

# Basics of Invalidity Search and Freedom-to-Operate Search in Japan

## -Advantages of Patent Searches in Japan-

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Search Department

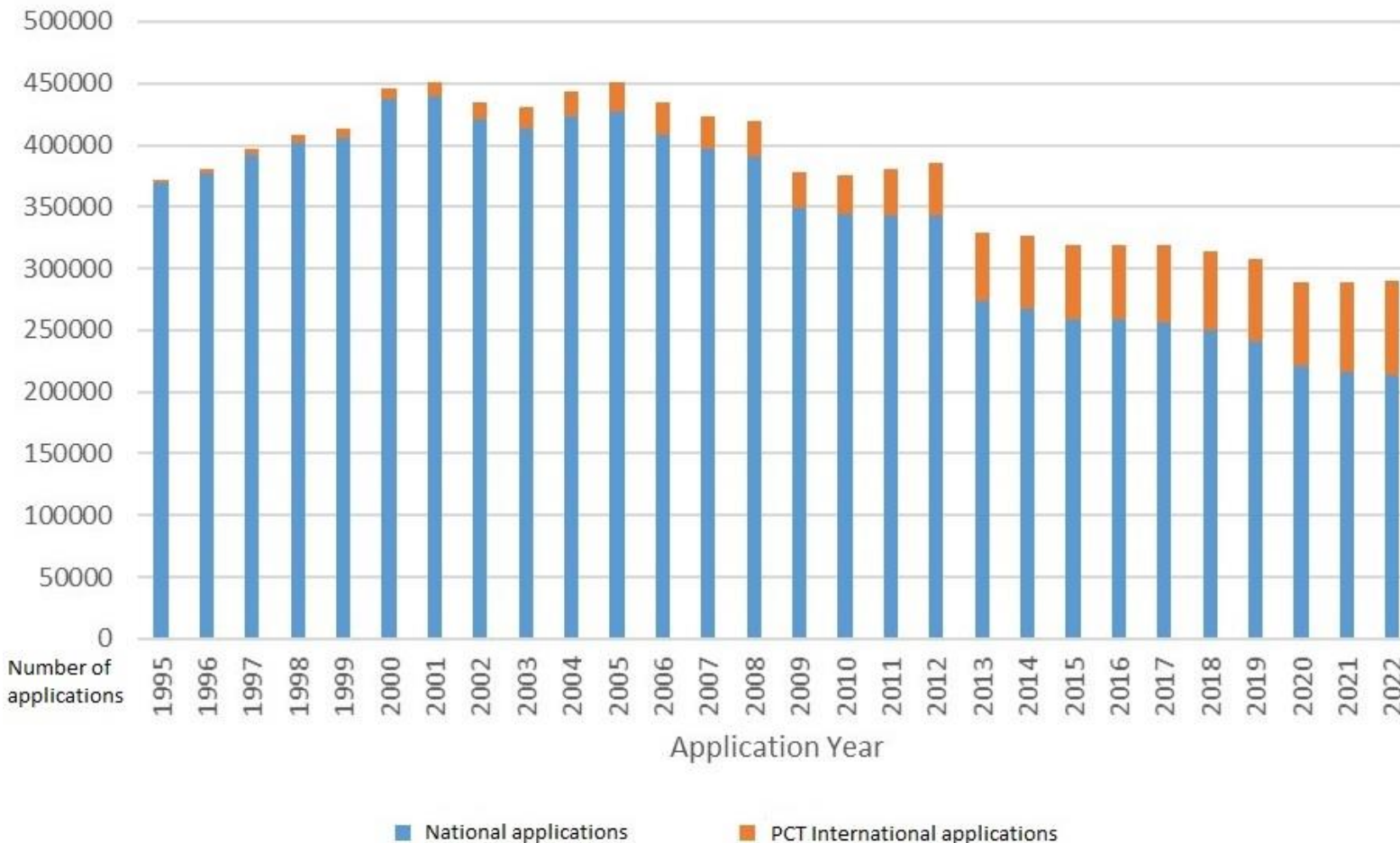
# Basics of Invalidity Search and Freedom-to-Operate Search in Japan

## -Advantages of Patent Searches in Japan-

- Number of Patent Applications in Japan
- Invalidity Search
- Freedom-to-Operate Search
- Brief Overview of Our Search Services
- Advantages of Performing Searches in Japan

# Number of Patent Applications Filed in Japan

The Number of Patent Applications in Japan (1995-2022)



● Patent applications which have been filed in Japan **since 1995** add up to over 10 million.

