# A Quick-Look Introduction to the USPTO's New Patent Public Search System

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On February 1, 2022 the United States Patent and Trademark Office announced the launching of their new Patent Public Search tool, a system designed to "provide more convenient, remote, and robust full-text searching of all U.S. patents and published patent applications." The new system builds on the capabilities of their four existing search tools, namely the Public-Examiner's Automated Search Tool (PubEAST), Public-Web-based Examiner's Search Tool (PubWEST), Patent Full-Text Database (PatFT), and Published Patent Application Full-Text Database (AppFT). These four legacy search tools are scheduled to be retired in September 2022.

The USPTO provides free online access to its full collection of U.S. patent documents published since 1790. This is now done via the new Patent Public Search (PatPub) database which holds well over 12 million U.S. patent documents. Every word and every image of every document is available for review and study by anyone having access to the internet. There is no requirement for user registration or for setting up an account, or for using a login password to use the new system. The full database contents are accessible merely by addressing the appropriate URL. The URL for PatPub is: **ppubs.uspto.gov/pubwebapp/**. If regular usage of this system is expected, this URL should be bookmarked to facilitate future access. The USPTO's collection includes granted patents, published patent applications and other official patent-related document types.

Clicking on that URL will bring up the main workspace page as shown in Figure 1. Note that this workspace (Quick Search, the default workspace) is made up of three panels as labeled. In use, a search query is set up in the Search panel, the search results or search history are shown in the Search Results/Search History panels (toggled), and selected patent documents from the Search Results panel are viewed in the Document Viewer panel. More on these later.



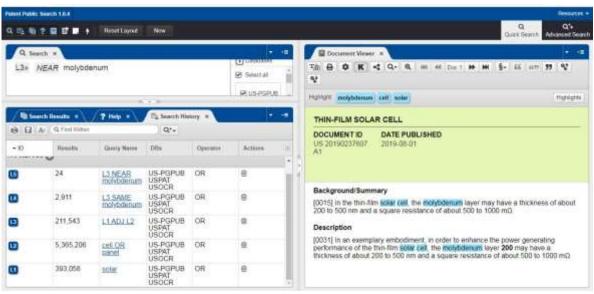
Figure 1 - Quick Search Workspace - URL: ppubs.uspto.gov/pubwebapp/

The USPTO has provided a plentiful amount of training material covering the main features and usages of PatPub. Both online texts and a continuing series of webinars have been made available for public education. Some 70 pages of text are available online, including six quick reference guides describing "how to" aspects of the system, a detailed FAQ section plus three other sections describing search support features. The series of webinars, presented by very knowledgeable Patent Office staff, allows for both instructional and interactive exchanges on topics of interest to participants. Over 100 pages of slides accompanied two of the early webinars. Together the two modes of dissemination provide a helpful introduction to the new search tool. Upcoming webinars may be found at: uspto.gov/about-us/events.

A straightforward way to become familiar with the PatPub search system is by way of a simple search example. This approach precludes the need and difficulty of learning and applying the many syntax and database rules **before** carrying out an actual search. But primarily, the approach of using a simple search, described herein completely from start to finish, lends itself to a smooth and natural understanding of the system operation under 'real life' conditions. Search syntax and system rules will become clear and intuitive upon seeing their use at the appropriate steps of the search.

A common search type comes from the need to locate a particular technology of interest to an inventor or his representative. Say the inventor has developed a unique solar cell structure using molybdenum in an unusual way. On initial review, the three key words - solar, cell, and molybdenum appear likely to be sufficient to uncover patent documents bearing on the disclosed invention. So a first search query can now be set up. In the Search panel click on the voltage Options button which expands the entry area and shows the prompt "Enter query text." This allows the user's search queries to be manually typed in there one line at a time, as shown in **boldface** below. After entering each line, click Search then click Clear. If needed, expand (resize) the Search panel until these two buttons come into view. Do this by clicking and dragging downward the resize button vertically located between the Search panel and the Search Results/Search History panel. This sample search will produce the results shown in Figure 2.

