



Quality Insights

## Patentcloud Quality Insights Annotation Report

### ArcherDX, Inc. et al v. QIAGEN Sciences, LLC et al DDE-1-18-cv-01019

Focus on: U.S. Pat. No. 10,450,597

Filing date: Jul. 10, 2018

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Click on a page number to read

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# Map claims to specification and file wrapper

# Map claims to specification - '597

Which claim terms are or are not in the specification?

Claim Analysis

Find relevant specification content as intrinsic evidence for claim term interpretation

40 Terms Identified in This Claim [Click to Select Terms](#)

Claims ▾

▾ #1

Claim# 1

A method of **preparing nucleic acids** for analysis,

the method comprising:

(a) **contacting** a first nucleic acid template comprising a **sequence** of a first strand of a **double-stranded target nucleic acid** with a complementary **target-specific primer** that comprises a **target-specific hybridization sequence**, under conditions to promote template-specific hybridization and extension of the target-specific primer;

(b) **contacting** a second nucleic acid template comprising a **sequence** of a second strand that is **complementary to the sequence** of the first strand of the double-stranded target nucleic acid with a plurality of different primers that share a common **sequence** that is **5'** to different **hybridization sequences**, under conditions to promote template-specific hybridization and extension of at least one of the plurality of different primers, wherein

the different **hybridization sequences** have different 3' ends, and wherein

Select Terms



**Claim Analysis finds** these terms in the spec:  
**"double-stranded target nucleic acid", "target-specific hybridization sequence", "hybridization sequences",** as well as other terms that are highlighted in red.

# Map claims to specification - '597

Which claim terms are or are not in the specification?

Claims ▾	Claim# 1
▾ #1	<p>A method of <b>preparing nucleic acids</b> for analysis,</p> <p>the method comprising:</p> <p>(a) contacting a first nucleic acid template comprising a sequence of a first strand of a double-stranded target nucleic acid with a complementary target-specific primer that comprises a target-specific hybridization sequence, under conditions to promote template-specific hybridization and extension of the target-specific primer;</p> <p>(b) contacting a second nucleic acid template comprising a sequence of a second strand that is complementary to the sequence of the first strand of the double-stranded target nucleic acid with a plurality of different primers that share a common sequence that is 5' to different hybridization sequences, under conditions to promote template-specific hybridization and extension of at least one of the plurality of different primers, wherein</p> <p>the different <b>hybridization sequences</b> have different 3' ends, and wherein</p> <p>Select Terms</p>

Review the selected claim element and see how it is defined in the patent specification and related figures.

Selected elements of '597 Claim 1

Selected elements of Claim '597 in Spec

Figures of '597

Select Text

**hybridization** **sequence[s]**

The selected clause includes the following keywords:

**sequences**\* (62)

**hybridization**\* (104)

**sequence** (368)

Content

[0028] In some embodiments, as depicted in FIG. 1B, in step 109B, DNA products of step 107 (e.g., as purified in step 108) are contacted with a second target-specific primer and a second tail primer. The second target-specific primer is further contacted by an additional primer (e.g., a primer having 3' sequencing adapter/index **sequence[s]**) that hybridizes with the common **sequence** of the second target-specific primer. In some embodiments the additional primer may comprise additional **sequence[s]** 5' to the **hybridization** **sequence** that may include barcode, index, adapter **sequence[s]** or sequencing primer sites. In some embodiments, the additional primer is a generic sequencing adapter/index primer. In some embodiments, the second target-specific primer may be nested relative to the target-specific primer used in step 107. In step 110B, the DNA products of step 107 (e.g., as purified in step 108) are amplified by PCR in which the extensions are primed by the

# Map claims to specification and Complaint - '597

Does the allegedly infringing product element fall within or outside the patent's scope?

