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Practical Exercises and Examples of Producing PLR Components

Anthony Trippe
Managing Director – Patinformatics, LLC
WIPO Regional Workshop on Patent Analytics
Intellectual Property of the Philippines (IPOPHL)
Manila, Philippines – 6 December 2013

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Law of Linear Patent Analysis

Develop a Collection of Analysis Tools

Understand the Need Behind the Need

The Need Drives the Question

The Question Drives the Data

The Data Drives the Tool

Why is this important?

To a man with a hammer, everything looks like a nail - avoid this at all costs

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PATENT ASSIGNEE CLEANUP & CHART

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Business Objective

We are thinking of getting into the dental floss market.

Send me everything you can find on dental floss.

Now What?

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What You Need to Discover

Who are the top companies?
Who is the most prolific inventor?
Is pace of filing going up or down?

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Outline of Steps

Search conducted in PatentScope with "dental floss" as the search query on the first page of the patent document

Export data in TSV or CSV format

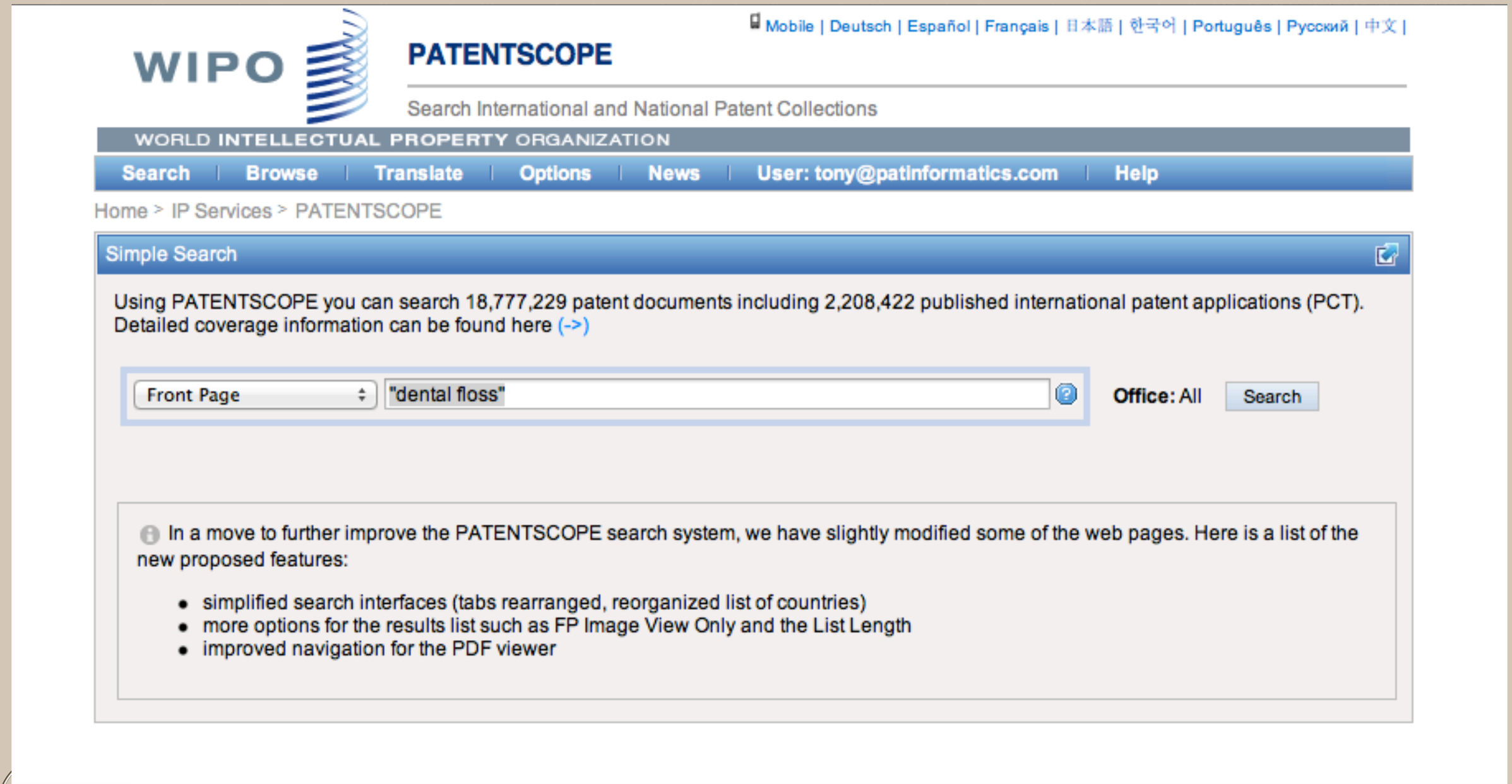
Open file in Excel

Create Pivot Table

Group items together (clean-up)

Create tables, charts and graphs

Start with a Search



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Results from PatentScope

Mobile | Deutsch | Español | Français | 日本語 | 한국어 | Português | Русский | 中文 |

WIPO **PATENTSCOPE**

Search International and National Patent Collections

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Search | Browse | Translate | Options | News | User: tony@patinformatics.com | Help

Home > IP Services > PATENTSCOPE

Results **1-10** of **683** for Criteria:**FP:("dental floss")** Office(s):**all** Language:**EN** Stemming: **true**

prev 1 2 3 4 5 6 7 8 9 10 next Page: 1 / 69 Go >

Refine Search FP:("dental floss") Search RSS

Analysis »

Sort by: Relevance **View** All **List Length** 10

No	Ctr	Title	PubDate	Int.Class	Appl.No	Applicant	Inventor
1.	WO	WO/2013/016423 - HOLDER FOR DENTAL FLOSS	31.01.2013	A61C 15/04	PCT/US2012/048141	THE PROCTER & GAMBLE COMPANY	HERZOG, Karl
A dental floss clamp, said clamp comprising a first limb and a second limb which are mutually hinged at a first end of each limb; each limb having a plurality of projections and recesses configured such that when the limbs are brought together the projections of the first limb can engage with the recesses of the second limb and the projections of the first limb press laterally on the projections of the second limb in order to clamp a length of dental floss.							
2.	WO	WO/2013/016517 - DENTAL FLOSS COMPRISING PLASTIC PARTS	31.01.2013	A61C 15/04	PCT/US2012/048304	THE PROCTER & GAMBLE COMPANY	HERZOG, Karl
A method for producing a length of dental floss having a plastic part attached comprising the steps of providing a mould having a cavity; disposing a length of dental floss within the cavity; arranging the dental floss within the cavity such that the dental floss enters the cavity at a first location x and exits the cavity at a second location y and wherein the path length of the dental floss within the cavity is greater than the linear distance between the first location x and the second location y; and injecting a plastic material into the cavity to encapsulate the floss.							
3.	WO	WO/2013/014651 - HANDLING AID FOR DENTAL FLOSS	31.01.2013	A61C 15/04	PCT/IB2012/053869	THE PROCTER & GAMBLE COMPANY	HERZOG, Karl
A dental floss clamp comprising a screw connection having a threaded nut and a threaded bolt which is moveable within a longitudinal axis of the threaded nut and can be screwed therein wherein the threaded nut comprises a jacket and has an interior thread and an interior groove; the threaded bolt has an exterior thread and an exterior groove; each turn of the interior thread has a first flank, and a second flank, each having a pitch; and wherein the pitch of the second flank with respect to the longitudinal axis of the threaded nut is greater than the pitch of the first flank.							

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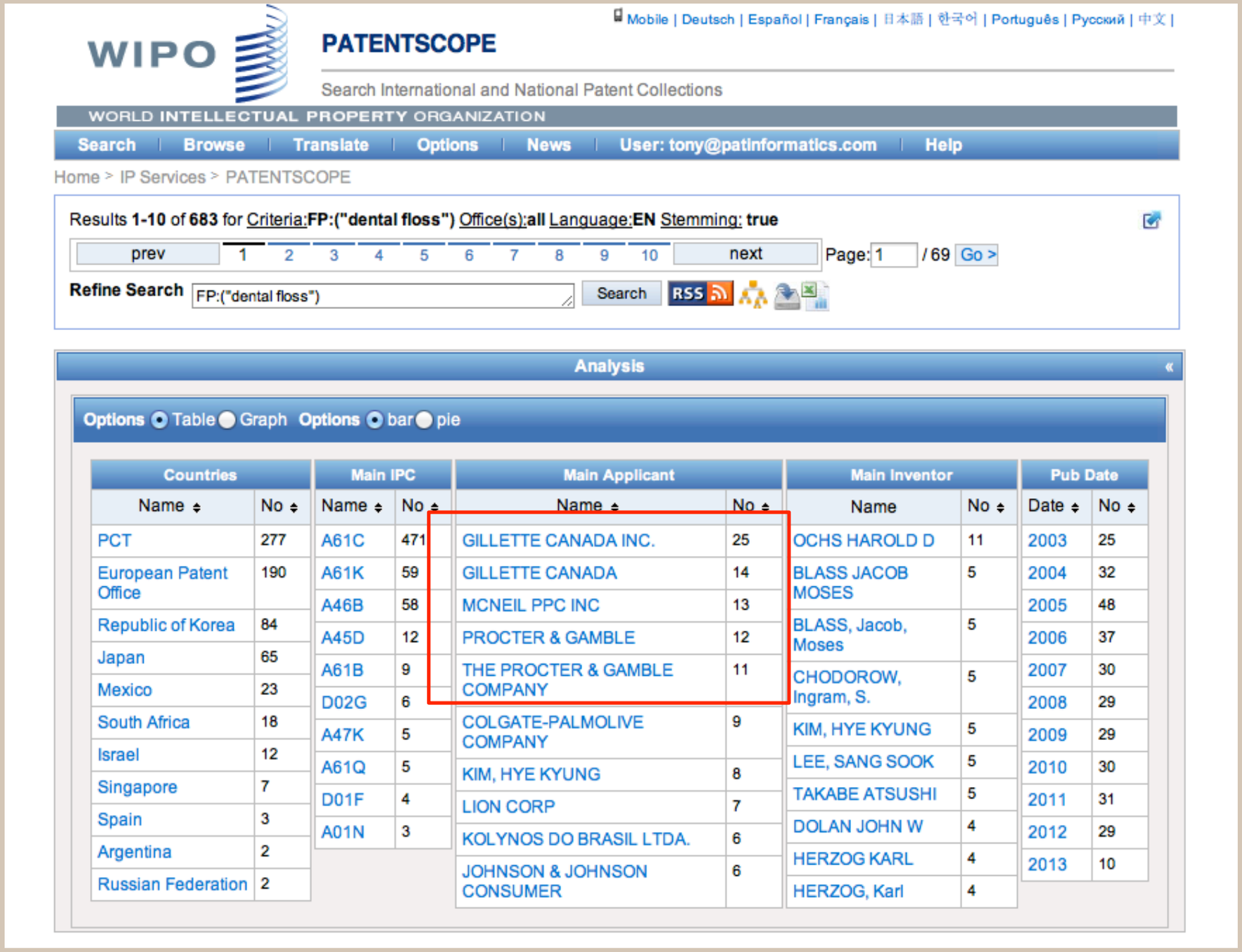
PatentScope Comes with Analytics



Countries	
Name	No
PCT	277
European Patent Office	190
Republic of Korea	84
Japan	65
Mexico	23
South Africa	18
Israel	12
Singapore	7
Spain	3
Argentina	2
Russian Federation	2

Main IPC	
Name	No
A61C	471
A61K	59
A46B	58
A45D	12
A61B	9
D02G	6
A47K	5
A61Q	5
D01F	4
A01N	3

Main Applicant	
Name	No
GILLETTE CANADA INC.	25
GILLETTE CANADA	14
MCNEIL PPC INC	13
PROCTER & GAMBLE	12
THE PROCTER & GAMBLE COMPANY	11
COLGATE-PALMOLIVE COMPANY	9
KIM, HYE KYUNG	8
LION CORP	7
KOLYNOS DO BRASIL LTDA.	6
JOHNSON & JOHNSON CONSUMER	6

Main Inventor	
Name	No
OCHS HAROLD D	11
BLASS JACOB MOSES	5
BLASS, Jacob, Moses	5
CHODOROW, Ingram, S.	5
KIM, HYE KYUNG	5
LEE, SANG SOOK	5
TAKABE ATSUSHI	5
DOLAN JOHN W	4
HERZOG KARL	4
HERZOG, Karl	4

Pub Date	
Date	No
2003	25
2004	32
2005	48
2006	37
2007	30
2008	29
2009	29
2010	30
2011	31
2012	29
2013	10

Registered Users can Export Data

Limited to 100 records so alternate sources may have to be used to gather a complete set

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ResultList File Viewed in Excel

resultList.xls

Query: FP:("dental floss")

Publication Number	Publication Date	Title	Abstract
WO2013016423	01.02.2013	HOLDER FOR DENTAL FLOSS	A dental floss clamp, said clamp comprising a first limb and a second limb which are mutually hinged at a first end of each lim of projections and recesses configured such that when the limbs are brought together the projections of the first limb can enga second limb and the projections of the first limb press laterally on the projections of the second limb in order to clamp a length
WO2013016517	01.02.2013	DENTAL FLOSS COMPRISING PLASTIC PARTS	A method for producing a length of dental floss having a plastic part attached comprising the steps of providing a mould havin of dental floss within the cavity; arranging the dental floss within the cavity such that the dental floss enters the cavity at a first at a second location y and wherein the path length of the dental floss within the cavity is greater than the linear distance betw second location y; and injecting a plastic material into the cavity to encapsulate the floss.
WO2013014651	01.02.2013	HANDLING AID FOR DENTAL FLOSS	A dental floss clamp comprising a screw connection having a threaded nut and a threaded bolt which is moveable within a lor nut and can be screwed therein wherein the threaded nut comprises a jacket and has an interior thread and an interior groove exterior thread and an exterior groove; each turn of the interior thread has a first flank, and a second flank, each having a pitc second flank with respect to the longitudinal axis of the threaded nut is greater than the pitch of the first flank.

