

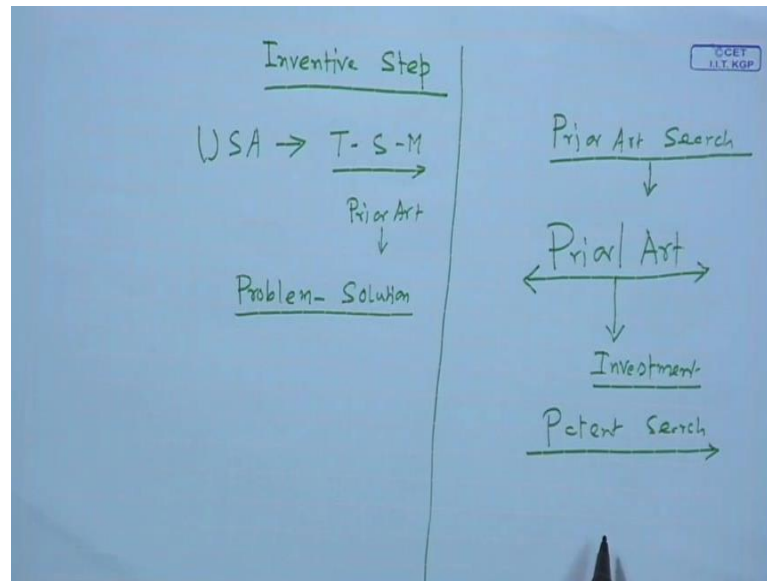
Introduction on Intellectual Property to Engineers and Technologists
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Lecture - 09
Prior - art Search

So you got the idea about patentability criteria what are not patentable, so how to generate an invention from a simplified way and also what are the things you have to be cautious to get a patent about patent just like mere discovery, mere use, new use of non substance without efficacy, then medical method, methods of agriculture's. So, agriculture device can be patentable, agricultural method is not patentable, how can you convert a method to device, it is essential tricks how can you considered method to systems or it creates essential things. You should that skill you have to adopt that is sometime say with the help of a good drafters it can be use and you also think about how can I considered method into a systems or method into a device. So, that somehow you are getting in some patentable inventions from method by converting into device.

Similarly, software you are creating, software is not patentable in India in the for the computer program - how can you convert that into embedded system to get in a patent. So, always you think about that algorithm I have designed how can algorithm can be used in a hardware systems and if you considered now present rule (Refer Time: 01:59) rule notified for stake holders refuse, they are suggesting that not only that algorithm should be new, along with algorithm the hardware, thus would be hardware should be new. So, now you to think about that what about the instruction your software is providing that when instructions you are embedding in the hardware, how that hardware configuration also you have to change a little bit to perform that instructions in that hardware in better way then you get patent on that part. Similarly, business method thing is not patentable. So, that part also you think about in India.

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But here one important parameters you have to considered for novelty and inventive states that for that both the cases this important parameters is prior art and prior art is very much essential things that you as a technologist or engineer should know because if I considered with reference to the job prospective also that company before investing in an R and D always try to do a prior art search. So, there is a huge number of opportunities available for an engineer's work as a patent search engineers or patent analyst.

So, you will search an analyzed and based on your searches report around a lessees report that company will try to invest in a particular R and Ds. So, understanding that prior art is very much essential for investment decision investment decision because company try at least get some return on investment in the form of a patent. So, for that is in before investing or starting an R and D they should go for a prior art search. Prior art is also, search is also sometime try to find out some potentially infringers what if you some patents who based on the prior art search is sometimes may search also (Refer Time: 04:29) you may consider this patent search, sometimes you may refer forward search or a patent search you will able to know if somebody in your patent in your territory any other competitor has come up while filling patent applications. That if you do not do search patent search subsequently after filling patents applications then you will be not able to know that what the other player or what other any other player practicing in your territory.

So, if you somebody without performing without new permission is practicing in your territory that also you will to know if you do a patent search subsequently after filing, this prior art search, so patent search. So, this is essentially part of any multinational company who is trying to invest or trying to do something just like I can give a example that happens in Gujarath, what happens? A company invested huge amount of money for his (Refer Time: 05:34) factory later on they get a notice from a another company that what about the technology you are adopting in your (Refer Time: 05:44) factory this is patented by company A.