**Select Text**

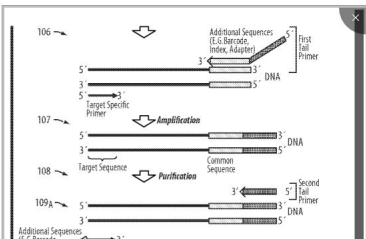
hybridization sequence

The selected clause includes the following keywords:

- sequences (62)
- hybridization (104)
- sequence (368)

**Content**

[0028] In some embodiments, as depicted in FIG. 1B, in step 109B, DNA products of step 107 (e.g., as purified in step 108) are contacted with a second target-specific primer and a second tail primer. The second target-specific primer is further contacted by an additional primer (e.g., a primer having 3' sequencing adapter/index sequence) that hybridizes with the common sequence of the second target-specific primer. In some embodiments the additional primer may comprise additional sequence 5' to the hybridization sequence that may include barcode, index, adapter sequence or sequencing primer sites. In some embodiments, the additional primer is a generic sequencing adapter/index primer. In some embodiments, the second target-specific primer may be nested relative to the target-

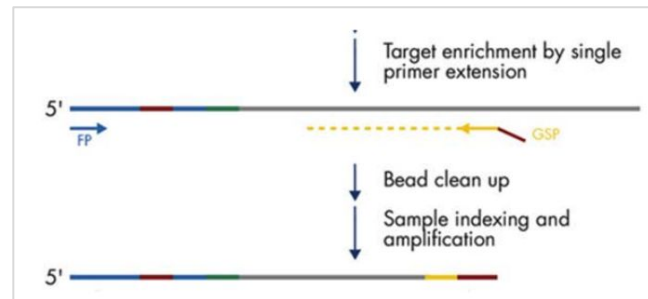


With the claim scope interpretation from **Claim Analysis**, verify your findings against the complaint.

Answer the question:

***Does the alleged Invention element fall within or outside the patent's scope?***

sequence that is characteristic of the at least one of the plurality of different primers” as recited in at least claim 1 of the '597 Patent. **QIAGEN Sciences, QIAGEN LLC, QIAGEN Gaithersburg, QIAGEN GmbH, and QIAGEN N.V. instruct End-users to perform this claim element in, at least, the following aspect of QIAseq kits' workflow and associated instructions (including those instructions contained within the QIAseq Kits):**



# Map claims to the file wrapper - '597

Which claim terms are in the file wrapper(i.e. examiner's opinion) ?

Disclosure Rate by Prior Art

Claims	Disclosure by Single Reference		Disclosure by Multiple References	
	Prosecution History	Post-Grant	Prosecution History	Post-Grant
<input checked="" type="checkbox"/> #1	43%	0%	43%	0%
<input checked="" type="checkbox"/> #2	50%	0%	50%	0%
<input type="checkbox"/> #7	0%	0%	0%	0%
<input checked="" type="checkbox"/> #3	50%	0%	50%	0%

Confirm

Claim# 1  
A method of preparing nucleic acids for analysis, the method comprising: (a) contacting a first nucleic acid template comprising a sequence of a first strand of a double-stranded target nucleic acid with a complementary target-specific primer that comprises a target-specific hybridization sequence, under conditions to promote template-specific hybridization and extension of the target-specific primer; (b) contacting a second nucleic acid template comprising a sequence of a second strand that is complementary to the sequence of the first strand of the double-stranded target nucleic acid with a plurality of different primers that share a common sequence that is 5' to different

Review how the asserted claims were disclosed by the prior art found by the examiner during prosecution and post-grant proceedings.

**A higher percentage means more claim elements were disclosed by the prior art.**

Disclosure Rate by Prior Art

Claim Insights Summary Table > Claim Table (Claim# 1) | Select A Claim 1 2 3 switch between claims

How is each claim element disclosed by cited prior art? Click numbers to find detailed comparison.

The percentage "%" indicates how many keywords in an element being disclosed by a specific references. [Click to find comprehensive explanation of calculation.](#)

☒ Responded prior arts only

Claims	Prior Art Ref. (7)					
	OL330	US2007/0172824	US2013/0005585	US9487828	WO01/83696	US4868104
#1.01 (0%)	0%	0%	0%	0%	0%	0%
#1.02 (N/A)	N/A	N/A	N/A	N/A	N/A	N/A
#1.03 (A) (92%)	61%	92%	92%	92%	92%	92%
#1.04 (A) (87%)	0%	87%	87%	87%	87%	87%
#1.05 (A) (66%)	0%	66%	66%	66%	66%	66%

Why was this patent granted? Which claims were amended and how did the scope change?

