlined. These claims are henceforth termed, "Sample Claims."

[ SAMPLE ]

#### CLAIMS

[Claim 1]

*An apparatus for retrieving chemical substances*, comprising:

*chemical substance characteristics data storage means* for storing names, uses and structure formulae of a multiple of chemical substances in their correspondence;

*chemical substance trading data storage means* for storing names, prices per gram, and vendor names of a multiple of chemical substances in their correspondence;

*input means* for inputting uses of chemical substances or a structure formula as a retrieval key;

*chemical substance characteristics data retrieval means* for extracting the name, the use and the structure formula of the chemical substance corresponding to the retrieval key inputted from said chemical substance characteristics data storage means based on the retrieval key inputted by said input means;

*chemical substance trading data retrieval means* for extracting the price per gram and the vendor name of the corresponding chemical substance from said chemical substance trading data storage means based on the name of the chemical substance extracted from said chemical substance characteristics data retrieval means; and

*display means* for displaying the name, the use and the structure formula of the chemical substance extracted by said chemical substance characteristics data retrieval means, and the price per gram and the vendor name of the chemical substance extracted from said chemical substance trading data retrieval means in their correspondence on a display screen.

#### (b) Category of the claims

"An apparatus for retrieving chemical substances" is stated in the Sample Claims. This is the invention of a product.

An invention of a process is not given in the Sample Claims. Where the

documenter does not draft a claim for a specific category, s/he should fully explain to the applicant the risk of not drafting such a claim.

**(c) Constituent features of the Sample Claims**

Seven constituent features are stated in the Sample Claims: an apparatus for retrieving chemical substances; chemical substance characteristics data storage means; chemical substance trading data storage means; input means; chemical substance characteristics data retrieval means; chemical substance trading data retrieval means; and a display means.

These can be broken into three groups: The first group consists of an apparatus for retrieving chemical substances. The second group consists of chemical substance characteristics data storage means and chemical substance trading data storage means. The third group consists of an input means, chemical substance characteristics data retrieval means, chemical substance trading data retrieval means, and a display means.

The first group includes the second and the third groups. The first group is a constituent feature indicating the claimed invention as a whole.

Concerning the second group, the chemical substance characteristics data storage means and the chemical substance trading data storage means are stated as separate constituent features, which indicate that the data is managed separately by two storage means. The third group indicates that the two storage means are associated for the execution of retrievals through sequential processing executed by these constituent features.

For the following reasons, it is considered reasonable that the Sample Claims include these seven constituent features.

The first group indicates the category of the invention, which should be explicitly stated.

The second and third groups indicate the technical features of the claimed invention, respectively.

Concerning the second group, chemical substance characteristics data storage means and chemical substance trading data storage means are stated as different constituent features. This indicates the technical feature of the invention to manage the data separately by two storage means.

The third group indicates that separate retrieval processes are utilized for these storage means. That means there are two retrieval means, chemical substance characteristics data retrieval means and chemical substance trading data retrieval means, corresponding to the two storage means. Further, the purpose of the Sample Claims is to “offer convenience for ordering or other trading activities of required chemical substance” for users of the apparatus for retrieving

chemical substances. Input and output means are important for the attainment of this purpose. Therefore, the claims include input means and display means as constituent features.

Thus, the reasons for determination of each constituent feature of the Sample Claims can be explained. Therefore, the constituent features of these Sample Claims are evaluated as reasonable.

Next, we will look at each constituent feature of the Sample Claims and explain points for improvement.

**(d) Improvement point 1: Selection of terms**

The documenter should not use terms also used in the technical data as they are, but should understand the roles that the terms played in the technical data, and then select adequate wording.

The purpose of the “name of the chemical substance” in the Sample Claims is to distinguish one chemical substance from other chemical substances. However, numeric codes, for example, may be used in future retrieval technology, therefore it may be better to use terms such as “chemical substance identifying data.”

However, “chemical substance identifying data” is not an established academic term. Therefore, “chemical substance identifying data” should be explicitly defined as “data for distinguishing one chemical substance from other chemical substances,” etc. in the patent application documents.

The “use purpose of chemical substance or chemical structure formula” and the “price per gram and the vendor names of chemical substances” are also restricted expressions. For example, an apparatus for retrieving chemical substances concerning “prices per 10 grams of the chemical substance” is, in principle, not included in the scope of right, since the “price per gram of the chemical substance” is stated in the claim.

The purpose of the “use purpose of chemical substance or chemical structure formula” is to indicate the characteristics of the chemical substance. So, it is adequate to express these as “characteristics data.” The documenter should define the “characteristics data” as, for example, the “data indicating the chemical substance characteristics” in the description.

The purpose of the “price per gram and the vendor names of chemical substances” is to indicate the trading of the chemical substance. So, it is adequate to express these as “trading data.” The documenter shall define “trading data” as, for example, the “data required for the purchase of the chemical substance in the market” in the description.

**(e) Improvement point 2: Elimination of processing not technically required**

The claims should not state processing that is not technically required.

The Sample Claims state that the chemical substance characteristics data retrieval means extracts not only the data corresponding to the retrieval key but also the retrieval key itself.

However, as is common general technical knowledge, the retrieval means need not extract the retrieval key itself. For example, in a case where the retrieval key is the use purpose of the chemical substance, it is sufficient to extract “chemical substance names” and “chemical structure formulae” corresponding to the retrieval key, but it is not necessary to extract “the use purpose of the chemical substance.” In a case where the retrieval key is the chemical formula, for example, it is sufficient to extract “chemical substance names” and “the use purpose of the chemical substance” corresponding to the retrieval key, but it is not necessary to extract the “chemical formulae.”

If the retrieval key is a part of the characteristics data and the rest of the characteristics data can be retrieved through retrieval processing, it may be commercially valuable because it enables retrieval of the same information as the Background Art.

The part that is considered commercially valuable is stated in Claim 2 of the improved version.

**(f) Improvement point 3: Clarification of the naming of the constituent features**

By improving the names given to each constituent feature, the documenter can make it easy for readers to understand the claimed invention.

For example, the expression “chemical substance” is included in the names of the four means stated in the Sample Claims. However, the fact that each means of the apparatus for retrieving chemical substances relates to “chemical substance” does not usually have a special meaning. Therefore, the expression “chemical substance” can be omitted.