L1 solar 393,058 L2 cell OR panel 5,365,200 L3 L1 ADJ L2 211,543 L4 L3 SAME molybdenum 2,911 L5 L3 NEAR molybdenum 24



2 - Simple Search Example using the Quick Search Workspace

There are many ways to set up a proper search query. A few alternates are shown below. Many other equally proper versions could be structured as well. A first possible alternate is set up as a single line version:

L1 ("solar cell" OR "solar panel") NEAR molybdenum - 24 results

A second possible alternate is set up where each key word is searched individually **before** applying the various logic and other operators, such as:

L1	"solar cell"	61,150
L2	"solar panel"	69,098
L3	molybdenum	425,185
L4	(L1 ADJ L2) NEAR L3	24

Note that all three search queries - the simple search example and the two alternate query versions - will produce the identical results, namely the same 24 hits. Note also that this simple search approach and its alternates have introduced the new user to proper search query syntax (some Boolean/proximity operators and search strategies) all in a natural and in-context way.

By way of this simple search example query and two possible alternates, a number of the main search elements have been introduced without resorting solely to previously memorized syntax rules. The use of Boolean and proximity operators, parentheses, exact phrases, and especially the notion that there are many ways to set up a proper (i.e. legal) search query are shown. After this soft introduction, more detailed and complex search queries and strategies can be more confidently undertaken.

The /? Help x\ button on the tool bar of the Search Results/Search History panel may be used at any time when setting up a search query. Upon clicking on Help, details of the main elements needed to set up an effective search (Boolean/proximity operators, etc.) are given via a drop-down, scrollable display. To close out Help, click on the x button and the panel will revert to displaying the preexisting search results and search history information, ready to continue the query set up. After being closed out, the Help button will no longer be shown but its function can be fully restored by momentarily clicking on the Advanced Search button and the Quick Search button, both located at top right on the main gadget tool bar, and then on the Search History button and on a Query Name.

To view more of either the search results or search history listings, the Search Results/Search History panel can be vertically expanded (resized) by clicking and dragging the resize button 

▼ / centrally located between the Search panel and the Results/History panel.

The example query above and the two alternates have been purposefully set up to produce identical results, namely the same 24 hits. However, by using the same key words but varying the positioning or inclusion/omission of the several operators - Boolean/ parentheses, etc. - completely different results could result. By astute use of these operators, the scope of the search can be changed from very narrow (a handful of hits - 24) to very broad (a few thousand hits - 2911). When using the PatPub search tool, as with all other complex databases, hands-on experience will be the new user's best teacher. To get and maintain agility and competence in its use, frequent and regular usage will be needed.

Printing requires the user's computer system to have a PDF-equipped browser; most all recent computers come with this feature installed. PatPub provides for printing out of two versions (PDF or text) of selected hits developed, as well as the contents of the Search Results and Search History panels

To print a PDF copy of a selected hit, click on the toggle "Switch to Text view/Switch to Image view" button [7/o] on the Document Viewer panel's toolbar. This will bring up the first PDF page of the first hit. To select which hit # [Doc #] and which page [Page #] to print use the two sets of navigation button arrays. Then click on the panel's printer button (second from the left) which will bring up the selected page on screen left as well as the browser's "Print" section on screen right. (By default the browser usually prints out all pages of the hit selected but first gives the user the option of selecting which pages to be printed.) Clicking Print on the browser's "Print" screen will produce the printout of Page 1 of Doc.1, the top half of which is shown in Figure 3. For a preliminary evaluation the first page of each relevant hit is often printed out by new users, manually annotated and retained for future reference, (The good old fail-proof pencil and paper approach.) For the advanced user PatPub provides embedded means for doing this. Toggling to the "Switch to Text View" function allows the desired text version of any selected hit to similarly be viewed and printed out.