So, what happens? So, already invested for the (Refer Time: 05:51) factory for 100 crores rupees, now you are in sue. So, then you have indefinitely somehow have to create a win situation with these two company or negotiate with the company who is the patent in that field. So, that way that you me ask me that how that company who has patent have to come have a knowledge about that my that technology whatever am adopting responder factory. So, they have to patentee has to (Refer Time: 06:17) then may became across about that why have to some public as an, or others or advertisement company which has started business in Gujarath they came to know.

So, that you understand the pretend search important, so prior search important during the filling of the patent, during investing R and D, during after filling with the patent application, get a returned or in the form of a damages from other company. So, for the reason this is the important area where you people has technological engineers can sharpen your skills and be a potential employee of a MNCs. So, prior art search, this is now I will explain you about the prior art search.

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1. PRIOR ART SEARCH INCLUDES SEARCH FOR PRIOR PATENT AS WELL AS NON-PATENT PRIOR PUBLISHED LITERATURES. PLEASE SELECT FEW KEYWORDS FROM THE "INVENTIVE AREA" OF YOUR INVENTION. SEARCH USING

- I. [HTTP://WWW.USPTO.GOV/PATENTS/PROCESS/SEARCH/](http://www.uspto.gov/patents/process/search/)
- II. [HTTP://EP.ESPACENET.COM/](http://ep.espacenet.com/)
- III. [HTTP://PATENTSCOPE.WIPO.INT/SEARCH/EN/SEARCH.JSF](http://patentscope.wipo.int/search/en/search.jsf)
- IV. [HTTP://IPINDIA.NIC.IN/IPR/PATENT/PATENTS.HTM](http://ipindia.nic.in/ipr/patent/patents.htm)
- V. [WWW.WIPO.INT](http://www.wipo.int)
- VI. [HTTP://WWW.GOOGLE.CO.IN/ADVANCED PATENT SEARCH](http://www.google.co.in/advanced_patent_search)
- VII. [WWW.SCIENCEDIRECT.COM](http://www.sciencedirect.com) FOR NON-PATENT LITERATURE

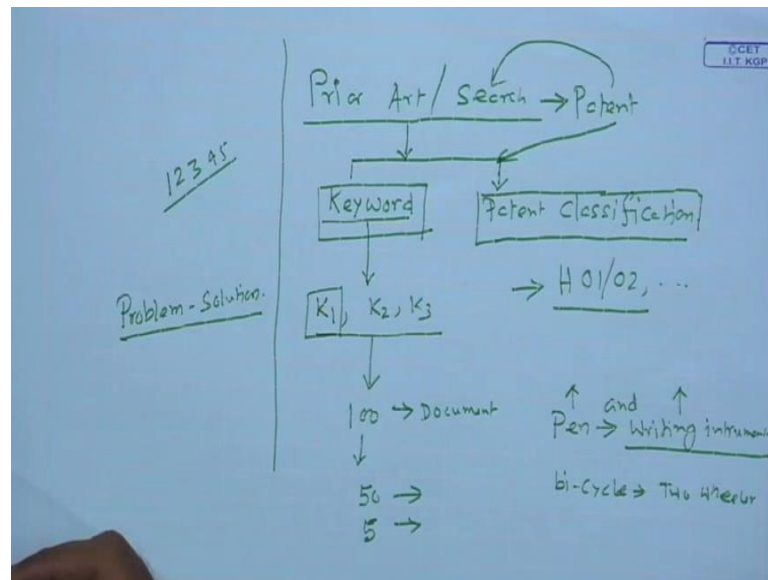
So, first this is in respect of before filing of the patent application, so prior art search if I referred prior art search include prior patent as well as non patent prior published literature search. So, you have to search if I want to file patent application then you should search prior patent application because you considered that prior claiming you referred, I already referred prior claim we consider the prior art. Similarly you have to consider that non patent literature or prior publication I referred prior public literature you have to search, so prior public literature or claiming to consider these two prior art sometime prior public knowledge if it is available in documentation form that can also do search just like we have traditional knowledge digital library.

