

Class 2. Patent Classification

1. International patent classification

1) What is the international patent classification?

IPC is the technological classification of patent unified internationally according to “Strasbourg Agreement Concerning the International Patent Classification” to internationally standardized each country’ s patent classification.

2) What is the primary aim of IPC?

The establishment of an effective patent search tool

3) The principle of classifying invention

“Function-oriented” principle rather than “Application-oriented” to reflect its intrinsic nature

4) Update & Republishing Period

Every 5 years (6th edition : January 1995 ~ December 1999,
7th edition : January 2000 ~ December 2004)

5) History of IPC

1791 : Alphabetical lists (France) : Alphabetic order of the first meaningful word of the title of the patent.

1872 : US Classification (Alphabetical order)

1883 : Paris Convention : Start to cooperation between industrial property offices (1904 by the International Bureau of the Paris Union ,
1926 by France, Czechoslovakia & Spain) not successful

1949 : European patent Classification

1971 : IPC is proposed (Strasbourg Agreement concerning the International Patent Classification)

1975 : IPC entered into force

6) The Construction of IPC

Sections (8*)

Classes (120*)

Subclasses (628*)

Groups (69,000*)

*According to 7th Edition of IPC

	Section	Class	Subclass	Group	Subgroup
Format	A ~ H	1 or 2 digit Number	Single Alphabet	1~3 digit Number	Over 2 digits Number
Number (7th Edition of IPC)	8	120	628	69,000	
Example (Soccer Shoes)	A (Human Necessities)	43 (Foot wear)	B	5/02	

7) Section

Section divides all technological fields in which inventions susceptible to patent protection may be made.

Each section is presented by one of the capital alphabet letter A to H (8 sections)

And these section symbols are followed by each section title.

Example-----

Section A : HUMAN NECESSITIES

Section B : PERFORMING OPERATIONS; TRANSPORTING

Section C : CHEMISTRY; METALLURGY

Section D : TEXTILES; PAPER

Section E : FIXED CONSTRUCTIONS

*Section F : MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS;
BLASTING*

Section G : PHYSICS

Section H : ELECTRICITY

8) Subsection

Within section, there are several subsections. These subsections are presented by informative headings without classification symbols.

Example-----

Section A : HUMAN NECESSITIES

Subsections Agriculture

Foodstuffs; Tobacco

Personal or Domestic Articles

Health; Amusement

9) Classes

Each section is divided by classes.

Each class symbol consists of section symbol followed by a two-digit number

Class title indicates the contents of the class

The “subsection” is not the part of IPC hierarchical system, however, make a group with classes dealing with related subject matters

Example-----

Section A HUMAN NECESSITIES

Subsection: Agriculture

*Class A 01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING;
TRAPPING; FISHING*

Subsection: Foodstuffs; Tobacco

Class A 21 BAKING; EDIBLE DOUGHS

*Class A 22 BUTCHERING; MEAT TREATMENT; PROCESSING POULTRY OR
FISH*

*Class A 23 FOODS OR FOODSTUFFS; THEIR TREATMENT, NOT COVERED
BY OTHER CLASSES*

Class A 24 TOBACCO; CIGARS; CIGARETTES; SMOKERS' REQUISITES

10) Subclasses

Each class consists of one or more subclasses.

Each subclass symbol consists of class symbol followed by a capital letter

There is a gap in the series of letters identifying the subclasses because vowels (a,e,i,o,u) have been omitted for linguistic reasons.

The title of the section or the class, as a rule, just shows the rough outline of the contents of the section or the class. The titles of the subclasses, however, not only outline the subject matter but delimit, as precisely as possible, the subject matter which is covered by the subclass in question.

Example-----

A 47 FURNITURE; DOMESTIC ARTICLES OR APPLIANCES; COFFEE MILLS; SPICE MILLS; SUCTION CLEANERS IN GENERAL

A 47 B Tables; Desks; Office furniture; Cabinets; Drawers; General details of furniture

A 47 C Chairs; Sofas; Beds

A 47 D Furniture specially adapted for children

A47F Special furniture, fittings, or accessories for shops, storehouses, bars, restaurants, or the like; Paying counters

A 47 G Household or table equipment

A 47 H Furnishings for windows or doors

A 47 J Kitchen equipment; Coffee mills; Spice mills; Apparatus for making beverages

A 47 K Sanitary equipment not otherwise provided for; Toilet accessories

A 47 L Domestic washing or cleaning; Suction cleaners in general

11) Groups / Subgroups

Each subclass is classified into subdivisions referred to as “Groups”, which are either main groups or subgroups.

Main group symbol consists of the subclass followed by a one-to-three digit number, the oblique and the number 00

Subgroup symbol consists of the subclass followed by a one-to-three digit number, the oblique and a number of at least two digits other than

The subgroup title starts with a small letter if it reads as a continuation of the title of the next higher group.