Initial Pivot Table Sorted by Total

Count of Applicants	
Row Labels	Total
PROCTER & GAMBLE	5
KIM, HYE KYUNG	4
THE PROCTER & GAMBLE COMPANY;HERZOG, Karl	4
	3
COLGATE-PALMOLIVE COMPANY	3
CHOI, Byeong Gap	2
COLGATE PALMOLIVE CO	2
LEE, KYUE HYOO	2
LEE, KYUNG HO	2
MCNEIL PPC INC	2
MURPHY, PAUL	2
TIPHONNET JOEL	2
AIELLO, Paulo, Cesar	1
BOSCH CERDA MARIA ANTONIA;GONZALEZ MARTIN JUAN ANTONIO	1
BOSCH CERDÁ, Maria Antonia;GONZÁLEZ MARTÍN, Juan Antonio	1
BOWSHER M WILLIAM	1
BRIGHT STAR DENTAL PTY LTD;TARASIUK, Daniel	1
BROWN, Laurence, B.	1
BRUSHLINE CO., LTD.	1
BRUSHTIME PRODUCTS, INC.;BOOKER, Winifred, J.	1
C&C. LTD.	1
CHEN, Chunmei	1
CHIN CHUZAN;沈 仲山;CHIN SHUNRYO;沈 俊 良;CHIN CHUN-CHIUNG;沈 俊 [illegible]	1
CJLION CORP.;C&C. LTD;LEE, Eul Kyou;CHOI, Il Gyu	1
COLGATE-PALMOLIVE COMPANY;FONTANA, Jose Eder;LEMOS, Edilberto;PERNA, Fernando;FOCASSIO, Paulo	1
COLGATE-PALMOLIVE COMPANY;PATEL, Madhusudan;GATZEMEYER, John J.;JIMENEZ, Eduardo J.;KENNEDY, Sharon	1
COLGATE-PALMOLIVE COMPANY;WONG, Chi Shing;FONTANA, Jose Eder;FOCASSIO, Paulo	1
CRISP, Jackson	1
DELTA OF SCIENCE APS;LYSTLUND, Thomas	1
DENTALPOINT AG	1
DENTEK ORAL CARE INC	1

Some grouping or cleanup of this field is clearly going to be needed to get accurate value

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Initial Pivot Table Sorted by Total

	A	B
20	▼ BRUSHTIME PRODUCTS, INC.;BOOKER, Winifred, J.	
21	BRUSHTIME PRODUCTS, INC.;BOOKER, Winifred, J.	1
22	▼ C&C. LTD.	
23	C&C. LTD.	1
24	▼ CHEN, Chunmei	
25	CHEN, Chunmei	1
26	▼ CHIN CHUZAN;沈 仲山;CHIN SHUNRYO;沈 俊 良;CHIN CHUN-CHIUNG;沈 俊 □	
27	CHIN CHUZAN;沈 仲山;CHIN SHUNRYO;沈 俊 良;CHIN CHUN-CHIUNG;沈 俊 □	1
28	▼ CHOI, Byeong Gap	
29	CHOI, Byeong Gap	2
30	▼ CJLION CORP.;C&C. LTD;LEE, Eul Kyou;CHOI, Il Gyu	
31	CJLION CORP.;C&C. LTD;LEE, Eul Kyou;CHOI, Il Gyu	1
32	▼ Colgate	
33	COLGATE PALMOLIVE CO	2
34	COLGATE-PALMOLIVE COMPANY	3
35	COLGATE-PALMOLIVE COMPANY;FONTANA, Jose Eder;LEMOS, Edilberto;PERNA, Fernando;FOCASSIO, Paulo	1
36	COLGATE-PALMOLIVE COMPANY;PATEL, Madhusudan;GATZEMEYER, John J.;JIMENEZ, Eduardo J.;KENNEDY, Sharon	1
37	COLGATE-PALMOLIVE COMPANY;WONG, Chi Shing;FONTANA, Jose Eder;FOCASSIO, Paulo	1
38	▼ CRISP, Jackson	
39	CRISP, Jackson	1
40	▼ DELTA OF SCIENCE APS;LYSTLUND, Thomas	
41	DELTA OF SCIENCE APS;LYSTLUND, Thomas	1
42	▼ DENTALPOINT AG	
43	DENTALPOINT AG	1
44	▼ DENTEK ORAL CARE INC	
45	DENTEK ORAL CARE INC	1
46	▼ Dentsoll	
47	DENTSOLL KOREA CO., LTD.;KIM, Yun soon	1
48	DENTSOLL KOREA CO.,LTD.;KIM, Yun Soon	1
49	▼ GC CORP;株式会社ジ□シ□	
50	GC CORP;株式会社ジ□シ□	1

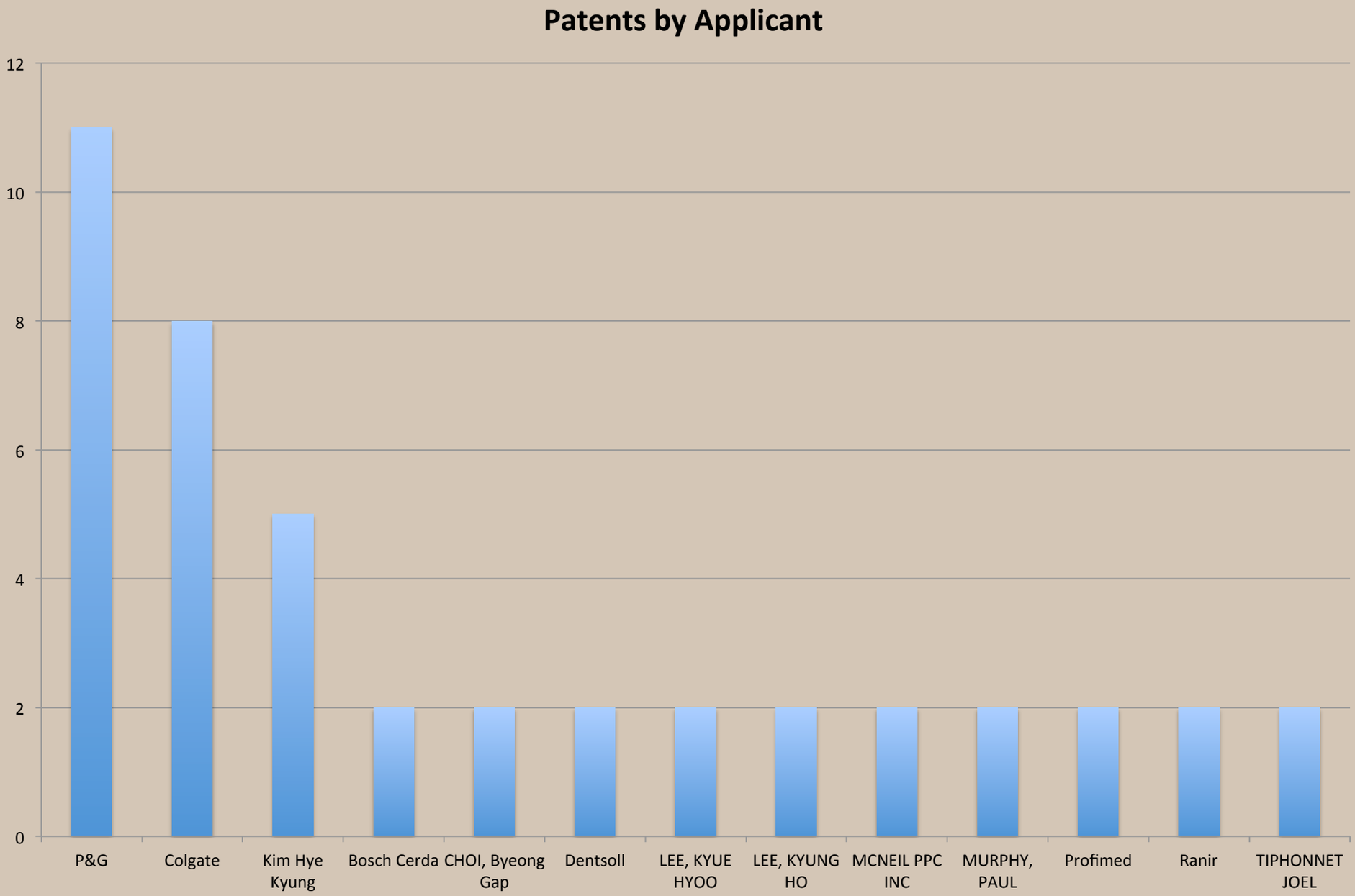
Once individual items are selected, right clicking on entry will allow you to group and rename the item

Leading Applicants After Cleanup

3	Count of Applicants	
4	Row Labels	Total
5	P&G	11
6	Colgate	8
7	Kim Hye Kyung	5
8		3
9	Bosch Cerda	2
10	CHOI, Byeong Gap	2
11	Dentsoll	2
12	LEE, KYUE HYOO	2
13	LEE, KYUNG HO	2
14	MCNEIL PPC INC	2
15	MURPHY, PAUL	2
16	Profimed	2
17	Ranir	2
18	TIPHONNET JOEL	2

Save the items in the table to a new worksheet and create a chart of the top applicants

Chart of Top Applicants



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ALTERNATE CLEANUP METHOD – USING GOOGLE REFINE

Tips for Patent Assignee searching

- Use corporate trees when possible
- Consider mergers and acquisitions
- Consider potential misspellings
- Consider looking for key inventors
- Don't forget to look for patents acquired and re-assigned
- Get rid of patents that have been allowed to expire or sold and applications which have been abandoned

Raw List of Top Applicants

Raw Data PA	Count
The United States of America as represented by the Secretary of the Navy,Washington,DC	17
Hon Hai Precision Ind. Co. Ltd.,Taipei Hsien,TW	16
Intel Corporation,Santa Clara,CA,US	7
Caliper Technologies Corp.,Mountain View,CA	6
Ethicon Inc.,Somerville,NJ	5
The United States of America as represented by the Secretary of the Navy,Washington,DC,US	5
AsusTek Computer Inc.,Taipei,TW	4
BASF Aktiengesellschaft,Ludwigshafen,DE	4
International Business Machines Corporation,Armonk,NY	4
Korea Kumho Petrochemical Co. Ltd.,Seoul,KR	4
LG Electronics Inc.,Seoul,KR	4
LSP Technologies Inc.,Dublin,OH	4
Silverbrook Research Pty Ltd,Balmain,AU	4
Be Here Corporation,Pleasanton,CA	3
Daimler Benz Aerospace Airbus GmbH,Hamburg,DE	3
Golden Bridge Technology Inc.,West Long Branch,NJ,US	3
Hyundai Electronics America Inc.,San Jose,CA,US	3
PFN Inc.,Cambridge,MA,US	3
Schulak Edward R.,Birmingham,MI,US	3
Seagate Technology Inc.,Scotts Valley,CA,US	3
The Minster Machine Company,Minster,OH	3
The United States of America as represented by the Secretary of the Air Force,Washington,DC,US	3
UDT Sensors Inc.,Hawthorne,CA	3
WebLink Wireless Inc.,Dallas,TX	3

Create and Choose File in Refine

Choose the Parsing Options

Google refine *A power tool for working with messy data.*

Create Project
Open Project
Import Project

« Start Over | Configure Parsing Options | Project name: Patent Assignee Raw Data Example | Create Project »

	Assignee/Applicant
1.	Galen (Chemicals) Limited,Dublin,IE
2.	Aplus Flash Technology Inc.,Saratoga,CA,US
3.	MACEACHERN; WILLIAM A
4.	Eastman Kodak Company,Rochester,NY,US
5.	SIEGER; ARLETTE
6.	Daniels Pull Plow Inc.,East Dundee,IL,US
7.	Telecom Medical Inc.,San Francisco,CA,US
8.	Sabre Oxidation Technologies Inc.,Odessa,TX,US
9.	Rumber Materials Inc.,Austin,TX,US
10.	Priority Call Management Inc.,Wilmington,MA,US

Version 2.5 [r2407]

Help
About

Parse data as

CSV / TSV / separator-based files
Line-based text files
Fixed-width field text files
PC-Axis text files
JSON files
RDF/N3 files
XML files
Open Document Format spreadsheets (.ods)
RDF/XML files

Character encoding: [ ] Update Preview

Columns are separated by
- (•) commas (CSV)
- ( ) tabs (TSV)
- ( ) custom \t

Escape special characters with \

- [ ] Ignore first 0 line(s) at beginning of file
- [x] Parse next 1 line(s) as column headers
- [ ] Discard initial 0 row(s) of data
- [ ] Load at most 0 row(s) of data

- [x] Parse cell text into numbers, dates, ...
- [x] Quotation marks are used to enclose cells containing column separators
- [x] Store blank rows
- [x] Store blank cells as nulls
- [ ] Store file source (file names, URLs) in each row

Created Project

Google refine Patent Assignee Raw Data Example csv Permalink

Open... Export Help

Facet / Filter | Undo / Redo 0

Using facets and filters

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started?
Watch these screencasts