➤ The number of patent applications in Japan in 2021 was ranked 3rd in the world.

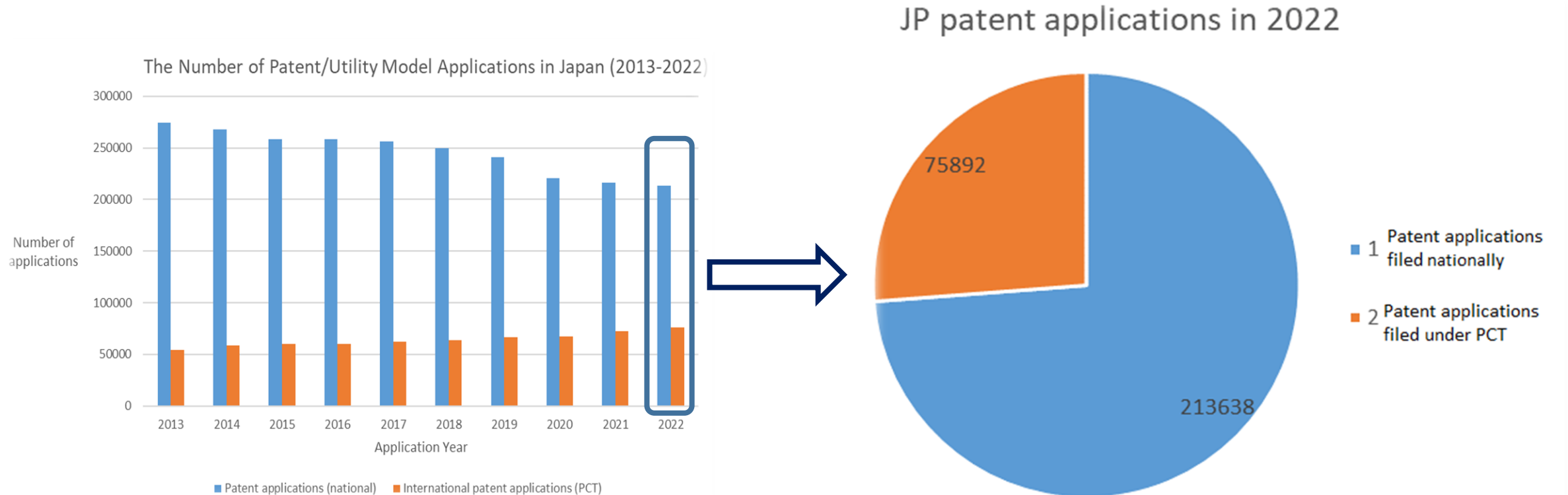
1. China: 1,585,663

2. U.S.: 591,473

**3. Japan: 289,200**

(based on data in 2021 (WIPO))

# Number of Patent Applications Filed in Japan



- More than 70% of the patent applications filed in Japan are filed nationally.
- Majority of the patent applications in Japan are not translated into other languages.

➡ Patent documents you have not been able to find might be found **in Japan**.

# Invalidity Search

**An invalidity search\*** is a search to assess whether a patent could be invalidated by finding prior art which could invalidate the patent.

\* It is also called *an invalidation search, prior art search for invalidating*, etc.

- A patent to be invalidated is usually your competitor's patent.
- You can also search for prior art which could validate a patent which can be your own patent. In this case, the search is called a validity search.

# Invalidity Search

- Find prior art which is relevant to the claim(s) to be invalidated

US011575136B2

(12) United States Patent  
Inuzuka et al.

