### http://www.uspto.gov/patent



#### **Patent Tools & Links**



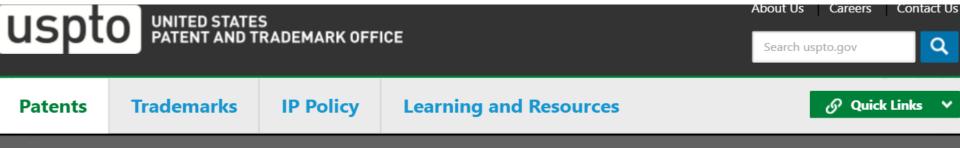


Check patent application status with public PAIR and private PAIR



#### **Fees and Payment**

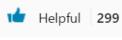
Pay fees and learn more about filing fees and other payments.



Home / Patents: Application Process / Search for Patents







◀ Application Process

Patent Search (Search for Patents)

Accessing Published

### Search for Patents

New to Patent Searching? See this important information about searching for patents:

How to Conduct a Preliminary U.S. Patent Search: A Step by Step Strategy - Web Based Tutorial (38 minutes)

• The Seven Step Strategy - Outlines a suggested procedure for patent searching

A detailed handout of the Cover Stop Strategy with examples and screen shots

### **USPTO Patent Full-Text and Image Database (PatFT)**

Filing Year by Application Serial Number

Understanding Patent Classifications

Withdrawn Patent Numbers

Learn about Patent Classification

- USPTO Patent Full-Text and Image Database (PatFT)
- USPTO Patent Application Full-Text and Imaggraphase (AppFT)
- Global Patent Search Network (GPSN)
- Patent Application Information Retrieval (PAIR)
- Public Search Facility
- Patent and Trademark Resource Centers (PTRCs)
- Patent Official Gazette
- Common Citation Document (CCD)
- Search International Patent Offices
- Search Published Sequences

# **USPTO Patent Full-Text and Image Database (PatFT)**

- The USPTO houses full text for patents issued from 1976 the present.
- PDF images for all patents from 1790 - the present.





#### Search for Patents

New to Patent Searching? See this important information about searching for patents:

How to Conduct a Preliminary U.S. Patent Search: A Step by Step Strategy - Web Based Tutorial (38 minutes)

- The Seven Step Strategy Outlines a suggested procedure for patent searching
- A detailed handout of the Seven Step Strategy with examples and screen shots.

Patents may be searched using the following resources:

- USPTO Patent Full-Text and Image Database (PatFT)
- USPTO Patent Application Full-Text and Image Database (AppFT)
- Global Patent Search Network (GPSN)
- Patent Application Information Retrieval (PAIR)
- Public Search Facility
- Patent and Trademark Resource Centers (PTRCs)
- Patent Official Gazette
- Common Citation Document (CCD)
- Search International Patent Offices
- Search Published Sequences
- Patent Assignment Database (Assignments on the Web)

USPTO Patent Full-Text and Image Database (PatFT)

### **Searching Full Text Patents (Since 1976)**

Searching Full Text Patents (Since 1976)

Customize a search on all or a selected group of elements (fields) of a patent.

- Ouick Search
- Advanced Search
- Patent Number Sear

### **Advanced Search**

s for

Searching PDF Image Patents (Since 1790)

Searches are limited to patent numbers and/or classification codes for pre-1976 patents.

- View Patent Full-Page Images
- How to View Patent Images

# USPTO Patent Application Full-Text and Image Database (AppFT)

Search for Full-Text and Image versions of patent applications. Customize searches on all fields of a patent application in the AppFT for Full-Text searches.

- Quick Search
- Advanced Search
- Publication Number Search

Searches are limited to patent numbers and/or classification codes for Full-Page images.

### **Global Patent Search Network (GPSN)**

- Search the full text of multiple international patent collections.
- The initial collection available will be Chinese patent documentation from the State Intellectual Property Office (SIPO) of the People's Republic of China.
- The data available includes full text Chinese patents, English machine translations and full document images.
- This collection will be periodically updated to include additional years of coverage.