Example-----

A01B 1/00 Hand tools

1/24 . for treating meadows or lawns

A01B 1/00 Hand tools

1/16 . Tools for uprooting weeds

12) Hierarchical structure of the subgroups

The hierarchy of subgroup is determined by the number of dots preceding their titles, and not by the numbering of the subgroups.

13) Multi-part titles

Some titles may comprise two or more distinct parts separated by semicolons

- These dependent titles are interpreted separately, however, it's desirable to treat together

Example-----

A01B 1/06 . Hoes ; Hand cultivators

14) Reference

In many cases, a class, subclass or group title is followed by a phrase in brackets referring to another place in IPC. Such a phrase, called a reference.

- 1) Limitation of scope : This type of reference specifies the subject matter which is taken to another place.
- 2) Indication of precedence : This type of reference is used when the subject matter is classifiable in two places and it is desired that such subject matter should be classified in only one of those places

Example-----

A01K 31/00 Housing birds

31/02 . Door appliances; Automatic door-openers (counters for specific applications G07C 9/00)

31/04 . Dropping-boards; Devices for removing excrement

31/06 . Cages

31/07 . . Transportable cages (A01K 31/08 takes precedence) [2]

31/08 . . Collapsible cages

3) Guidance : Show where to find related subject matter not covered by the title of the place where the reference appears

15) IPC search procedure

Clarifying the statement of the technical subject & Locating the field of search (refer to Catchword Index)

Consult the “ contents of section” -scan the section title and select possible subsections and classes by title (consider residual places of the IPC)

Check the reference and note of selected subclass and subsections

Locate the appropriate main groups by referring to “Subclass Index”

Select main group by checking full group titles, notes and references

Read or scan all one-dot groups under the selected main group and identify which one is most appropriate.

- Consider “precedence reference”
- Consider all groups subordinate to the chosen group

⑦ Search the hierarchically higher group of the chosen group (up to main group)

⑧ If the chosen group is in a subclass governed by an overall precedence rule, search should be made not only in the chosen group but in all groups which take precedence there over (“ Last Place Rule”)

⑨ Try again with new standpoint

16) IPC Classifying Rule – “Last place rules”

In certain parts or places of the classification, where a particular technical subject is covered by two or more places of the same hierarchical level or the indentation, a “ last place rule” has been introduced. According to this rule, such a technical subject is only classified in the one of these places which appears last in classification. This rule is applied successively at each hierarchical level or indentation at which the technical subject in question is covered by two or more places; thereafter, the selection of the appropriate place follows the normal approach

(quoted from “ Introductory manual to the IPC” , www.wipo.int)

2. U.S. Patent Classification

1) Introduction

Even UPC is a classification of one country, it is recognized as an important patent classification internationally.

UPC is updated every month, therefore, it can provide up-to-date information of high technology.

2) Principle

UPC classify a patent according to all information in patent specification while IPC classify a patent according to only patent claims.

UPC stresses on the function of intrinsic characteristics of product or processing.

3) Structure

Even though UPC has the hierarchical system similar to IPC structure, however, it's the different to be constructed with three main patent groups

“ Chemistry, Electricity, Machinery”

These three groups are divided by 450 classes subdivided by about 150,000 subclasses.

4) Symbol

Class (number) + Oblique stroke(/) + Subclass (number, decimal dot or alphabet also used)

Example-----

585/800

585: Chemistry of Hydrocarbon Processing [Class]

800: Purification, Separation, Recovery [Sub Class]

5) IPC & UPC Concordance

USPTO provides matching table for IPC & UPC concordance

Example-----

IPC & UPC concordance table

You are viewing a US to IPC7 Concordance.

US to IPC7 Concordance for
Class 704 DATA PROCESSING: SPEECH SIGNAL PROCESSING, LINGUISTICS, LANGUAGE TRANSLATION,
AND AUDIO COMPRESSION/DECOMPRESSION

U.S. Subclass	IPC7 Subclass	IPC7 Group
1	G 06 F	17 / 20
2 - 7	G 06 F	17 / 28
8	G 06 F	17 / 20
9	G 06 F	17 / 27
10	G 06 F	17 / 21
200	G 06 F	15 / 00
200	G 10 L	11 / 00
200.1	G 10 L	19 / 00
201	G 10 L	19 / 00
201 - 230	G 10 L	21 / 00
202	G 10 L	11 / 00
203 - 204	G 10 L	19 / 02
205	G 10 L	19 / 14
206 - 207	G 10 L	11 / 04

3. Japan Patent Classification

1) History

1985 ~ 1977 : JPC (Japan Patent Classification)

From 1978 : IPC (International Patent Classification)

2) Additional Classifications : File Index, F-term

Aim : To solve the problem patent applications are concentrated on a certain classification field and to disperse the patent applications evenly.

File Index (FI)

FI is used for “ search file formation” in the JPO (Japan patent Office).