So, we have to search a prior public knowledge thing in the document form, then you have to search CDs and other quants of things available in that digital library, then that thing also you have to search. So, prior art search respect of patent filling before filling in an R and D, so you have to search even non patent literature search also, after patent filing also try to find out potential infringer, you can say that some prior art literature you find out list company A is created a product having the features which have I have patent you can definitely your getting the company A is infringing your patent.

So, that is also non patent literature search after filling is also essential part nowadays because company try to advertise that try to advertise their product or sometime they attend conference, publish some research papers, in that paper also sometimes they try to

give the features of their product for advertisement purpose, for publicity purpose, then you are also able to know the company is a potential infringer or infringer of your patents, so then also and that you can file issue. Again is that is company will get some return from that company.

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So, now the prior art search how will you do? I considered prior art search respect of patent different ways, prior art search. So, prior art search can be done based on different way just like see you and everybody is using Google nowadays googling, we call it is googling. So, how will you do the Google, how will do search sometimes used based on keyword based on keyword. So, prior art search is the respect of patent let us say if it is prior art search restricted to patent, sometime we call patent search patent search then you can search patent search also prior art search or let us say patent search parts of prior art search and patent search prior art search restricted to the patent. So, then you can do based on keyword based on classification sometime one patent classification search, patent classification I will refer discuss that thing is subsequently, based on classification.

So, prior art search include patent non patent detail, I will say in that case your search should be restricted from the using the keyword. If you want to consider prior art search with reference to the patent then you can go by keyword and also based on patent classification. So, patent classification and keyword this search is restricted for patent

search and keyword based search is restricted for prior art search, got the thing. Your clarification patent search, for the patent search you can go by keyword you can go by patent classification or prior art search for non patent literatures you would go using the keyword.

Now, you may ask me how will you create the keyword. So, I will say to create the keyword I referred that to generate a patent use for a following problem solution approach, problem solution approach. So, now, to generate the keyword I will suggest you to also follow that thing, now, how you create the keyword. So, you should think about your invention. So, your invention is also providing a solution to the problem. So, I will suggest first create keyword formulas let us say some problem area which created a keyword K 1 from the solution you get a keyword K 2, K 3 like this; so you got may be three keyword.

So, using three keywords you got, it is a 100 it, 100 is means 100 document in the form of patents or non patent part. So, now, you can do further just click on the Google you know that we can go for we can narrow the search query further. So, then waste on iteration you can do further search then resting narrowed to 50, similarly narrow like this is further iterating narrow to 5 because you have to ultimately search the relevant prior art for novelty destruction and (Refer Time: 13:14) steps destruction, all other unnecessary prior art you should filter out and get the relevant prior art. So, keyword based thing, but you should not narrow down initially then some cases what will happen may be relevant prior art you are missing during your first search part.

So, that way you can generate the keyword from the solution part or problem part if you later on be competent enough will be able to identify the inventive area of a particular invention, inventive area is generally reveals narrow just like a for a process may be within the purview of process parameters or in the purview of process parameters or the process closure or some algorithm to for kinetics and others, so that way inventive area will be narrowed to that part process. Similarly for a product the property or composition will be the inventive area, so inventive area if will try to find out then the easy to find out the key keyword from that inventive area then visually you will done the skill of searching.

So, keyword the search generally people used, but generation of the keyword is the essential just like say I will give the example sometime we call pen somebody may refer that this is the writing instrument. So, if you try to search instrument, so if you to try to search with reference to pen you may not get the p to the reference to the writing instruments. So, you have to search for pen and writing instrument then you will get invention related to pen you will get invention related to writing instrument. Similarly some cases spelling you know the British spelling and American spelling some there is just like we may refer bi-cycle just like a bi-cycle; sometime it may include two wheelers. So, bicycle having two wheels two wheelers also two wheel.

So, that way you have to consider more broader way just like a two wheeler bicycle and two wheeler rickshaw we can have to consider rickshaw tricycle, rickshaw other spelling of riska just like the misspelled or some British English spelling or American English spelling. So, you have or some other countries spelling or alteration will remains to that; that have to audition consider when you are doing a search. So, if you want search for a pen you should give a consider writing instrument and pen. So, pen and writing instrument will give you the hint. So, if you consider the pen. So, all features of the pen may be taken in the writing instrument, but writing instrument you have not put in your search query. So, you will miss that features in the writing instrument ultimately essential prior art you are missing. So, that way the keyword based search.