# การสืบค้นต้องรู้ตัวย่อ

PN	Patent Number	หมายเลขสิทธิบัตร
ISD	<b>Issue Date</b>	วันที่จดทะเบียน
TTL	Title	ชื่อการประดิษฐ์
<b>ABST</b>	Abstract	บทคัดย่อ
ACLM	Claim(s)	ข้อถือสิทธิ
SPEC	<b>Description/Spe</b>	รายละเอียดการ
	cification	ประดิษฐ์
IN	<b>Inventor Name</b>	ชื่อผู้ประดิษฐ์
AANM	<b>Applicant name</b>	ชื่อผู้ขอ

### USPTO PATENT FULL-TEXT AND IMAGE DATABASE

Home Quick Advanced Pat Num Help

View Cart

### Data current through October 27, 2015...

Query [Help]	
	Examples:
	ttl/(tennis and (racquet or racket)
	isd/1/8/2002 and motorcycle
	in/newmar-julie

1976 to present [full-text] ▼

Select Years [Help]

Search Reset

Patents from 1790 through 1975 are searchable only by Issue Date, Patent Number, and Current Classification (US, IPC, or CPC).

When searching for specific numbers in the Patent Number field, patent numbers must be seven characters in length, excluding commas, which are options

Field Code	Field Name	Field Code	Field Name
PN	Patent Number	IN	Inventor Name
ISD	Issue Date	IC	Inventor City
TTL	<u>Title</u>	IS	Inventor State
ABST	Abstract	ICN	Inventor Country
ACLM	Claim(s)	AANM	Applicant Name

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

# **Examples**

# ต้องการทราบว่าบริษัทคอลเกต จดสิทธิบัตรอะไรบ้าง

- ⇒ สืบคันเงื่อนไข จากผู้ขอ⇒ AANM/(colgate)

### USPTO PATENT FULL-TEXT AND IMAGE DATABASE

Home Quick Advanced Pat Num Help

View Cart

Data current through October 27, 2015...

Query [Help]

# AANM/(colgate)

Examples:

ttl/(tennis and (racquet or racket))
isd/1/8/2002 and motorcycle
in/newmar-julie

Select Years [Help]

1976 to present [full-text]

Search

Patents from 1790 through 1975 are searchable only by Issue Date, Patent Number, and Current Classification (US, IPC, or CPC).

When searching for specific numbers in the Patent Number field, patent numbers must be seven characters in length, excluding commas, which are options

Field Code	Field Name	Field Code	Field Name
PN	Patent Number	IN	Inventor Name
ISD	Issue Date	IC	Inventor City
TTL	<u>Title</u>	IS	Inventor State
ABST	Abstract	ICN	Inventor Country
ACLM	Claim(s)	AANM	Applicant Name

Refine Search | AANM/(colgate) **80 Patents** PAT. NO. D741,715 Container 9,167,888 Oral care implement having flexibly supported cleaning elements extending in opposite directions 9,167,886 Oral care implement having fluid delivery system D741,173 Cap for a container D740,672 • Container <u>D740,671</u> <u>Container</u> <u>D740,670</u> Container D740,669 Container <u>D740,668</u> Container 10 9,155,688 Oral care whitening compositions 12 <u>D739,658</u> Toothbrush 13 9,138,384 Color changing consumer products 14 D738,627 Toothbrush 17 <u>D737,675</u> Oral care implement package

Retrieved data on 10/11/2015



(10 of 89)

**United States Patent** 

9,155,688

Boyd, et al.

October 13, 2015

Oral care whitening compositions



Described herein are whitening compositions comprising a peroxide source, and an adhesion system comprising a hydrophobic component comprising a silicone adhesive; and a dental surface adhesion enhancing agent, which are physically stable and effectively provide whitening. Methods of making and using these compositions are also described herein.