Readers can clearly understand the processing undertaken by each constituent feature by including the new data provided by each constituent feature in its name. For example, “Input means,” “chemical substance characteristics data retrieval means” and “chemical substance trading data retrieval means” can be changed to the names as follows.

“Input means” should be changed to “characteristics data input means,” since input means is used for inputting the chemical substance characteristics data.



“Chemical substance characteristics data retrieval means” should be changed to “identification data retrieval means,” since identification data retrieval means is used for extracting the identification data based on the characteristics data.

“Chemical substance trading data retrieval means” should be changed to “trading data retrieval means,” since trading data retrieval means is used for extracting the trading data based on the identification data.

**(g) Sample Claims after improvement**

Considering the matters stated above, the Sample Claims can be improved, for example, as follows:

[ Improvement Version ]	Claims
[Claim 1]	<p><b><i>An apparatus for retrieving chemical substances</i></b>, comprising:</p> <p><b><i>a characteristics data storage unit</i></b> for storing identification data and characteristics data of each of a plurality of chemical substances in correspondence;</p> <p><b><i>a trading data storage unit</i></b> for storing identification data and trading data of each of a plurality of chemical substances in correspondence;</p> <p><b><i>a characteristics data input unit</i></b> for inputting characteristics data of a chemical substance as a retrieval key;</p> <p><b><i>an identification data retrieval unit</i></b> for extracting identification data corresponding to the retrieval key from the characteristics data storage unit, the retrieval key inputted by the characteristics data input unit;</p> <p><b><i>a trading data retrieval unit</i></b> for extracting trading data corresponding to the identification data from the trading data storage unit, the identification data extracted by the characteristics data retrieval unit;</p> <p>and</p> <p><b><i>a display unit</i></b> for displaying the characteristics data inputted by the characteristics data input unit, the identification data extracted by the identification data retrieval unit and the trading data extracted by the trading data extracted unit in correspondence on a display screen.</p>
[Claim 2]	<p>The apparatus of Claim 1, wherein the characteristics data includes a plurality of characteristic individual data;</p>

the characteristics data input unit inputs some or all of the plurality of characteristic individual data as the retrieval key;

the identification data retrieval unit

extracts the identification data corresponding to the retrieval key and the remainder of the characteristic individual data if the characteristics data input unit inputs only a part of the plurality of the characteristic individual data, and

extracts the identification data corresponding to the retrieval key if the characteristics data input unit inputs all of the plurality of the characteristic individual data; and

the display unit displays the characteristic individual data extracted by the identification data retrieval unit.

## **(2) Drawings**

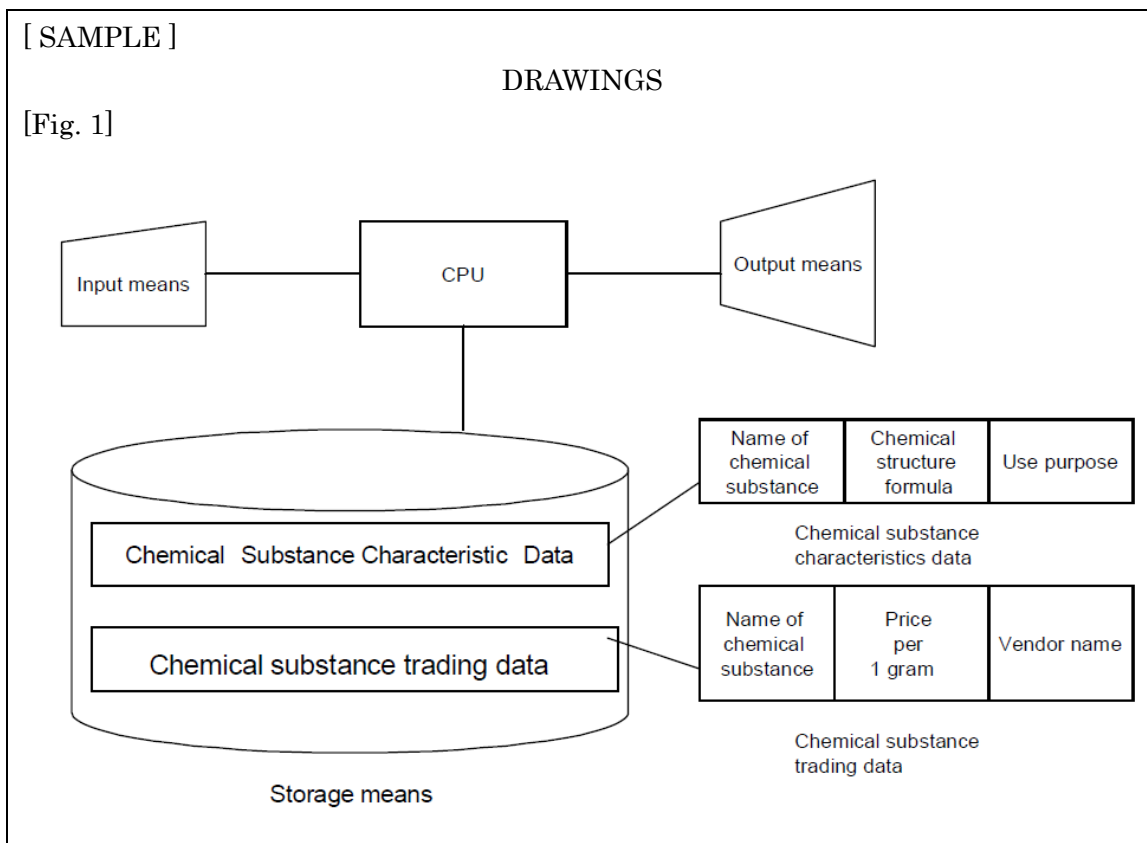
### **A. Formality**

Drawings shall be displayed in black and white. Each figure shall be preceded by a term that shows that it is a figure (e.g. “Fig.” or “Figure”), a space, and with an Arabic numeral that designates the figure (e.g. “Fig 1” or “Figure 1”).

In principle, explanations concerning drawings should be stated in the description. Figures are often explained using referential marks. Referential marks not stated in the description should not be displayed in figures, and vice versa.

### **B. Points for improvement in the sample figure**

One figure is shown in the sample. This is called the “Sample Figure.” The Sample Figure shows the hardware configuration of an apparatus for retrieving data about chemical substances.



Here is an explanation about the points that can be improved in the Sample Figure.

First, the figure should clarify the correspondence relationship between the claimed invention and each constituent feature. For example, the elements corresponding to the chemical substance characteristics data retrieval means and chemical substance trading data retrieving means are not clarified.

