

# Patent Classification and Search key

# Japan Patent Office





- I. IPC
- II. FI
- III. F-term
- IV. Reference tool



## <u>I. IPC</u>

- II. FI
- III. F-term
- IV. Reference tool



#### A. History - 1/4

- In the past, patent documents were classified according to different classification systems originally developed in each <u>individual country</u>.
- In 1971, the <u>Strasbourg Agreement</u> Concerning the International Patent Classification was sealed, and it came into effect in 1975.
- The IPC had been <u>revised almost every five years</u>, up to the <u>seventh</u> <u>version</u>, to address technological innovations and increased documents.



#### A. History - 2/4

The first edition of the Classification was in force from September 1, 1968 to June 30, 1974.

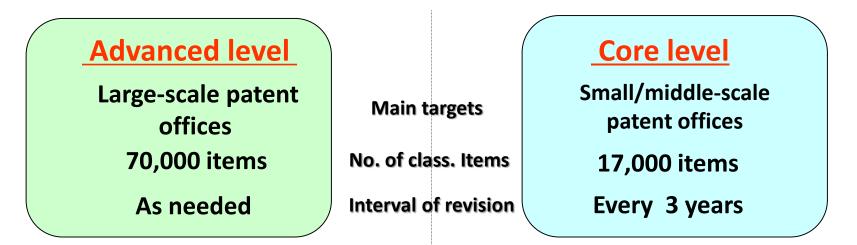
IPC ver. 2	July 1, 1974 to Dec. 31, 1979
IPC ver. 3	Jan. 1, 1980 to Dec. 31, 1984
IPC ver. 4	Jan. 1, 1985 to Dec. 31, 1989
IPC ver. 5	Jan. 1, 1990 to Dec. 31, 1994
IPC ver. 6	Jan. 1, 1995 to Dec. 31, 1999
IPC ver. 7	Jan, 1, 2000 to Dec. 31, 2005
IPC ver. 8 (IPC 2006.01 -)	Jan. 1, 2006 to the present

### I. IPC

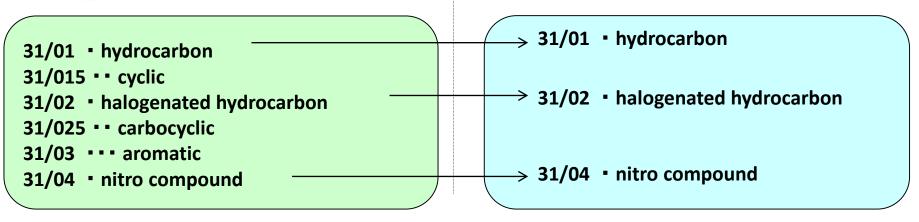


#### A. History - 3/4

IPC Reform (2006)