Inventors: Boyd; Thomas (Metuchen, NJ), Ontumi; Dennis (Easton, PA), Mandadi; Prakasarao (Flemington, NJ), Chopra; Suman (Monroe, NJ), Nesta;

Jason (Cedar Knolls, NJ), Pimenta; Paloma (Staten Island, NY)

Applicant: Name City State Country Type

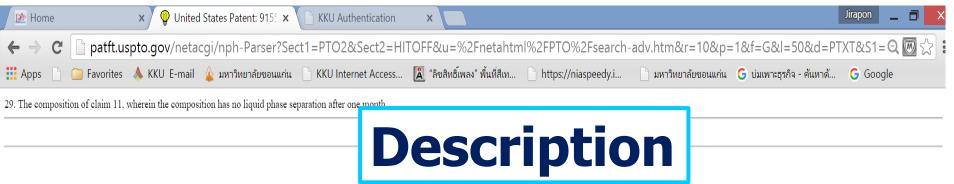
Colgate-Palmolive Company New York NY US

Assignee: Colgate-Palmolive Company (New York, NY)



#### The invention claimed is:

- 1. A non-aqueous oral care composition comprising: a peroxide source in the amount effective to deliver 0.01% to 5.5% of hydrogen peroxide; and an adhesion system comprising: a hydrophobic component comprising a silicone polymer and a silicone adhesive; and a dental surface adhesion enhancing agent, wherein the composition when applied to the teeth is sufficiently viscous to form an adherent, continuous layer on a dental surface and deliver an effective amount of said peroxide source to a tooth surface; wherein the peroxide source is selected from: hydrogen peroxide; urea peroxide, a crosslinked polyvinylpyrrolidone-hydrogen peroxide complex; sodium perborate; and a combination of two or more thereof; and wherein the adhesion system further comprises an organic material selected from: bees wax, mineral oil, a mineral oil and polyethylene blend, petrolatum, a liquid paraffin and butene/ethylene/styrene hydrogenated copolymer blend, a polyethylene wax, polyisobutene, a polyvinyl pyrrolidone/vinyl acetate copolymer; a polyacrylate; a shellac; and a combination of two or more thereof; wherein the composition has a Herschel-Bulkley rate index of less than 0.7; and wherein the composition has a critical strain greater than or equal to 0.02.
- 2. The composition of claim 1, wherein the peroxide source is a crosslinked polyvinylpyrrolidone-hydrogen peroxide complex.
- 3. The composition of claim 1, wherein the dental surface adhesion enhancing agent comprises an additional amount of cross-linked polyvinylpyrrolidone.
- 4. The composition of claim 3, wherein the additional amount of cross-linked polyvinylpyrrolidone is not complexed with a peroxide source.
- 5. The composition of claim 1, wherein the peroxide source is present in an amount effective to deliver about 0.1% hydrogen peroxide.
- 6. The composition of claim 1, wherein the peroxide source is present in an amount effective to deliver about 4.5% hydrogen peroxide.
- 7. The composition of claim 1, wherein the silicone adhesive is a pressure sensitive silicone adhesive.
- 8. The composition of claim 7, wherein the pressure sensitive silicone adhesive is a copolymer prepared by condensing a silicone resin with a dihydroxy polydiorganosiloxane.
- 9. The composition of claim 8, wherein the dihydroxy polydiorganosiloxane is dihydroxy polydimethylsiloxane.
- 10. The composition of claim 7, wherein the silicone resin is a silanol-containing silicone resin.
- 11. The composition of claim 1, wherein the organic material is mineral oil or a mineral oil and polyethylene blend.
- 12. The composition of claim 11, wherein the organic material comprises mineral oil.



#### BACKGROUND

Products that are presently available to whiten teeth include a variety of different ingredients, but the primary active ingredient is a peroxide source. These products typically contain substantial amounts of whitening agents, for example, a peroxide source in an amount equivalent to about 10% hydrogen peroxide. However, there is a need for compositions having lower concentrations of a peroxide source that are still effective in whitening teeth. Embodiments of the present invention are directed, in part, to this end.

#### SUMMARY

Some embodiments of the present invention comprise a non-aqueous oral care composition comprising: a peroxide source in the amount effective to deliver 0.01% to 5.5% of hydrogen peroxide; and an adhesion system comprising: a hydrophobic component comprising a silicone adhesive; and a dental surface adhesion enhancing agent, wherein the composition when applied to the teeth is sufficiently viscous to form an adherent, continuous layer on a dental surface and deliver an effective amount of said peroxide source to a tooth surface.