Further, in a patent examination of computer-related technology, some countries mandate the statement of explicit flowchart in patent examination. Therefore, it is advisable, if possible, to provide a flowchart in patent application documents for computer-related technology.

Thus, matters to be stated in patent application documents may vary from country to country, so the documenter should check the examination guidelines, etc. and confirm the matters to be stated in the patent application documents.

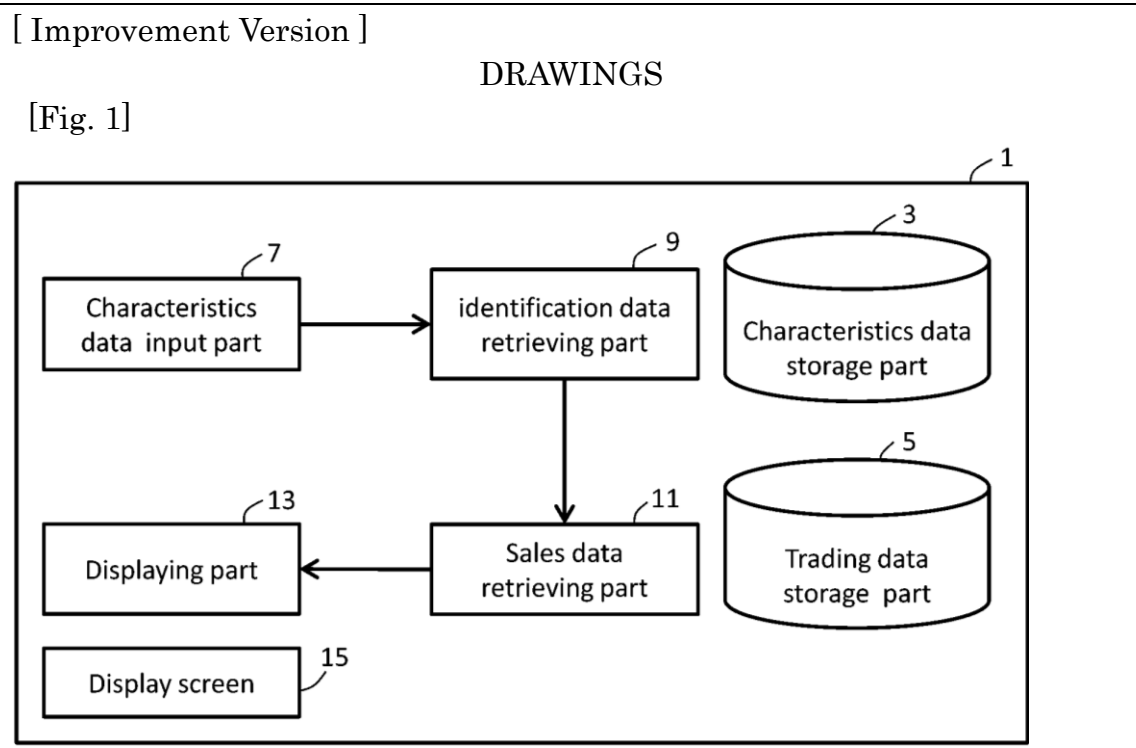
### C. Improved version

The Sample Figure has been improved as follows:

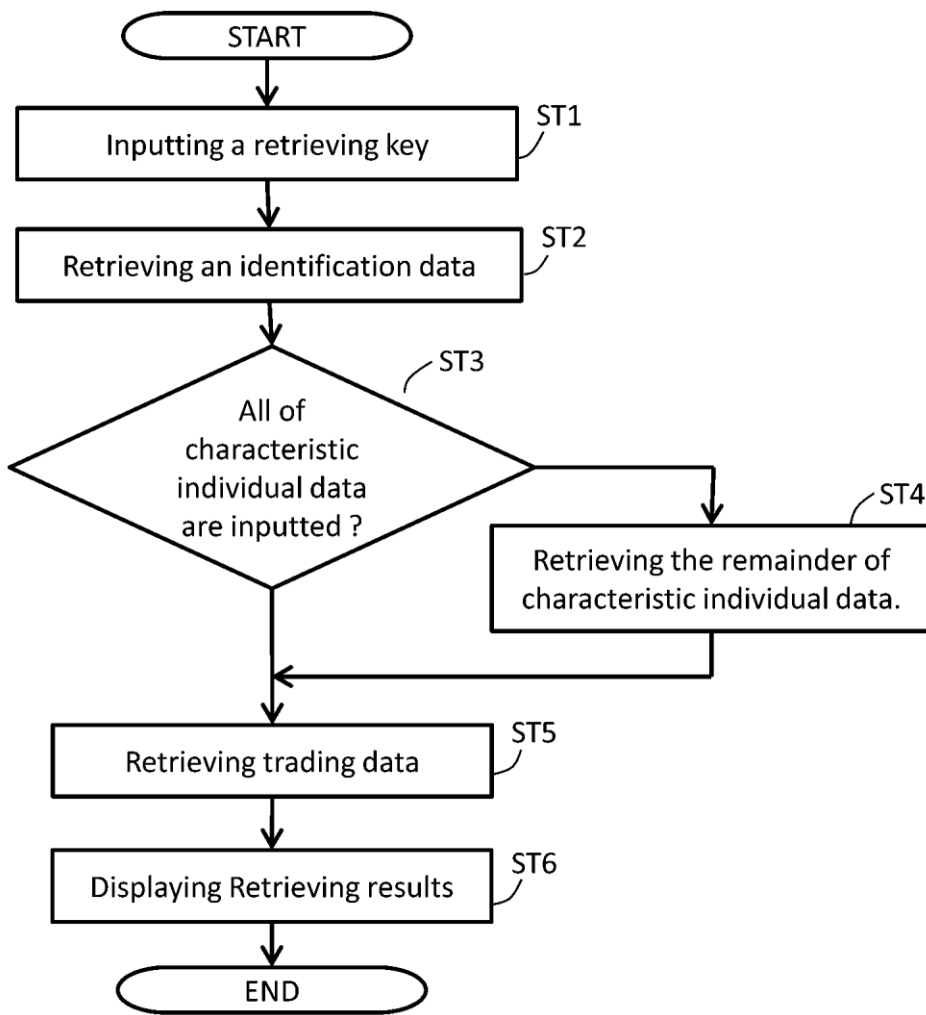
Figure 1 is a functional block diagram, showing elements corresponding to each constituent feature of the claimed invention.