Figure 3 - Printout of Top Half of PDF Copy of Page 1 of Hit #1 of Simple Search Example

The contents of the Search History and Search Results panels may also be printed out individually to make and keep a record of the search for possible future reference. To print out the search history, click on the Search History panel and click on the printer button (the left most) on its tool bar. This brings up the full search history listing in tabular form alongside the browser's "Print" section. Clicking first on the Print All button, and then in the next screen clicking on the Print button produces the printout shown in Figure 4

## USPTO Patent Public Search - Search History (Prior Art)

Ref#	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	394118	solar	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-03-26 19:44:42
L2	5377568	cell OR panel	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-03-26 19:45:03
L3	212154	L1 ADJ L2	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-03-26 19:45:20
L4	2914	L3 SAME molybdenum	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-03-26 19:45:49
L5	24	L3 NEAR molybdenum	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-03-26 19:46:50

Figure 4 – Printout of Full Search History of Simple Search Example

To print out the search results, click on the Search Results panel and select which hits are to be printed by clicking on their box(s) in the "Select" column. (For search results having many hits this would be a good time to resize the panel upwards to view more hits in the list.) Then click on the printer button in its toolbar which brings up the selected results hits in tabular form alongside the browse's "Print" section. Clicking on the browse's "Print" button produces the printout shown in Figure 5. In this example, three hits (#1-3) are printed out.

#### List of Selected Search Result Documents

#	Doc ID	Date Published	Title	Image Pages	
1 US-20180033901-A1		2018-02-01	SEMI TRANSPARENT BACK CONTACT AND SOLAR CELL USING THE SAME, AND A METHOD OF MANUFACTURING THEM	17	
2	US-9614108-B1	2017-04-04	Optically-thin chalcogenide solar cells	13	
3	US-20190237607-A1	2019-08-01	THIN-FILM SOLAR CELL	5	

Figure 5 - Printout of Selected Search Results of Simple Search Example

A number of other printing options are provided in PatPub. More details on how to use them are available online for the advanced user. The same can be said of countless other features built into PatPub.

Having thus completed this simple search, or any other search, the PatPub workspace may be cleared by clicking on the New button on the main gadget toolbar. This will permanently clear the workspace (lost forever) and bring up the Quick Search workspace of Figure 1, ready to carry out a new search.

On each new access to PatPub, the Quick Search workspace comes up as the default workspace. The Advanced Search workspace as shown in Figure 6 below may then be accessed by clicking on its button on the main gadget toolbar.

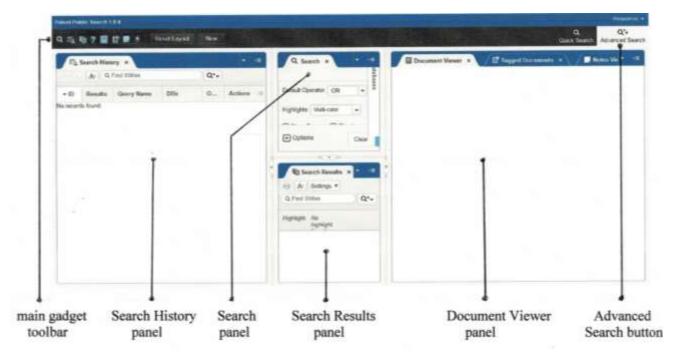


Figure 6 - Advanced Search Workspace

The Advanced Search workspace show above has four panels as labeled, which encompass essentially the same four functions as the Quick Search workspace. In Advanced Search, the Search History panel occupies screen left and the Document Viewer panel occupies screen right. Between them at screen central, the smaller Search panel is positioned above a similarly sized Search Results panel. Functionally, these four panels are fully equivalent to their counterpart panels in the Quick Search workspace.