In some embodiments, the present invention provides a non-aqueous dental whitening composition comprising: a peroxide component comprising a peroxide source in an amount effective to deliver or provide about 0.1% to about 5% of the total weight of the composition.

In some embodiments, the present invention provides methods of whitening a tooth comprising applying any of the compositions described herein to a tooth of a mammal.

Further areas of applicability of the present invention will become apparent from the detailed description and examples provided hereinafter. It should be understood that the detailed description and specific examples, while providing specific embodiments of the invention, are intended for illustration only and should in no way limit the scope of the invention.

#### DETAILED DESCRIPTION

In some embodiments, the composition of the present invention is a viscous liquid, preferably a gel, which maintains its consistency during storage enabling the product to be painted on the tooth surface with a soft applicator pen or brush.

In some embodiments, the composition of the present invention provides a stable vehicle that prevents the decomposition of the peroxide whitening agent during storage and before use.

Once applied on a tooth surface, the saliva on the tooth enamel surface to which the composition is applied will either dissolve or disintegrate the peroxide containing matrix resulting in a rapid decomposition of the peroxide, and thereby provide an effective concentration of the peroxide source at the tooth surface, despite its relatively low concentration in the composition. Surprisingly, this concentration is capable of delivering an acceptable level of tooth whitening.

The whitening compositions of the present invention are portable viscous liquid or gel tooth whiteners that can be applied to the teeth as a coated layer conveniently painted onto the tooth enamel surface. Upon application to the teeth, the applied whitening composition forms an adherent layer of peroxide containing product that has the capacity to release the peroxide whitening agent over an extended period of time, e.g., from about 5 minutes to about 12 hours. The applied layer adheres to the tooth surface whereby the released peroxide source then whitens the teeth to which the composition is applied.

In some embodiments, the tooth whitening compositions of the present invention are substantially anhydrous, that is, no water is added. The composition may contain trace levels of water from ingredients or from product manufacture; however, such trace



Go to Page:

Go



#### Sections:

- Front Page
- Specifications
- Claims

Full Document:

Full Pages





(US); Paloma Pimenta, Staten Island, NY (US)

(73) Assignee: Colgate-Palmolive Company, New York, NY (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/366,356

(22) PCT Filed: Dec. 18, 2012

(86) PCT No.: **PCT/US2012/070238** 

§ 371 (c)(1), (2) Date:

A61Q 11/0 A61K 8/38 A61K 8/89 Jun. 18, 2014

(87) PCT Pub. No.: WO2013/096245
PCT Pub. Date: Jun. 27, 2013

(65) Prior Publication Data

US 2014/0314693 A1

#### Related U.S. Application Data

Oct. 23, 2014

- (62) Division of application No. PCT/US2011/066087, filed on Dec. 20, 2011.
- (51) Int. Cl. 461K 8/89 (2006.01) 461K 8/22 (2006.01) 461K 8/81 (2006.01)

Patent No.: US 9,155,688 B2
Date of Patent: Oct. 13, 2015

.S. Cl.

PC ... A61K 8/22 (2013.01); A61K 8/38 (2013.01); A61K 8/8176 (2013.01); A61K 8/891 (2013.01); A61Q 11/00 (2013.01); A61K 2800/872 (2013.01)

ield of Classification Search

#### References Cited

#### U.S. PATENT DOCUMENTS

6,613,812	B2	9/2003	Bui et al.
7,135,167	B2 *	11/2006	Legrand et al 424/70.122
2005/0038181	A1	2/2005	Chopra et al.
2005/0063923	A1	3/2005	Prencipe et al.
2005/0069502	A1	3/2005	Chopra et al.
2005/0287084	A1	12/2005	Ibrahim et al.
2006/0045854	A1	3/2006	Zaidel et al.
2007/0003494	A1	1/2007	Mori et al.
2007/0253916	A1	11/2007	Maitra et al.
2012/0328535	A1*	12/2012	Zaidel et al 424/53

#### FOREIGN PATENT DOCUMENTS

CN	101005879	7/2007
CN	101272824	9/2008
CN	102188335	9/2011
TW	201143800	12/2011
WO	WO 2005/018593	3/2005

#### OTHER PUBLICATIONS

\*ci
Prii
(57)