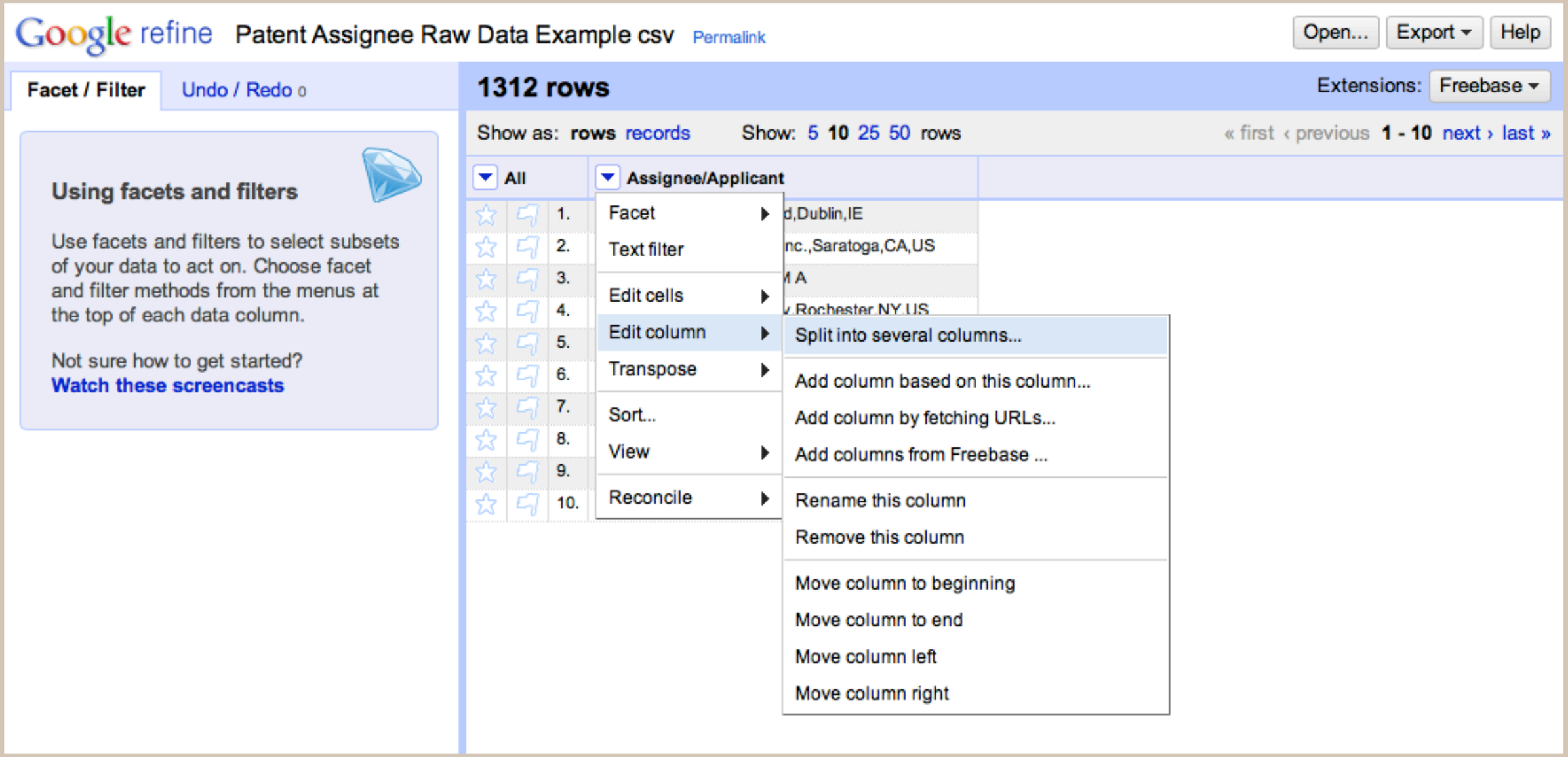
1312 rows

Extensions: Freebase

Show as: **rows** records Show: 5 **10** 25 50 rows « first ‹ previous **1 - 10** next › last »

All	Assignee/Applicant
1.	Galen (Chemicals) Limited,Dublin,IE
2.	Aplus Flash Technology Inc.,Saratoga,CA,US
3.	MACEACHERN; WILLIAM A
4.	Eastman Kodak Company,Rochester,NY,US
5.	SIEGER; ARLETTE
6.	Daniels Pull Plow Inc.,East Dundee,IL,US
7.	Telecom Medical Inc.,San Francisco,CA,US
8.	Sabre Oxidation Technologies Inc.,Odessa,TX,US
9.	Rumber Materials Inc.,Austin,TX,US
10.	Priority Call Management Inc.,Wilmington,MA,US

Remove the Location Data



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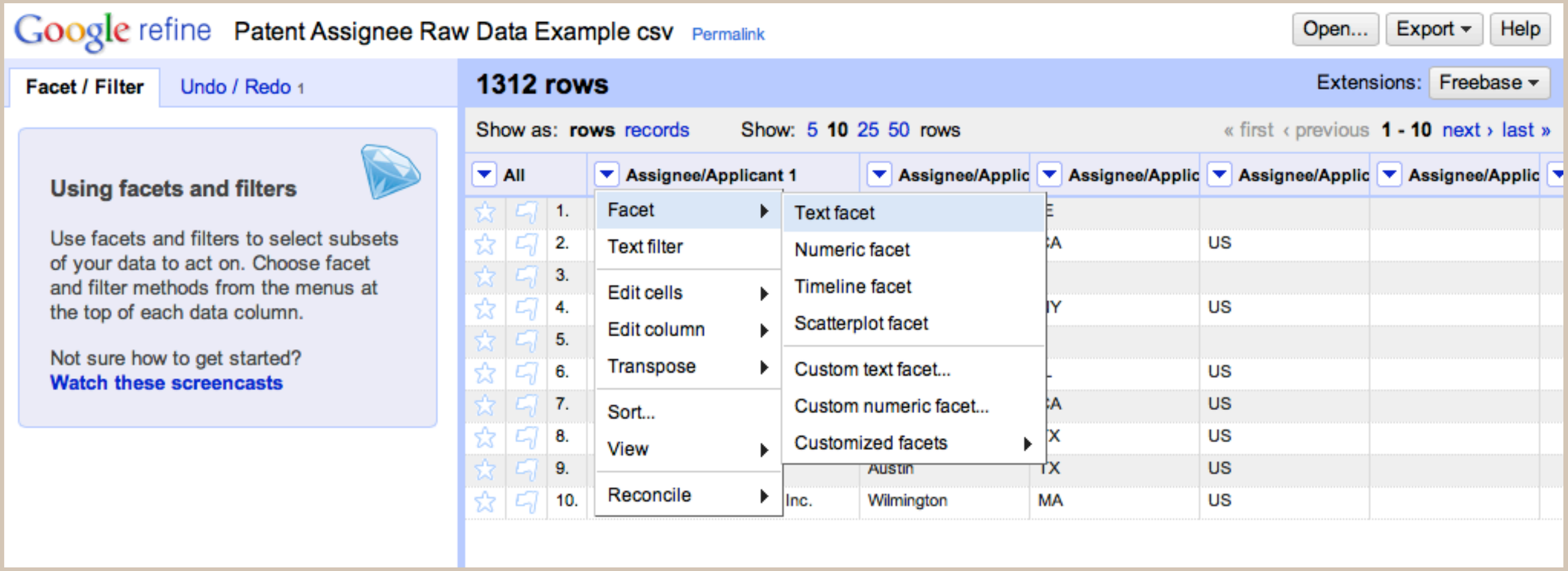
Create a Text Facet



Cluster/Clean the Applicants

Google refine **Patent Assignee Raw Data Example csv** Permalink

Open... | Export | Help

Facet / Filter | Undo / Redo 1

Refresh | Reset All | Remove All

Assignee/Applicant 1 change

1152 choices Sort by: **name** count | Cluster

- .PEF Industries Inc. 1
- 4 Seasons Wildlife Nutrition LLC 1
- A. H. Casting Services Limited 1
- A. W. Technologies LLC 1
- ABAHUSAYN; MANSUR 1
- Abasco Inc. 1
- Accent Signage Systems Inc. 1
- ACCO Brands Inc. 1
- Acotex Far East Limited 1
- Adaptive Micro Systems Inc. 1
- Advanced International Technologies Inc. 1

1312 rows Extensions: Freebase

Show as: **rows** records Show: 5 **10** 25 50 rows « first ‹ previous **1 - 10** next › last »

All		Assignee/Applicant 1	Assignee/Applic	Assignee/Applic	Assignee/Applic	Assignee/Applic
1.	Galen (Chemicals) Limited	Dublin	IE			
2.	Aplus Flash Technology Inc.	Saratoga	CA	US		
3.	MACEACHERN; WILLIAM A					
4.	Eastman Kodak Company	Rochester	NY	US		
5.	SIEGER; ARLETTE					
6.	Daniels Pull Plow Inc.	East Dundee	IL	US		
7.	Telecom Medical Inc.	San Francisco	CA	US		
8.	Sabre Oxidation Technologies Inc.	Odessa	TX	US		
9.	Rumber Materials Inc.	Austin	TX	US		
10.	Priority Call Management Inc.	Wilmington	MA	US		

Apply Algorithms

This feature helps you find groups of different cell values that might be alternative representations of the same thing. For example, the two strings "New York" and "new york" are very likely to refer to the same concept and just have capitalization differences, and "Gödel" and "Godel" probably refer to the same person. Find out more ...

Method: key collision | Keying Function: metaphone3 | **22** clusters found

Cluster Size	Row Count	Values in Cluster	Merge?	New Cell Value
5	28	• The United States of America as represented by the Secretary of the Navy (22 rows) • The United States of America as represented by the Secretary of the Air Force (3 rows) • The United States of America as represented by the Administrator of the National Aeronautics and Space Administration (1 rows) • The United States of America as represented by the Secretary of the Army (1 rows) • The United States of America as represented by the Secretary of the Interior (1 rows) Browse this cluster	☑	US Gov
3	3	• Applied CarboChemicals Inc (1 rows) • Applied Carbochemicals (1 rows) • Applied Carbochemicals Inc (1 rows)	☑	Applied CarboChemicals
3	5	• Hyundai Electronics America Inc. (3 rows) • Hyundai Electronics America (1 rows) • Hyundai Electronics Industries Co. Ltd. (1 rows)	☑	Hyundai Electronics
3	4	• ASUSTek Computer Inc. (2 rows) • AsusTek Computer Inc. (1 rows) • Asustek Computer Inc. (1 rows)	☑	ASUSTek

 # Choices in Cluster
2 — 5

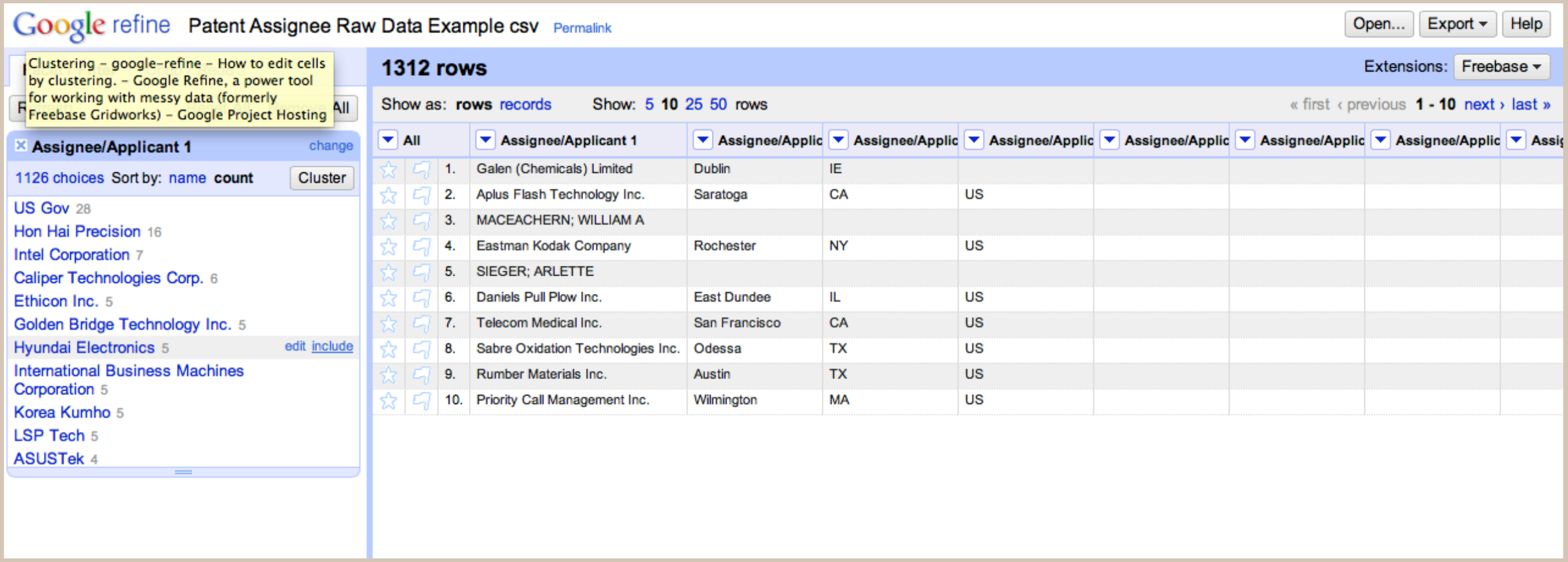
 # Rows in Cluster
2 — 28

Average Length of Choices
7 — 83

Length Variance of Choices
0 — 18

Select All | Deselect All | **Merge Selected & Re-Cluster** | Merge Selected & Close | Close