Similarly, patent classifications search is also there, there is IPC classification international patent classification - they have class, sub class, just like that I will refer that further they section, sub section, class, group, subclass, group, sub group, that way they try to define and invention in the form of syntax just like say H01 slash 02 like this way, let us say device for electronic device they will be denoted by H01, H02 considering that classification system.

So, if you know that I want to search that your invention is for electronic device you give this classification. So, you will get all the patents which are following with the country if the country following international patent classification system or patent there may be search related thing then you will get the invention related in that class what are the invention of there you will get further. So, electronic device, if you want to classify like this way H01 02 related invention for electronic device you will get using the patent

classification system. So, what we are getting at for a patent search you can follow a keyword base search you can follow a patent classification base search.

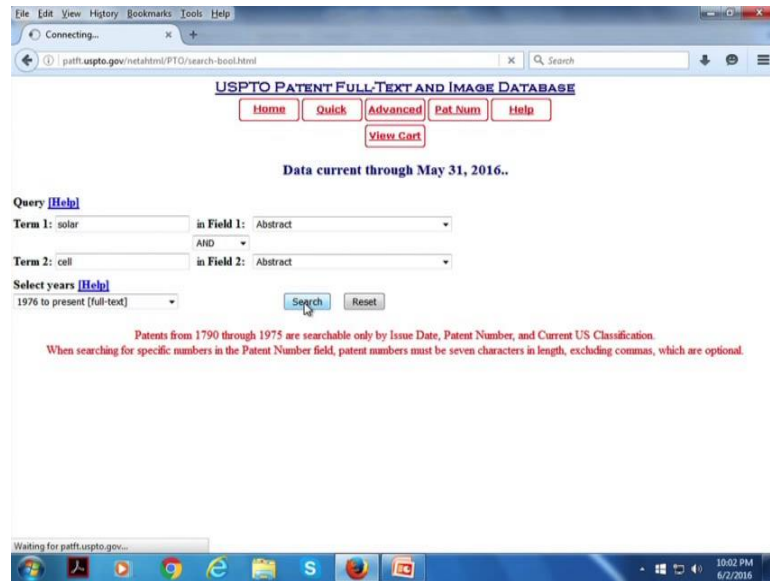
So, now what are the different sites are available for patent search you have all patent office just like say USPTO, EP space net, patent scope, wipo.int, Google these are the non patent search sites available for anybody, just like all your patent just like ipo dot India, ip India dot nic dot in, patents or you can get relevant Indian patent from that site, you get a relevant US patent from that site, you get EP patent relevant US EP patent European patent from that site, you got all international patent for wipo dot int published from wipo dot int. So, that this sites you can go for that site visit those site and do a patent search from those sites.

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I will just the show you that USPTO site how to search patent form let us specifically USPTO site, just like say here this is the USPTO site or patent search for patent is refer there. So, see that patent search facilities available. So, here you see that two options are available - quick search and advance search. So, quick search options are there advance search option there. So, advance search option I just referred here in patent numbers if you know a patent number just like let us say USPTO number 1 2 3 4 5. So, you can give the patent number then you can get information related to patent from their sites if you want do a quick search of US patent.

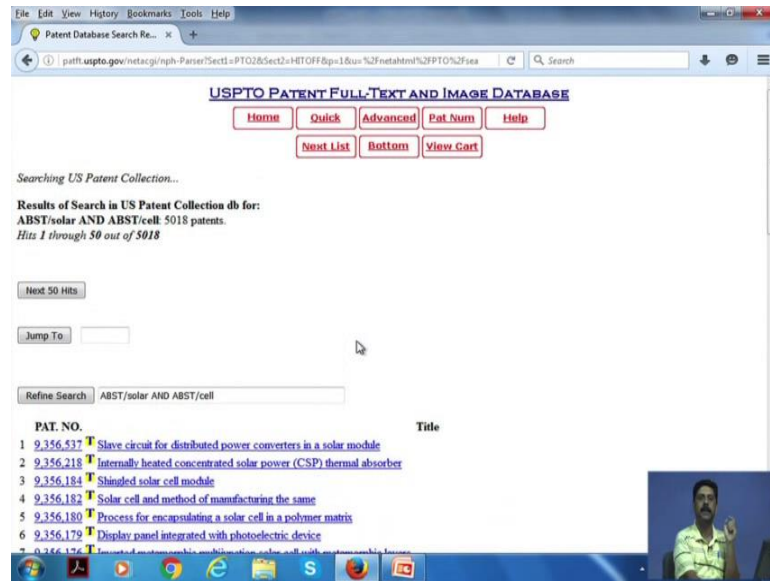
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So, you can follow the quick search option there just like say I am going to quick search option, in that quick search option then let us say I want to search for solar cell let us say I am giving in that first page solar then here let us say solar cell. So, solar I am giving the first one part because two part is available thing here I am just putting cell.