✍ All of the limitations of this asserted claim element in '597 were 92% known by lafrate (US9487828).

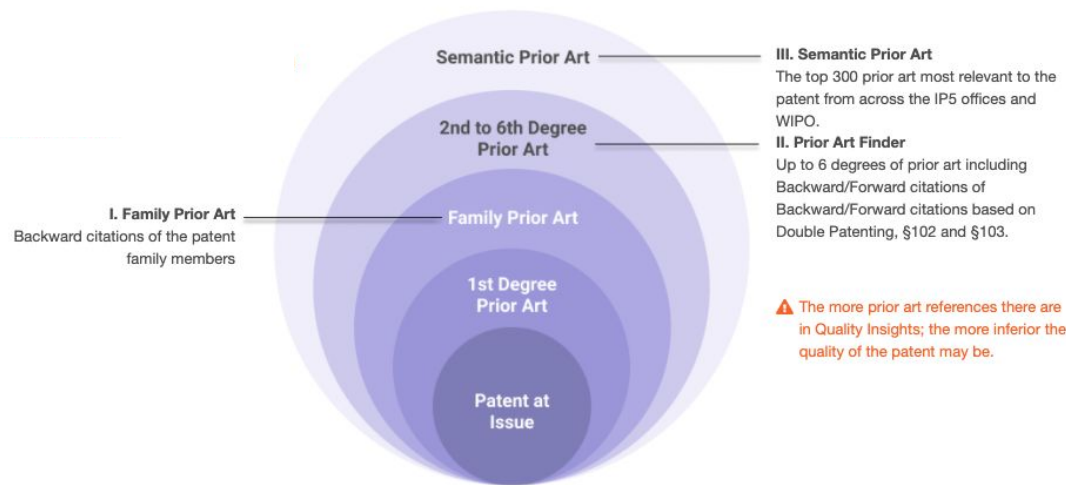
Answer the questions:

### Why was this patent granted?

Source: Quality Insights



# How does Quality Insights generate prior art?



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# Prior Art Finder

# Prior Art Finder for '597

Review cited and citing patents of '597 from the first to the sixth degree

Filter by:

- Applicability
- Legal Basis (§102 or §103)
- Patent Office
- Legal Status

1st Degree Art

7

2nd Degree Art

19

N Degree Art

86

## N Degree Art

Extend forward/backward citations from the Second Degree Art

Discover prior art's similarity with claim chart format in seconds !

KEEP Mode

Ranked By : Legal Basis (§102 first) |



US10450597B2

### 1st Degree (7)

US20130005585A1  
US9487828B2  
US4868104A  
WO2001/083696A2  
US20150211061A1  
US20200017899A1  
US20190017113A1

### 2nd Degree (19)

### 3rd Degree (20)

### 4th Degree (20)

### 5th Degree (20)

### 6th Degree

1st Degree List | Selected 0/20 Patent(s) [Select top 20 patents in list](#) [Confirm](#)

	#	Patent No.	Title	Legal Status ?	Appl. Date	Pub./Issue Date	Assignee (Std)	Applicability
<input type="checkbox"/>	1	<a href="#">US20130005585A1</a>	NUCLEIC ACID ENCODING REACTIONS	<span>PGPub - Granted</span>	2012-05-21	2013-01-03	FLUIDIGM CORP	AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>	2	<a href="#">US9487828B2</a>	Methods for determining a nucleotide sequ...	<span>Active</span>	2013-03-11	2016-11-08	THE GENERAL HOSPITAL C...	AIA 102(a)(2)
<input type="checkbox"/>	3	<a href="#">US4868104A</a>	Homogeneous assay for specific polynucle...	<span>Lapsed</span>	1985-09-06	1989-09-19	SYNTEX CORP	AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>	4	<a href="#">WO2001/083696A2</a>	METHODS FOR RAPID ISOLATION AND SE...	<span>Abandoned Appl.</span>	2001-04-27	2001-11-08	DIGITAL GENE TECHNOLOG...	AIA 102(a)(1)
<input type="checkbox"/>	5	<a href="#">US20150211061A1</a>	METHODS FOR DETERMINING A NUCLEOT...	<span>Abandoned Appl.</span>	2015-01-26	2015-07-30	THE GENERAL HOSPITAL C...	Not Applicable
<input type="checkbox"/>	6	<a href="#">US20200017899A1</a>	METHODS FOR DETERMINING A NUCLEOT...	<span>Exam.</span>	2019-02-25	2020-01-16	THE GENERAL HOSPITAL C...	Not Applicable
<input type="checkbox"/>	7	<a href="#">US20190017113A1</a>	SEQUENCING METHOD FOR GENOMIC REA...	<span>Exam.</span>	2017-07-12	2019-01-17	AGILENT TECHNOLOGIES I...	Not Applicable