Sort Text Facet by Count



Refined vs. Raw Applicants

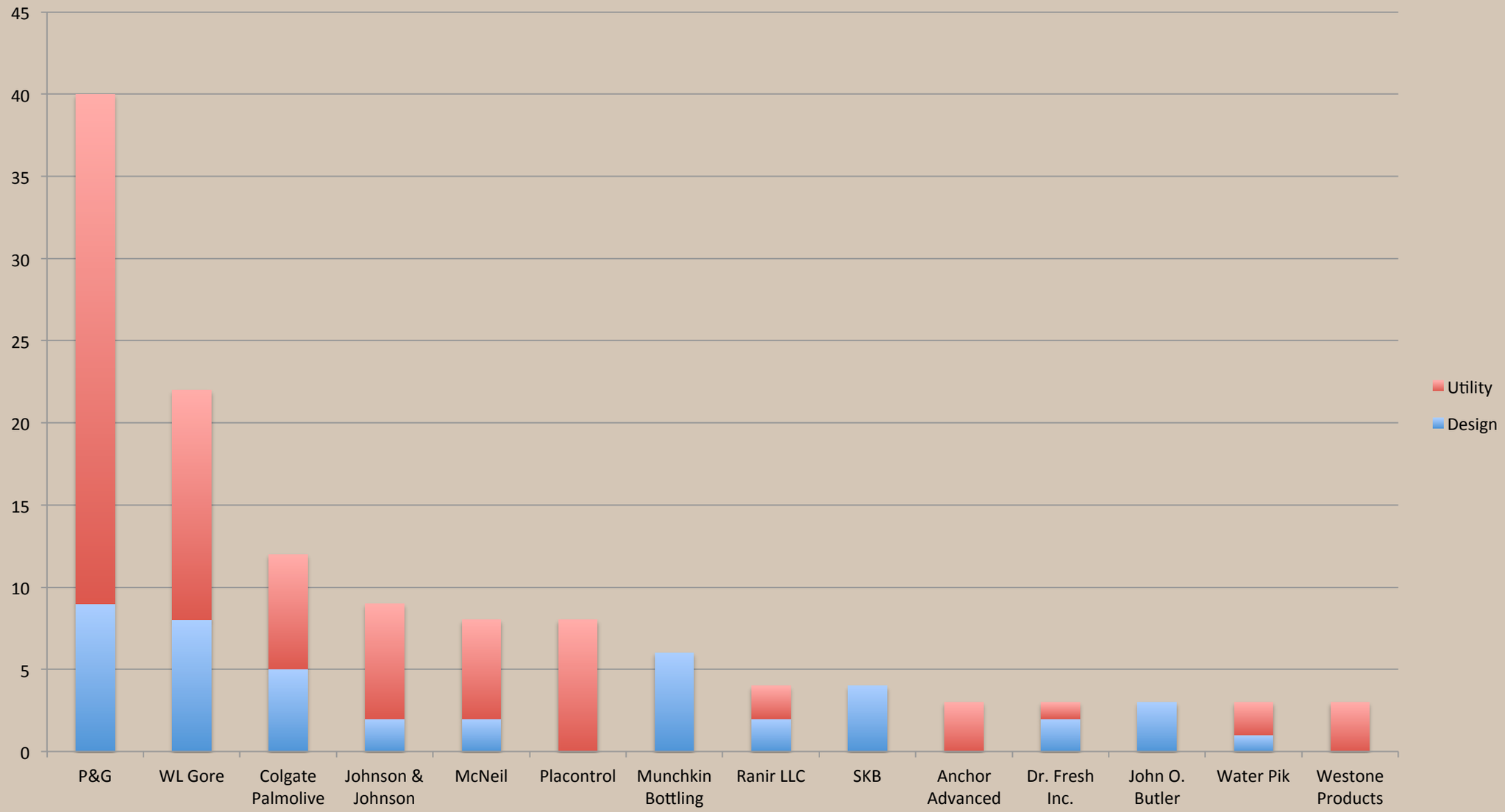
Refined PAs	Count	Raw Data PA	Count
US Gov	28	The United States of America as represented by the Secretary of the Navy,Washington,DC	17
Hon Hai Precision	16	Hon Hai Precision Ind. Co. Ltd.,Taipei Hsien,TW	16
Ethicon Endo Surgery	8	Intel Corporation,Santa Clara,CA,US	7
Intel Corporation	7	Caliper Technologies Corp.,Mountain View,CA	6
Caliper Technologies Corp.	6	Ethicon Inc.,Somerville,NJ	5
Golden Bridge Technology Inc.	5	The United States of America as represented by the Secretary of the Navy,Washington,DC,US	5
Hyundai Electronics	5	AsusTek Computer Inc.,Taipei,TW	4
IBM	5	BASF Aktiengesellschaft,Ludwigshafen,DE	4
Korea Kumho	5	International Business Machines Corporation,Armonk,NY	4
LSP Tech	5	Korea Kumho Petrochemical Co. Ltd.,Seoul,KR	4
ASUSTek	4	LG Electronics Inc.,Seoul,KR	4
BASF Aktiengesellschaft	4	LSP Technologies Inc.,Dublin,OH	4
LG Electronics Inc.	4	Silverbrook Research Pty Ltd,Balmain,AU	4
PFN	4	Be Here Corporation,Pleasanton,CA	3
Schulak Edward R.	4	Daimler Benz Aerospace Airbus GmbH,Hamburg,DE	3
Silverbrook Research Pty Ltd	4	Golden Bridge Technology Inc.,West Long Branch,NJ,US	3
Applied CarboChemicals	3	Hyundai Electronics America Inc.,San Jose,CA,US	3
Be Here Corporation	3	PFN Inc.,Cambridge,MA,US	3
BioGenex Laboratories	3	Schulak Edward R.,Birmingham,MI,US	3
Daimler Benz Aerospace Airbus GmbH	3	Seagate Technology Inc.,Scotts Valley,CA,US	3
Korea Inst of Sci and Tech	3	The Minster Machine Company,Minster,OH	3
Mindflow Technologies Inc.	3	The United States of America as represented by the Secretary of the Air Force,Washington,DC,US	3
Physical Optics Corporation	3	UDT Sensors Inc.,Hawthorne,CA	3
Premier Wastewater	3	WebLink Wireless Inc.,Dallas,TX	3
Priority Call Management Inc.	3		
Seagate Technology Inc.	3		
The Johns Hopkins	3		
The Minster Machine Company	3		
UDT Sensors Inc.	3		
Walbro Corporation	3		
WebLink Wireless Inc.	3		

PATENT ASSIGNEE BY YEAR – CO-OCCURRENCE MATRIX

Application Year vs. Publication Year

- Application year provides a closer approximation to when the research was performed
  - But creates a dip in most recent years based on 18-month publication cycle or time it takes to grant
- Publication year does not generate a dip since patents and applications are always publishing
  - Don't have to explain sudden downward trends to the clients

Revised Top Applicants



Top Applicants by Year Table

Company	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2009	2010	2011
P&G	1	3	2	4	2	7	6	3	2	1	1	1	3	1				1	2	
WL Gore		2			4	2	5	1	7				1							
Colgate Palmolive	1	1	1	1		2			1	4										1
Johnson & Johnson					2		1		1		1	1			1	2				
McNeil								2	1				3		1				1	
Placontrol				1	1		1	2	1		1			1						
Munchkin Bottling					6															
Ranir LLC														1	1		1			1
SKB													1	3						
Anchor Advanced Products						1	1	1												
Dr. Fresh Inc.													1		1		1			
John O. Butler Company		1								2										
Water Pik Inc.									1	1			1							
Westone Products Limited	1				1		1													

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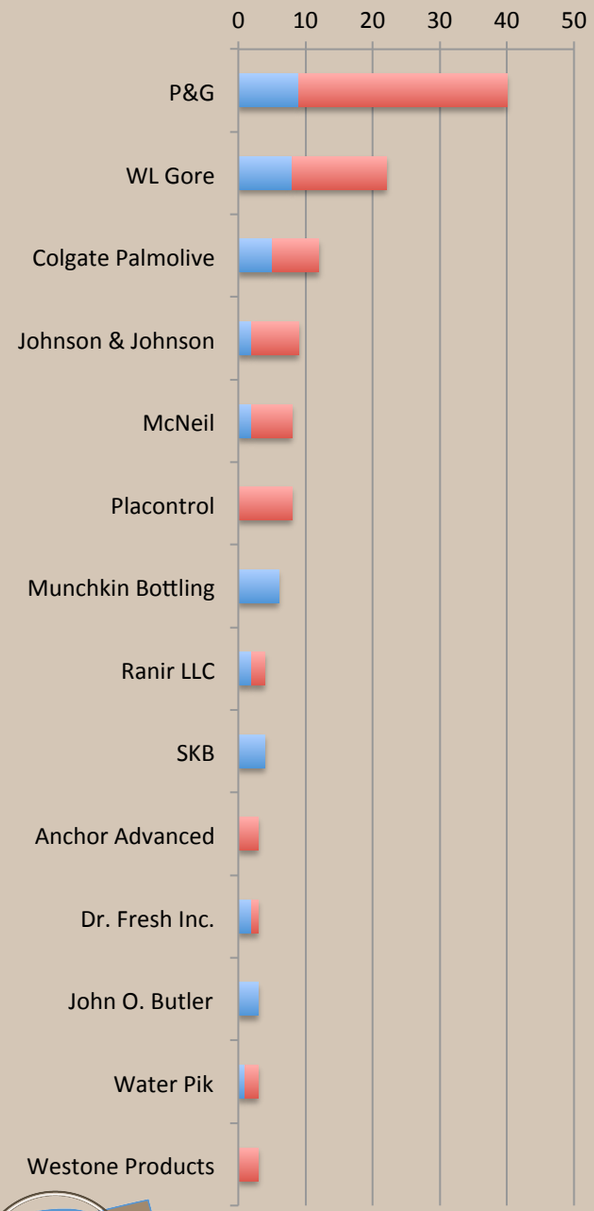
A Fancy Version for Clients



1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2009	2010	2011
1	3	2	4	2	7	6	3	2	1	1	1	3	1				1	2	
	2			4	2	5	1	7				1							
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1				1		1													

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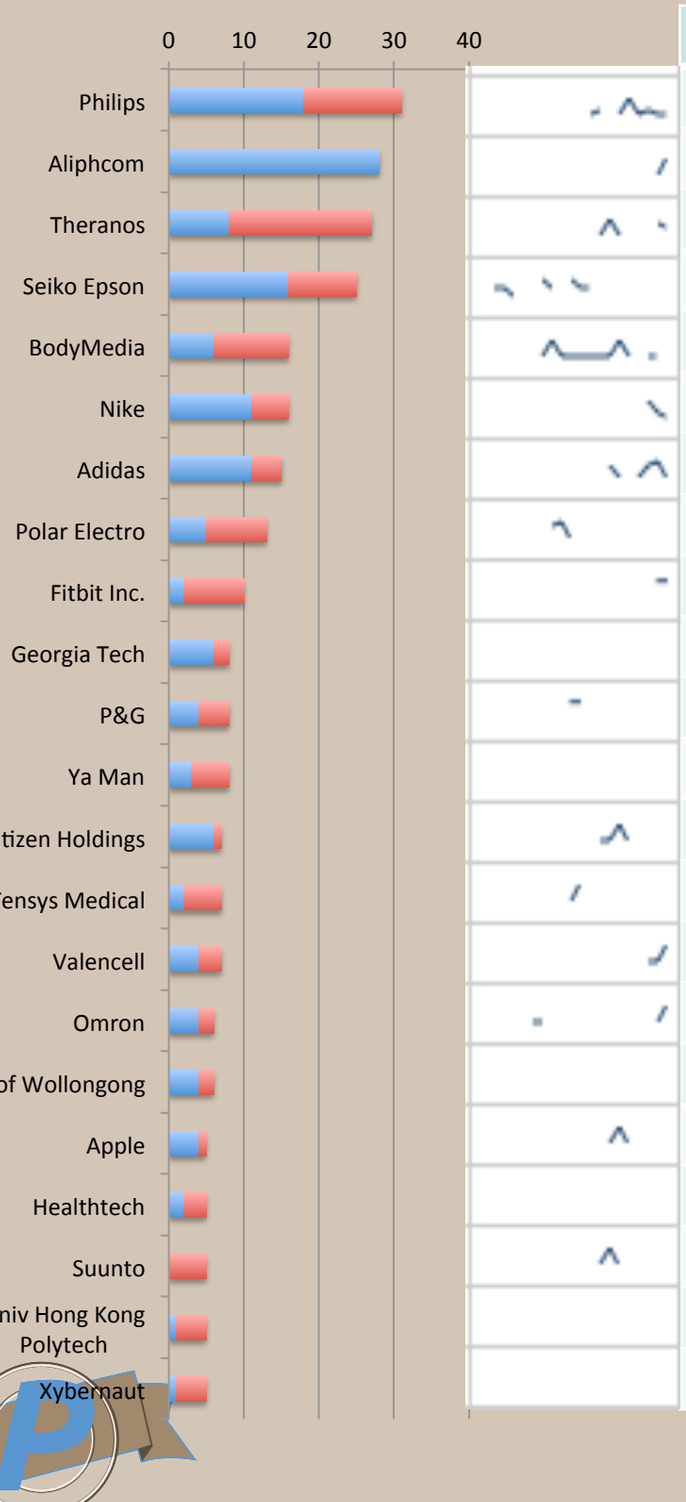
IP Landscape – Documents by Organization, Kind and Application Year



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Philips												1	4		2	9	2	3	2	1
Aliphcom																			12	16
Theranos	1						2						1	5	1		4		4	3
Seiko Epson		2	2	1			3	2		3	2	2		2				1		1
BodyMedia	2						1	2	1	1	1	1	1	1	2	1		1	1	
Nike										1				1		5		5	2	1
Adidas														3	1		1	3	4	1
Polar Electro					1			3	4	1		2					1			
Fitbit Inc.																			5	5
Georgia Tech								4												3
P&G										2	2		1							2
Ya Man								1		4										1
Citizen Holdings								1					1	1	3	1				
Tensys Medical										1	2		1							
Valencell				1				1							1			1	1	2
Omron						1	1		1										1	2
Univ of Wollongong										1		2								1
Apple														1	2	1			1	
Healthtech									2		1									
Suunto													1	3	1					
Univ Hong Kong Polytech													1			3				
Xybernaut								3												1

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FAMILY OR INVENTION REDUCTION

Aliphcom Up Portfolio

- As of September, 2013, Jawbone, which files patents under the name of Aliphcom, had 97 patent applications associated with the Up™ product, filed around the world, based on data provided by Orbit.com
- After removing redundant applications, filed in multiple countries, a collection of nine unique WO applications, and twenty US applications were discovered
- All 97 documents were categorized together as being in a single INPADOC family

Extended Families – Typically INPADOC

- Extended family definition from EPO website - All the documents directly or indirectly linked via a priority document belong to one patent family

In the case shown below, documents D1 to D5 belong to the same patent family, P1.