So, now solar cell, I want to search field for solar cell I will search let us say from the title let us say or abstract let us say abstract, now solar cell I will start to transform (Refer Time: 20:09). So, well this field also I will put as from abstract. So, now, I should get let us say from abstract let us counter start. So, now, let us do the search let us say how much you are getting. So, it is available from and 1790 to 1970 searchable only (Refer Time: 20:30) let us say how much we are getting out of; from the abstract because what are the - in abstract if the who are solar and cell is available then this search query will try to find out what are the documents available let us see how many after you are getting huge number of solar cell (Refer Time: 20:52).

(Refer Slide Time: 21:10)



So, 5018 US patent where the abstract they are using the solar cell. So, see that how many huge number of research involve in solar cell part and all that thing is patentable. So, further (Refer Time: 21:10) I am we may say more generic type of keywords. So, search numbers then you may narrowed down. So, that abstract though how title to abstract if you considered title you may get less number of it, now there is a option for advance search or just like say advance search there you may use different types of Boolean operator. I will just show you different types of Boolean operators are available just like TTL example TTL means titled tennis and racquet and racket.

So, tennis racket if you want to search; what are the invention is available for tennis racket. So, you can creates search query like this TTL then slash tennis just like a tennis and racket means spelling different way racket or racquet two different way title tennis and racket. So, what Boolean operator they are using and to tennis and racket. So, title TTL means title if you want consider that title just like different title, just like they have if you consider different field code they have given.

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Patents from 1790 through 1975 are searchable only by Issue Date, Patent Number, and Current Classification (US, IPC, or CPC).
When searching for specific numbers in the Patent Number field, patent numbers must be seven characters in length, excluding commas, which are optional.

Field Code	Field Name	Field Code	Field Name
PN	Patent Number	IN	Inventor Name
ISD	Issue Date	IC	Inventor City
TTL	Title	IS	Inventor State
ABST	Abstract	ICN	Inventor Country
ACLM	Claim(s)	AANM	Applicant Name
SPEC	Description/Specification	AACI	Applicant City
CCL	Current US Classification	AAST	Applicant State
CPC	Current CPC Classification	AACO	Applicant Country
CPCL	Current CPC Classification Class	AAAT	Applicant Type
ICL	International Classification	LREP	Attorney or Agent
APN	Application Serial Number	AN	Assignee Name
APD	Application Date	AC	Assignee City
APT	Application Type	AS	Assignee State
GOVT	Government Interest	ACN	Assignee Country
FMID	Patent Family ID	EXP	Primary Examiner
PARN	Parent Case Information	EXA	Assistant Examiner
RLAP	Related US App. Data	REF	Referenced By
RLFD	Related Application Filing Date	FREF	Foreign References
PRIR	Foreign Priority	OREF	Other References
PRAD	Priority Filing Date	COFC	Certificate of Correction

So, pin PN means patent numbers. So, PN 1 2 3 4 like this if you create the search query then patent number you should get ISD, then ISD slash then you keep that abstract ABST then give that search query, ACLM claim within the claim you want to search the then you put ACLM then you search query, within this specification description you are trying to search expect like this way.

So, application that you use that APD and then operators different types of operators Boolean operators use 'and' 'or', you are going to search for a patent tennis or racket then generation tennis racquet or racket. So, then would tennis or racket you want to search for tennis racket then tennis and regulate you want to tennis racket different way then you put 'and' 'or'. So, different operator Boolean operators using 'and' 'or' and 'not' these are the different Boolean operator you can use for searching purposes. So, you understood; what are the different types of Boolean operators we are using and how to do an advance search using the USPTO site.