(10) Patent No.: US 11,575,136 B2  
(45) Date of Patent: Feb. 7, 2023

(54) METAL MEMBER AND MANUFACTURING METHOD THEREOF

(71) Applicant: TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION, Kawasaki (JP)

(72) Inventors: Riko Inuzuka, Kanagawa (JP); Norikazu Osada, Tokyo (JP); Masato Yoshino, Kanagawa (JP); Masahiro Asayama, Kanagawa (JP); Shohei Kobayashi, Kanagawa (JP); Tsuneji Kamada, Tokyo (JP)

(73) Assignee: TOSHIBA ENERGY SYSTEMS & SOLUTIONS CORPORATION, Kawasaki (JP)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 17/182,764

(22) Filed: Feb. 23, 2021

(65) Prior Publication Data  
US 2021/0206659 A1 Sep. 23, 2021

(30) Foreign Application Priority Data  
Mar. 18, 2020 (JP) JP2020-047270

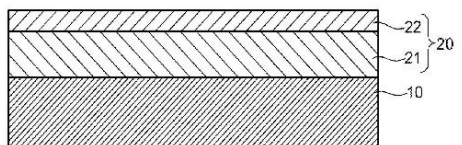
(51) Int. Cl.  
B22B 7/00 (2006.01)  
H01M 8/021 (2016.01)  
B22B 15/01 (2006.01)

(52) U.S. Cl.  
CPC: H01M 8/021 (2013.01); B22B 15/013 (2013.01)

(58) Field of Classification Search  
None  
See application file for complete search history.

5 Claims, 2 Drawing Sheets

1



For example... Target patent: US 11,575,136

What is claimed is:

1. A metal member for being used in a solid-oxide type electrochemical stack, the metal member comprising:  
a base formed of ferritic stainless steel containing Cr; and  
a metal film provided on the base, wherein  
the metal film includes a first metal layer containing Co  
and a second metal layer made of Mn, the first metal layer contacting the second metal layer, and is a stack in which the first metal layer and the second metal layer are sequentially stacked from the side of the base,  
wherein an element ratio of the amount of the first metal layer to the amount of the second metal layer is from 8:2 to 7:3 in density such that the metal film is prevented from peeling off from the base.
2. The metal member according to claim 1, wherein the metal film is a stack including, in addition to the first metal layer and the second metal layer, a third metal layer made of at least one of Fe, Cu, Ni, Zn, or Mo.
3. The metal member according to claim 1, wherein the first metal layer further contains at least one element of Fe, Cu, Ni, Zn, or Mo, in addition to Co.

Filed Date: February 23, 2021

Priority Date: March 18, 2020

Claim to invalidate: CL.1



# Invalidity Search -Outline of Our Procedures-

## Patent document searches:

FI, F-Terms (JP)  
IPC, CPC (non-JP)

- Pre-search** with keywords in a database.
- Select** at least a few relevant documents and obtain the classifications given to the documents.
- Choose** necessary classifications and keywords to build a search formula.
  - ➔ In order to search for Japanese patent documents, all variations in Japanese keywords and Chinese characters (Kanji) to be used for the search are chosen in this step.  
For example, there are two Chinese characters used to express a device or a machine, “機(ki)” and “器(ki)”.
- Build a search formula** using the keywords and the classifications chosen.
- Enter the search formula** in the database to retrieve a collection of patent documents in the database.
- Select** some most relevant patent documents in the collection of patent documents.

# Invalidity Search -Outline of Our Procedures-

## Non-patent literature searches:

### ● Two Types of Non-Patent Literature Searches:

◆ *Database Search* 

◆ *Library Search\** 

\*Library search is also called a manual search.



# Invalidity Search -Outline of Our Procedures-

## Non-patent literature searches:

### ◆ *Database search*

Non-patent (general)  
classifications

- Pre-search** with keywords in a database.
- Select** at least a few relevant non-patent literature\* and obtain the classifications given to the selected non-patent literature.
- Choose** necessary classifications and keywords to build a search formula.
- Build a search formula** using the keywords and the classifications based on the results of pre-searching.
- Enter the search formula** in the database to retrieve a collection of non-patent literature in the database.
- Select** some most relevant articles and/or documents in the collection of non-patent literature\*.

\*Non-patent literature includes academic papers, technical journals, books, etc.