**Example:** A61K31/00 Preparation of drugs containing organic active components

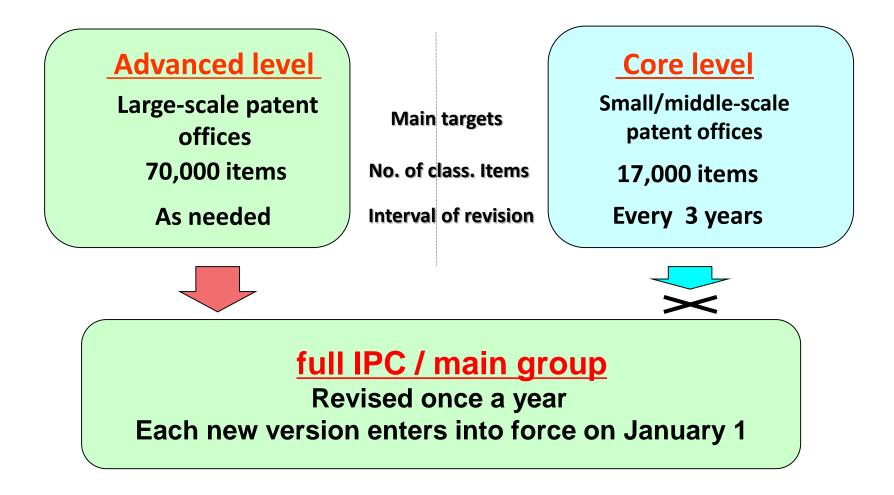


## I. IPC



#### A. History - 4/4

**IPC Simplification (2011)** 

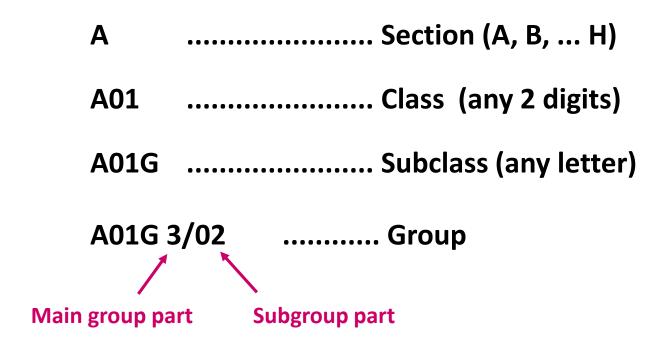




#### **B.** Layout of classification symbols – 1/2

A01G 3/02

complete classification symbol; consists of different components





#### **B.** Layout of classification symbols – 2/2

#### Two types of groups: Main groups Subgroups of main groups

#### 



#### C. Hierarchical structure – 1/3

section	subsections
A: HUMAN NECESSITIES	AGRICULTURE; FOODSTUFFS/TOBACCO; PERSONAL OR DOMESTIC ARTICLES; HEALTH/LIFE-SAVING/AMUSEMENT
B: PERFORMING OPERATIONS; TRANSPORTING	SEPARATING/MIXING; SHAPING; PRINTING; TRANSPORTING; MICRO-STRUCTURAL TECHNOLOGY/NANO-TECHNOLOGY
C: CHEMISTRY; METALLURGY	CHEMISTRY; METALLURGY; COMBINATORIAL TECHNOLOGY
D: TEXTILES; PAPER	TEXTILES OR FLEXIBLE MATERIALS NOT OTHERWISE PROVIDED FOR; PAPER
E: FIXED CONSTRUCTIONS	BUILDING; EARTH OR ROCK DRILLING/MINING
F: MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING	ENGINES OR PUMPS; ENGINEERING IN GENERAL; LIGHTING/HEATING; WEAPONS/BLASTING
G: PHYSICS	INSTRUMENTS; NUCLEONICS
H: ELECTRICITY	



#### C. Hierarchical structure – 2/3

#### section

**<u>A</u>: HUMAN NECESSITIES** 

subsection:

AGRICULTURE

class:

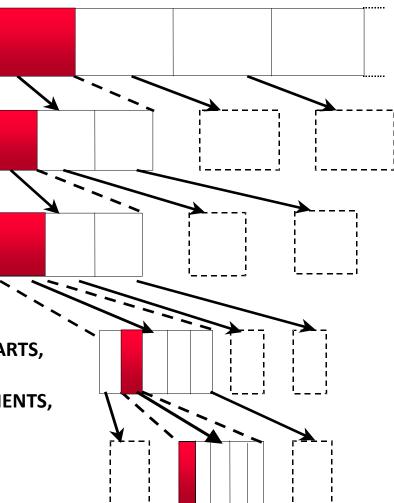
<u>A01</u>: AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

#### subclass:

A01B: SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL

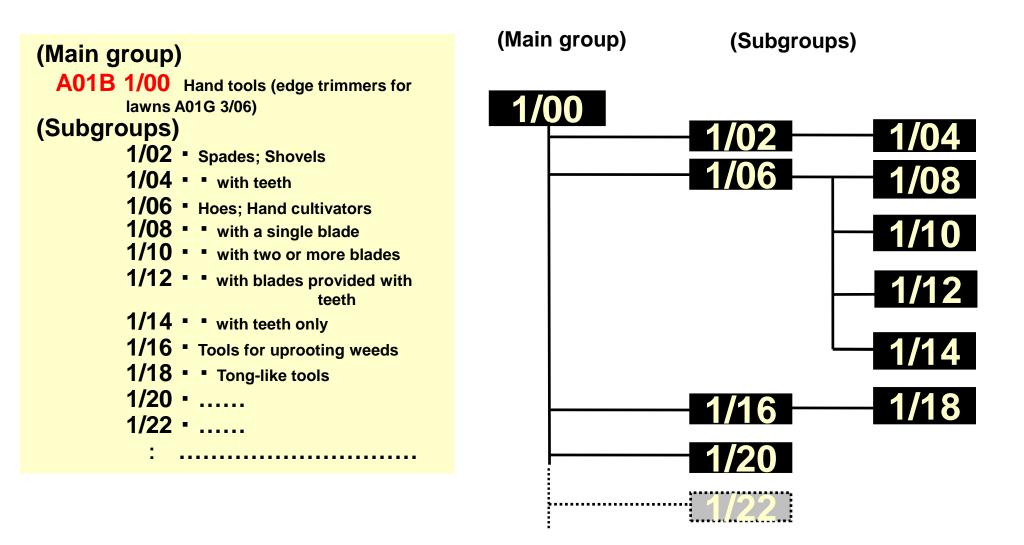
main group:

1/00: Hand tools (edge trimmers for lawns A01G 3/06)





