EXAMINER SEARCHING

(through the looking glass)

Dominic DeMarco

Managing Director

DeMarco Intellectual Property, LLC

Patent Research for Patent Attorneys

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Who is this guy talking to us?



Dominic DeMarco
Registered Patent Agent (#49,015)
BS in Chemical Engineering from the University of Virginia

Working full time as a patent searcher since 1997 Started DeMarco IP in 2007 The company has grown by double digits for ten straight years

Served on the Board of Directors of PIUG (the Patent Information Users Group) – Trade group for patent searchers

Lead instructor for the PIUG "Patent Searching Fundamentals" and "Fundamentals of FTO Searching"

Invited by the USPTO to teach a recurring search course based upon "gap analysis" to US examiners

Invited by WIPO to teach patent search courses all over the world



The first caveat:

Examiners search patents for different reasons than we on the outside search patents.

They are decision makers and are strongly incentivized to stop a search when a decision may be made.



Discussion targets:

- 1) Accessing Examiner Search Logic
- 2) Examiner Database Analysis
- 3) Sample Examiner Strategy Analysis
- 4) General Examiner Strategy Analysis

We are **not** reviewing the 'Reason for Allowance', 'Applicant Arguments', or 'Examiner Rejections' because you should all know how to do that already!



1) Accessing Examiner Search Logic:

Available via Public PAIR for most issued patents and PG-Publications since 2001

http://portal.uspto.gov/external/portal/pair



A randomly selected high profile patent

(12) United States Patent Greenberg et al.

(10) Patent No.:

US 8,000,000 B2 <

(45) Date of Patent:

*Aug. 16, 2011

(54)	VISUAL	PROSTHESIS
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(75) Inventors: Robert J. Greenberg, Los Angeles, CA

(US); Kelly H. McClure, Simi Valley, CA (US); Arup Roy, Valencia, CA (US)

(73) Assignee: Second Sight Medical Products, Inc.,

Sylmar, CA (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 206 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 11/874,690

(22) Filed: Oct. 18, 2007

(65) Prior Publication Data

US 2008/0262568 A1 Oct. 23, 2008

Related U.S. Application Data

- (60) Provisional application No. 60/852,875, filed on Oct. 19, 2006.
- (51) **Int. Cl.** *A61N 1/372* (2006.01)
- (52) **U.S. Cl.** 607/60; 607/53

(56) References Cited

U.S. PATENT DOCUMENTS

4,573,481	A		3/1986	Bullara	
4,612,934	A	əţc	9/1986	Borkan 6	507/62
4 628 933	Δ		12/1986	Michelson	

4,837,049	A	6/1989	Byers et al.
5,109,844	A	5/1992	de Juan, Jr. et al.
5,215,088	A	6/1993	Normann et al.
5,569,307	A *	10/1996	Schulman et al 607/56
5,935,155	A	8/1999	Humayun et al.
6,400,989	B1	6/2002	Eckmiller
6,458,157	B1 *	10/2002	Suaning 623/6.63
7,818,061	B1 *	10/2010	Palmer 607/32
2005/0078846	A1*	4/2005	Single 381/326
2006/0247754	A1	11/2006	Greenberg et al.

FOREIGN PATENT DOCUMENTS

WO WO 02/40095 A1 5/2002

OTHER PUBLICATIONS

Eugene De Juan, Retinal Tacks, American Journal of Ophthalmology 99: pp. 272-274, Mar. 1985.