The Advanced Search workspace provides for setting up the same search queries, viewing and printing out of the same search results, the same search history results, and the same document viewing features as in the Quick Search workspace. This is shown by way of a simple search example which has been expanded to incorporate several more of the features built-into PatPub. The following steps also closely parallel those used in connection with the Quick Search simple search example. The lowering/raising device disclosed below was purposefully chosen for its very simplicity so as not to obscure the steps used to process it.

Consider that an inventor or his representative has come forward and disclosed a motor driven device for lowering and raising a ceiling mounted fixture so that a lamp or fan in the fixture can be lowered to be cleaned, adjusted or repaired. Upon initial review it is determined that the key words of – lowering, raising, ceiling, fixture, lamp, bulb, fan, and motor – should be sufficient to uncover patent documents relevant to the disclosed invention. So a first search query can now be set up.

In the Search panel, click on the 

Options button which readies the entry area. (The prompt "Enter query text" may be displayed.) This allows the user's search queries to be manually typed in there one line at a time as shown in **boldface** below. After entering each line, click on Search then click Clear. If needed, expand - resize - the Search panel until these two buttons come into view. This sample search will produce the results tabulated in boldface below and shown in Figure 7.

```
L1 lowering OR raising
                             1,729,972
L2 cieling
                             42
L3 ceiling
                             352,987
L4 fixture OR lamp OR bulb
                             1,45,2,230
L5 L1 SAME L3 SAME L4
                             414
L6 L1 NEAR L4 SAME L3
                             48
L7 motor
                             3,151,712
L8 L6 SAME L7
                             3
L9 L6 AND L7
                             13
```

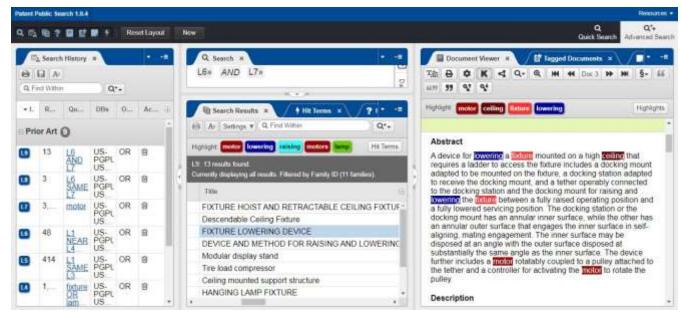


Figure 7 – Simple Search Example using the Advanced Search Workspace

Note that the Search History panel has been resized to be smaller in width so that the Search Results panel could be resized to be wider to give a better view of the document titles in the hit listing. Use the Search Results panel's bottom scroll bar to better position the titles horizontally, and its side scroll bar to scan or select the hits from top (most recent) to bottom (oldest). The Document Viewer panel has been set to view the paragraph(s) containing key words (in this case the third hit in the Search Results panel) by clicking first on the To button (Switch to Image view) and then clicking on the K button (Show and hide Key Word in Context.)

in the Document Viewer panel to allow for moving the result to be displayed either one hit at a time, or to the first or last document in the results panel. As a second alternative, the hit to be displayed may be selected using the keypad shortcut feature. With the Num Lock key actuated, clicking on the 1 key will move the hit selected to a higher result number (i.e., 4 to 7 - older), while clicking on the 7 key will move the hit selected to a lower result number (i.e., 7 to 4 - newer.) Several other keypad-controlled actions for image browsing are available for the advanced user. See the USPTO's "Training Materials – References" Keyboard shortcuts, pages 1-7, available online for details on this.

The results produced above may be readably reviewed online for relevance, and hard copies printed out for retention. To view the hits, scroll down the Search Results panel to review the title of each hit and assess its pertinence. Use the bottom sideways scroll bar and the side scroll bar to position the titles of the hits so as to be viewable. Clicking on any promising-looking title will bring up its full text version on the Document Viewer panel. To further evaluate its relevance, click on the **K** button on the Document Viewer panel's tool bar which will change the display to one in which only the paragraph(s) containing the key words are shown, the key words being highlighted in color. This is a powerful and time saving feature not previously available on most of the USPTO's legacy search tools. To step through all the results titles, use may also be made of the conventional four button navigation array  $\boxed{I < I < [Doc \#] >> I >> I}$  on the panel's toolbar which steps the document to be displayed either forward or backward, and displays that document's hit number.