#### C. Hierarchical structure – 3/3







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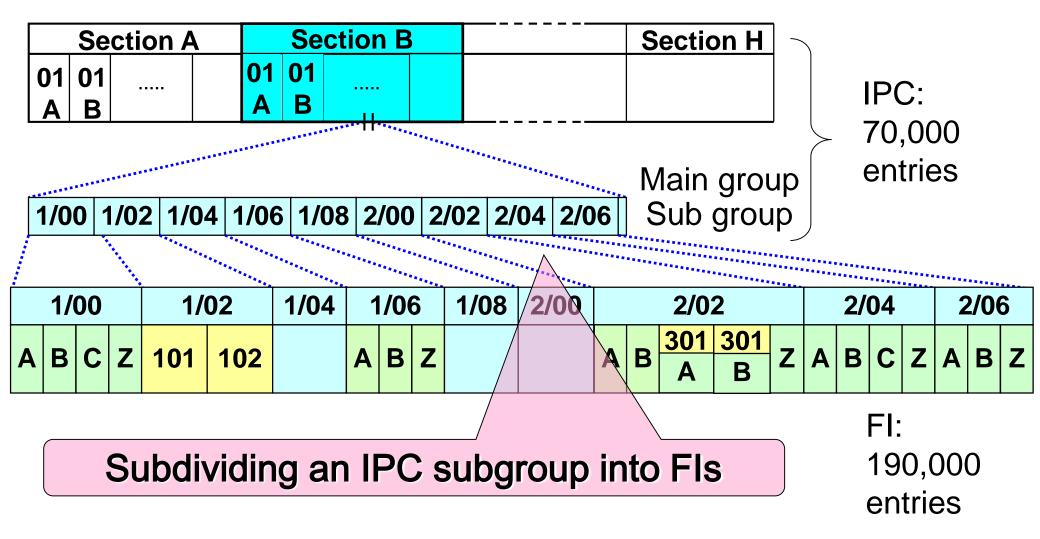
**<u>FI</u>** (File Index) is a domestic classification system developed and maintained by the JPO. It has the following features.

- Hierarchical tree structure which enables subdivision of Subgroups of the International Patent Classification (IPC)
- Assigned <u>mainly</u> to the Japanese patent publications and the Japanese utility model gazettes

> JPO recently started to assign FIs also to some Chinese documents.

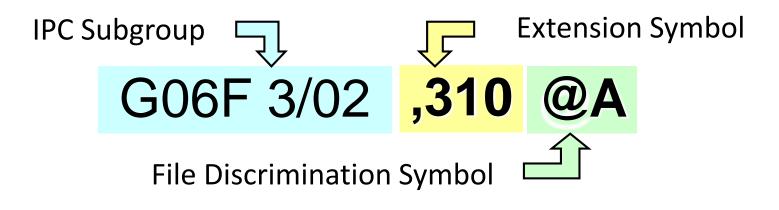


#### Correspondence between FI and IPC





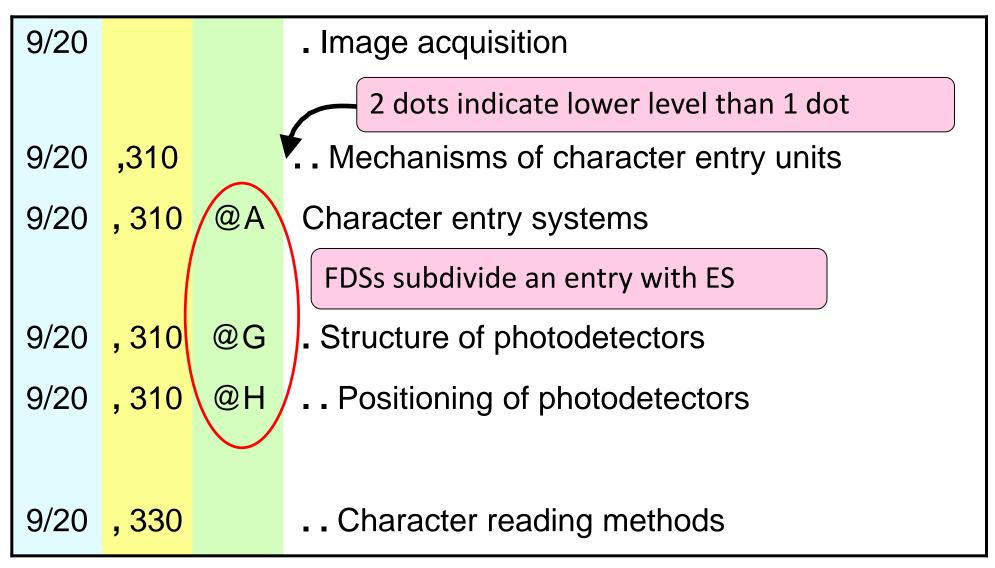
General format of FI



- Other formats of FI
  - ➢ G06K 9/18 (IPC subgroup per se)
  - G06K 9/20 @A (no extension symbol)
  - ➢ G06K 9/20 ,330 (no file discrimination symbol)



#### Hierarchical dots of FI, e.g., in G06K 9/20





"*Theme*" is a unique idea introduced by the JPO in order to categorize FI according to technical relevance.