Up to 6th  
Degree Prior  
Art List

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# Family Prior Art

# Family Prior Art of '597

Review prior art cited by and cited against the family counterparts when available

Simple Family

[10](#)

Backward Citation: Patent

[79](#)

Backward Citation: Non-Patent Literature

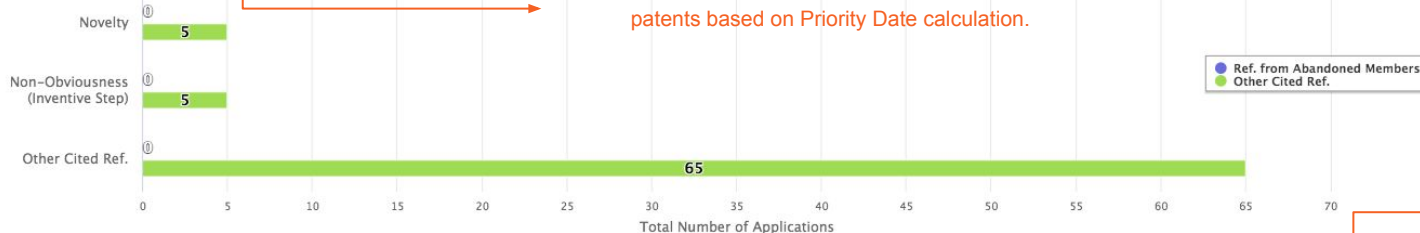
[73](#)

## Backward Citation: Patent

Categorized to indicate relevance; You can start from applicable references cited as novelty prior art

All References (79)

**Applicable Only (72)**



Click on Cited Patents for Potential Prior Art



Choose Applicable Only to find Applicable patents based on Priority Date calculation.

Prior Art List

KEEP Mode

Ranked By : Appl. Date

<input type="checkbox"/>	#	Patent No.	Title	Legal Status	Appl. Date	Pub./Issue Date	Assignee (Std)	Applicability
<input type="checkbox"/>	1	<a href="#">US4868104A</a>	Homogeneous assay for specific polynucle...	Lapsed	1985-09-06	1989-09-19	SYNTEX CORP	AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>	2	<a href="#">US5827658A</a>	Isolation of amplified genes via cDNA subtr...	Expired	1996-08-09	1998-10-27	THE UNITED STATES OF A...	AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>	3	<a href="#">WO1997/023646A1</a>	DETECTION OF DIFFERENCES IN NUCLEIC ...	PCT End - NP	1996-12-20	1997-07-03	BEHRINGWERKE AG	+1 AIA 102(a)(1)
<input type="checkbox"/>	4	<a href="#">WO1997/023647A1</a>	HOMOGENEOUS AMPLIFICATION AND DET...	PCT End - NP	1996-12-20	1997-07-03	BEHRINGWERKE AG	+1 AIA 102(a)(1)

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# Semantic Prior Art

# Semantic Prior Art of '597

Review potential prior art ranked by concept similarity

## Semantic Prior Art

Most Relevant IP5 & WO 300 prior art references based on [Semantic Similarity](#) among the first claims and abstracts.