It has the similar meaning with “ deployment symbol” of IPC and has the subordinate concept of IPC subgroup. However, FI has the more detailed concept to subdivide the “ deployment symbol” , that is the “ fascicle index symbol”.

The formation of FI : **IPC symbol + deployment symbol + fascicle index symbol**

FI symbol formation	Example
IPC symbol	A21D 2/04
IPC symbol + fascicle index symbol	B01D 53/02B
IPC symbol + deployment symbol	B31B 1/00 301
IPC symbol + deployment symbol + fascicle index symbol	C04B 35/58 104B

F-term

F-term is produced by Japan Patent Information Organization database (JAPIO), Japan Patent Office (JPO) and Industrial Property Cooperation Center (IPCC) with the aims of overcoming the limitation of IPC classifying too comprehensively in high technology field, keeping up with the complexity and diversity of modern technological contents, and making patent search easier.

F-term theme code format : **Number + Alphabet capital letter + Number + Number + Number**

Example	
F-term (Theme Code)	3D016
Theme Title	Automobile Bumper
IPC range	B60R 19/00 ~ 19/56

F-term subdivides the theme code based on several technical points of view ; **Purpose, Function, Structure, Material, Method, Process, Control, etc.**

Example-----

3D001		Chassis suspension devices							
		B60G1/00 - 25/00							
AA	AA00	AA01	AA02	AA03	AA04	AA05	AA06	AA07	AA08
	PURPOSE AND EFFECTS	. Control or adjustment of attitude or vehicle height	.. Dynamic load	... Roll	... Pitch Nose-diving Rear-end sag	.. Static load	... Auto-leveling
		AA11	AA12	AA13	AA14	AA15	AA16	AA17	AA18
		.. Winding up of coil springs and the like	. Steering characteristics	. Suspension lock	. Adjustment of wheel alignment	. Adjustment of camber angle	.. Adjustment of caster angle	.. Adjustment of toe-in angle	. Changing of wheel forms or arrangements
		AA19	AA20						
		. Assembly or maintenance characteristics	. Vibration prevention, or noise reduction						
BA	BA00	BA01	BA02	BA03	BA04	BA05	BA06	BA07	BA08
	FORMS OF SUSPENSION	. Independent suspension	.. Swing axles	... Leading arms	.. Struts	... Coil spring-separated variants	... Variants with longitudinal torsion bars	... Double joints	... Dual links

4. European Patent Classification (ECLA)

1) Introduction

The European Patent Office has further refined the International Patent Classification by adding subgroups. This refined classification system is called the European Patent Classification (EPC).

All the published patent applications are classified by EPO staff according to the European Patent Classification to enable high quality searches.

2) Format

The classification is made up by a letter, denoting the IPC section, followed by a number (2 digits), denoting the IPC class. Optionally, the classification can be followed by a sequence of a letter, denoting the IPC subclass, a number (variable, 1-3 digits), denoting the IPC main group, a forward slash "/", a number (variable, 1-3 digits), denoting the IPC subgroup.

Cnn ***or***

CnnC ***or***

CnnCnn ***or***

CnnCnn/ ***or***

CnnCnn/nn ***or***

CnnCnn/nnCn..Cn

Example-----

	Previous page: B60F5/00
<input type="checkbox"/> B	PERFORMING OPERATIONS: TRANSPORTING
<input type="checkbox"/> B60	VEHICLES IN GENERAL
<input type="checkbox"/> B60G	VEHICLE SUSPENSION ARRANGEMENTS (air-cushion vehicles B60V ; [N: cycle suspensions B62K25/00])
<input type="checkbox"/> B60G1	Suspensions with rigid connection between axle and frame
<input type="checkbox"/> B60G3	Resilient suspension for a single wheel (pivoted suspension arms per se, attachment thereof to sprung part of the vehicle, buffer means for limiting movement of arms B60G7/00 ; [N: rigid axle suspensions B60G9/00]; characterised by arrangement, location or type of springs B60G11/00) [C9409]
<input type="checkbox"/> B60G5	Resilient suspensions for a set of tandem wheels or axles having interrelated movement
<input type="checkbox"/> B60G7	Pivoted suspension arms; Accessories thereof (means for maintaining substantially constant wheel camber during suspension movement B60G3/26 ; [N: articulations for wheels B60G5/00 ; leaf spring attaching means B60G11/10 , B60G11/12 ; trailing arm twist beam axle attaching means B60G21/05C1 ; articulations in general F16C1]) [C9409]
<input type="checkbox"/> B60G9	Resilient suspensions of a rigid axle or axle housing for two or more wheels [N: (the axle being a part of a set of tandem axles B60G5/00 - B60G5/06B ; with leaf springs B60G11/02 - B60G11/08)] [C9412]
<input type="checkbox"/> B60G11	Resilient suspensions characterised by arrangement, location or kind of springs (single wheel suspension by pivoted arm resilient in itself B60G3/00 ; adjusting spring characteristic B60G17/00 ; springs per se F16F)