Each theme is specified by a particular *code* and associated with ranges of FIs.

Range of FI	Theme code	
G06F 3/01	5E555	
G06F 3/02 - 3/027	5B020	
G06F 3/03	5B068	
G06F 3/033 - 3/041,340	5B087	
G06F 3/041,350 - 3/047	5B068	
G06F 3/048	5E555	
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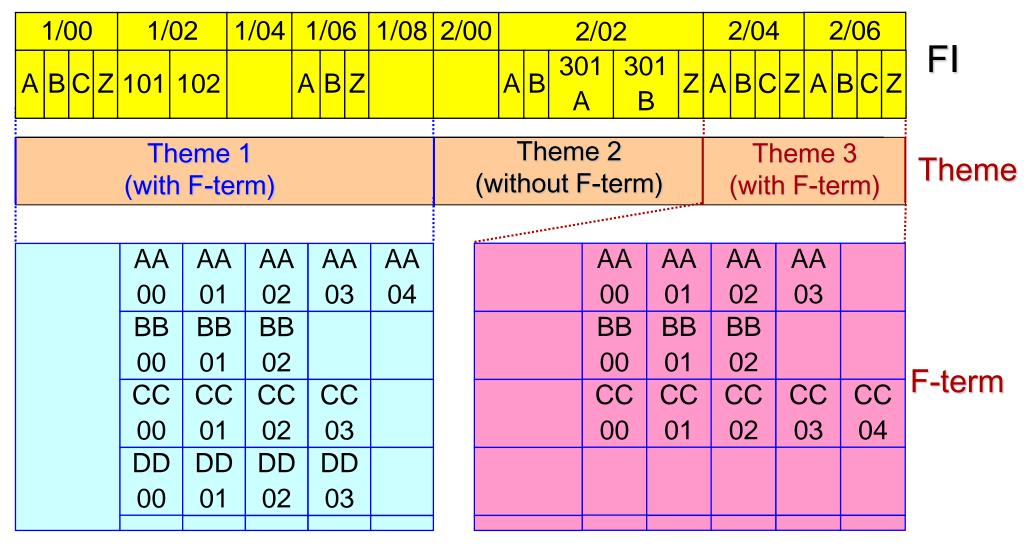


**<u>F-term (File forming term)</u>** is a unique classification system invented and maintained by the JPO. It has the following features.

- Hierarchical tree structure with multi-aspect enables analysis of a patent document from <u>multiple -viewpoints</u>
- Assigned mainly to <u>MOST</u> Japanese patent publications and Japanese utility model gazettes
  - JPO recently started to assign F-terms also to some Chinese documents.



#### Relationship between FI, Theme, and F-term



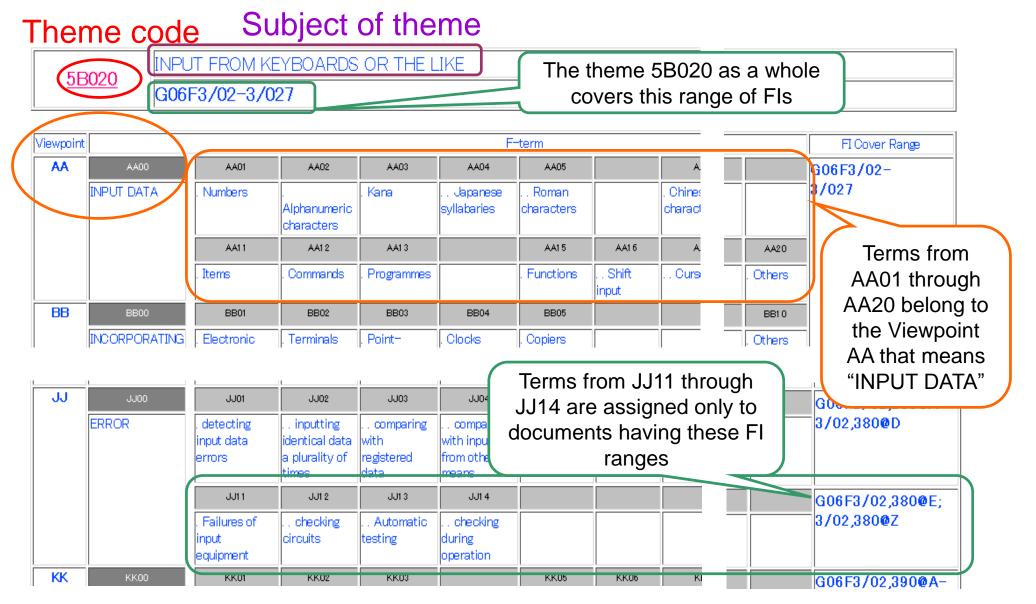


#### Comparison among FI, F-term, & IPC

	FI	F-term	IPC
Total number of entries	190,000	360,000	70,000
Coverage of patent documents	*Mainly JP documents	*Mainly JP documents	Global
Coverage of technical fields	100%	70%	100%
Function	Categorize	Analyze	Categorize