So, I am just showing a public search databases you may similarly try for Indian patent office IPINDIA.NIC.IN. Similarly here also different way just like 'and' and 'not'. So 'and' let us say inventors name and any invention code you know that inventor and inventor, so you will get single hit. So, Mr. Alexander solar cell, Mr. Alexander solar cell Alexander may get a inventor and so the that way you can design your search query to get the idea

of the in search (Refer Time: 24:13). So, similarly non patent literature will may get it is false sciencedirect.com.

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✓ **PATENT SEARCH BASED ON PATENT CLASSIFICATION**

INTERNATIONAL PATENT CLASSIFICATION

SECTION

A.....HUMAN NECESSITIES
B.....PERFORMING OPERATIONS; TRANSPORTING
C.....CHEMISTRY; METALLURGY
D.....TEXTILES; PAPER
E.....FIXED CONSTRUCTIONS
F.....MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
G.....PHYSICS
H.....ELECTRICITY

SUBSECTION - WITHIN SECTIONS, INFORMATIVE HEADINGS MAY FORM SUBSECTIONS, WHICH ARE TITLES WITHOUT CLASSIFICATION
EXAMPLE: SECTION A (HUMAN NECESSITIES) CONTAINS THE F SUBSECTIONS: AGRICULTURE FOODSTUFFS; TOBACCO PERSONAL OR ARTICLES HEALTH; LIFE SAVINGS; AMUSEMENT

So, I already referred that, so international patent classification systems or you can do search using the international patent classification, have given an idea how to do search from USPTO site, you may try (Refer Time: 24:31) net would getting search query like this way TTL they have different search syntax may be. So, have to the important part how can you create the search query how create search things strings, what are the Boolean operator is used.

So, this is actual practical exercise class you may have to practice I will give some exercises to you to practice this things out of the class. Similarly what I was referred in that patent classification systems just like international patent classification they have 8 - A B C D E F - 1 2 3 4 5 6 and 7 8, 8 sections. So, just like for human necessities then they have sub sections within sections they have a sub sections which sub sections. Sub sections just like section for human necessities that contain agricultural foodstuffs, tobacco personal, tobacco personal or domestic parts.

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CLASS
20. EACH SECTION IS SUBDIVIDED INTO CLASSES WHICH ARE THE SECOND HIERARCHICAL LEVEL OF THE CLASSIFICATION.
(A) CLASS SYMBOL – EACH CLASS SYMBOL CONSISTS OF THE SECTION SYMBOL FOLLOWED BY A TWO-DIGIT NUMBER.
EXAMPLE: H01
(B) CLASS TITLE – THE CLASS TITLE GIVES AN INDICATION OF THE CONTENT OF THE CLASS.
EXAMPLE: H01 BASIC ELECTRIC ELEMENTS

SUBCLASS
21. EACH CLASS COMPRISES ONE OR MORE SUBCLASSES WHICH ARE THE THIRD HIERARCHICAL LEVEL OF THE CLASSIFICATION.
(A) SUBCLASS SYMBOL – EACH SUBCLASS SYMBOL CONSISTS OF THE CLASS SYMBOL FOLLOWED BY A CAPITAL LETTER.
EXAMPLE: H01S
(B) SUBCLASS TITLE – THE SUBCLASS TITLE INDICATES AS PRECISELY AS POSSIBLE THE CONTENT OF THE SUBCLASS.
EXAMPLE: H01S DEVICES USING STIMULATED EMISSION

So, different part human necessities things is incorporated in that a thing, similarly b include performing operation, transporting, c include chemistry metallurgy, d include textile and paper. Then they are sub class, the each class comprising of one or more sub class says which are the third or level, then subclass class, subclass sections then you call the section then class then subclass just like a example I have given example H01; H01 two digit number this classes H01 I referred already to you, basic electronic elements example H01 basic electronic elements.