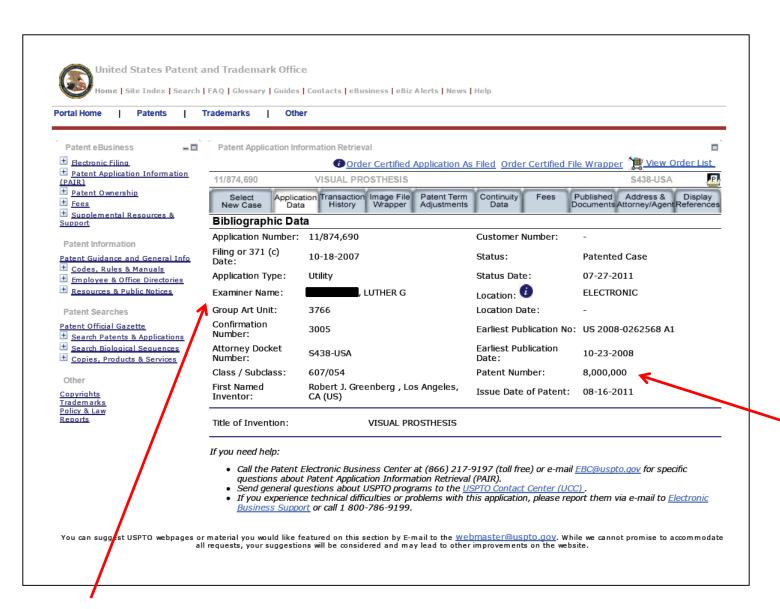
Primary Examiner — Carl H
Assistant Examiner — Luther
(74) Attorney, Agent, or Firm — Scott B. Dunbar;
Alessandro Steinfl

(57) ABSTRACT

A visual prosthesis apparatus and a method for limiting power consumption in a visual prosthesis apparatus. The visual prosthesis apparatus comprises a camera for capturing a video image, a video processing unit associated with the camera, the video processing unit configured to convert the video image to stimulation patterns, and a retinal stimulation system configured to stop stimulating neural tissue in a subject's eye based on the stimulation patterns when an error is detected in a forward telemetry received from the video processing unit.

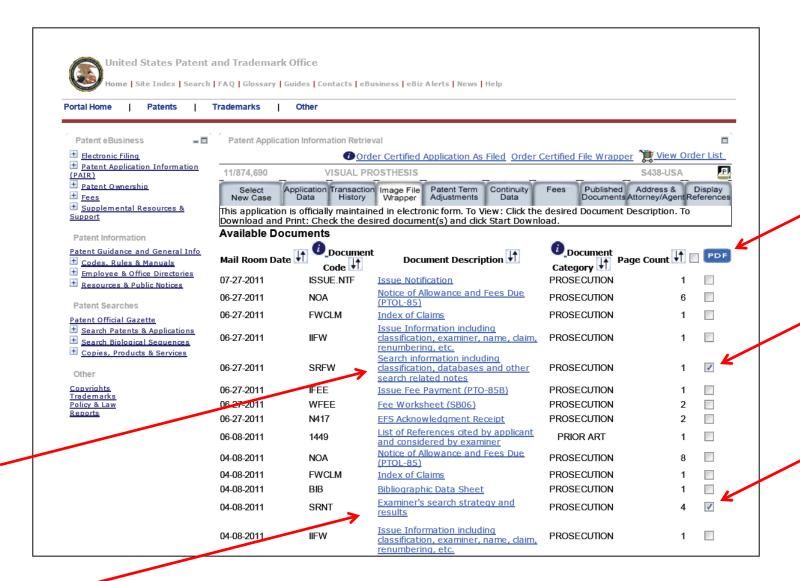


^{*} cited by examiner











Automated bite at the apple

11874690

PLUS Search Results for S/N 11874690, Searched Thu Feb 26 11:56:34 EST 2009
The Patent Linguistics Utility System (PLUS) is a USPTO automated search system
for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which
produces a list of patents that are most closely related linguistically to the application
searched. This search was prepared by the staff of the Scientific and Technical Information
Center, SIRA.