\*JPO started to assign FI / F-term to some Chinese documents







Utilizing F-term as a search key

- Specify the <u>F-term theme based on FI or IPC</u>
- <u>Select F-terms</u> that match technical elements of a search target
- Compose search queries by combining these terms

Example of a search target "Granular calcium oxide ceramics with low heat expansion" -> Theme 4G031 Composition of oxide ceramics F-term AA04, BA24, CA05 -> Query 4G031(AA04\*BA24\*CA05)



#### Example of a search target *"Granular calcium oxide ceramics with low heat expansion"*

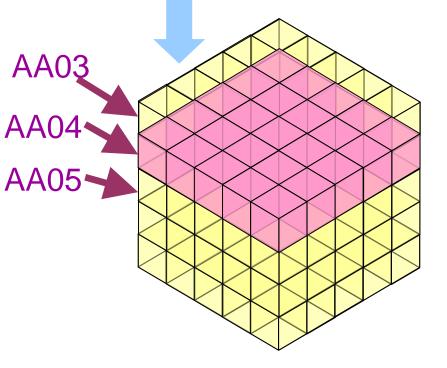
4G031

Composition of oxide ceramics

C04B35/42-35/51

iewpoint						F-term	
AA	AA00	AA01	AA02	AA03	AA04	AA05	AA06
	COMPONENTS	. Alkali-metal oxides	. Alkali− earth−metal oxides	Magnesium oxides	. Calcium oxides	Strontium oxides	Barium oxides
		AA11	AA1 2	AA1 3	AA14	AA1 5	AA1 6
		Titanium oxide AA21 Iron oxides AA31 Tin oxides	C	A alciו	A04 Im c		∎ es ■
BA	BA00	BA01	BA02	BA03	BA04	BA05	BA06
	FUNCTIONS AND USES	. Electric and electrical functions and uses	Conductivity	Ion conductivity	Voltage non-linear resistance bodies	P-type conduction (PTC) semiconductors	N-type conduction (NTC) semiconductors
		BA11	BA12	BA13	BA14	BA15	BA16
			Insulation	Magnetic-head	. Optical functions	Translucency	
		Current– collection characteristics	characteristics	support members	and uses		Electrical and optical characteristics
		collection				BA25	optical
		collection characteristics	Characteristics BA22 Heat insulation	support members	and uses		optical characteristics BA25 . Biological and
CA	CA00	collection characteristics BA21 . Thermal	Characteristics BA22 Heat insulation	BA23 Heat-and shock-resistance	BA24	BA25	optical characteristics BA25 . Biological and chemical function
CA	CA00 STRUCTURES	collection characteristics BA21 Thermal functions and uses	BA22 . Heat insulation	BA23 BA23 . Heat- and shock-resistance characteristics	and uses BA24 Low heat expansion	BA25 Fireproof substances	optic chara . Biol cherr

## viewpoint AA "components"





#### Example of a search target *"Granular calcium oxide ceramics with low heat expansion"*

	40001	Composition of o	xide ceramics				
	<u>4G031</u>	C04B35/42-35,	/51				
wpoin	+					F-term	
AA	AA00	AA01	AA02	AA03	AA04	AA05	AA06
	COMPONENTS	. Alkali-metal oxides	. Alkali– earth-metal oxides	Magnesium oxides	. Calcium oxides	Strontium oxides	Barium oxides
		AA11	AA1 2	AA1 3	AA14	AA1 5	AA1 6
		Titanium oxides	Zirconium oxides	Vanadium oxides	Niobic oxides	Tantalum oxides	Chromium oxides
		AA21	AA22	AA23	AA24	AA25	AA26
		Iron oxides	Cobalt oxides	Nickel oxides	. Oxides from Group Ib to IIb	Copper oxides	Zinc oxides
		AA31	AA32	AA33	AA34	AA35	AA36
BA	EA00 FUNCTIONS AND USES	el	ow		<b>\24</b> : ехр	oans	ion
		characteristics					characteristics
	1	BA21	BA22	BA23	BA24	BA25	BA26
		. Thermal functions and uses	Heat insulation	Heat- and shock-resistance characteristics	. Low heat expansion	Fireproof substances	. Biological and chemical functio and uses
CA	CA00		Heat insulation	shock-resistance			chemical functio

avers are

composed of different compounds shapes and sizes

viewpoint BA "Functions and Uses"

viewpoint AA

"components"