# Invalidity Search -Outline of Our Procedures-

## Non-patent literature searches:

### ◆ *Library search*

- Search** for possibly relevant journals and/or books by searching with keywords in a library database and obtain call numbers and locations of the possibly relevant journals and/or books or reserve them for browsing.
- Go to the library\*** and **browse** the journals and/or books which were reserved in the library database beforehand.
- Select** some most relevant descriptions in the journals and/or books and make photocopies.

\*The libraries used for non-patent searches are usually the National Diet Library and a university library.

# Invalidity Search -Summarizing Results-

- Summarize search results in a table to visualize how relevant each of the selected documents to the patent to invalidate.

This helps our client in deciding whether to take the next step of requesting for ***Analysis/Opinion*** by patent attorneys.

[SAMPLE] Table 2: Comparison Table  
(G-R-\*\*\*\*\* (N\*\*\*\*\*JP1G))

[SAMPLE] Comparison Table of Prior Art Search for EP \*\*\*\*\*  
G-R-\*\*\*\*\* (N\*\*\*\*\*JP1G)

A	Description is relevant
B	Description is partially relevant
C	Description is slightly relevant
D	No description or different embodiment

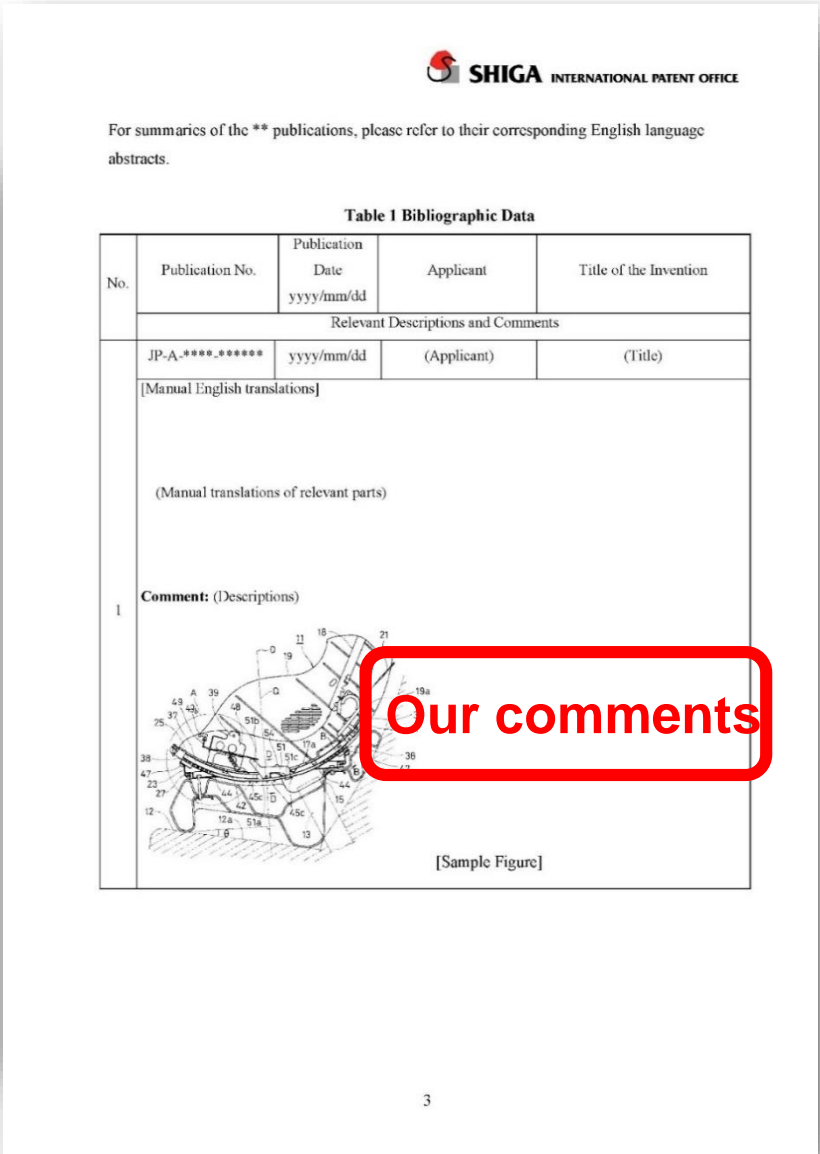
A: Japanese Unexamined Patent Publication  
U: Japanese Utility Model Publication