[Change Scope](#)

Select claim text or enter the desired text/keywords

Discover prior art's similarity with claim chart format in seconds ! Prior art references found (within the designated scope) that are

deemed as having high semantic similarity will be starred with a ★

KEEP Mode 300 are of high semantic similarity

Ranked By : Relevance

<input type="checkbox"/>	<input type="checkbox"/>	Ranking	Patent No.	<input type="checkbox"/>	★	Title	Legal Status ?	Appl. Date	Pub./Issue Date	Assignee (Std)		Applicability
<input type="checkbox"/>		1	<a href="#">KR1019957002252A</a>		★	핵산 유사체를 사용하여 핵산 종족을 억제하는 방...	PGPub - Granted	1994-12-05	1995-06-19	NIELSEN PETER EIGIL	+2	AIA 102(a)(1)
<input type="checkbox"/>		2	<a href="#">EP1017855B1</a>		★	METHODS OF SYNTHESIZING POLYNUCLE...	Expired	1999-07-22	2004-11-03	LUMIGEN INC		AIA 102(a)(1)
<input type="checkbox"/>		3	<a href="#">EP1375676A2</a>		★	Methods of synthesizing polynucleotides b...	Abandoned	1999-07-22	2004-01-02	LUMIGEN INC		AIA 102(a)(1)
<input type="checkbox"/>		4	<a href="#">US6054301A</a>		★	Methods of amplification using a thermost...	Expired	1996-05-24	2000-04-25	TOYOBO CO LTD		AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>		5	<a href="#">US5773257A</a>		★	Method for producing primed nucleic acid t...	Expired	1995-06-06	1998-06-30	STRATAGENE		AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>		6	<a href="#">EP0646181A1</a>		★	USE OF NUCLEIC ACID ANALOGUES IN TH...	PGPub - Granted	1993-06-07	1995-04-05	BUCHARDT DORTHE	+3	AIA 102(a)(1)
<input type="checkbox"/>		7	<a href="#">WO1993/025706A1</a>		★	USE OF NUCLEIC ACID ANALOGUES IN TH...	PCT End - NP	1993-06-07	1993-12-23	BUCHARDT OLE	+3	AIA 102(a)(1)
<input type="checkbox"/>		8	<a href="#">EP0646181B1</a>		★	USE OF NUCLEIC ACID ANALOGUES IN TH...	Expired	1993-06-07	1997-01-08	BUCHARDT DORTE	+3	AIA 102(a)(1)
<input type="checkbox"/>		9	<a href="#">US20080051295A1</a>		★	Method Of Detecting Nucleic Acid Using A...	Abandoned	2005-03-14	2008-02-28	CANON KK		AIA 102(a)(1) AIA 102(a)(2)
<input type="checkbox"/>		10	<a href="#">WO2009/120372A2</a>		★	COMPOSITIONS AND METHODS FOR NUC...	PCT End - NP	2009-03-27	2009-10-01	PACIFIC BIOSCIENCES OF C...		AIA 102(a)(1)

# Semantic Prior Art of '597

Review potential prior art ranked by concept similarity

**US10450597B2** [🔗](#)

Methods of preparing nucleic acids for sequencing

Overview

History

Claim Analysis

Claim Insights

Family Prior Art

Prior Art Finder

**Semantic Prior Art**

File Wrapper Search

[About Semantic Prior Art](#)

## Semantic Prior Art

Most Relevant IP5 & WO 300 prior art references based on [Semantic Similarity](#) within the scope below. [Reset to Default](#)

Enter text to start searching for semantic prior art (English only)

+ Add text from claims

Submit

[Discover prior art's similarity with claim chart format in s](#)

Add text from claims

×

Select A Claim

1

2

3

4

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7

8

9

10

Next 10

...that is complementary to the sequence of the first strand of the double-stranded target nucleic acid with a plurality of different primers that share a common sequence that is 5' to different hybridization sequences, under conditions to promote template-specific hybridization and extension of at least one of the plurality of different primers, wherein the different hybridization sequences have different 3' ends, and wherein each primer of the plurality of different primers does not anneal to the same sequence of the double-stranded target nucleic acid as any other primer of the plurality of different primers, wherein, following (a) and (b), an extension product is generated to contain

Add



adding text from claims to find more related Prior Art



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# Comparison tools

# Prior Art Comparison (claim chart format)

What does this prior art say about the critical elements?