Figure 2 is a flowchart, showing the processing of the claimed invention.

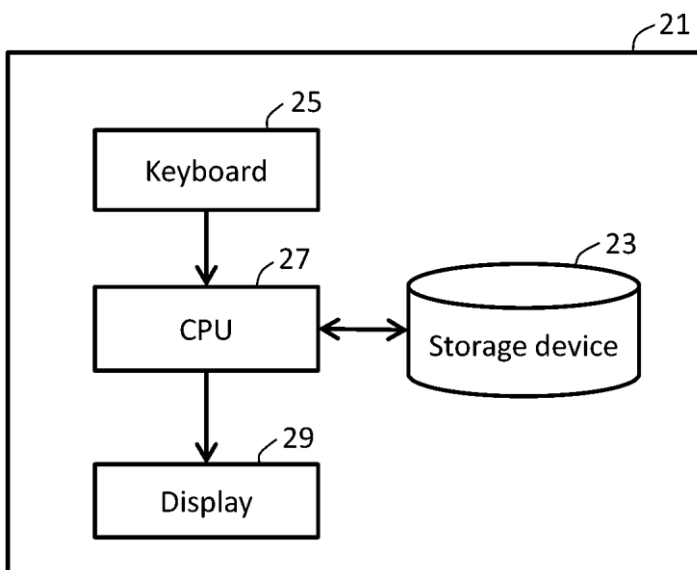
Figure 3 is a hardware block diagram, showing an example of hardware resources embodying the claimed invention.



[Fig. 2]



[Fig. 3]



### **(3) Description**

The description should state the technical significance of the claimed invention, and explain the claimed invention as a whole, clearly and fully so that it can be worked.

There are standardized section titles for the description. The documenter should draft the documents in accordance with the standardized section titles.

Paragraphs in the description shall be numbered with consecutive Arabic numerals. The title of the invention and the section titles, however, shall not be numbered.

The documenter may state mathematical and chemical formulae. Each formula shall be preceded by a sign that shows that it is a mathematical formula ("Math.") or a chemical formula ("Chem."), a space, and with an Arabic numeral that designates each mathematical or chemical formula (E.g. Math. 1, Math. 2, Chem. 1, Chem. 2).

Here is an explanation of the section titles in general use, in order of appearance:

#### **A. Title of Invention (or Title)**

The Title of Invention shall briefly present the contents of the invention (Form 29-13).

The following provides a sample description.

<b>TITLE OF INVENTION</b>
---------------------------

Apparatus for retrieving chemical substances
--

#### **B. Technical Field (or Field)**

In this section, the Technical Field to which the claimed invention belongs shall be stated.

The following provides a sample description.

<b>TECHNICAL FIELD</b>
------------------------

[0001]
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This invention relates to a system for retrieving and ordering chemical substances to be used for specific purposes in the chemical industry, pharmacies, and others.
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## **C. Background Art (or Background) and Citation List**

### **(a) Background Art**

This refers to the art, which, as far as is known to the applicant, can be regarded as useful for understanding the claimed invention, and the relationship between the claimed invention and prior art.

For example, where the problem to be solved by the claimed invention is publicly known, the conventional method for solving the publicly known problem is the Background Art.

There are cases where publicly unknown art is stated as Background Art. In such cases, the documenter should clearly indicate that the Background Art is publicly unknown.

The documenter selects a Background Art based on the state of the art as of the filing. The Background Art need not be the closest publicly known art found through an ideal search. It is important for the documenter to state at least the common general technical knowledge naturally known to a person skilled in the art as a Background Art. And, by stating in the Summary of Invention the technical contribution of the claimed invention to the common general technical knowledge, the applicant will be able to effectively oppose an examiner's decision of lack of novelty and inventive step.

### **(b) Citation List**

Where the applicant has knowledge of any inventions known to the public through publication at the time of filing of the patent application, the source of the information concerning the inventions known to the public through publication, such as the name of the publication and so forth shall be stated in the Citation List.

In the Citation List, publications shall be classified into patent literature and non-patent literature. Examples of statements specifying literature are given in the examination guidelines and handbook.

### **(c) Points for improvement in the sample Background Art**

The following provides a sample of the Background Art.

[ SAMPLE ]

BACKGROUND ART

[0002]

The information retrieval technology in general is applied for various purposes, and also in the field of retrieving chemical substances, the technology is

known to store names of chemical substances, chemical structure formulae, purposes, etc. in correspondence to stored items, to retrieve them by one item as a retrieval key and to extract other related information.

[0003]

However, in the conventional chemical substance retrieval system, since trading information such as prices and vendors which have no direct relationship with the chemical substance characteristics have not been stored, these information had to be acquired using other systems.

Here is an explanation of the points for improvement in this sample Background Art.

The paragraphs 0002 and 0003 of the sample indicate Background Arts concerning chemical substance characteristics data and chemical substance trading data, respectively.

The statement in paragraph 0002, “the retrieval technology in general is applied for various purposes” can be omitted, since the claimed invention is pertaining to an “apparatus for retrieving chemical substances,” and, therefore, it is sufficient to state the facts concerning the chemical substance retrieval technology of which the applicant is aware.

The statement in paragraph 0002 provides material that serves as the criteria by which the feasibility of retrieval processing by the claimed invention is judged.

The statement in paragraph 0003, “trading data of chemical substances had to be acquired using other systems” is abstract, so readers of patent application documents cannot realize the problems of the Background Art. It is essential that the documenter should state the facts objectively.

This statement of Background Art can be improved, for example, as follows:

[ Improvement Version ]

BACKGROUND ART

[0002]

A conventional chemical substance retrieval system in Patent Literature 1 stores names of chemical substances, chemical structure formulae, purposes, etc. in correspondence, retrieves them from one of the items as a retrieval key, and extracts other related information.



[0003]

Trading data of chemical substances (such as prices and vendors, etc.) has no relationship with the characteristics data. The conventional chemical substance retrieval system in Patent Literature 1 has not stored the trading data of chemical substances. Therefore, the trading data had to be acquired using other systems (See Non Patent Literature 1).

#### CITATION LIST

##### PATENT LITERATURE

[0004]

[Patent Literature 1] Publication of unexamined patent application No. ○○○○—○○○○○○

##### NON PATENT LITERATURE

[0005]

[Non Patent Literature 1] Name of the author, title of thesis, title of publication, publishing nation, publishing company and the like, publishing day, month and year and pages.