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Manual first bite at the apple

EAST Search History

Ref#	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S18	21698543	@ad< "20061019"	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2009/02/26 14:16
S21	27975	(600/16-18.cds. or 600/508-528.cds. or 607/1-76.cds. or 607/115- 156.cds.)	US-PGPUB; USPAT; USOOR; DERWENT	OR	ON	2009/02/26 14:23
S40	440	\$21 and \$18 and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) and (power with management))	US-PGPUB; USPAT; USOCR	OR	<u></u>	2009/02/26 15:56
S43	111	S40 and error and implant	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 16:13
S44	71	S43 and sleep	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 16:14
S46	65	\$21 and \$18 and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and (power with management))	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 16:25
S47	1	607/55-57.ccls. and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and (power with management))	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 17:13
S48	22	607/55-57.ccls. and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and power)	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 17:16



Manual second bite at the apple

EAST Search History

Ref#	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	5861034	@ad<"20061019"	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/14 14:15
L17	26936	((spinal with cord with stimulat\$4) or SCS or cochlea\$4 or retina\$4) and (telemetry or communicat \$4) and (respond or (back with telemetry) or error or ((inaccurate or faulty or bad) with data)) and 3	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L18	5516	17 and (((stop or down) with power) or deactivate or idle)	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L19	257	17 and (external with (((stop or down) with power) or deactivate or idle))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L20	44	19 and cochlea\$4	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L21	27	19 and retina\$4	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:35



Manual third bite at the apple

EAST Search History

EAST Search History (Prior Art)

Ref#	Hits	Search Query	DBs	Default	Plurals	Time Stamp
S45	883	607/60.ccls. and @ad<"20061019"	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:54
S46	353	607/60.ccls. and @ad<"20061019" and ((back with telemetry) or feedback)	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S47	96	607/60.ccls. and @ad<"20061019" and ((back with telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S48	32	607/60.ccls. and @ad<"20061019" and ((back near telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S49	28	607/60.ccls. and @ad<"20061019" and ((back adj telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S50	5	607/60.ccls. and @ad<"20061019" and ((back adj telemetry)) and retinal	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:56
S51	12	607/60.ccls. and @ad<"20061019" and ((back adj telemetry)) and error	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:57
S52	53	("4166470" "4267410"	US-PGPUB:	OR	ON	2010/11/03



Summarizing the bites at the apple

Application/Control No.

Search Notes

11874690

Examiner

LUTHER G

Application/Control No.

Applicant(s)/Patent Under Reexamination

GREENBERG ET AL.

Art Unit

3766

	SEARCHED		
Class	Subclass	Date	Examiner
623	6.63	2/27/2009	LB
607	5, 17, 53-57, 62	2/27/2009	LB
607	60	11/4/2010	LB

SEARCH NOTES		
Search Notes	Date	Examiner
IDS Search	2/27/2009	LB
PLUS Search	2/27/2009	LB
Assignee Search	2/27/2009	LB
Inventor Name Search	2/27/2009	LB
Class / Subclass Search	2/27/2009	LB
Forward / Backward Citation Search	2/27/2009	LB
East Text Search (US Patents, PG Pubs, US OCR Database, European Patents)	2/27/2009	LB
Updated East Text Search (US Patents, PG Pubs, US OCR Database, European Patents)	7/14/2009	LB
Updated East Text Search (US Patents, PG Pubs, US OCR Database, European Patents)	11/4/2010	LB



2) Examiner Database Analysis (EAST)

- ■US-PGPUB US Pre-Grant Publications (full text, 2001-today)
- ■USPAT Issued US Patents (full text, searchable back to the 1970s)
- ■USOCR OCR "scanned" images for US Patents (1920-1976)
- ■EPO **Abstracts** of select European documents (19??-**2010**) ■CH-'78, DE-'81, EP-'78, FR-'84, GB-'00, and WO-'78
- ■JPO **Abstracts** of Japanese A documents (1976-today*)
- ■FPRS **Abstracts** of most non-US documents (all years**)
- ■Derwent Derwent World Patent Index***
- ■UPAD Unpublished US Patent Applications (2006-2010)
 - * JPO data was **not** uploaded during all of 2014-2016
 - ** FPRS data was first uploaded Jan. 1, 2014
 - *** Derwent was first uploaded Jan. 1, 2009



The big things you should note:

- •Full text searching is available **only** for US patents and US publications. (No full text of PCT documents.)
- Abstract-only searching is available for non-US documents.
- ■Bonus: The DWPI and FPRS databases only became available to US Examiners in the past few years. Most have no idea how to <u>efficiently</u> use them!