Printing requires the user's computer system to have a PDF-equipped browser; most all recent computers come with this feature installed. PatPub provides for printing out of two versions (text or PDF) of selected hits developed, as well as of the contents of the Search Results and Search History panels.

To print a PDF copy of a selected hit, click on the toggle "Switch to Text view/Switch to Image view" button  $\boxed{\text{T/o}}$  on the Document Viewer panel's toolbar. This will bring up the first PDF page of the first hit. To select which hit # [Doc #] and which page [Page #] to print use the two sets of navigation button arrays.

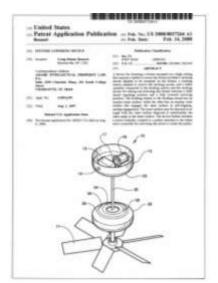


Figure 8 shows a printout of Page 1 (of 6) of Doc. # 3 which is produced by clicking on the panel's printer button, again bringing up the first PDF page on screen left as well as the browser's "Print" section on screen right. In this "Print" section, select which page(s) are to be printed and note that the default is to print out *all* pages. Then click on the Print button, which for this example prints out Figure 8. For a preliminary evaluation only the first page of each relevant hit is often printed out by new users, manually annotated and retained for future reference. For the advanced user, PatPub provides built-in features which allow adding notes to the image form of documents, viewing those notes in an adjacent panel, adding tags, and printing all document notes. See the USPTO's Quick Guide "Adding Notes to Images" for the details on this.

Figure 8 - Printout of PDF Page 1 of Hit #3 using the Advanced Search Workspace

PATENT NUMBER	DOCUMENTIC	DATE PU	DI JOHED	
20080007264	U5 20080037264 A1	2008-02-14	BLISHED	
INVENTOR INFORMAT	TION			
NAME	CITY	STATE	ZIP CODE	COUNTRY
Bennett; Craig Delane	Mooresville	NC	N/A	US
APPLICATION NO	DATE FILED	)		
11/832199	2007-06-01			
	ITY (CONTINUITY US 80821712 00 2006080			
US CLASS CURRES	NT:			
363/394_363/494_363/418				
CPC CURRENT				
TYPE	CPC		DATE	
CPCX	F 04 D 29/601	2013-01-01		
CPCI	F 04 D 25/088 F 21 V 21/38		2013-01-01 2013-01-01	
CORRESPONDENC ADAMS INTELLECTUA CHARLOTTE NC 28244 KWIC HIB	UL PROPERTY LAW, P.A.	Suite 2350 Ch	aciotte Plaza, 201 Sc	oth College Street
betract				
betract device for lowering a flat cludes a docking mount, e docking mount, and a taking and lowering the fit costion. The docking stats nemular outer surface if mer surface may be dep- rigle as the inner surface. If the better and a control the better and a control the better and a control	adapted to be mounted a tether operatily connected dure between a fully rais on or the docking mount and engages the inner su seed at an angle with the The device further inclu-	on the fixture, of to the docki ed operating; has an annuli rface in self-er outer surface des a motor n	a docking station a ing station and the position and a fully ar inner surface, wi sgring, mating ang a disposed at sufrat otstably coupled to	dapted to receive docking mount for lowered servicing rise the other has againers. The artially the same
device for lowering a fat cludes a docking mount: e docking mount, and a listing and lowering the fit cation. The docking stati is ensular outer surface the nerview outer surface the pige as the inner surface.	adapted to be mounted a tether operatily connected dure between a fully rais on or the docking mount and engages the inner su seed at an angle with the The device further inclu-	on the fixture, of to the docki ed operating; has an annuli rface in self-er outer surface des a motor n	a docking station a ing station and the position and a fully ar inner surface, wi sgring, mating ang a disposed at sufrat otstably coupled to	dapted to receive docking mount to lowered servicing rife the other has againent. The artially the same