#### **D. Summary of Invention (or Summary)**

In principle, this statement should include the problems to be solved by the invention for which a patent is sought and how the problems have been solved by the invention. Where the invention for which a claim is sought has a beneficial effect in relation to conventional technology, such effect should be stated, if possible.

#### **(a) Technical Problems**

The problems to be solved by the claimed invention should be stated on the premise of the Background Art. The documenter should consider the questions naturally raised from the statement of the Background Art based on common general technical knowledge. It is useful to analyze such questions in order to indicate the usability of the claimed invention.

For example, where the invention lies in realizing what the problem is, this should be apparent (PCT guideline 4.06). On the other hand, if the problem is known or obvious, the inventive step examination will bear on the originality of the solution claimed (WIPO HANDBOOK). Therefore, the claim for the originality of the solution to the problem should be enhanced.

[ SAMPLE ]

TECHNICAL PLOBLEM

[0004]

The purpose of this invention is to provide a chemical substance retrieval system, which is useful for ordering required chemical substances, enabled to extract trading information such as prices and vendors, by retrieving chemical substances based on the required use purpose of a chemical substance and chemical structure formula.

The technical problem in the sample substantially states the constituents and effects of the invention, but does not state the problem of the Background Art. First, the documenter can analyze the reason why the Background Art has managed chemical substance characteristics and chemical substance trading data separately.

For example, the focus could be placed on the time-based difference between chemical substance characteristics and chemical substance trading data. That is, chemical substance characteristics do not, in principle, change through the past, present, and future; while chemical substance trading data does change with the passage of time.

Also, s/he can focus on the difference between the information acquisition methods concerning chemical substance characteristics and chemical substance trading data. Chemical substance characteristics are clarified by scientists through research and disclosed through academic theses, etc., while chemical substance trading data is adjusted in the market by vendors, etc. Information concerning chemical substance characteristics and chemical substance trading data are obtained from different sources.

On the premise of the analysis of both chemical substance characteristics and chemical substance trading data, readers of patent application documents can understand the reason why they have been managed separately, and therefore better understand the problem to be solved by the invention.

The problem to be solved by the invention can be improved, for example, as follows.

[ Improvement Version ]

TECHNICAL PROBLEM

[0006]

However, the conventional chemical substance retrieval system in Patent Literature 1 retrieves the characteristics data. The characteristics data is obtained by researchers based on their scientific knowledge. On the other hand, the trading data is obtained from the economical trading

results in the market. Therefore, the characteristics data and the trading data are managed separately. The user of the conventional chemical substance retrieval system has to get the characteristics data and the trading data separately.

[0007]

Accordingly, an object of the present invention is to provide an apparatus for retrieving chemical substances which can retrieve the trading data by using the characteristic data in the state of which the characteristic data and the trading data are separately managed.

#### **(b) Solution to Problem**

It should be stated how the problem has been solved by the claimed invention. It is not sufficient to state the solution to the problem in the mode for carrying out the invention. It should also be stated in the claims.

For example, where the solution to the problem is novel, it should be clearly and sufficiently stated along with its effects. However, where the solution to the problem is obvious (and has been already carried out), a detailed description of the solution to the problem may be minimized.

[ SAMPLE ]

SOLUTION TO PROBLEM

[0005]

A chemical substance retrieval system of this invention is structured in such a manner that a storage means to store names of chemical substances, use purposes of chemical substances and chemical structure formulae in their correspondence and a storage means to store names of chemical substances, prices and vendors in their correspondence are separately provided, and after retrieving a name of chemical substance based on a use purpose of chemical substance or chemical structure formula as the retrieval, a price and vendor are retrieved by the retrieved name of chemical substance. This configuration is decided taking into consideration easiness of data transfer from a conventional type of chemical substance retrieval system and easiness of data maintenance.

As to the sample "Solution to Problem," the former part alone is sufficient, which indicates that the claimed invention consists of two essential parts, by which the problem has been solved.

On the other hand, the statement in the latter part, "this configuration is decided taking into consideration easiness of data transfer from a conventional type of chemical substance retrieval system and easiness of data maintenance" is a

statement concerning the effects of the claimed invention and, therefore, should be stated in the section “Advantageous Effects of Invention.”

The statement in the “Solution to Problem” can be improved, for example, as follows:

[ Improvement Version ]

SOLUTION TO PROBLEM

[0008]

The first aspect of the present invention is an apparatus for retrieving chemical substances, comprising two storage units. One is a characteristics data storage unit to store identification data and characteristics data in correspondence. The other is a trading data storage unit to store identification data and trading data in correspondence. The apparatus utilizes the identification data stored by both of the characteristics data storage unit and the trading data storage unit. The apparatus retrieves identification data from the characteristics data storage unit by using characteristics data, and retrieves trading data from the trading data storage unit by using the identification data.

[0009]

The second aspect of the present invention is the apparatus of the first aspect, wherein the characteristics data includes a plurality of characteristic individual data, and if some of the characteristic individual data is inputted, the remainder of the characteristic individual data is retrieved and displayed.

**(c) Advantageous Effects of Invention**

Where the invention for which a patent is sought has advantageous effects in relation to conventional technology, such effects should be stated. An advantageous effect is an effect that is advantageous in comparison with an effect of a Background Art, among the effects derived from the matters defining the claimed invention (characteristic effects).

The effect needs to be obtained from the technical features of the claimed invention. An effect obtained from the constituent stated in the mode for carrying out the invention is not sufficient. The effect obtained from the technical features of the claimed invention should be stated.

For example, if no inventive step is found in the solution, the question becomes whether or not the result is obvious or whether it is surprising either by its nature or by its extent.

In patent examinations concerning the inventive step in Japan, advantageous effects are taken into consideration where they are explicitly stated in the description, etc. (Examination Guidelines). Therefore, the characteristic effects obtained from the invention should be stated as specifically as possible. (However, it should be noted that, in some countries, the statement of effects, etc., may influence the interpretation of the claims).

“Advantageous Effects” taken into consideration are, for example, effects that are advantageous and qualitatively different in comparison with those of cited inventions. “Advantageous Effects” are also effects that are qualitatively the same but quantitatively prominent. Further, they need to be the effects that a person skilled in the art could not foresee from the state of the art.