Commands Available to Examiners (Page 1)

- Truncation
 - \$ = Unlimited characters
 - ■\$1 = Zero or 1 character
- Proximity Operators: (in order of execution)
 - Adj# = Within # words, order specific (default is 1)
 - Near# = Within # words (default is 1)
 - With = Within a single sentence
 - Same = Within a single paragraph
- Section Operators: (can be used in combination)
 - ■Title = .ti.
 - Abstract = .ab.
 - ■Title or Abstract = .ti,ab.
 - Claims = .clm.



Commands Available to Examiners (Page 2)

- Classification Operators:
 - ■CPC Classification = .cpc.
 - ■IPC Classification = .ipc. or .ipcr.
 - ■US Classification = .ccls.
- Other Common Operators:
 - ■Assignee = .as. or .asn.
 - ■Inventor = .in. or .inv.
 - ■Publication Number = .pn. or .did.
 - Application Date = @ad<</pre>
 - Publication Date = @pd>

There are many others, but this is a listing of the common ones.



3) Examiner Strategy Analysis

With all due respect to Mr. Luther an Assistant Examiner, and Mr. Carl the signatory Examiner, we will review the publicly available search history for US 8,000,000.

This is what you can do for any US patent or application of particular interest available via Public PAIR (18 months after filing).

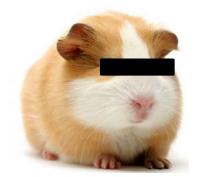


The second caveat:

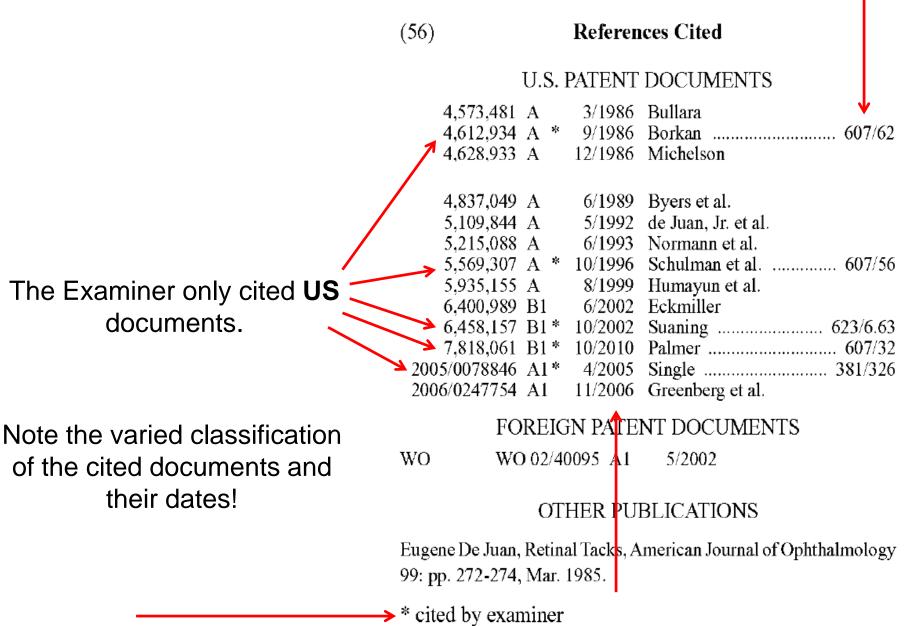
The validity of this patent is not being questioned.

It is merely a guinea pig to demonstrate the analysis of Examiner search logic that may be done.

No search is perfect. All searches are a balance of inclusion and exclusion.









Automated bite at the apple

Ref #s (US only)

11874690

PLUS Search Results for S/N 11874690, Searched Thu Feb 26 11:56:34 EST 2009
The Patent Linguistics Utility System (PLUS) is a USPTO automated search system
for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which
produces a list of patents that are most closely related linguistically to the application
searched. This search was prepared by the staff of the Scientific and Technical Information
Center, SIRA.