FAMILY P1

Document D1	Priority P1		
Document D2	Priority P1	Priority P2	
Document D3	Priority P1	Priority P2	
Document D4		Priority P2	Priority P3
Document D5			Priority P3

As mentioned above, national application numbers, international application numbers and domestic relations are included in the family search.

What is a personal fitness monitor?

USA TODAY
MONDAY, MARCH 25, 2013

HEALTH

Sleep-tracking devices have experts tossing and turning

Data help spot patterns but can be misleading

Kim Painter
@KimPainter
Special for USA TODAY

Leigh Honeywell, 28, of Seattle made a resolution at the start of 2012: She decided to get more sleep. More than a year later, the computer security manager says she's keeping that resolution and owes a lot of credit to a little device she wears on a wrist strap at night.

The device is a Fitbit One, one of a growing number of gadgets consumers can buy to track their health habits, including sleep. The devices typically use movement detectors called accelerometers, which can count your steps during the day but also can detect sleep patterns by tracking your arm movements at night. You download the data to your computer or mobile device — and get multicolored charts showing how long you were in bed and how much of the time the device sensed that you were asleep or awake. At least one device, the Jawbone Up, claims to distinguish light from deep sleep.

Smartphone apps that track sleep also are proliferating. Some ask users to literally sleep with their phones so the phones' accelerometers can detect their movements.

It is unclear how many people are using such devices and apps. A recent survey from Pew Research Center found that most people who track personal health statistics still use paper or their memory rather than a computer, smartphone or what the survey called "a medical device."

It's also unclear how accurate or useful the sleep data created by the trackers are. Some sleep experts are skeptical. They say, and manufacturers agree, that trackers are no substitute for medical advice or testing when people have serious sleep problems.

But Honeywell, who used an app before getting her Fitbit, is convinced they have made a difference in her once sleep-deprived life.

AWAKEN YOUR AWARENESS

Seeing her data, she says, convinced her "there was a pattern," and it was not healthy: "I would get progressively less sleep for about 10 days in a row, then I would crash and catch up for a few days, then do it all again." She also realized she craved candy on the days she got the least sleep.

Now she's consistently sleeping eight hours or more each night, feeling more alert and resisting candy, she says. Honeywell says she got exactly what the device makers say they intend to provide: insights that can change habits for the better.

"It's hard to get better if you don't know where you are starting from," says Jawbone's Travis Bogard. Many people, he says, find there's "a huge gap between intentions and actual behavior."

A sleep tracker that is also an activity and calorie tracker lets people see relationships between sleep, eating, exercise and weight, says John Stivoric, chief technology officer of BodyMedia. It makes sleep- and activity-tracking armbands used by contestants on NBC's *The Biggest Loser*.

Some people who start tracking sleep do notice worrisome patterns — such as waking dozens of time a night — and decide to check them out with doctors, says Eric Friedman, Fitbit's chief technology officer. He says one user who saw that he was waking up 83 times a night went to a doctor and found out he had sleep apnea, a serious breathing disorder.

But none of the products is designed to tell people what's normal — how many times they should wake up each night or what constitutes a good "sleep efficiency" score (the percentage of in-bed time you are asleep, provided by several of the devices). Instead, users are invited to compare their numbers with one another and to consider their own data over time.

FALSE REASSURANCE POSSIBLE

That data could be misleading, says Hawley Montgomery-Downs, a sleep researcher at West Virginia University. In a study published in 2011, she found that a previous version of Fitbit was less accurate than polysomnography, the sophisticated gold-standard sleep lab test, and less accurate than an actigraph, a watchlike accelerometer that is sometimes used in sleep studies and was the inspiration for the consumer devices. In 24 healthy adults, Fitbit and the actigraph overestimated overnight sleep time compared with the lab test, Fitbit by an average of 67 minutes and the actigraph by 43 minutes.

In general, she says, accelerometers are more likely to say people are asleep when they are awake than the other way around, meaning they might give people with sleep disorders an overly rosy view. "That could be dangerous," she says.

Matt Bianchi, a sleep specialist and assistant professor of neurology at Harvard Medical School, agrees. People with sleep problems "might be falsely reassured by a device that seems to say they are fine," he says.

He says there's also no evidence an accelerometer can tell light from deep sleep. Bogard says the measure used on Jawbone's device "doesn't directly map" the formal stages of sleep recognized by doctors but tracks how still or active a sleeper is.

Montgomery-Downs and Bianchi say they have no problem if the devices are used to raise sleep awareness among healthy people, as long as they know the limitations.

Russell Sanna, executive director of the division of sleep medicine at Harvard Medical School, is more enthusiastic. Tracking sleep, even with imperfect devices, could be a great way for more people to learn how important sleep is, he says.

Sanna says he uses one of the commercial sleep trackers (he won't say which one), and "I love it."

TAKE ONE TO BED

Consumers who want to try a sleep tracker that can download data to computers or mobile devices have plenty of options. Among those that use accelerometers to track sleep and other health stats:

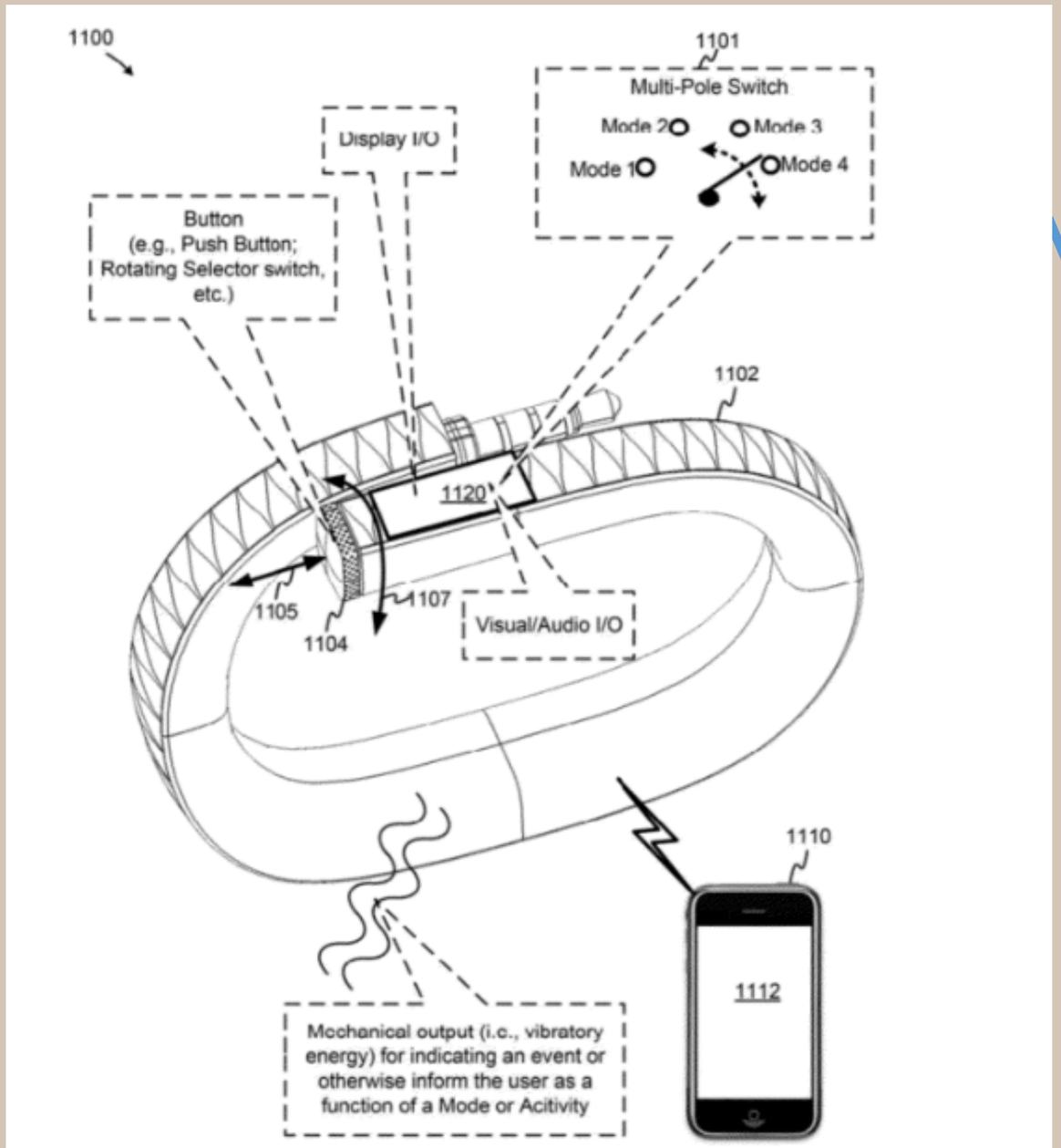
Fitbit One
The device clips onto clothing during the day and goes on a wrist strap at night. A day-and-night wristband version, the Flex Wireless, is due in April. $100 at fitbit.com.

BodyMedia armbands
The Link ($150) and Core ($120) bands strap to the upper arm and add temperature and sweat sensors to movement detection. At bodymedia.com.

Basis
The watch-style device also uses multiple sensors and comes with black and white bands. $200 at mybasis.com.

Larklife
The rubber wristband comes with a softer fabric sleep bracelet. $150 at lark.com.

Jawbone Up
The rubber wristband comes in many colors. $130 at jawbone.com.



