

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference LVC-001PC	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2010/042540	International filing date (<i>day/month/year</i>) 20 July 2010	(Earliest) Priority Date (<i>day/month/year</i>) 21 July 2009
Applicant COVELLO, LEONARD		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- the international application in the language in which it was filed.
 a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. Certain claims were found unsearchable (see Box No. II).

3. Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- the text is approved as submitted by the applicant.
 the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant.
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 1C
 as suggested by the applicant.
 as selected by this Authority, because the applicant failed to suggest a figure.
 as selected by this Authority, because this figure better characterizes the invention.
- b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2010/042540

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-6, 9-14 and 17-21

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2010/042540

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61M 25/01 (2010.01)

USPC - 604/516

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A61M 5/00, 25/00, 25/01, 25/10, 29/00, 31/00 (2010.01)

USPC - 600/585; 604/96.01, 510, 514, 516; 606/191

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 2006/0149310 A1 (BECKER) 06 July 2006 (06.07.2006) entire document	1-4, 6, 9-14
Y		5, 17-21
Y	US 6,280,459 B1 (DOBLE) 28 August 2001 (28.08.2001) entire document	5
Y	US 2008/0015540 A1 (MUNI et al) 17 January 2008 (17.01.2008) entire document	17-19
Y	US 2006/0004286 A1 (CHANG et al) 05 January 2006 (05.01.2006) entire document	20-21
A	US 2008/0015497 A1 (KEITH et al) 17 January 2008 (17.01.2008) entire document	1-6, 9-14, 17-21

 Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 November 2010

Date of mailing of the international search report

03 DEC 2010

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/US2010/042540

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-6, 9-14 and 17-21 are drawn to a method of treating a congested maxillary sinus.

Group II, claims 22-27 are drawn to a method of delivering a drug to a congested maxillary sinus.

Group III, claims 28 and 29 are drawn to a method of retracting the middle turbinate prior to a sinus procedure.

Group IV, claims 30-34 are drawn to a middle turbinate retractor.

Group V, claim 35 is drawn to a middle turbinate retractor.

Group VI, claims 36-41 are drawn to a hole punch capable of making a perforation in the uncinata process.

Group VII, claims 42-58 are drawn to a guide-free dilator.

Group VIII, claims 59-62 are drawn to a drug insertion device.

Group IX, claims 63 and 64 are drawn to a device for controlled delivery of a drug into a sinus.

The inventions listed as Groups I-IX do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical features of Group I, advancing an instrument capable of making a perforation; making a perforation; inserting a dilator through the perforation; dilating by expanding the dilator, are not present in Groups II-IX; the special technical features of Group II, advancing a drug insertion instrument device through the perforation; and releasing a drug or drug delivery device in the maxillary sinus, are not present in Groups I or III-IX; the special technical features of Group III, advancing a middle turbinate retractor in a compressed state into the axilla of the middle meatus between the middle turbinate and the lateral wall of the nose; and expanding the middle turbinate retractor to reveal the relevant anatomy around an obstructed sinus cavity, are not present in Groups I, II or IV-IX; the special technical features of Group IV, an expandable frame having two parallel sides and a rounded portion between the two sides, said expandable frame approximating a V-shape or a

U-shape; an intervening pliable metal or plastic frame between the two sides of the expandable frame which enables expansion and compression of the frame; and a pair of forceps on the inner portion of both sides of the expandable frame, are not present in Groups I-III or V-IX; the special technical features of Group V, two parallel arms that are capable of being expanded or compressed with respect to each other; a pair of expansion receptacles at the lower portion of each arm; a ratchet arm connected at the upper portion of each parallel arm, are not present in Groups I-IV or VI-IX; the special technical features of Group VI, a shaft; a stationary platform mounted on said shaft; a blade attached to one end of the stationary platform; a mobile tapered flange, are not present in Groups I-V or VII-IX; the special technical features of Group VII, a rigid shaft with a bottom portion and a top portion; a rigid handle mounted at the bottom portion of the rigid shaft; and a dilator segment mounted at the top portion of the rigid shaft, are not present in Groups I-VI, VIII or IX; the special technical features of Group VIII, a rigid shaft containing a lumen, said rigid shaft angled distally at an angle between about 55 degrees and about 60 degrees; a piston slidably connected to said lumen of said rigid shaft; a receptacle for holding a drug or drug delivery device, are not present in Groups I-VII or IX; and the special technical features of Group IX, a drug containing matrix; and a degradable framework having a spine and a series of coplanar ribs protruding radially from the spine, the tips of the ribs protruding past the outer surface of the drug containing matrix, wherein the drug containing matrix degrades at a rate faster than the degradable framework, are not present in Groups I-VIII.

Since none of the special technical features of the Groups I-IX inventions is found in more than one of the inventions, unity is lacking.