[ SAMPLE ]

ADVANTAGEOUS EFFECT OF INVENTION

[0006]

According to this invention, by retrieving a use purpose of chemical substance or chemical structure formula for a certain chemical substance, and enabling the extraction of trading information such as prices, dealing vendors, it is possible to provide a chemical substance retrieval system which offers convenience for ordering or other trading activities of a required chemical substance.

The claimed invention has two effects: an advantage for users and that for administrators.

Only the advantage for users is stated in the sample. The documenter should also state the advantage for administrators.

The Effects of the Invention can be improved, for example, as follows:

[ Improvement Version ]

ADVANTAGEOUS EFFECTS OF INVENTION

[0010]

According to the present invention, the characteristics data storage unit and the trading data storage unit are different storage units. Therefore it is easy to transfer the characteristics data from the conventional chemical substance retrieval system to the characteristics

data storage unit. The characteristics data and the trading data are managed separately as before, which enables easy data maintenance.

[0011]

Moreover, the identification data is commonly stored in the characteristics data storage unit and the trading data storage unit. Therefore, the apparatus retrieves the trading data easily by using the characteristics data.

[0012]

According to the second aspect of the present invention, if some of the characteristic individual data is inputted, the apparatus retrieves the remainder of the characteristic individual data. This apparatus can achieve the same retrieval process as the conventional chemical substance retrieval system described in Background Art.

## **E. Brief Description of Drawings**

A brief description of each drawing should be stated in this section. The description of each drawing should start on a new line and be preceded by the title designating the figure (e.g. Figure 1, Figure 2).

## **F. Description of Embodiments**

### **(a) Formality**

In this section, the mode for carrying out a claimed invention that indicates how to work the invention should be stated so that a person ordinarily skilled in the art of the invention can work the claimed invention. At least one mode for carrying out the claimed invention should be stated, usually that which the applicant deems the best.

If necessary, examples indicating the specific mode for carrying out the invention should be stated. The heading "Example" should be assigned to the example. Where there is more than one example, headings with consecutive numbers such as [Example 1] and [Example 2] should be assigned, in order of appearance.

### **(b) Improvement of the sample of the mode for carrying out the invention**

In the sample of a mode for carrying out the invention, hardware resources are summarized and processing flow is explained. However, this is substantially the same as the matters stated in claims. The documenter should describe the claimed invention more specifically.

Please refer to the attached documents for the improved version of the sample of a mode for carrying out the invention. The documenter can better describe a mode for carrying out the invention by presenting the whole picture first and then giving

a specific explanation of each constituent. In particular, s/he should clarify the correspondence relationship between each constituent feature and the elements of a mode for carrying out the invention so that readers can easily understand the statement of the mode for carrying out the invention.

#### **G. Industrial Applicability**

Industrial Applicability should be stated when it is not obvious from the description or nature of the invention, as stipulated under 5.1(a)(vi) of the PCT rule.

#### **H. Reference Signs List**

Reference Signs List is a single list that covers the description, drawings, and scope of claims.

#### **5. Improved Version of the Sample**

The following is an improved version of the sample patent application documents. It should be noted that this does not represent an “ideal” patent application document. The documenter should have repeated discussions with the inventor and the applicant in order to draft the patent application documents best suited to the inventor and the applicant.

[ Improvement version ]

#### DESCRIPTION

##### TITLE OF INVENTION

Apparatus for retrieving chemical substances

##### TECHNICAL FIELD

[0001]

This invention relates to a system for retrieving and ordering chemical substances to be used for specific purposes in the chemical industry, pharmacies, and others.

##### BACKGROUND ART

[0002]

A conventional chemical substance retrieval system in Patent Literature 1 stores names of chemical substances, chemical structure formulae, purposes, etc. in correspondence, retrieves them from one of the items as a retrieval key, and extracts other related information.

[0003]

Trading data of chemical substances (such as prices and vendors, etc.) has no relationship with the characteristics data. The conventional chemical substance retrieval system in Patent Literature 1 has not stored the trading data of chemical substances. Therefore, the trading data had to be acquired using other systems (See Non Patent Literature 1).

#### CITATION LIST

##### PATENT LITERATURE

[0004]

[Patent Literature 1] Publication of unexamined patent application No. ○○○○—○○○○○○

##### NON PATENT LITERATURE

[0005]

[Non Patent Literature 1] Name of the author, title of thesis, title of publication, publishing nation, publishing company and the like, publishing day, month and year and pages.

#### SUMMARY OF INVENTION

##### TECHNICAL PROBLEM

[0006]

However, the conventional chemical substance retrieval system in Patent Literature 1 retrieves the characteristics data. The characteristics data is obtained by researchers based on their scientific knowledge. On the other hand, the trading data is obtained from the economical trading results in the market. Therefore, the characteristics data and the trading data are managed separately. The user of the conventional chemical substance retrieval system has to get the characteristics data and the trading data separately.

[0007]

Accordingly, an object of the present invention is to provide an apparatus for retrieving chemical substances which can retrieve the trading data by using the characteristic data in the state of which the characteristic data and the trading data are separately managed.

##### SOLUTION TO PROBLEM

[0008]

The first aspect of the present invention is an apparatus for retrieving chemical substances, comprising two storage units. One is a characteristics data storage unit to store identification data and



characteristics data in correspondence. The other is a trading data storage unit to store identification data and trading data in correspondence. The apparatus utilizes the identification data stored by both of the characteristics data storage unit and the trading data storage unit. The apparatus retrieves identification data by using characteristics data from the characteristics data storage unit, and retrieves trading data by using the identification data from the trading data storage unit.

[0009]

The second aspect of the present invention is the apparatus of the first aspect, wherein the characteristics data includes a plurality of characteristic individual data, and if some of the characteristic individual data is inputted, the remainder of the characteristic individual data is retrieved and displayed.

#### ADVANTAGEOUS EFFECTS OF INVENTION

[0010]

According to the present invention, the characteristics data storage unit and the trading data storage unit are different storage units. Therefore it is easy to transfer the characteristics data from the conventional chemical substance retrieval system to the characteristics data storage unit. The characteristics data and the trading data are managed separately as before, which leads to easy data maintenance.

[0011]

Moreover, the identification data is commonly stored in the characteristics data storage unit and the trading data storage unit. Therefore, the apparatus retrieves the trading data easily by using the characteristics data.