Abstract

Described herein are whitening compositions comprising a peroxide source, and an adhesion system comprising a hydrophobic component comprising a silicone adhesive; and a dental surface adhesion enhancing agent, which are physically stable and effectively provide whitening. Methods of making

## 29 claims, No drawing

### **Full Pages**

**Full Document:** 

### **Full Pages**

## **Examples**

# ต้องการทราบว่าบริษัทซัมซุงจด สิทธิบัตรอะไรบ้างเกี่ยวกับมือถือ

- สืบคันเงื่อนไข จากชื่อสิ่งประดิษฐ์และ ผู้ขอ
  - (TTL/phone AND AANM/samsung)



Data current through October 27, 2015...

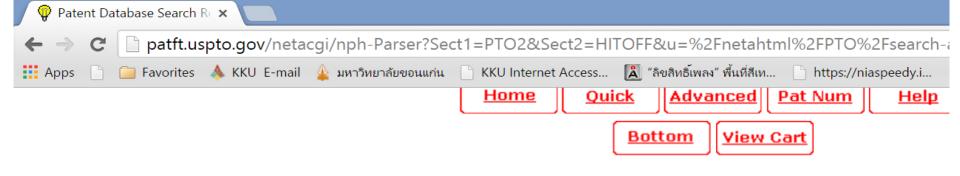


1976 to present (full-text)

Field Code	Field Name	Field Code	Field Name
PN	Patent Number	IN	Inventor Name
ISD	Issue Date	IC	Inventor City
TTL	<u>Title</u>	IS	Inventor State
ABST	Abstract	ICN	Inventor Country
ACLM	Claim(s)	AANM	Applicant Name

Classification (US, IPC, or CPC).

ength, excluding commas, which are optional



Searching US Patent Collection...

Results of Search in US Patent Collection db for:
(TTL/phone AND AANM/samsung): 43 patents.

Hits 1 through 43 out of 43

Jump To

PAT. NO.

1 D741,312 Cover for mobile phone
2 D741,311 Cover for mobile phone
3 D740,774 Mobile phone
4 D739,395 Cover for mobile phone

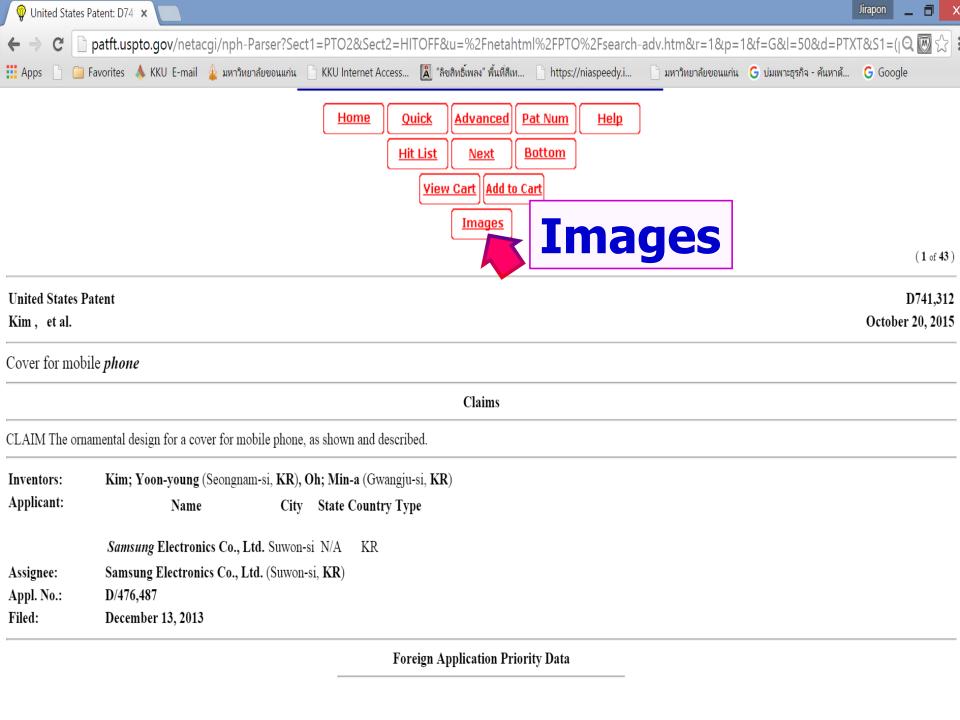
9.137,354 Portable television (TV) phone and method for controlling operation thereof