1.01

1.02

1.03

1.04

1.05

1.06

1.07

1.08

Find 47 Result(s) | Disclosure Rate: 53%

### Claim Element

#1.03 (a) contacting a first nucleic acid template comprising a sequence of a first strand of a double stranded target nucleic acid with a complementary target-specific primer that comprises a target-specific hybridization sequence, under conditions to promote template-specific hybridization and extension of the target specific primer;

**Keyword List** ⓘ (144) FW PA

sequence

sequences

Sequence

SEQUENCE

### US6627402B2 Content

**Abstract**

The present invention is directed to a method for detecting the presence or absence of any specific target nucleic acid sequence contained in a sample. The target sequence can be present in the sample in a relatively pure form or as a component of a member of a mixture of different nucleic acids. The method of the invention utilizes a novel primer design. The sequence of the novel primer is composed of two portions, the 3' portion is a primer specific for the desired nucleic acid sequence and the 5' portion is complementary to preselected nucleic acid sequence. Extension of the 3' portion of the primer with a labeled deoxynucleosides triphosphate yields a labeled extension product if, but only if, the template includes the target sequence. The labeled extension product is detected by hybridization of the 5' portion to the preselected sequence. The preselected sequence is preferably bound to a solid support as one member of a grid having a group of sequences.

**Claims**

**Claim# 1** A method for identifying a polymorphic nucleotide in a target nucleic acid sequence in a nucleic acid sample, said method comprising ( a ) combining under hybridizing conditions to form a duplex ( i ) a nucleic acid sample which may include a target nucleic acid sequence, ( ii ) a primer having a 3 portion and a 5 portion wherein said 3 portion is complementary to a template sequence immediately adjacent a polymorphic nucleotide in a target nucleic acid sequence, and wherein said 5 portion is complementary to a preselected nucleic acid sequence which is different from said target nucleic acid sequence and which said preselected nucleic acid sequence is immobilized at a preselected location in an array of immobilized, preselected nucleic acid sequences on a solid support, wherein the length, base composition and percentage of each base in each of said immobilized preselected nucleic acid sequences are substantially the same to permit hybridization between said 5 portion and its complementary preselected nucleic acid sequence to be carried out under substantially the same conditions at each location on the array, ( b ) adding a template dependent polymerase and a labeled nucleoside triphosphate which is specific for the polymorphic nucleotide, to the duplex of step ( a ), if present, under conditions to form a labeled primer extension product which includes the primer of ( a)(ii ), ( c ) screening the labeled primer extension product of ( b ) by combining the 5 portion of the primer with the array of immobilized, preselected nucleic acid sequences on the solid support whereby the label identifies the polymorphic nucleotide and the

**Answer the question:**  
*What does this prior art say about the Claim elements: “nucleic acid sequence” ?*

**Discover prior art similarity with keywords (includes keyword stemming) mapped to the selected prior art reference Abstract, Claims, and Specification.**

# Prior Art Comparison (sample output)

Claim		Claim-Term Interpretation	Semantic Prior Art - '402	3rd Degree Citation Prior Art - B
1	A method of preparing nucleic acids for analysis, the method comprising:	Refer to Claim Analysis results	N/A	.....
	(a) contacting a first nucleic acid template comprising a sequence of a first strand of a double-stranded target nucleic acid with a complementary target-specific primer that comprises a target-specific hybridization sequence, under conditions to promote template-specific hybridization and extension of the target-specific primer;	.....	53%	.....
	(b) contacting a second nucleic acid template comprising a sequence of a second strand that is complementary to the sequence of the first strand of the double-stranded target nucleic acid with a plurality of different primers that share a common sequence that is 5' to different hybridization sequences, under conditions to promote template-specific hybridization and extension of at least one of the plurality of different primers,	.....	60%	.....
	wherein the different hybridization sequences have different 3' ends,.....	.....	.....	.....
	and ii) a primer that specifically anneals to the complement of the target-specific hybridization sequence.	.....	66%	.....