Claim No.	Constituent feature	No.	1	2	3	4	5
		Pub. No.	JP-A-****-****	JP-A-****-****	JP-A-****-****	JP-A-****-****	JP-U-****-****
		Pub. Date yyyy/mm/dd	yyyy/mm/dd	yyyy/mm/dd	yyyy/mm/dd	yyyy/mm/dd	yyyy/mm/dd
1	1-1 (Claim element)		B	B	A	A	A
	1-2 (Claim element)		A	A	A	A	A
	1-3 (Claim element)		A	A	A	B	A
	1-4 (Claim element)		A	A	B	B	B
	1-5 (Claim element)		B	B	B	A	A
	1-6 (Claim element)		B	C	C	C	D

# Invalidity Search -Summarizing Results-

- Write a search report with comments on each of the selected documents in English or Japanese.

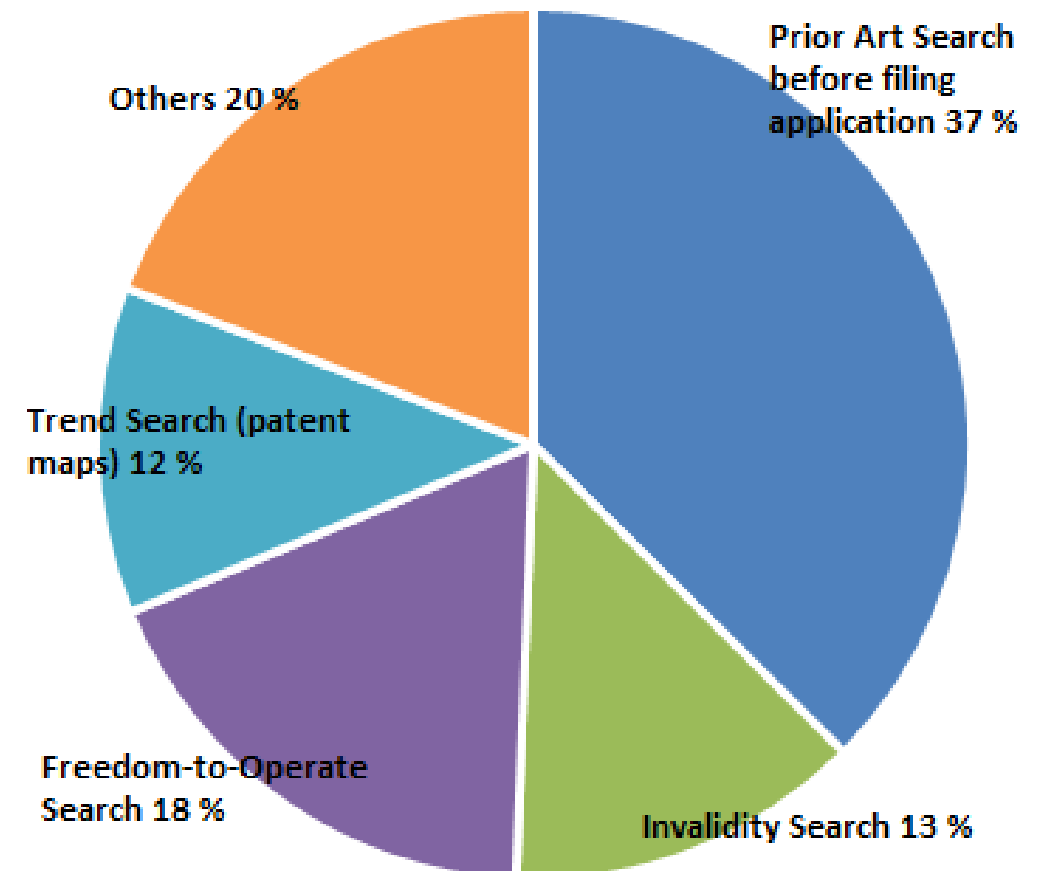
Translations into other languages are also available upon request.