BA25

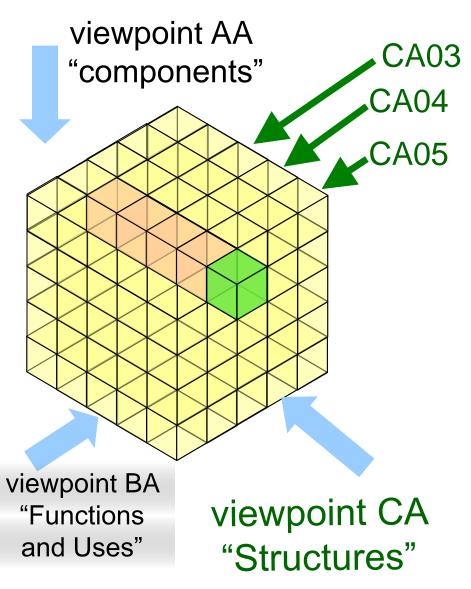
**BA23** 

**BA24** 



#### Example of a search target "Granular calcium oxide ceramics with low heat expansion"

	10001	Composition of o	xide ceramics				
-	<u>4G031</u>	C04B35/42-35	/51				
wpoint	t					F-term	
AA	AA00	AA01	AA02	AA03	AA04	AA05	AA06
	COMPONENTS	. Alkali-metal oxides	. Alkali earthmetal oxides	Magnesium oxides	. Calcium oxides	Strontium oxides	Barium oxides
		AA11	AA1 2	AA1 3	AA14	AA1 5	AA1 6
		Titanium oxides	Zirconium oxides	Vanadium oxides	Niobic oxides	Tantalum oxides	Chromium oxides
		AA21	AA22	AA23	AA24	AA25	AA26
		Iron oxides	Cobalt oxides	Nickel oxides	. Oxides from Group Ib to IIb	Copper oxides	Zinc oxides
		AA31	AA32	AA33	AA34	AA35	AA36
		Tin oxides	Lead oxides	Phosphorus oxides	Antimony oxides	Bismuth oxides	. Borides
BA	BA00	BA01	BA02	BA03	BA04	BA05	BA06
	FUNCTIONS AND USES	. Electric and electrical functions and uses	Conductivity	Ion conductivity	Voltage non-linear resistance bodies	P-type conduction (PTC) semiconductors	N-type conduction (NTC semiconductors
		BA11	BA12	BA13	BA14	BA15	BA16
		Current- collection characteristics	Insulation characteristics	Magnetic-head support members	. Optical functions and uses	Translucency	Electrical and optical characteristics
		BA21	BA22	BA23	BA24	BA25	BA26
		. Thermal functions and uses	Heat insulation	Heat- and ehock-resistance	. Low heat	Fireproof substances	. Biological and chemical functio and uses
CA	CA00	CA01		CA05		CA05	
	STRUCTURES	. Control of 1		AUJ	,	Granularity	
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		_	Gra	nula	rity		
			Jia	iiuia	ΊΙΥ		







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#### A. IPC Home Page – 1/2

http://www.wipo.int/classifications/ipc/en/

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international Patent Glassification (IPC)	WORLD INTELLECTUA	L PROPERTY ORG		
The International Patent Classification (IPC), established by the Strasbourg Agreement 1971, provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain. Browse and search the IPC Click!	IPC Home Page - Help      Version     2014.01      Current symbol     Go to     Language     English     French     English/French      View mode     path	Scheme P A P B P C P D P D P E P F P G P G	RCL         Compilation         Catchwords         Guide to the IPC           SECTION A — HUMAN NECESSITIES         SECTION B — PERFORMING OPERATIONS; TRANSPORTING           SECTION C — CHEMISTRY; METALLURGY         SECTION D — TEXTILES; PAPER           SECTION D — TEXTILES; PAPER         SECTION E — FIXED CONSTRUCTIONS           SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEAT         SECTION G — PHYSICS	ING; WEAPONS; BLASTING
News Next version of the IPC (IPC 2015.01) enters into force on January 1, 2015. Jul 1, 2014   IPC/WG/31 (May 12 to 16, 2014): document IPC/WG/31/2 (Report) and presentation available Jun 19 Cited from	full     hierarchic     Show CPC/FI     Deleted entries     Subclass indexes     Guidance Headings     V Notes	<i>е</i> р Н	SECTION H — ELECTRICITY	
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#### A. IPC Home Page –2/2