Figure 9 - Printout of Text Version of Page 1 of Hit #3 Using the Advanced Search Workplace

To print out a text version of a selected hit, click on the toggle "Switch to Image view/Switch to Text view" button T/o to bring up the first text page of the hit to be selected. (By default the first hit in the Search Results panel will come up.) To select which hit # [Doc #] to display and print, use the navigation button array on the Document Viewer panel's toolbar | I<< I << [ Doc # ] >> I >> I | In this example hit #3 was selected. The page number option and its navigation button array are not available in this view. Figure 9 shows a printout of the first page of text which is produced by clicking on the panel's printer button, bringing up the text page on screen left and the browser's "Print" section on screen right. In the "Print" section, select which page(s) are to be printed, note that the default is to print out all pages. Then click on the Print button to produce Figure 9. This first of an unknown number of pages of text includes at its beginning metadata-like formatted information of the document being displayed.

As before, the contents of the Search Results and the Search History panels may be printed out individually to make and keep a hard copy record of the search for possible future reference. In this example four hits (#1-4) were selected to be printed by clicking in their boxes in the "Select" (leftmost) column. To print out these search results, click on the Search Results panel, select the four hits and then click on the printer button on its toolbar. This brings up the selected search results listing in tabular form. Click on the Print button to produce the printout shown in Figure 10.

### List of Selected Search Result Documents

# Doc ID		Date Published	Title	Image Pages	
1	US-20080193291-A1	2008-08-14	Descendable Ceiling Fixture	12	
2 US-20120305731-A1		20305731-A1 2012-12-06	FIXTURE HOIST AND RETRACTABLE CEILING FIXTURE INCORPORATING THE SAME	10	
3	US-20080037264-A1	2008-02-14	FIXTURE LOWERING DEVICE	6	
4	US-20070134093-A1	2007-06-14	DEVICE AND METHOD FOR RAISING AND LOWERING CEILING FIXTURES	5	

4/20/2022 06:07:19 PM

Figure 10 – Printout of Selected Search Results Using the Advanced Search Workspace

To print out the search history, click on the printer button in the Search History panel. This brings up the full search history in tabular form. Clicking on the <a href="Print All">Print All</a> button brings up a browser screen showing the history listing in screen left and its print control section in screen right. In the right section, clicking on the <a href="Print">Print</a> button will produce the printout shown in Figure 11.

Ref#	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	1730524	lowering OR raising	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:06:40
L2	42	cieling	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:07:06
L3	353163	ceiling	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:07:20
L4	1452754	fixture OR lamp OR bulb	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:07:44
L5	414	L1 SAME L3 SAME L4	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:08:28
L6	48	L1 NEAR L4 SAME L3	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:09:01
L7	3152944	motor	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:09:39
L8	3	L6 SAME L7	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20
L9	13	L6 AND L7	(US-PGPUB OR USPAT OR USOCR)	OR	ON	ON	2022-04-20 17:10:25

Figure 11 – Printout of Search History Using the Advanced Search Workspace

In connection with Figure 7, the columns shown in the Search Results panel had been described simply as being horizontally viewable using sideways scrolling. A more detailed description of how to get the most usefulness from this feature is now provided. The USPTO's guidance on the columns feature describes 26 of 29 columns as being selectable by the user. By default, all are initially selected for viewing. In actual use, only a handful are really useful for any particular search type. For typical search use, seven columns are usually sufficient. In the present example, the seven columns are: Result No., Document ID, Date Published, Pages, Title, Inventor and Relevance. Figure 12 shows the resulting view in the Search Results panel for the columns selected. Note that the Relevance column has been repositioned to be near the left most, and the Date Published and Pages columns have been repositioned to be near the right most.