# Invalidity Search Cases -at SHIGA in 2022-

- Search Department at SHIGA performs from about 60 to 100 invalidity searches every year.
- About 30 % of our clients requesting invalidity searches are from overseas such as the U.S., China, France, and Germany.

Search Cases at SHIGA in 2022



# Freedom-to-Operate Search

**A freedom-to-operate search\*** is a search to find issued or pending patents which a company's product, process or method may have a risk of infringing other's patent(s).

*\* It is also called an FTO search, clearance search, etc.*

## Advantages of FTO search:

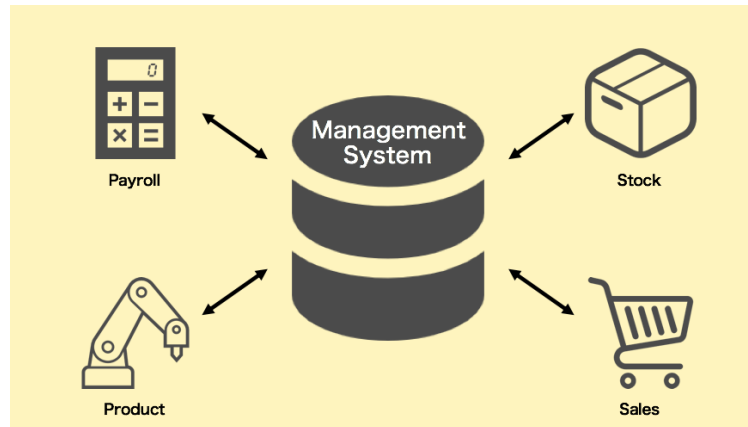
- It gives a guidance to a company's product design/launch decisions.
- It helps in avoiding a risk of infringing others' patent(s).
- It helps in finding a patent to invalidate.

# Freedom-to-Operate Search -Outline of Our Procedures-

- ◆ Before performing an FTO search, we discuss with our clients to grasp the novel features of their product/process/method.



What is novel?