5935155 74

6647297 84

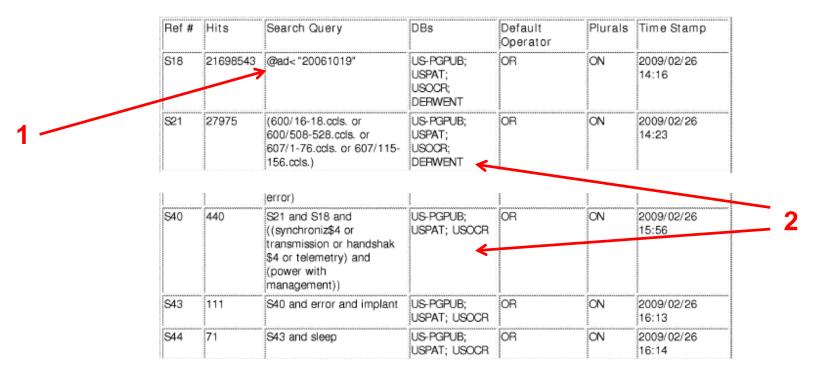
Score assigned by the Semantic tool

None of these references were used by the Examiner. The Examiner has no control of this automated process and must review the listed references.



Manual first bite at the apple

EAST	Search	History
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- 1) The @ad<"20061019" command accidentally eliminates pre-1976 references which do not have an application date field.
- 2) Notice the database selection discrepancy. Derwent has been deactivated which limits the searching to US documents only.



Manual first bite at the apple

EAST Search History

	Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		1	error)	THE PARTY OF THE P	AUDOLES .	a.	CONTRACTOR
	S40	440	S21 and S18 and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) and (power with management))	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 15:56
Not likely	S43	111	S40 and error and implant	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26
Likely reviewed	S44	71	S43 and sleep	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 16:14

Likely reviewed

S46	65	S21 and S18 and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and (power with management))	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 16:25 3)	Time Stamps
S47	1	607/55-57.ccls. and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and (power with management))	US-PGPUB; USPAT; USOCR	OR	ON	2009/02/26 17:13	ALAMAN S
S48	22	607/55-57.ccls. and ((synchroniz\$4 or transmission or handshak \$4 or telemetry) with error and power)	US-PGPUB; USPAT; USOCR	OR	0	2009/02/26 17:16	

3) Gaps between time stamps can help you determine which sets of references have been reviewed.



EAST Search History

EAST Search History (Prior Art)

Manual third bite at the apple

4) Changed databases again.

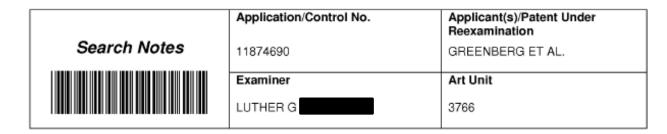
Ref #	Hits	Search Query	DBs	Default	Plurals	Time Stamp
S45	883	607/60.ccls. and @ad< "20061019"	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:54
S46	353	607/60.ccls. and @ad<"20061019" and ((back with telemetry) or feedback)	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S47	96	607/60.ccls. and @ad<"20061019" and ((back with telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S48	32	607/60.ccls. and @ad<"20061019" and ((back near telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S49	28	607/60.ccls. and @ad<"20061019" and ((back adj telemetry))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:55
S50	5	607/60.ccls. and @ad<"20061019" and ((back adj telemetry)) and retinal	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2010/11/03 16:56

5) Queries not reviewed based upon the continual strategy refinement. Removed "feedback" and limited to "back adj telemetry".

^{***}Less than 500 US patents or PG-Pubs use this term!!!



Summarizing the bites at the apple





SEARCHED						
Class	Subclass	Date	Examiner			
623	6.63	2/27/2009	LB			
607	5, 17, 53-57, 62	2/27/2009	LB			
607	60	11/4/2010	LB			

6) There are over 4,000 references in this range of Subclasses when crossed with "@ad<=20061019". No documentation of having performed this date limitation or crossing these Subclasses with key word limitations is shown in the search history.