7 D736,757 Cover for mobile phone

8 <u>D736,752</u> <u>Mobile phone</u>

D739,368 Mobile phone

Retrieved data on 10/11/2015



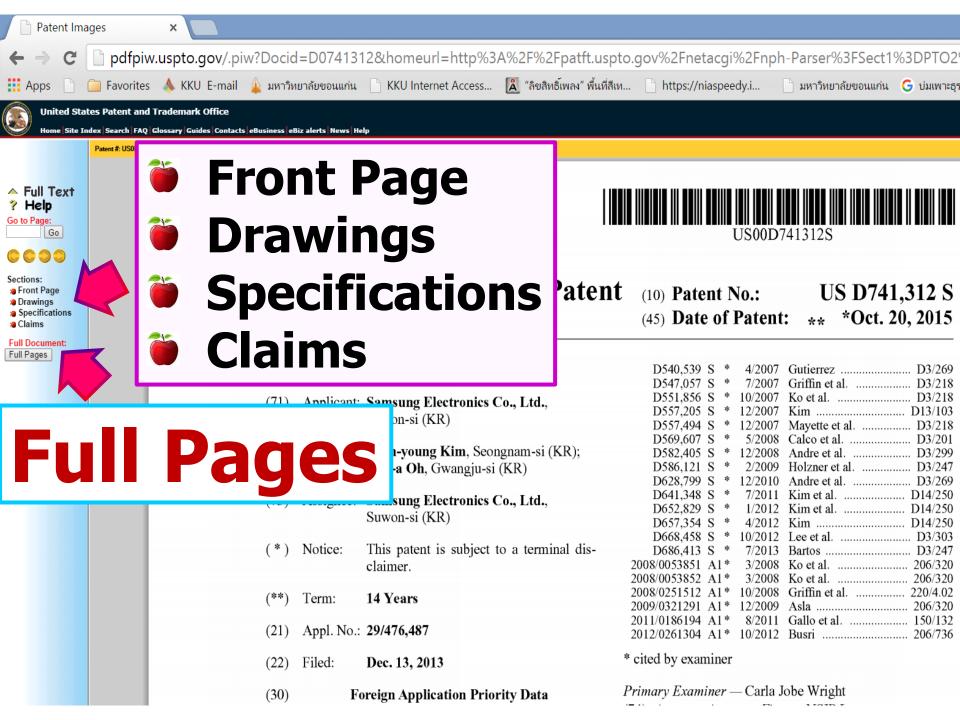
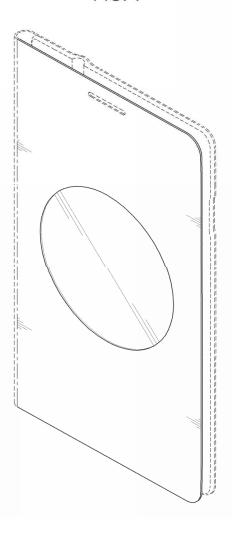


FIG. 1





▲ Full Text ? Help

Go to Page:

#### Sections:

- Front Page
- Drawings
- Specifications
- Claims

#### Full Document:

Full Pages

See application file for complete search history.

#### References Cited (56)

#### U.S. PATENT DOCUMENTS

D345,859 S	*	4/1994	Gribovsky	D3/247
D468,529 S	*	1/2003	Sabounjian	D3/273

FIG. 7 is a bottom view thereof.

The dot-dash broken line shown in FIGS. 1 and 2 represents a boundary of the claimed design. The dash-dash broken lines throughout the drawing figures depict unclaimed environment. The broken lines form no part of the claimed design.

#### 1 Claim, 7 Drawing Sheets