# Freedom-to-Operate Search -Outline of Our Procedures-

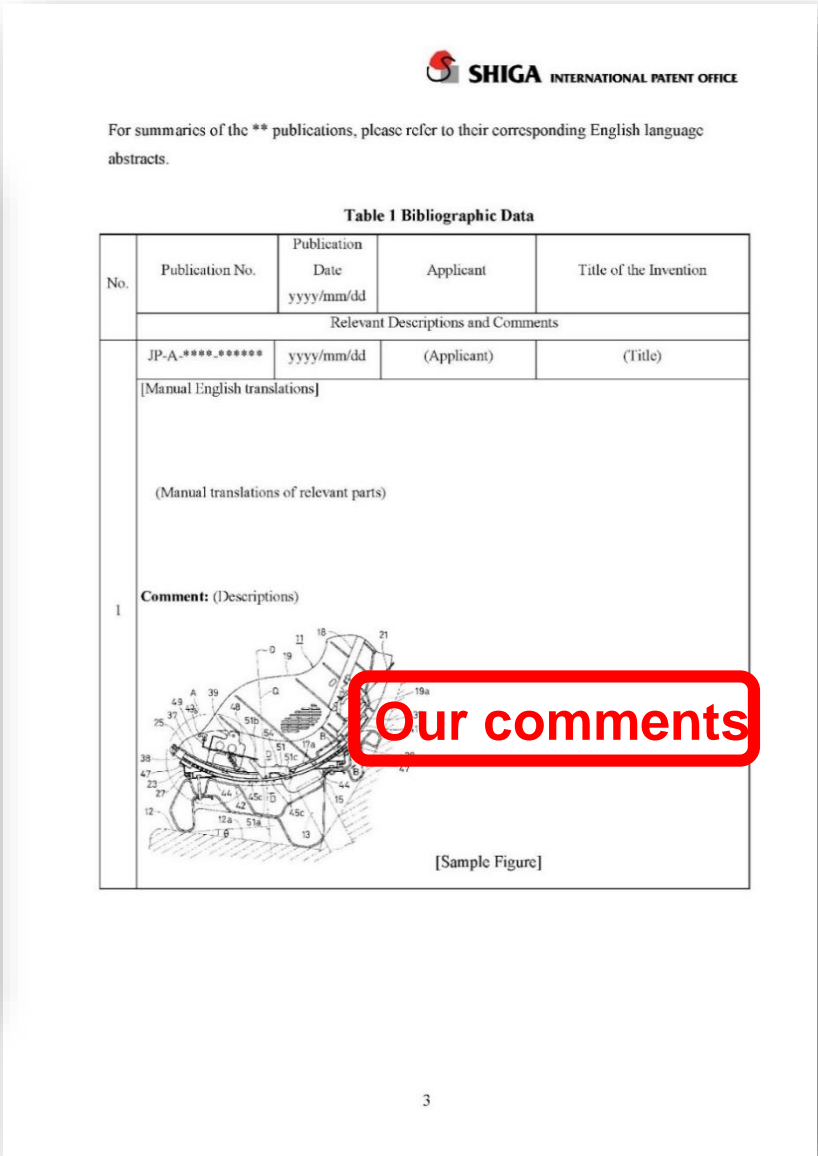
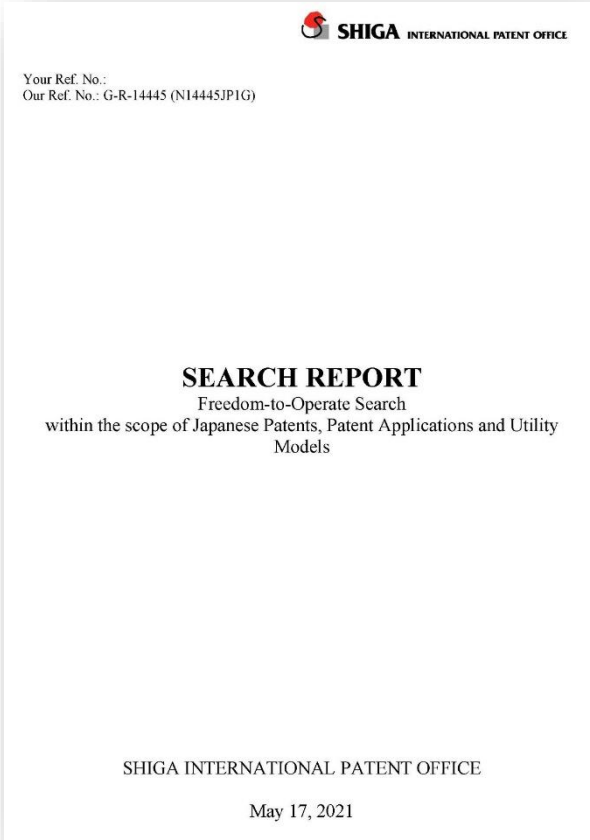
- Pre-search** with keywords in a database.
- Select** at least a few relevant issued or pending patents and obtain the classifications given to the patents.
- Choose** necessary classifications and keywords to build a search formula.
- Build a search formula** using the keywords and the patent classifications.
- Enter the search formula** in the database to retrieve a collection of issued and pending patents.
- Find** all issued or pending patents which our clients' product/process/method may be considered to infringe by browsing through claim descriptions of the issued and pending patents in the collection.

# Freedom-to-Operate Search -Summarizing Results-

- Write a search report with comments on each of the relevant patents in English or in Japanese.

Translations into other languages are available upon request.