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Version 2014.01 -	фр)	F02B 37/00	Engines characterised by provision of pumps driven at least for part of the time by exhaust (or introduction of liquid fuel into cylinders by use of auxiliary fluid F028 13:00; characterised by after characterised by passes conducting the charac form the pump to the engine intel F028 33:44.	charging F02B 29/06;
Current symbol	æ	F02B 37/007	with exhaust-driven pumps arranged in parallel [6]	
F02B 37/12	æ	F02B 37/013	with exhaust-driven pumps arranged in series [6]	
Go to	d?	F02B 37/02	<ul> <li>Gas passages between engine outlet and pump drive, e.g. reservoirs</li> </ul>	
anguage English	đP	F028 37/04	<ul> <li>Engines with exhaust drive and other drive of pumps, e.g. with exhaust-driven pump and mechapump</li> </ul>	inically-driven second
French	d <del>P</del>	F028 37/10	<ul> <li>at least one pump being alternately driven by exhaust and other drive [3]</li> </ul>	
B English/French	dP	F02B 37/11	· · · driven by other drive at starting only [6]	
	eP .	F02B 37/12	Control of the pumps [3]	
View mode	dP	F02B 37/14	· · of the alternation between exhaust drive and other drive of a pump, e.g. dependent on speed [	3]
a full	62	F028 37/16	•• by bypassing charging air [6]	
hierarchic	dP	F028 37/18	•• by bypassing exhaust [6]	
) merarane	dP	F02B 37/20	by increasing exhaust energy, e.g. using combustion chambers [6]	
Show CPC/FI	dP	F02B 37/22	<ul> <li>by varying the cross-section of exhaust passages or air passages [6]</li> </ul>	
Z Deleted entries Subclass indexes	ď	F02B 37/24	<ul> <li>by using pumps or turbines with adjustable guide vanes [6]</li> </ul>	
Guidance Headings	62.0.1	F02B 39/00	Component parts, details, or accessories relating to driven charging or scavenging pumps, n F02B 33/00-F02B 37/00	ot provided for in groups
Notes	19	F028 39/02	Drives of pumps (exhaust drives or combined exhaust and other drives F02B 37/00); Varving pu	mp drive gear ratio (control

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#### B. Patent Map Guidance (PMGS) – 1/14

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#### B. Patent Map Guidance (PMGS) – 2/14

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#### B. Patent Map Guidance (PMGS) – 3/14

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- ✓ Search by Keyword : <u>FI/F-term</u> search by using <u>keywords</u>
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#### B. Patent Map Guidance (PMGS) – 4/14

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#### B. Patent Map Guidance (PMGS) – 5/14

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		311 Structures of areas adjacent to large computers				
		A Structures of computer rooms				
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	C . Free-access floor structures					
		D Seismic resistant structures				
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Section	Explanation
• ASection	SECTION A - HUMAN NECESSITIES
<u>BSection</u>	SECTION B — PERFORMING OPERATIONS; TRANSPORTING
<u>CSection</u>	SECTION C — CHEMISTRY; METALLURGY
<u>DSection</u>	SECTION D - TEXTILES; PAPER



#### B. Patent Map Guidance (PMGS) – 6/14

#### FI(List Indication)

This screen shows all FIs contained in the main group "G06F3/00". (HB : FI Handbook)

#### Display Type

● List ◎ Target ◎ The same Hierarchy

FI	Explanation Reference, etc.		
• <u>3/00</u>	Input arrangements for transferring data to be processed into a form capable of being handled by the computer; Output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements [4]	5B041	HB
	A Related to connection, addition, cutoff, selection or switching the devices (W or Y takes precedence)	5B041	HB
	B . Active inserting or removal (inserting or withdrawing live wires) (Connections or disconnection without shutting off the power supply)	5B041	HB
	C . Non-contact connecting circuits (DC insulated connection)	5B041	<u>HB</u>
	D Optical coupling	5B041	<u>HB</u>
	E Optical transfer (including transfers with optical fibers) (including optical buses)	5B041	HB
	F Circuits for connecting or shutting off the bus lines (including circuit connection of abnormal buses) e.g. bus width conversion	5B041	HB
	G Bus driving circuits in general	5B041	<u>HB</u>
	H . Transmitters or receivers (including tristate buffers or latches)	5B041	<u>HB</u>
	From FI, corresponding theme code can be known.		



#### B. Patent Map Guidance (PMGS) – 7/14

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#### B. Patent Map Guidance (PMGS) - 8/14



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Term	Explanation
AA00	Input data This viewpoint covers the subject matter for data inputted with input devices. When input data are unknown, classification is not made under this viewpoint.
AA01	. Numbers
AA02	. Alphanumeric characters
AA03	. Kana This place covers the subject matter for kana input of word processors or the like.
AA04	Japanese syllabaries Example: A, I, U, E, O in Kana



#### B. Patent Map Guidance (PMGS) – 9/14

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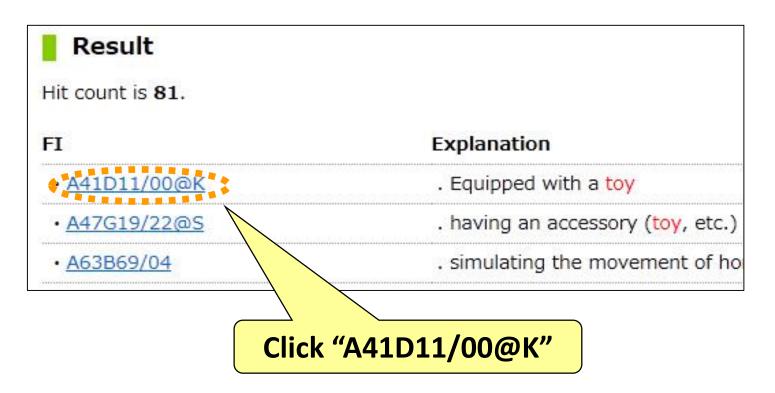