[0012]

According to the second aspect of the present invention, if some of the characteristic individual data is inputted, the apparatus retrieves the remainder of the characteristic individual data. This apparatus can achieve the same retrieval process as the conventional chemical substance retrieval system described in Background Art.

#### BRIEF DESCRIPTION OF DRAWINGS

[0013]

Fig. 1 is a block diagram illustrating a chemical substance retrieval system as an example of the present invention.

Fig. 2 is a flow diagram illustrating an example of the information processing of the chemical substance retrieval system 1 in Fig. 1.

Fig. 3 is a diagram illustrating an example of a hardware constitution realizing the chemical substance retrieval system 1 in Fig. 1.

#### DESCRIPTION OF EMBODIMENTS

[0014]

Fig. 1 is a block diagram illustrating a chemical substance retrieval system as an example of the present invention.

[0015]

In Fig. 1, a chemical substance retrieval system 1 comprises a characteristics data storage part 3, a trading data storage part 5, a characteristics data input part 7, an identification data retrieving part 9, a trading data retrieving part 11, a display part 13 and a display screen 15.

[0016]

The characteristics data storage part 3 stores identification data and characteristics data of each of a plurality of chemical substances in correspondence. Here, the identification data of a chemical substance is to distinguish a certain chemical substance from the other chemical substances. An example of the identification data is the name of a chemical substance. The characteristics data of a chemical substance is to specify the characteristics of a chemical substance. In this embodiment, the characteristics data includes a plurality of characteristic individual data. In the following, there are two characteristic individual data; the uses and the structure formulae of a plurality of chemical substances. The characteristics data storage part 3 can be easily built by using the conventional chemical substance retrieval system.

[0017]

The trading data storage part 5 stores the identification data and trading data of each of a plurality of chemical substances in correspondence. Here, the trading data is to purchase chemical substances in the market. In the following, the trading data includes the prices per gram and the vendor names of chemical substances.

[0018]

In chemical substance retrieval system 1, the characteristics data storage part 3 and trading data storage part 5 are separately manageable as before. Therefore, data maintenance is easy for an administrator of the chemical substance retrieval system 1.

[0019]

The characteristics data input part 7 inputs some or all of the plurality of characteristic individual data as retrieval keys.

[0020]

The identification data retrieval part 9 extracts identification data corresponding to the retrieval key from the characteristics data storage part 3 based on the retrieval key inputted from the characteristics data input part 7. If the characteristics data input part 7 inputs some of the plurality of the characteristic individual data, the identification data retrieval part 9 extracts the identification data and the remainder of the characteristic individual data corresponding to the retrieval key. That is to say, if the use and chemical structure formula are inputted as retrieval keys, the identification data retrieval part 9 extracts the identification data. If the use of a chemical substance is inputted as a retrieval key, the identification data retrieval part 9 extracts the identification data and the chemical formula. If the chemical structure formula is inputted as a retrieval key, the identification data retrieval part 9 extracts the identification data and the use. In this way, the user obtains the identification data, the use and the chemical structure formula corresponding to the retrieval key by using the chemical substance retrieval system 1.

[0021]

The trading data retrieval part 11 extracts the trading data of chemical substances corresponding to the identification data from the trading data storage part 5 based on the identification data extracted by the identification data retrieval part 9. In this way, the user obtains the prices per gram and vendor names of chemical substances corresponding to the retrieval key.

[0022]

The display part 13 displays the characteristics data, the identification data and the trading data in correspondence on the display screen 15. That is to say, the identification data, the use, the chemical formula, price per gram and the vendor name corresponding to the retrieval key are displayed on the display screen.

[0023]

Fig. 2 is a flow diagram illustrating an example of the information processing of the chemical substance retrieval system 1 illustrated in Fig. 1. Referring to Fig. 2, an example of the information processing of the chemical substance retrieval system 1 in Fig. 1 is described.

[0024]

The characteristics data input part 7 inputs some or all of the characteristic individual data of chemical substance as a retrieval key (Step ST1 in Fig. 2).

[0025]

The identification data retrieval part 9 extracts the identification data corresponding to the retrieval key from the characteristics data storage part 3 using the retrieval key inputted from the characteristics data input part 7 (Step ST2 in Fig. 2).

[0026]

The identification data retrieval part 9 judges if all of the characteristic individual data is inputted as the retrieval key or not (Step ST3 in Fig. 2). If the retrieval key is only a part of the characteristic individual data, the identification data retrieval part 9 extracts the remainder of the characteristic individual data (Step ST4 in Fig. 2).

[0027]

The trading data retrieval part 11 extracts, from the trading data storage part 5, the trading data corresponding to the identification data extracted by the identification data retrieval part 9 (Step ST5 in Fig. 2).

[0028]

The display part 13 displays the characteristics data, the identification data and the trading data in correspondence on the display screen 15 (Step ST6 in Fig. 2).

[0029]

Fig. 3 is a diagram illustrating an example of a hardware constitution for realizing the chemical substance retrieval system 1 in Fig. 1. Information processing device 21 comprises a storage device 23, a keyboard 25, a central processing unit (CPU) 27, and a display 29.

[0030]

The storage device 23 in Fig. 3 corresponds to the characteristics data storage part 3 and the trading data storage part 5 in Fig. 1. Storage device 23 can use a semiconductor storage unit such as RAM or ROM or a recording medium such as a magnetic disk and/or CD-ROM. Moreover, storage device 23 is shown as a single memory unit in Fig. 3. The characteristic data storage part 3 and the trading data storage part 5 may be realized by two storage devices.

[0031]

Keyboard 25 in Fig. 3 corresponds to the characteristics data input part 7 in Fig. 1.

[0032]

CPU 27 in Fig. 3 corresponds to the identification data retrieval part 9, the trading data retrieval part 11 and the display part 13 in Fig. 1.

[0033]

The display screen of display 29 in Fig. 3 corresponds to the display screen 15 in Fig. 1.