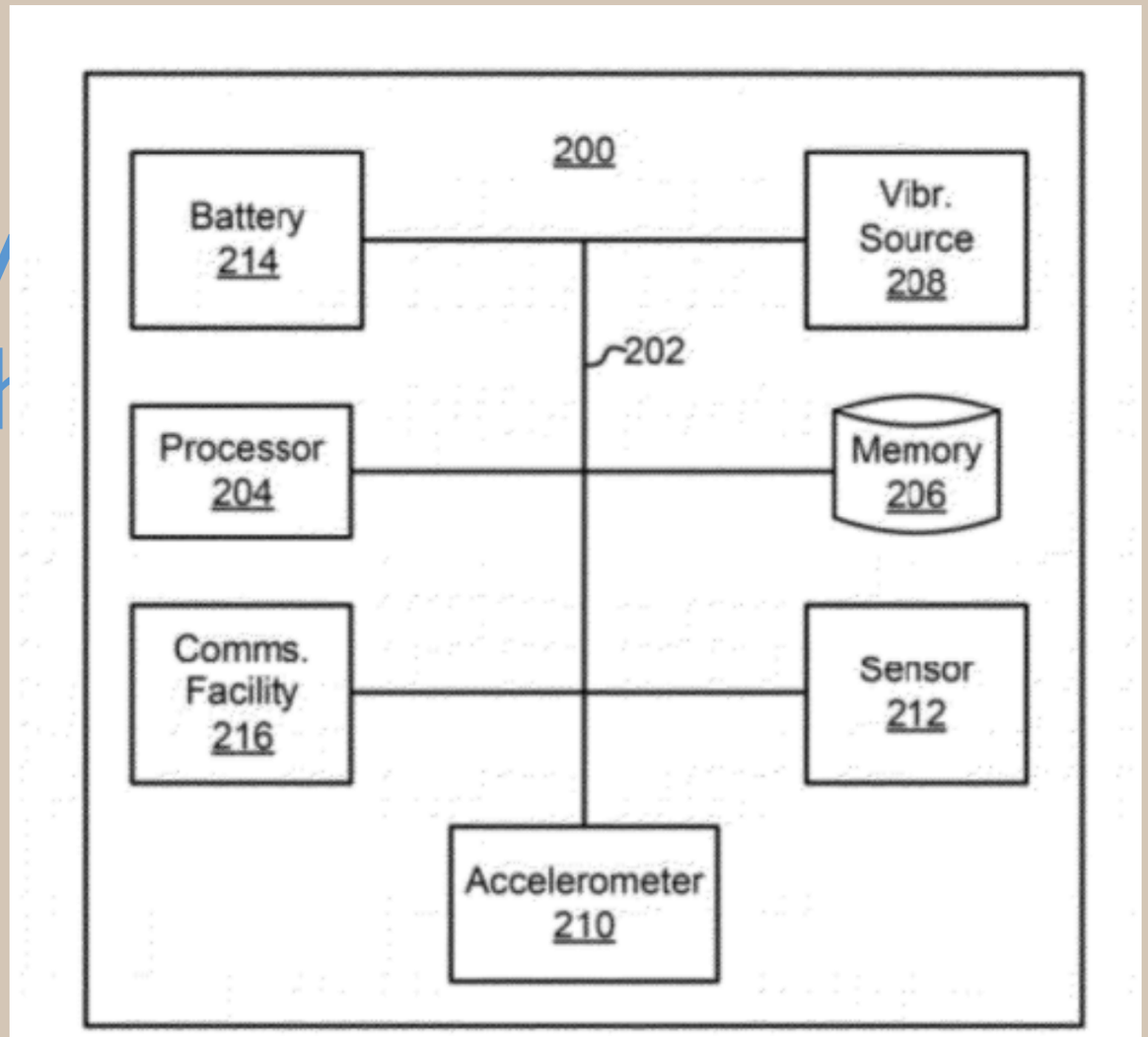


FIG. 2A

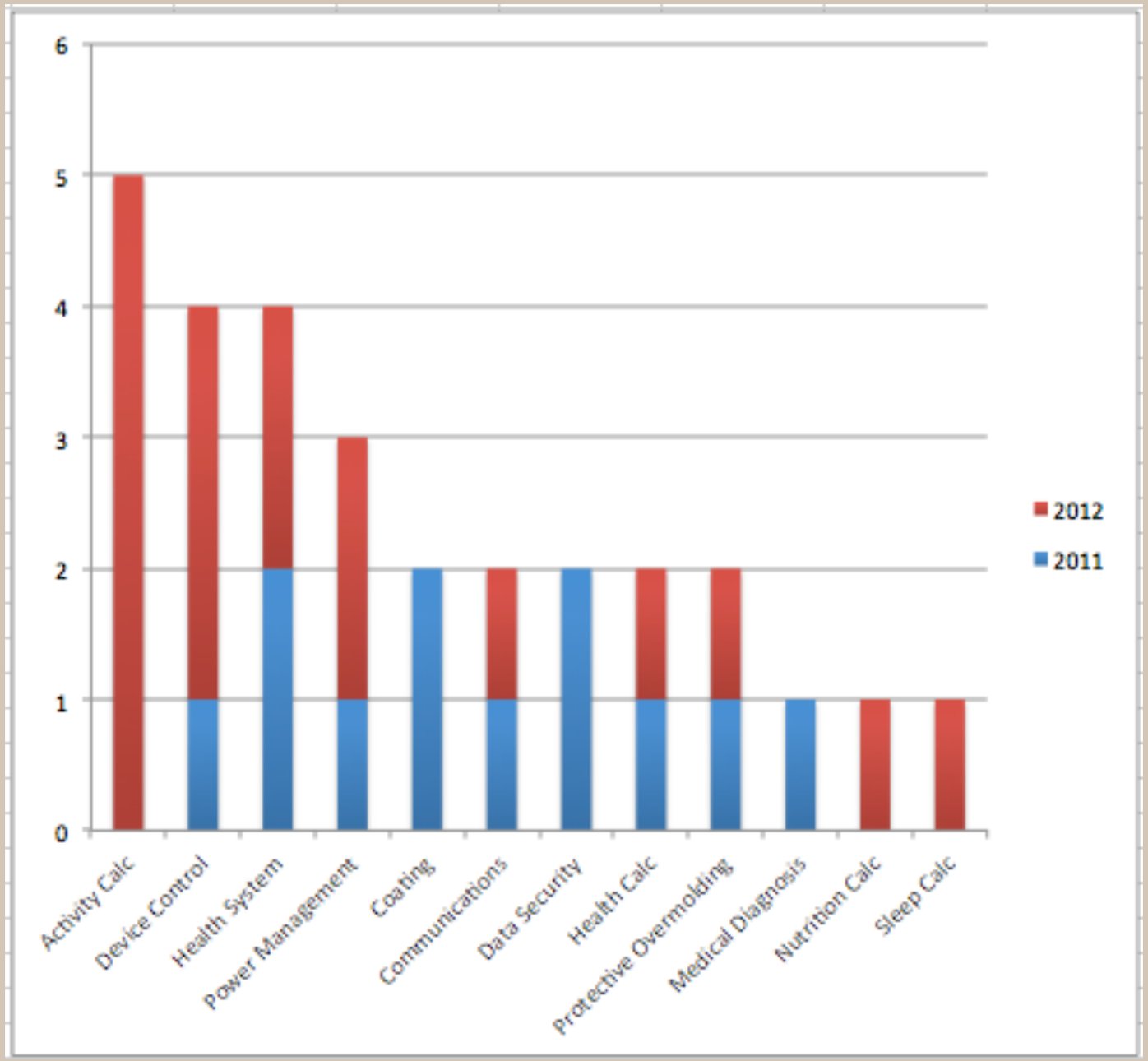
Aliphcom Up Portfolio

- Many of the 27 documents have identical original titles and similar specifications but they differ fairly significantly when looking at the claims

- To determine how many distinct technology concepts are covered by this collection the claims of each document were read and categorized

- For simplicity sake, each document was only placed in a single category based on the analysis of the first claim

Aliphcom Up Portfolio



Aliphcom Up Portfolio

- Power management claims
- A wearable band comprising: a plurality of sensors;a controller coupled to the plurality of sensors;an energy storage device;a power port configured to receive power and control signals, the power port coupled to the energy storage device;a power manager comprising: a transitory power manager configured to control an application of power to one or more components of the wearable band in one or more power modes; and a power modification manager comprising a power clock controller configured to adapt a clock frequency of a clock signal configured to be applied to the controller as a function of a power mode, the power mode associated with a mode of operation

Aliphcom Up Portfolio

- Protective Overmolding claims

- A method, comprising: selectively applying a curable coating substantially over one or more of a plurality of elements coupled to a framework configured to be worn, the plurality of elements including at least a sensor; and selectively forming a molding substantially over a subset of the plurality of elements, the molding configured to provide a protective property

Other Aliphcom Up Families

- FAMPAT Family (Questel) – Basic family plus: Applications falling outside the 12 month filing limit; Links between EP and PCT publications; Combining US Provisionals that share the same priority with US Published Applications.

- Derwent Family (Thomson Reuters) – Patent Families in the World Patents Index (WPI) draw together patents covering the same invention. Their relationship is defined by the priority or application details claimed by each document.

- Looking at the Aliphcom case, there were 29 FAMPAT families and 36 Derwent families associated with the collection.

ADDITIONAL DISCUSSION USING SIMPLE FAMILIES, ODPI & OTHER FAMILIES

Simple Families – An EPO Construct

- Simple family definition from EPO website - All documents having exactly the same priority or combination of priorities belong to one patent family.

In this case, document D1 is the only document in family P1, D2 and D3 belong to family P1-P2, D4 belongs to family P2-P3, and D5 to family P3.

Document D1	Priority P1			FAMILY P1
Document D2	Priority P1	Priority P2		FAMILY P1-P2
Document D3	Priority P1	Priority P2		FAMILY P1-P2
Document D4		Priority P2	Priority P3	FAMILY P2- P3
Document D5			Priority P3	FAMILY P3

If all the priorities of two documents are the same, they are referred to as "equivalents". This definition is currently used in Espacenet for listing the documents under "also published as" on the bibliographic data view.

Working with Patent Families

- A patent family is a set of either patent applications or publications taken in multiple countries to protect a single invention by a common inventor(s) and then patented in more than one country. A first application is made in one country – the priority – and is then extended to other offices.
- Basic family – all documents having exactly the same priority or combination of priorities.
- INPADOC family – broader definition of a patent family takes domestic application numbers as additional connecting elements and includes documents having the same scope but lacking a common priority.
- FAMPAT family – Basic family plus: Applications falling outside the 12 month filing limit; Links between EP and PCT publications; Combining US Provisionals that share the same priority with US Published Applications.
- Derwent Family – Patent Families in the Thomson Scientific World Patents Index (WPI) draw together patents covering the same invention. Their relationship is defined by the priority or application details claimed by each document.

Working with Patent Families

- When counting a collection of patents an analyst can look at them in a few different ways

- One Document per Family (ODPF)
  - Basic family – Not really a family representation per se in this case
  - INPADOC family – Easiest to work with since it is the most expansive but dramatically cuts down on the number of US members
  - Simple family – only available in PatSeer & PatStat, sort of available in CCD
  - FAMPAT family – A good compromise but still under represents US documents
  - Derwent Family – Based on invention, sort of, so comes close to ODPI but still under represents US, especially continuations

- One Document per Invention (ODPI)
  - All granted and pending patents from primary country; foreign documents included where a representative of the primary country is not available

Overview of Known Family Reductions

INPADOC Families – 1

DWPI Families – 36

FamPat Families – 29

Simple Families – 35

One Document per Invention – 27

Looking at Members of Simple Family #2

Simple Family #2 Publication Numbers	DWPI Family Found Within	FamPat Family Found Within	ODPI Family Found Within
US2012315382	Family 1	Family 28	Family 1
US2012315379	Family 2	Family 29	Family 2
US8529811	Family 2	Family 29	Family 2
CA2810735	Family 3	Family 29	N/A
CA2810714	Family 4	Family 29	N/A
CA2814743	Family 5	Family 29	N/A
AU2012266891	Family 4	Family 29	N/A
AU2012266890	Family 3	Family 29	N/A
AU2012268411	Family 5	Family 29	N/A
WO2012170108	Family 4	Family 29	N/A
WO2012170107	Family 3	Family 29	N/A
WO2012170362	Family 5	Family 29	N/A

Looking at Coating/ Overmolding Docs

Worldwide Overmolding Document Number	Simple Family Found Within	DWPI Family Found Within	FamPat Family Found Within	ODPI Family Found Within
AU2012266890A1	Family 2	Family 3	Family 29	N/A
AU2012266891A1	Family 2	Family 4	Family 29	N/A
AU2012267464A1	Family 5	Family 8	Family 28	N/A
AU2012268411A1	Family 2	Family 5	Family 29	N/A
CA2810714A1	Family 2	Family 4	Family 29	N/A
CA2810717A1	Family 5	Family 8	Family 28	N/A
CA2810735A1	Family 2	Family 3	Family 29	N/A
CA2814743A1	Family 2	Family 5	Family 29	N/A
CN203004181	Family 5	N/A	Family 3	N/A
CN203004205	Family 5	N/A	Family 3	N/A
US20120313272A1	Family 22	Family 6	Family 28	Family 3
US20120313296A1	Family 5	Family 7	Family 28	Family 4
US20120315379A1	Family 2	Family 2	Family 29	Family 2
US20120315382A1	Family 2	Family 1	Family 28	Family 1
US8529811B2	Family 2	Family 2	Family 29	Family 2
WO2012170107A1	Family 2	Family 3	Family 29	N/A
WO2012170108A1	Family 2	Family 4	Family 29	N/A
WO2012170362A1	Family 2	Family 5	Family 29	N/A
WO2012171037A1	Family 5	Family 8	Family 28	N/A

Summary of Family Approaches for Coating/ Overmolding Docs

INPADOC Families – 1

DWPI Families – 8, four US and four WOs (assuming WO and not AU or CA are primary)

FamPat Families – 3, but only two from the US, the third would be one of the CN docs

Simple Families – 3, all US

One Document per Invention – 4, all US

Thoughts on Working with Families

- When the US is not the priority country WO documents will not over or under represent inventive output using an extended family reduction method or one of the narrower definitions, including simple, DWPI and, FamPat families. The ODPI method will also not be impacted.

- When the US is the priority country, ~5-7% of the time the WO document will be the only publication when a PCT application is filed, but a National Stage application is never filed in the US.

- When the US is the priority country, 20% of the time there will be multiple WO documents found in the same extended family. These can also be situations where additional inventive output is not captured if WO documents are not considered beyond a domestic family reduction.

Conclusions for Working with Families

- The purpose of this exercise is not to say that one family reduction method is better than another, but it can be clearly seen that in this example each one of these methods would have given a separate collection of patents, and in almost all cases a different statistical value
- In this case, using all 97 worldwide documents would not be appropriate, and neither would using an extended family approach, where all of them would be represented by a single document
- Absolutely, using any one of the other methods will produce a more accurate result. Pre-processing patent collections for statistical analysis always requires a family reduction step, but it is critical that analysts consider the type of method they will use, and the impact this decision will have on the values generated downstream

CITATION ANALYSIS – DISCUSSION AND CHART

Patent Citation Analysis is An Example of a Meso Or Macro Level Type of Analysis

- Should citations be counted based on discrete documents or should they be grouped by family or application number?
- Ended up asking two questions:
  - Do pre-grant applications contribute significantly to the citation counts for a granted patent?
  - Are citation patterns different between countries?
- A third question was asked by others
  - Do sources of patent citations agree with one another?

Let's Look at a Practical Example Using an Individual Patent Document

So which answer represents the number of forward citations for US8341981?

a. 22

b. 0

c. 7

d. All of the above

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The Answer is Different Depending on Whether Patent Families Are Considered

So which answer represents the number of forward citations for US8341981?

a. 22 - Represents citations to INPADOC Patent Family
b. 0 - Citations to Discrete '981 Patent Document
c. 7 - Citations to '981 and Corresponding Pre-Grant App
d. All of the above

When Looking at Citation Patterns in the US I Found the Following

- 83% of the cases where a granted patent from the study has a forward citation and a corresponding pre-grant application there are forward citations associated with **both** documents
- Individually, both pre-grant applications and granted patents from the study had ~75% chance of having at least one forward citation - **much higher than expected**
- For the granted patents that did not have any forward citations associated with them, 60% of the corresponding pre-grant applications still had at least one

The Situation in Europe However is Very Different - But Still Surprising

- It is critical to consider pre-grant applications in Europe when talking about forward citations with patent equivalents - **Less than 10% of grants have forward citations**
- In Europe the likelihood of finding forward citations associated with pre-grant applications is four-times higher than finding them with the granted patent - **between 35-45% chance of finding forward citations on pre-grant applications**
- Europe only has examiner citations but more applications than expected still have forward citations

The Analyst Also has to be Careful when Considering Sources Since They can be Different

15 Comments

Rex Yeap Feb 16, 2013

Hi Tony,

1. Forward citation count for US8341981:

To compile the list of answers here:

- **Tony** = 0, 7, 22 (reference: "Personally, I would say the answer is d")
- **Tony** = 7 (reference: "if you made me commit to an actual number I would say c. or seven")

It would also be interesting to see how the different patent databases report on the fwd citation count, '981:

- **USPTO** = 0
- **Delphion** = 0
- **PatBase** = 0 (ref: Phil Ostanock, http://is.gd/piug_po536)
- **DWPI** = 0, 3, 6 (ref: Don Walter, http://is.gd/piug_dw981)
- **Derwent PCI** = 3 (ref: John Arenivar, http://is.gd/pi_981)
- **Orbit** = 7
- **Google Patents** = n.a.
- **Freepatentsonline** = n.a.
- **Ambercite** = ?

2. Forward citation count for US2009146536 (Patent application of '981'):

- **Espacenet** = 4 (ref: Robert Grantham, http://is.gd/piug_rg536)
- **Delphion** = 6
- **Orbit** = 6
- **PTO East** = 6 (ref: Robert Grantham, http://is.gd/piug_rg536)
- **PatBase** = 7 (ref: Phil Ostanock, http://is.gd/piug_po536)
- **Ambercite** = ?