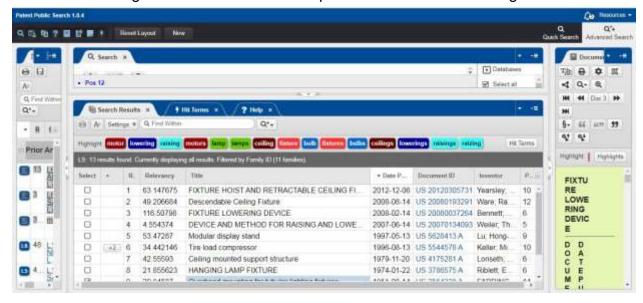


Figure 12 – Printout of the Results of Column Selection Using the Advanced Search Workspace

This arrangement contributes to quick and easy reviewing of the hit titles and the document's relevance score to help determine if further study of that hit is warranted. Note also that the Search Results panel has been resized upwards to better view the content of the columns selected. This has reduced the widths of the Search History panel on the left, the Document viewer panel on the right and the Search panel at its top. As usual, all this resizing is done by using the appropriate resizing buttons.

A number of other useful functions are built into the column-related feature by PatPub. See the USPTPO's Quick Guide "Patent Public Search - Search Results" for full details, on these. That guide also briefly includes the topic of how to copy search results to a spreadsheet.

At this point PatPub retires from the field having done its job, and the evaluation and analysis phase by the user takes center stage in the search effort.

#### # # # # #

The USPTO's new PatPub search tool is a prime candidate for being the world's premier patent search tool. A primary reason for that is the countless number of powerful new and improved features it provides to the patent search community. These features and their resulting capabilities were derived from many years of development and from being responsive to the needs of the USPTO and public users. As expected, along with this wealth of useful features comes a corresponding increase in the complexity of its use. Thus, this quick-look introduction must be considered merely a quick glance of what is a mountain-sized search tool that will take a serious effort to truly master.

Basic computer skills and some (not advanced) familiarity with searching databases are needed to fully benefit from using the PatPub search system. The descriptions and detailed search examples herein have been carefully crafted to assure that even the new user is coached to acquire a basic introduction to the system use.

While the PatPub system contains and provides access to all U.S. patent documents issued/published/registered since 1790 (well over twelve million), no foreign patent documents are available for public searching via the system. For a fully comprehensive search, foreign patent documents must be searched in addition to U.S. patent documents. Foreign patent document searches can be carried out via the World Intellectual Property Organization (WIPO) PATENTSCOPE database, by the European Patent Office (EPO) ESPACENET database, as well as via Google Patents. All of these are available online free of charge and without the need to set up an account or register as a user. Between them many tens of millions of foreign patent documents (one estimate has it at over 80 million) are searchable. Many other patent databases, U.S.-based and foreign-based, are available online, some fee based, others are free of charge.

No comprehensive single source training manual is available for PatPub at this writing. This is in contrast to the detailed 213 page training manual provided along with live public classes which accompanied the rollout of EAST in 2004

When the results of a patent search can lead to significant financial or legal risk, it is highly recommended that any preliminary patent search carried out by an inventor or other non-patent professional be backed up with a search done by a professional patent searcher or a patent law firm before proceeding with the filing of a patent application or taking expensive commercialization steps. The results of this backup search should be accompanied by a written Patentability Opinion done by a registered patent practitioner.

The responsibility for search results, especially for patent documents not found or found but misinterpreted remains with the user of the PatPub tool. The information provided here has been assembled by a professional patent searcher with over 30 years of patent searching experience. By using the USPTO's many different databases as they became available online and at the Public Search Facilities over the years, as well as with use of the many publically available U.S. and international patent databases, this information is believed to be fully reliable.

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