## REFERENCE SIGNS LIST

[0034]

1 Apparatus for retrieving chemical substances, 3 Characteristics data storage part, 5 Trading data storage part, 7 Characteristics data input part, 9 Identification data retrieval part, 11 Trading data retrieval part, 13 Display part, 15 Display screen, 21 Information processing device, 23 Storage device, 25 Keyboard, 27 CPU, 29 Display

## CLAIMS

[Claim 1]

An apparatus for retrieving chemical substances, comprising:

a characteristics data storage unit for storing identification data and characteristics data of each of a plurality of chemical substances in correspondence;

a trading data storage unit for storing identification data and trading data of each of a plurality of chemical substances in correspondence;

a characteristics data input unit for inputting characteristics data of a chemical substance as a retrieval key;

an identification data retrieval unit for extracting identification data corresponding to the retrieval key from the characteristics data storage unit, the retrieval key inputted by the characteristics data input unit;

a trading data retrieval unit for extracting trading data corresponding to the identification data from the trading data storage unit, the identification data extracted by the characteristics data retrieval unit; and

a display unit for displaying the characteristics data inputted by the characteristics data input unit, the identification data extracted by the identification data retrieval unit and the trading data extracted by the trading data extracted unit in correspondence on a display screen.

[Claim 2]

The apparatus of Claim 1,

wherein the characteristics data includes a plurality of characteristic individual data;

the characteristics data input unit inputs some or all of the plurality of characteristic individual data as the retrieval key;

the identification data retrieval unit

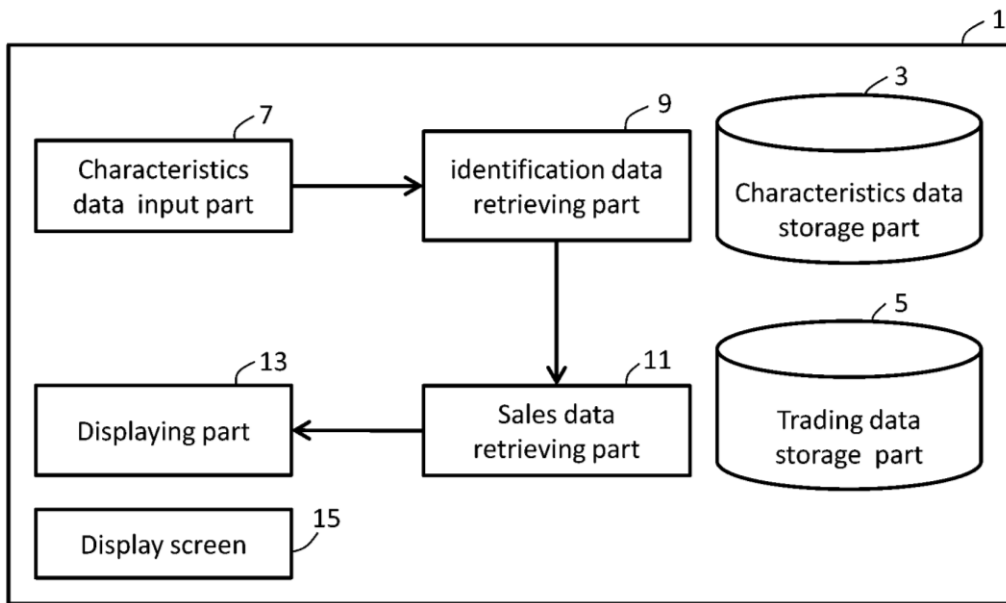
extracts the identification data corresponding to the retrieval key and the remainder of the characteristic individual data if the characteristics data input unit inputs only a part of the plurality of the characteristic individual data, and

extracts the identification data corresponding to the retrieval key if the characteristics data input unit inputs all of the plurality of the characteristic individual data; and

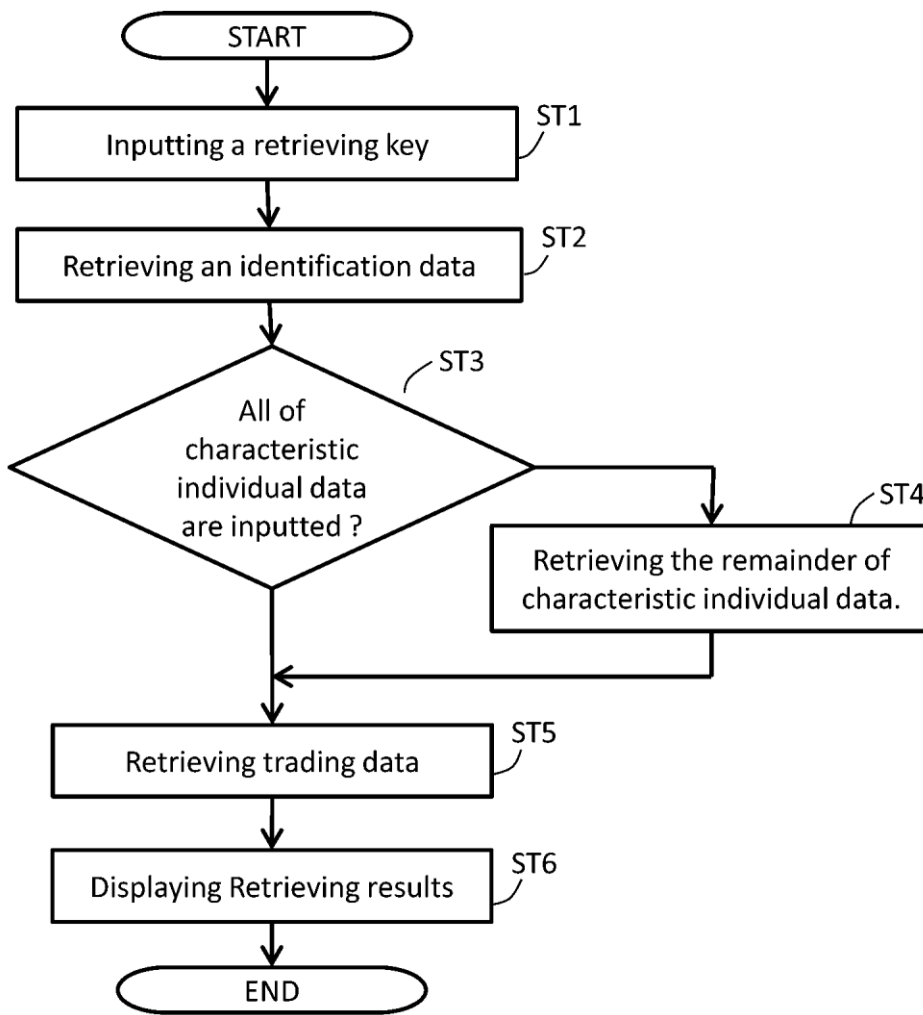
the display unit displays the characteristic individual data extracted by the identification data retrieval unit.

### DRAWINGS

[Fig. 1]



[Fig. 2]



[Fig. 3]