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GROUP
22. EACH SUBCLASS IS BROKEN DOWN INTO SUBDIVISIONS REFERRED TO AS "GROUPS", WHICH ARE EITHER MAIN GROUPS (I.E., THE FOURTH HIERARCHICAL LEVEL OF THE CLASSIFICATION) OR SUBGROUPS (I.E., LOWER HIERARCHICAL LEVELS DEPENDENT UPON THE MAIN GROUP LEVEL OF THE CLASSIFICATION).
(A) GROUP SYMBOL – EACH GROUP SYMBOL CONSISTS OF THE SUBCLASS SYMBOL FOLLOWED BY TWO NUMBERS SEPARATED BY AN OBLIQUE STROKE.
(B) MAIN GROUP SYMBOL – EACH MAIN GROUP SYMBOL CONSISTS OF THE SUBCLASS SYMBOL FOLLOWED BY A ONE- TO THREE-DIGIT NUMBER, THE OBLIQUE STROKE AND THE NUMBER 00.
EXAMPLE: H01S 3/00
(C) MAIN GROUP TITLE – THE MAIN GROUP TITLE PRECISELY DEFINES A FIELD OF SUBJECT MATTER WITHIN THE SCOPE OF ITS SUBCLASS CONSIDERED TO BE USEFUL FOR SEARCH PURPOSES.
MAIN GROUP SYMBOLS AND TITLES ARE PRINTED IN BOLD IN THE CLASSIFICATION.
EXAMPLE: H01S 3/00 LASERS
(D) SUBGROUP SYMBOL – SUBGROUPS FORM SUBDIVISIONS UNDER THE MAIN GROUPS. EACH SUBGROUP SYMBOL CONSISTS OF THE SUBCLASS SYMBOL FOLLOWED BY THE ONE- TO THREE-DIGIT NUMBER OF ITS MAIN GROUP, THE OBLIQUE STROKE AND A NUMBER OF AT LEAST TWO DIGITS OTHER THAN 00.
EXAMPLE: H01S

Example: **G01N 33/483** * * * Physical analysis of biological material
33/487 * * * of liquid biological material **33/49** * * * * blood **33/50**
* * * Chemical analysis of biological material, e.g. blood

So, then subclass basic electronic elements further subsequently within basic electronic what are the different elements, then group each subclass is broken down to sub just like group and sub groups. So, just like I given a example just like a G0133483. So, group section sub section class sub class group sub group. So, physical analysis of biological material, so rather this syntax HG01N33483 will ultimately get physical analysis of biological material. At (Refer Time: 26:58) of 3 by 5 (Refer Time: 27:01) if 33 by 483 for biological material, 33 by 487 a liquid biological material, so 33 by 490 different way, understanding physical analysis of biological material. Then chemical analysis of biological material different 37 49, so see that how that group and sub group you know first sections if you know that which area your invention is that then come from that which subsequently go to sub sections, then go to group then the sub group like this you are nice way able to classify the invention just like example H01 S 3 01 laser state arrangement invention.

Similarly, just like stroke for the just like H01 00 2-3 digit (Refer Time: 27:48) just like a data (Refer Time: 27:49) which area group, sub group, your invention is. So, if you able to properly classify your invention then you will be able to know how which able to properly get hit of that invention. So, let us say summarized. So, you can do a prior art search using keyword and a patent classification if prior art is restricted to prior claiming in the public prior patent then patent classification search will be good or if you want to do a search (Refer Time: 28:24) based search is also good, but how to generate a (Refer Time: 28:27)? How to generate a search query this is a matter of practice or gradually you may learn this skill.

Lot of patent search databases also available they generally provide tutorials, helping hand, tools how to do a search that is Thompson, they have now lots of companies are coming up with patent or properties such databases. So, Thompson is a good patent search databases you have WIPS, WIPS is also good patent databases you can take a license and you can sharpen your skill using the WIPS or I will suggest you use the public search databases just like a way USPTO, WIPS dot in from that you can nice way get an idea how to create a such syntax for the patent specifically.

So, just like say I am ending here with the prior art search, so to search. So, we have finished the prior art search, but I will give upload assignment with reference to the WIPS class because today is the second weeks class end. So, I will just upload the

assignment for this week's, they are the search exercise is also there and some time you may have to do some tutorial class for search exercise specifically in the class or out of the class also. So, let us say I am finishing it here for today.

Thank you.