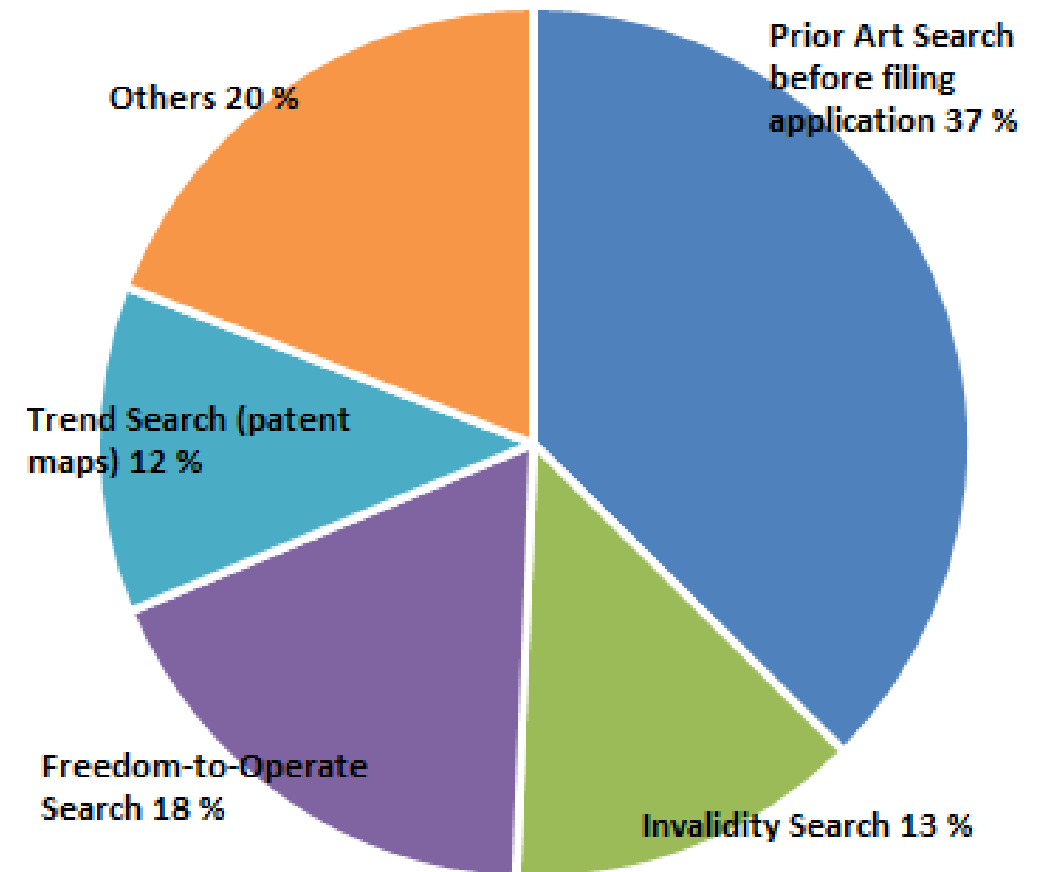
***FTO Analysis/Opinion*** can be requested to our patent attorneys.



# Freedom-to-Operate Search Cases -at SHIGA in 2022-

- Search Department at SHIGA performs from about 80 to 120 FTO searches every year.
- Less than 10 % of our clients requesting FTO searches are from overseas.
- Our oversea clients requesting FTO searches in the past few years are mainly from **China**.

Search Cases at SHIGA in 2022



# Brief Overview of *Our Search Services* at SHIGA

- Searchers at SHIGA often collaborate with the technical specialists and attorneys in our firm to offer high-quality search results.
- We do our best in offering a variety of search services with over 300 technical staffs including 170 patent attorneys, Ph.D. holders, former JPO examiners, and scientific researchers.

# Brief Overview of *Our Search Services* at SHIGA

## -Languages, Countries, and Technical Areas-

### Languages

- We are capable of performing searches in **Japanese and English**.
- Also experienced in performing Chinese and Korean searches using machine translations.

### Countries / Jurisdictions

- We perform searches in-house mainly in **JP, US, and EP**.
- We outsource searches in the other countries to *our local agents*.

### Technical Areas

Software, hardware, chemistry, biology, pharmacy, biotechnology, and combined fields such as AI and chemistry, AI and machinery, machinery and biology, and so on.

# Advantages of Performing Searches in Japan

● Possibility of finding patent documents which are published only in Japanese and are not available in the other languages such as English, Chinese, etc.

● Many patent documents exist in Japan.  
(The 3rd in the world)



Thank you so much for your attention,  
and we look forward to hearing from  
you soon about patent searches! 😊



[Feedback Form]

Contact us at: [ip-search@shigapatent.com](mailto:ip-search@shigapatent.com)  
Search, Research and Evaluation Division  
SHIGA INTERNATIONAL PATENT OFFICE