Do you think they were reviewed in their entirety?



4) General Examiner Strategy Analysis

No more picking on Luther!

I've reviewed thousands of US file histories over the years. There are some generalities that can be made with regard to the manner in which US Examiners search patents and utilize the databases available to them.

As with all generalities, this does not apply to every Examiner. Some are fantastic patent searchers.



Database Choices (part 1)

Quote-Unquote I have received from more than one Examiner:

"I turn off the foreign databases because they give me too much stuff to go through."

In reviewing several thousand file histories, in less than 0.1% of these cases has an Examiner utilized the International Patent Classification system (IPC).



Database Choices (part 2)

Examiners are expected to search the patent literature and also expected to search non-patent literature (NPL).

The searching of NPL is often outsourced to in-house search experts within the USPTO (employees via **STIC** and/or contractors via **ASRC**).

The Examiner with their intimate knowledge of the case and the technology is often not the person performing the NPL search if and when one is done.

STIC = Science and Technical Information Center ASRC = Arctic Slope Regional Corporation

Patent Section Limitations

The other way Examiners eliminate the opportunity for "foreign stuff" to clutter their queries is by never limiting their searching to bibliographic information (Titles and Abstracts: .ti,ab.)

A US full text document has approximately 10,000 words. A non-US abstract has approximately 100 words.

Which do you think is more likely to be found when a search for 'A and B and C and D' is performed? Does that mean the non-US documents are not relevant?

This also reduces the utility of the Derwent database and their value-added abstracting.



'Field of Classification Search'

- (52) **U.S. Cl.** 607/60; 607/53

It is commonly accepted that an Examiner will document a 'Field of Classification Search' if text searching encompassed those subclasses.

This means that these subclasses were probably not reviewed in their entirety.



Proximity Operator Usage

Examiners preferentially search broad to narrow.

To narrow, they add limitations rather than modifying the proximity operators. Example:

A and B = 3000 hits ... too many to review

Examiner will choose: A and B and C and D = 300 hits

Will not choose: A same B = 400 hits

Will not choose: A with B = 200 hits

The reliance upon the 'and' command loses much of the context of key word or text based searching.

*** Unfortunately, most non-examiners do this too...



Example: Manual second bite at the apple

EAST Search History

(A_1 or A_2 or A_3) and

and D

B and C

and E

and A₂ or and A₃

Ref#	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	5861034	@ad<"20061019"	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/14 14:15
L17	26936	((spinal with cord with stimulat\$4) or SCS or cochlea\$4 or retina\$4) and (telemetry or communicat \$4) and (respond or (back with telemetry) or error or ((inaccurate or faulty or bad) with data)) and 3	US-PGPUB; USPAT; USOCR; EPO ←	OR 8	ITON	2009/07/14 16:34
L18	5516	17 and (((stop or down) with power) or deactivate or idle)	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L19	257	17 and (external with (((stop or down) with power) or deactivate or idle))	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L20	44	19 and cochlea\$4	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:34
L21	27	19 and retina\$4	US-PGPUB; USPAT; USOCR; EPO	OR	ON	2009/07/14 16:35

- 7) Too many Booleans begat an error. No art to A₁ was likely reviewed.
- 8) Not even mentioning the disappearing database... C'mon Luther.



Conclusions

- A) The publicly available Examiner Search Logic is easily reviewable.
- B) Reviewing this Logic will demonstrate how specific references were identified.
- C) Likewise, it can provide a road map to identify search areas that were not considered should you need to question the validity of a patent.
- D) Examiner Search Logic can provide quality talking points if you need to discuss your patentability search practices. Do you really want Luther doing the only searching on important applications?
- E) Bonus: This same type of review should regularly be applied to your in-house or contracted search efforts.



THANK YOU!

QUESTIONS?

Dominic DeMarco

Managing Director

DeMarco Intellectual Property, LLC

Patent Research for Patent Attorneys

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