Separating Types of Citations – a Case Study

- A search on Thomson Innovation for Allure Energy US patent documents generates ten granted patents and twenty-nine pre-grant applications for a total of 39 documents
- 28 of these document have at least one forward patent citation associated with them according to the database.

But First the Grants and the Pre-grant Publications Need to be Reconciled

- In the case of the ten granted Allure Energy patents, all ten have pre-grant applications associated with them
- In only one of the cases both the granted patent, and the corresponding pre-grant application don't have any forward citations
- Three of the granted patents have no citations themselves but their corresponding pre-grant applications do
- In the case of these nine granted patents the data associated with the pre-grant application needs to be added to the data associated with the grant so that it represents the accumulated citations for the full lifecycle of the document

The Following Table Demonstrates This

Granted Patent	Granted Patent Forward Citation Count	Corresponding Pre-grant Application	Corresponding Pre-grant Application Forward Citation Count	Reconciled Total
US8442695B2	0	US20120072033A1	2	2
US8428782B2	1	US20110015802A1	10	11
US8412382B2	0	US20110202185A1	4	4
US8396604B2	0	US20120135759A1	0	0
US8396602B2	0	US20120023225A1	3	3
US8174381B2	4	US20110173542A1	4	8
US8108076B2	2	US20110054699A1	4	6
US8099195B2	7	US20110046801A1	4	11
US8082065B2	3	US20110051823A1	8	11
US8024073B2	24	US20110054710A1	9	33

Data Needs to be Exported from Innovation and Merged Before Analysis can be Conducted

- Export Citing References Details – Patents field
- Field for US8,082,065 looks like this:
- US20120029713A1,US, ,7 (Pre-search), 2010-08-02,GEN ELECTRIC | US20120116597A1,US, ,7 (Pre-search), 2010-11-09,GEN ELECTRIC | US8386087B2,US, ,0 (Examiner),2010-08-02,GEN ELECTRIC,SPICER LUCAS BRYANT,BESORE JOHN K,WORTHINGTON TIMOTHY DALE,FINCH MICHAEL FRANCIS

This single field contains a tremendous amount of information on the '065 document

- The '065 patent has three forward citations associated with it (so far) and, in this case, they are separated by a vertical bar (|) between each entry
- Within each entry we find six pieces of information associated with each of the three citations
- These are separated by a comma and represent the citing patent number, the citing patent country, the type of citation (examiner or applicant) for international reports (blank in this example) and for the US, the citing patent application date and the citing patent applicant

Continue Processing the Exported Data and Send the CSV File to Open Refine

- If the application number is exported with the publication number and the Cited Reference Details – Patent it can be sorted on in MS Excel so that the pre-grant applications are in the row next to the corresponding granted patents
- Simply copy the data from the Cited Reference Details – Patent cell for the pre-grant application and paste it on to the end of the data associated with the corresponding granted patent
- Remember to include a horizontal bar after the data in the granted patent cell before pasting in the data from the pre-grant application

The Data Associated with the '605 Patent Now Looks Like This:

- US20120029713A1,US, ,7 (Pre-search),2010-08-02,GEN ELECTRIC | US20120116597A1,US, ,7 (Pre-search),2010-11-09,GEN ELECTRIC | US8386087B2,US, ,0 (Examiner),2010-08-02,GEN ELECTRIC,SPICER LUCAS BRYANT,BESORE JOHN K,WORTHINGTON TIMOTHY DALE,FINCH MICHAEL FRANCIS | US20110122798A1,US, ,7 (Pre-search),2009-11-24,SILVER SPRING NETWORKS INC | US20110257804A1,US, ,7 (Pre-search),2010-04-14,RAYTHEON CO | US20120023225A1,US, ,7 (Pre-search),2009-07-20, | US20120130513A1,US, ,7 (Pre-search),2010-11-18,VERIZON PATENT & LICENSING INC | US20120198083A1,US, ,7 (Pre-search), 2011-01-27,OPENPEAK INC | US8375118B2,US, ,0 (Examiner), 2010-11-18,VERIZON PATENT & LICENSING INC | US8396602B2,US, ,11 (Examiner),2009-07-20,ALLURE ENERGY INC,IMES KEVIN R,HOLLISTER JAMES | WO2012163901A1,WO,X, , 2011-06-02,NOKIA SIEMENS NETWORKS GMBH,DE LA RUE MICHAEL,SINGH ABHINAV,GULAK MACIEJ,NAKAMURAKARE MANUEL,SOEIMA MARCO AURELIO,KJ BOBY

Business Objective

Highly cited patents are considered potentially valuable and the organizations that cite them could be interested in licensing or acquiring the technology

Now What?

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What You Need to Discover

Which patents are most highly cited?
Which organizations are citing the patents?
When did these organizations do the citing?

Outline of Steps

Use the Dental Floss Collection for data collection

Open file in Excel

Create Pivot Table

Look at Forward Citations by Company

Create tables, charts and graphs

Clean citing companies for organization of interest

Create tables, charts and graphs

Let's Look First at the Number of Forward Citations by Company

Company	Total Forward Citing Patents
P&G	606
WL Gore	220
Colgate Palmolive	198
Placontrol	162
McNeil	88
Westone Products Limited	85
Munchkin Bottling	49
Johnson & Johnson	32
Ranir LLC	31
Dr. Fresh Inc.	25
SKB	23
Anchor Advanced Products	22
Water Pik Inc.	12
John O. Butler Company	10

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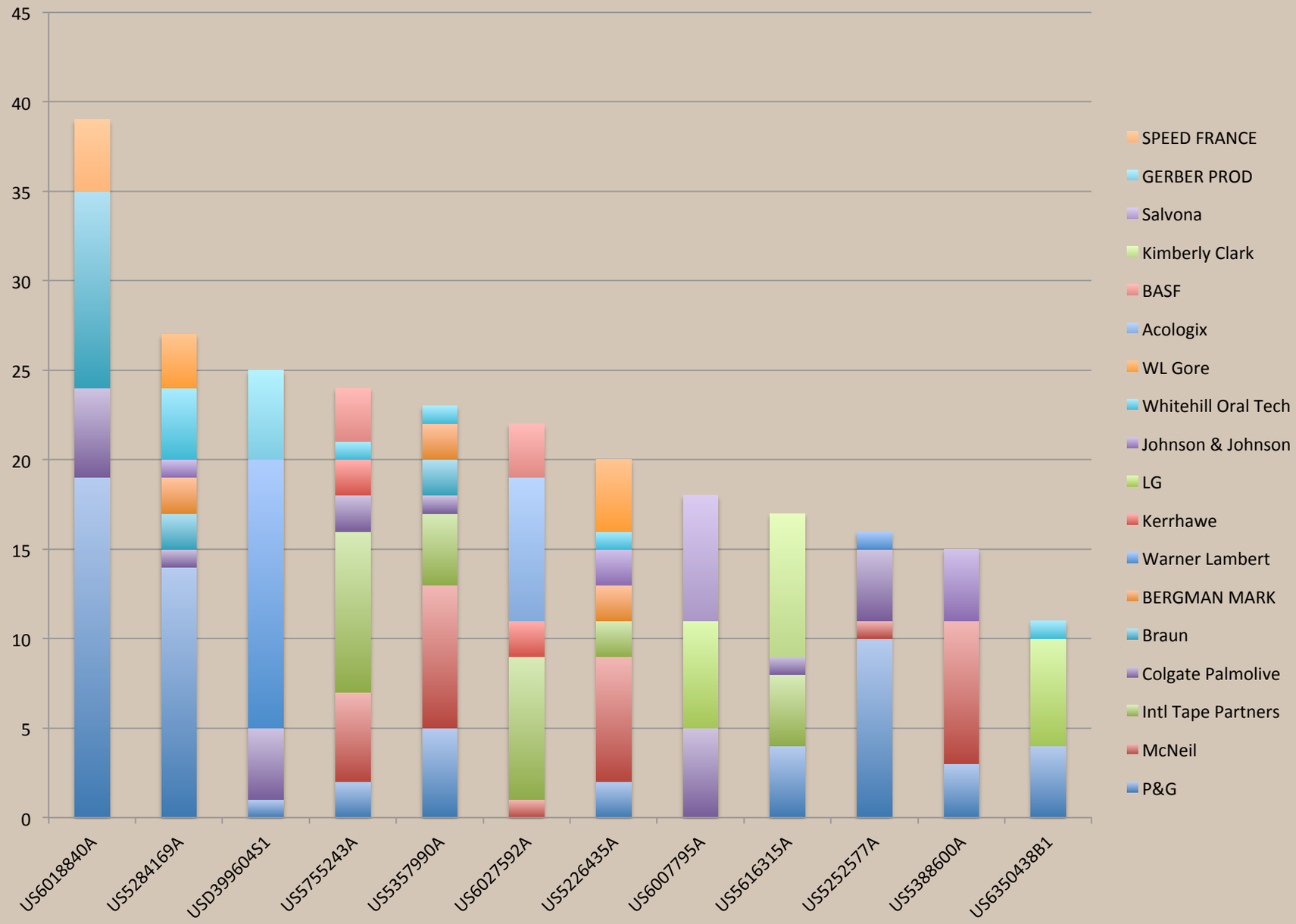
Looking at just the P&G Documents We Can See The Highest Cited Patents and by Who



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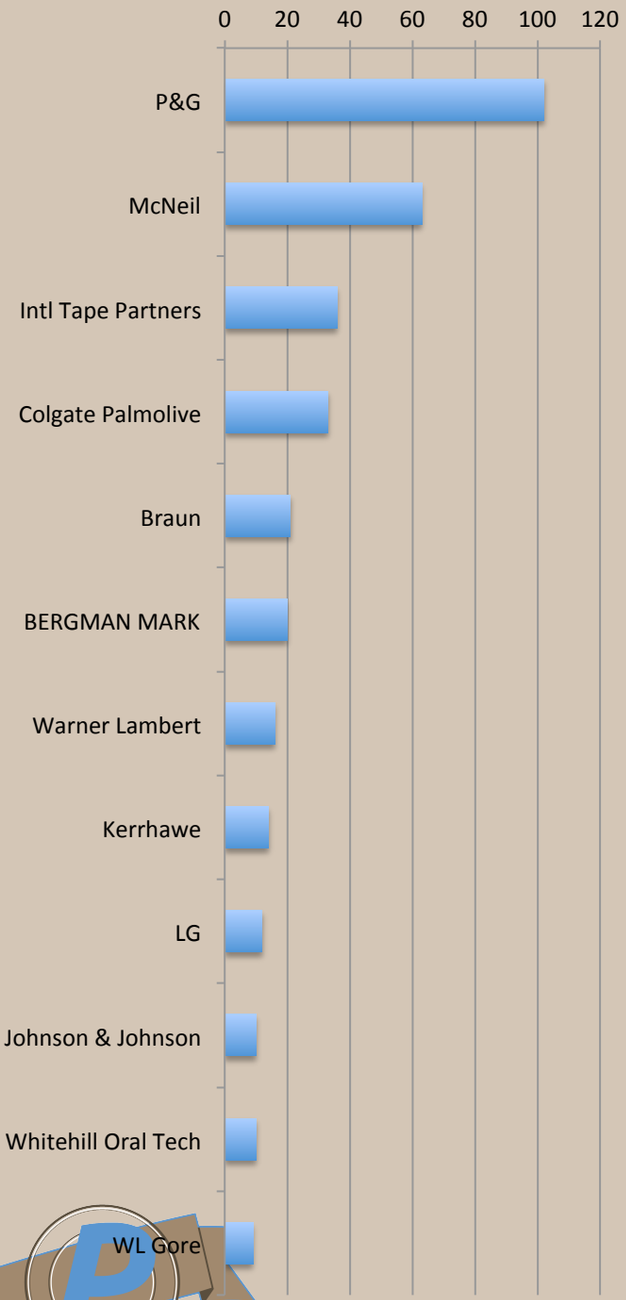
We Can Also See Companies Citing by Year



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						9	2			2	5	5	1	1		17	17	1	2	1
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CLAIMS ANALYSIS

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When comparing claims within a patent family an analyst can look at a variety of different levels:

The originally written claims (usually represented by the claims published as a pre-grant application) can be compared to the claims that were eventually allowed to grant – this analysis will demonstrated what changes needed to be made during prosecution in order to get an allowance

The independent claims within a single granted patent can be compared to one another – this shows the different aspects of the invention that the applicant is looking to cover

The independent claims from one family member can be compared to the corresponding independent claims from another member of the same patent family – through the use of Divisionals, Continuations and Continuation-In-Parts the coverage and application of the invention can be expanded