#### B. Patent Map Guidance (PMGS) – 10/14

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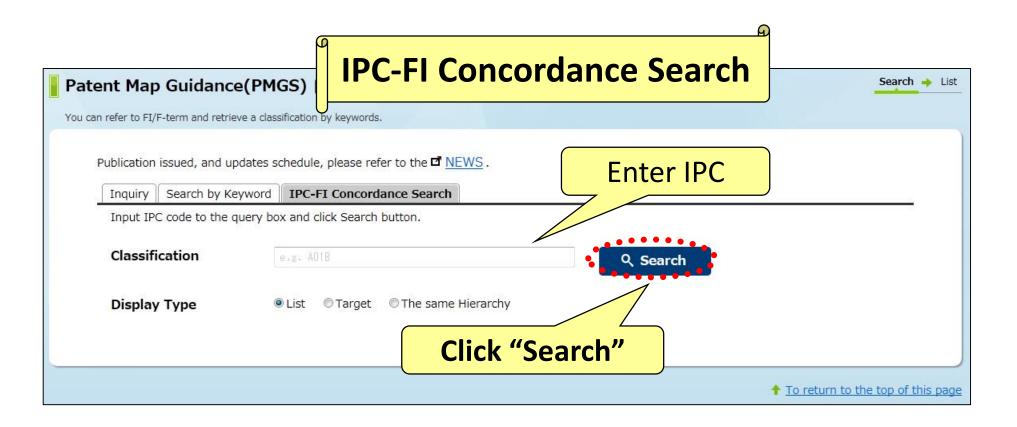


#### B. Patent Map Guidance (PMGS) – 11/14

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	FI	Explanation
	• <u>11/00</u>	 Garments for children
		 A Kinds of clothes for children
		B . Jackets
		C . Coverall
		 D One-piece dresses
		 E . Lower clothes
		 F Lower clothes with chest and shoulder straps
		 G . Overcoats
		 H Functions of clothes for children
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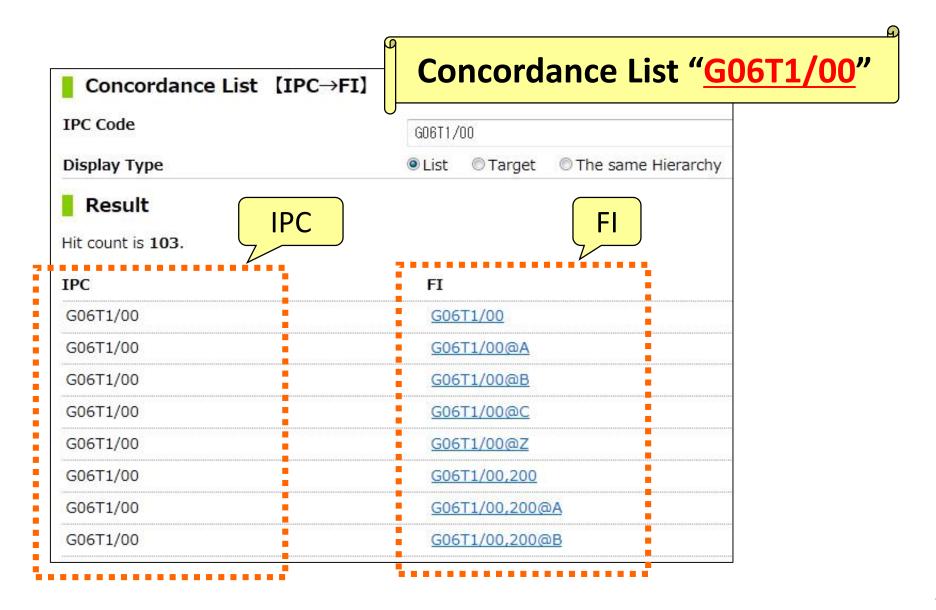


#### B. Patent Map Guidance (PMGS) – 12/14





#### B. Patent Map Guidance (PMGS) – 13/14





## B. Patent Map Guidance (PMGS) – 14/14

**Details of JP publication** 

(51) Int. Cl. <b>G</b> $G = K$ <b>17/00 (2006.01)</b> <b>G</b> $G = K$ <b>17/00 (2006.01)</b> <b>G</b> $G = K$ <b>17/00 L</b> <b>G</b> $G = K$ <b>17/00 F</b> <b>F F F F F F F F F F</b>	Front page of the publication					is me	eans	"Theı	<b>ne co</b> (43) <b>2</b>		平成22年	(P20	10-50518 10-505189A (2010.2.18
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