System-identified keywords and key phrases  
(highlighting of other keywords is available)

Results from claim to  
specification and file  
wrapper mapping

Results from prior art comparison by  
claim element

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# Prior Art downloads

# Prior Art downloads

Patent List (Excel) ☐ Patent List (CSV) ☐ Full Text (PDF) ☐ Front Page (PDF)
- Export Items: ☒ Selected Patents
- Export Fields: ☒ Customized ☐ All Fields ☐ Save as my default settings.
- Patent Field:
- ☒ Patent Office ☒ Appl. No. ☐ Appl. No. (PTO) ☒ Appl. Date
- ☐ Earliest Appl. ☒ Title ☐ Title (English) ☐ Patent No.
- ☐ Patent No. (PTO) ☐ Pub./Issue Date ☐ Pub. No. ☐ Pub. Date
- File Name:
- Buttons: Cancel, Export

#	Patent No.	Title	Status	Date
1	CN1247662A	Dual use spe		
2	EP0998105B1	Mobile teleph		
3	JPH09-036932A	EXTERNAL R		
4	JPH11-055358A	MOBILE RAD		
5	US5317622	Ringin circuit for use in a telephone set f...	Abandoned	1994-05-31



Download patent data in Excel or PDF format for Family Prior Art, Second Degree Prior Art, and/or Semantic Prior Art.

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# Prosecution and PTAB History

## Key Events

# Key Events - '597

1 Prosecution & 0 Post-Grant

Event History

**1**

Family Status

**10** Applications

Prior Art Status

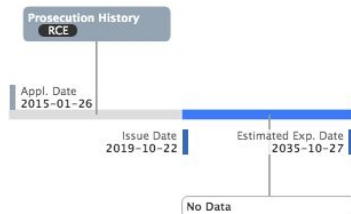
**454** Applications / **74** NPL References

Event History | **1** Prosecution History / **0** Post-Grant

Validity challenges to a patent in its prosecution history and post-grant events

# of Family Counterparts and Legal Status

# of Highly Relevant Prior Art References



Legend	
Document Code	Document Description
CTFR	Final rejection
CTNF	Non-final rejection
CLM	Claims
REM	Remarks

Timeline of Prosecution:



# Key Events - '597

## Prosecution History

14/605363 Prior Art Ref. | 13 Ref.

Check prior art cited and the legal basis of these challenges

Double Patenting | 0 Ref.

§ 102 | 6 Ref.

other reference [US9487828](#) lafrate [US9487828](#) Lafrate [US20130005585](#) Anderson [US20090203085](#) Kurn  
[US4868104](#) Kurn

§ 103 | 7 Ref.

[US20150211061](#) (1st) other reference (1st) [US9487828](#) (1st) Lafrate  
Callaway  
[US20130005585](#) (1st) [US4868104](#) (1st) [WO2001/083696](#) (1st) Anderson Kurn Muller  
[US20070172824](#) Chun

Clickable events for original OAs and their OCR version when available.

Summary of 14/605363 History | 14 Event(s)

Direct links to Grounds,  
Claims Highlighted and Prior Art Details

Data Last Updated on: 2021-09-04

Descriptions (Code)	Date	Prior Art Ref.
Notice of Allowance (NOA)	2019-09-06	
Applicant Arguments/Remarks Made in an Amendment (REM)	2019-08-09	
<a href="#">Claims (CLM)</a>		
Final Rejection (CTFR)	2019-05-30	Grounds 3 ^
Legal Basis	Claims	Prior Art Ref.
double patenting	claim 1,2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,21,22,23,24,25,26,27,28,29,30,31,32,33	<a href="#">US20150211061</a>
35 U.S.C. § 103	claim 1,2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,21,22,23,24,25,26,27,28,29,30,31,32,33	<a href="#">US20150211061</a> (1st)



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# Prosecution and PTAB History Search

# Patent File Wrapper Search



Directly discover details in the prosecution history and post-grant proceeding across all documents via a keyword search.

## Cross-Document Search

Enter keyword to find documents including specific legal basis or specific claim terms

[① About File Wrapper Search](#)



## Rejections, Remarks, and Notice of Allowance in Prosecution History | 13 Records

<input type="checkbox"/> Descriptions (Code) ?	Party	Date ?
<input type="checkbox"/> Notice of Allowance (NOA)	USPTO	2015-09-24
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2015-06-19
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2015-03-19
<input type="checkbox"/> Request for Continued Examination (RCEX)	Applicant	2015-03-03
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2015-03-03
<input type="checkbox"/> Final Rejection (CTFR)	USPTO	2014-11-03
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-10-15
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2014-07-15
<input type="checkbox"/> Request for Continued Examination (RCEX)	Applicant	2014-06-26
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-06-26
<input type="checkbox"/> Final Rejection (CTFR)	USPTO	2014-02-26
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-02-07
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2013-11-07

Data Last Updated on 2021-04-08

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# Prosecution and PTAB History PDF Downloads


# PDF Downloads

 Download the complete set or just part of the PDF files in the File Wrapper Search.