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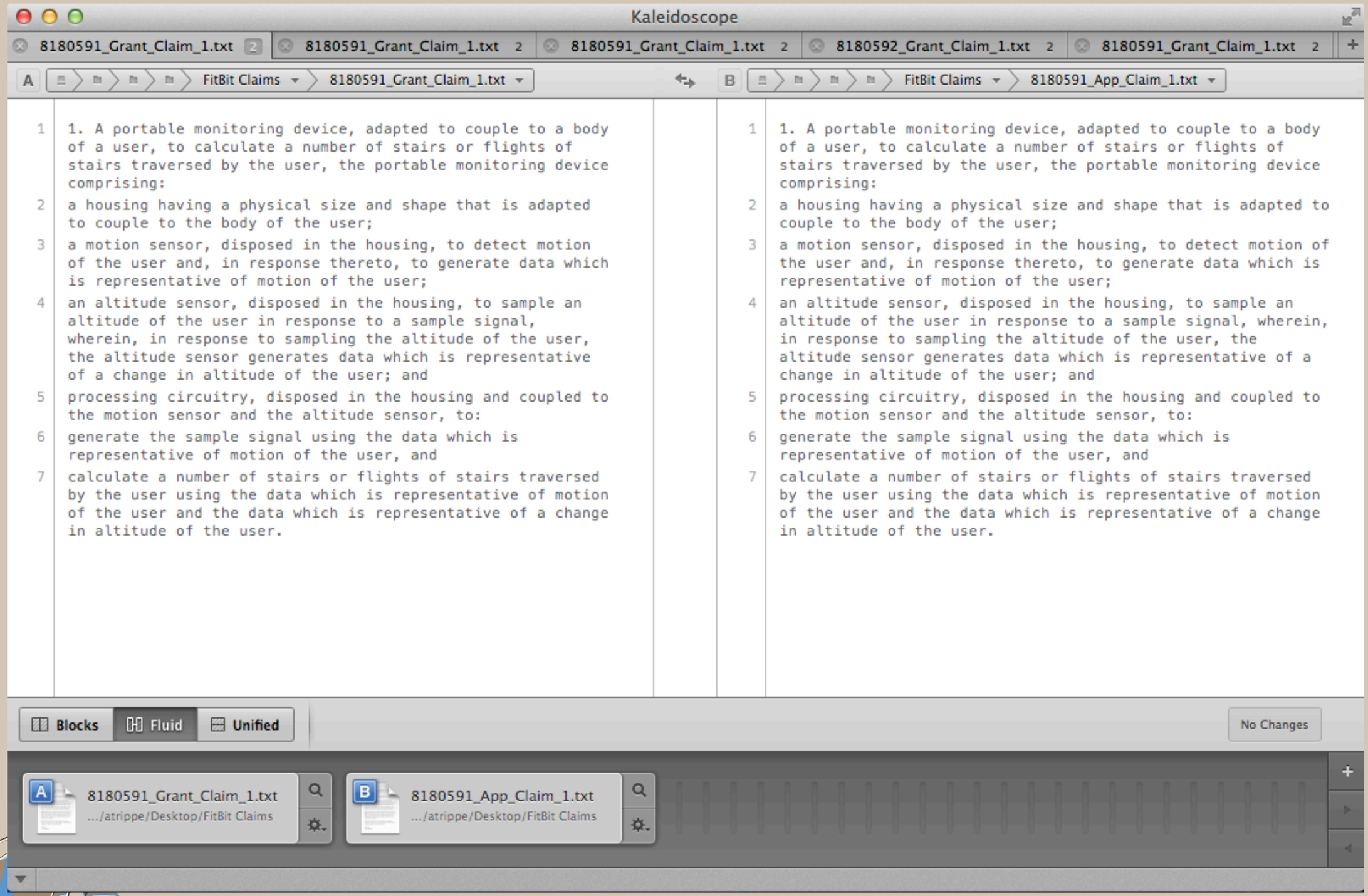
Comparing the application to the granted patent



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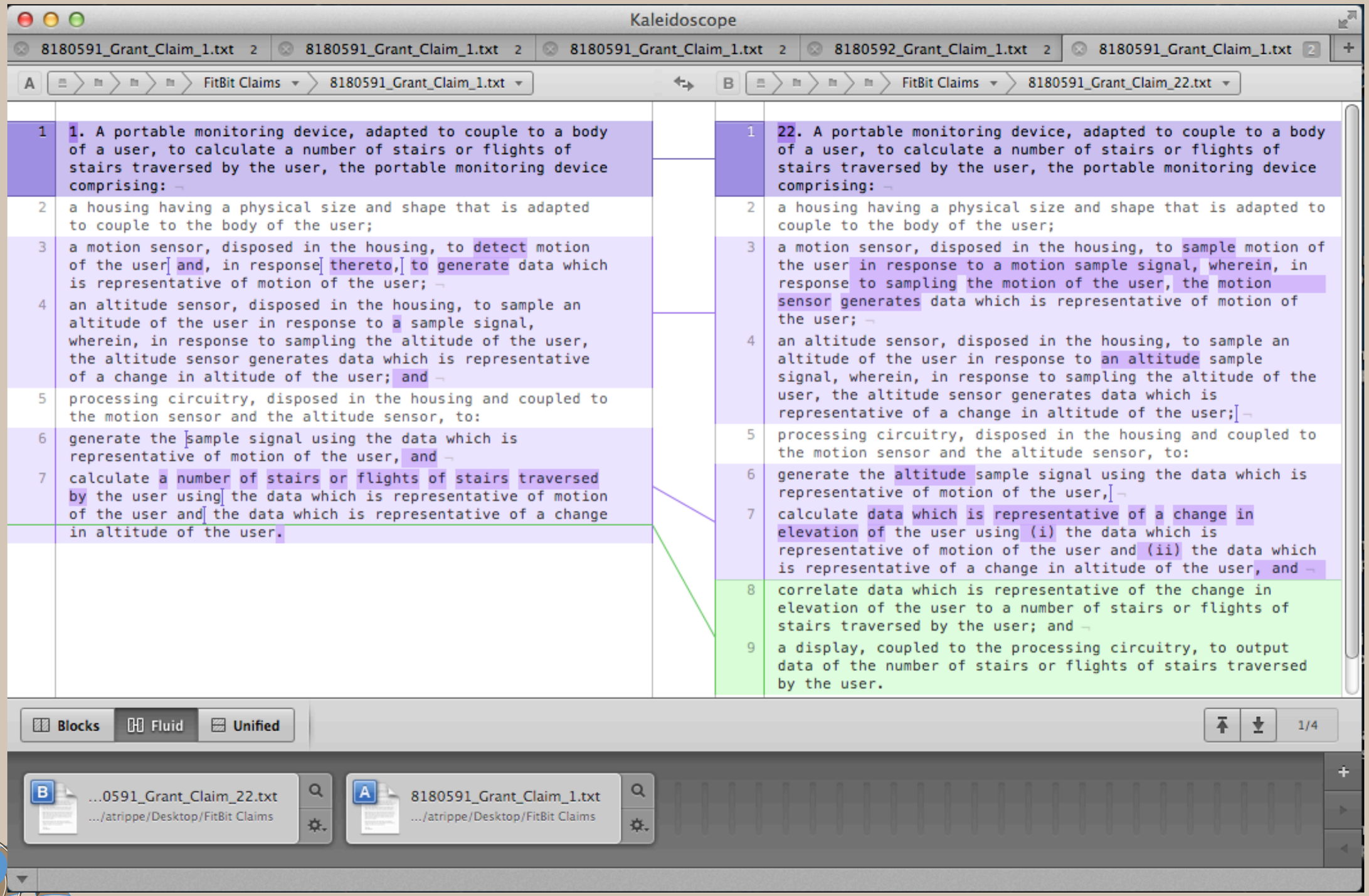
Comparing independent claims in the granted patent



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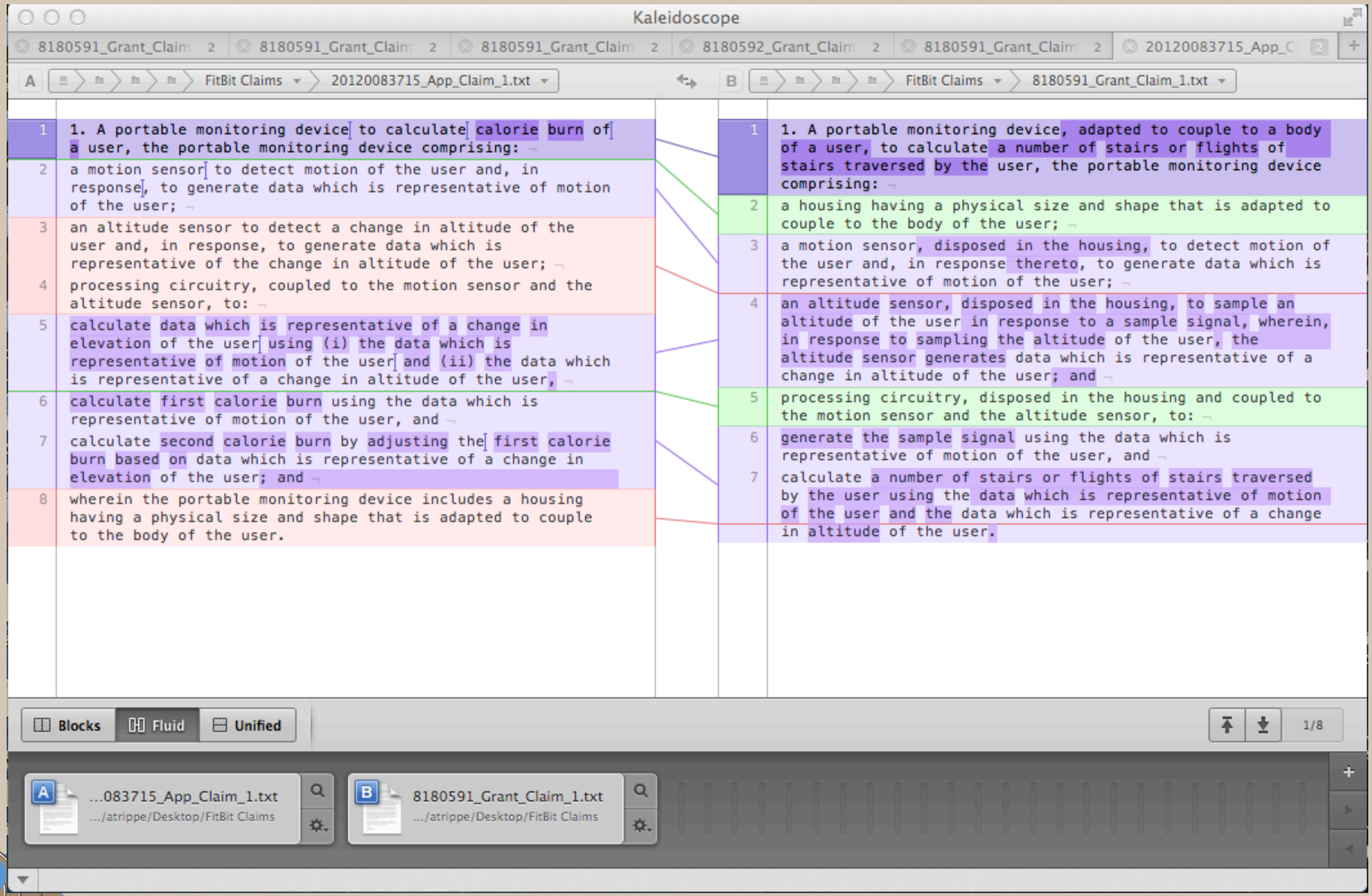
Comparing claims in the patent family



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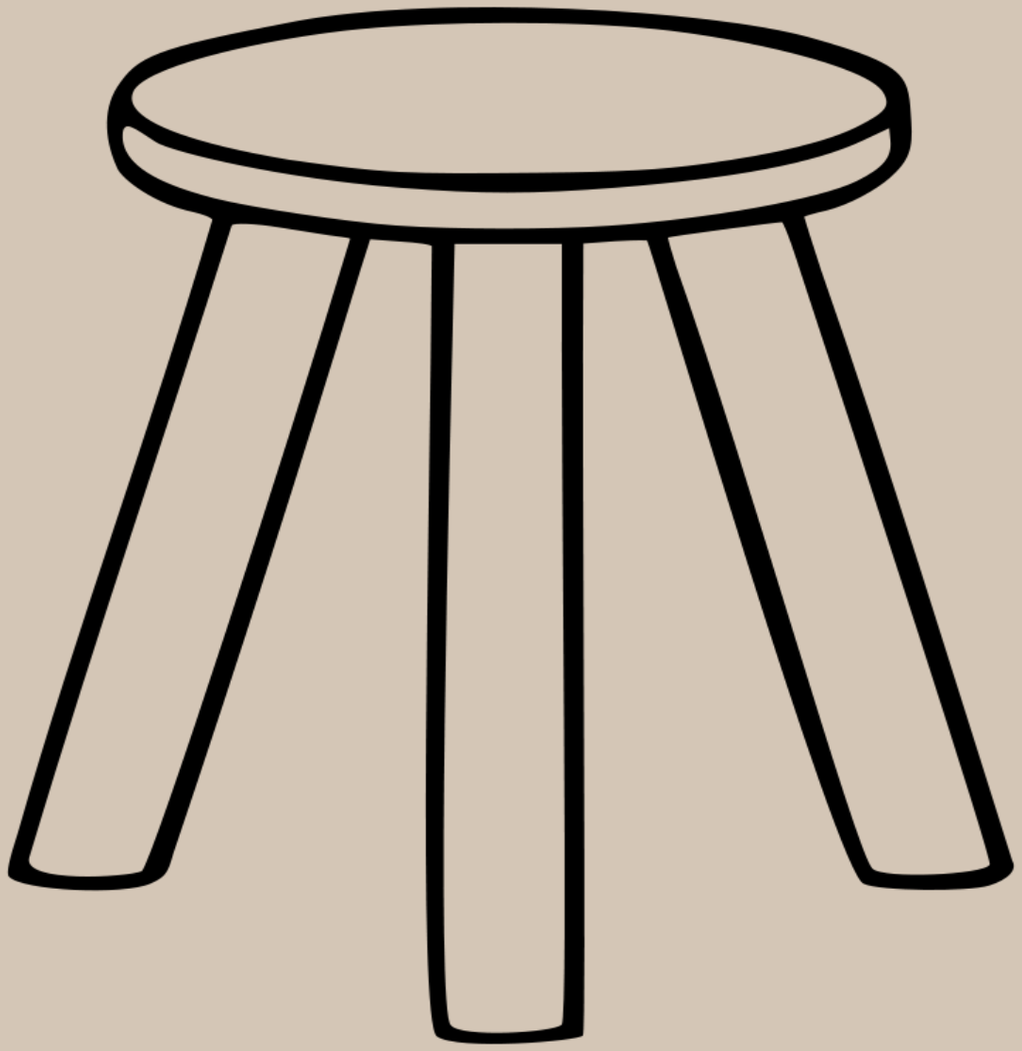
A holistic view of patents as they pertain to corporate strategy requires an integrated approach

- Like a three-legged stool there are different elements to an integrated strategy



- Business goals
- Financial analysis
- Patent considerations

- All three elements have to be considered or the item won't stand