### Cross-Document Search

Enter keyword to find documents including specific legal basis or specific claim terms



Rejections, Remarks, and Notice of Allowance in Prosecution History | 13 Records 

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<input type="checkbox"/> Descriptions (Code) 	Party	Date 
<input type="checkbox"/> Notice of Allowance (NOA)	USPTO	2015-09-24
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2015-06-19
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2015-03-19
<input type="checkbox"/> Request for Continued Examination (RCEX)	Applicant	2015-03-03
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2015-03-03
<input type="checkbox"/> Final Rejection (CTFR)	USPTO	2014-11-03
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-10-15
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2014-07-15
<input type="checkbox"/> Request for Continued Examination (RCEX)	Applicant	2014-06-26
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-06-26
<input type="checkbox"/> Final Rejection (CTFR)	USPTO	2014-02-26
<input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM)	Applicant	2014-02-07
<input type="checkbox"/> Non-Final Rejection (CTNF)	USPTO	2013-11-07

Data Last Updated on 2021-04-08

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# Prosecution and PTAB History Side-by-side PDF and OCR

# Side by Side: PDF & OCR



Conduct a keyword search in a single document to identify the claim scope quickly and easily. You can even search additional claim terms within rejections.

**Keywords (2)**

Select a Keyword Set

☐ sensor (23)

☐ flexible substrate (1)

+ Add new keyword

U992631182 - CTNF (2015-03-19)

13/284,674 6 / 18 90%

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Art Unit: 2867

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the sensor traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.

However, Gray does teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection (Fig. 2; [0063]: **A number of conductors forming rows and columns of a conductive pattern (e.g., indium tin oxide (ITO)) may be deposited on a substrate composed of polyester or other material on one or more layers of the touchscreen... the row and column oriented conductors may be disposed on the same layer...**; See also Miller US 5,089,672; Col. 2, lines 11-16; Col. 5, lines 1-20; Col. 5, lines 61-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Grant and Hotelling by including the conductive lines (rows and columns) taught by Gray for the purpose of "providing paths for signals traveling through the touchscreen" (See Gray; Abstract).

103(a) as being unpatentable over Grant et al. US 2008/0303782 A1 (previously cited and  
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hereinafter Grant) in View of Hotelling et al. US 2008/0158183 A1 (previously cited and hereinafter Hotelling), in further View of Gray et al. US 2010/0045614 (previously cited and hereinafter Gray) and in further View of Frey et al. US 2009/0219257 (newly cited and hereinafter Frey).

Regarding claim 1, Grant does teach an apparatus (Abstract) comprising:  
a substantially flexible substrate (Abstract: flexible touch sensitive surface); and  
a touch [0003], [0005], [0006], [0022], [0023], [0027], and [0071], e.g., flexible surface, flexible circuitry, and capacitance touch [0003] which must be conductive to receive user input) disposed on the substantially flexible substrate ( see at least Figs. 1A-1C; [0009-0011], configured to bend with the substantially flexible substrate (Figs. 1A-1C, 3 and the corresponding descriptions; [0003]).

Grant does not specifically teach the touch [0003] comprising drive or sense electrodes made of flexible conductive material.

However, Hotelling does teach a touch [0003] (Fig. 2a, 5 and the corresponding descriptions, and the Summary of the Invention, i.e., a touch [0003] comprises of row and column traces made of copper) comprising drive or sense electrodes (see at least Figs. 1 and 2a; [0008, 0030-0033]; claim 9; sense traces formed on a first side of a dielectric substrate; and drive traces formed on a second side of the substrate) made of flexible conductive material ([0008]; traces made of copper or other highly conductive metals running along the edge of the substrate).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the [0003] traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.



## QI is a Game Changer

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