



UNIVERSITY OF MARYLAND
VENTURES
BALTIMORE

OFFICE OF TECHNOLOGY TRANSFER
Introduction to Intellectual Property
July 15, 2022

COMMERCIALIZE DISCOVERIES. **CREATE ECONOMIC IMPACT.**

INTRODUCTION TO INTELLECTUAL PROPERTY



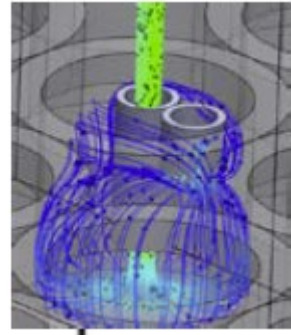
Information and materials provided herein is for educational purposes only, and receipt and use (1) is not provided in the course of and does not create or constitute an attorney-client relationship, (2) is not intended as a solicitation, (3) is not intended to convey or constitute legal advice, and (4) is not a substitute for obtaining legal advice from a qualified attorney. You should not act upon any such information without first seeking qualified professional counsel.

Dustin E. Lee is a patent attorney that specializes in medical devices, emerging technologies, and software. Before joining the University of Maryland, Baltimore - Office of Technology Transfer in July 2016, he worked as an engineer and patent attorney in private practice.

Dustin received his BS in Engineering in Aerospace Engineering from the University of Michigan. He began his career as a mechanical engineer, developing integrated robotics and material technologies, before earning a JD from Michigan State University. He also has an MBA from the University of Maryland Smith School of Business. He has experience in university technology transfer and patent boutique firms, in which he focused on patent prosecution, litigation, and counseling in the mechanical, computer, biomedical, and electrical arts. Dustin is an active member of the State Bar of Michigan, AIPLA, LES, and is registered to practice before the USPTO.

INTRODUCTION TO INTELLECTUAL PROPERTY

- Patents
- Copyrights
- Trademarks and Service-marks
- Trade Secrets and Know-How



THE REQUIREMENTS OF PATENTABILITY

Patentability Requirements

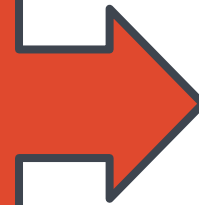
- Subject Matter Eligibility (*useful*)
- Novelty (*identical*)
- Non-obviousness (*similarity*)

Requirements of the Patent Application

- Written Description (*what it is*)
- Enablement (*how it works*)
- Best mode (*how it works best*)

Patent Inventorship

- Contribution to conception or reduction to practice



- Subject Matter Eligibility
 - Is it useful?
 - Does it use software to solve a technical problem?
- Novelty
 - Has someone done this before?
- Non-obviousness
 - What is in the prior art?
 - What are the differences between the prior art and the invention?
 - What is the relevant level of ordinary skill in the pertinent art?
 - Is there evidence of non-obviousness?
- Written Description, Enablement, and Best Mode
 - How does it work?
 - What is the *best* way for it to work?



PATENT BASICS

Utility

- Machine, manufacture, composition of matter, or process
- Monopoly of *up to 20 years*
 - Initial fees + Maintenance fees @ 3.5, 7.5, and 11.5 years
- Grants a property right to the inventor/owner
 - Claims establish the “boundaries” to exclude others
 - *Not* a right to make, use, sell the patented invention!
- Country specific
 - No “international patent”

Design

- Ornamental design of a functional item
- Monopoly of 14 years

Plant

- An invented or discovered and asexually reproduced a distinct and new variety of plant, other than a tuber propagated plant or a plant found in an uncultivated state
- Monopoly of 20 years

(12) **United States Patent**
Gammie

(10) **Patent No.:** **US 7,635,386 B1**
(45) **Date of Patent:** **Dec. 22, 2009**

(54) **METHODS AND DEVICES FOR PERFORMING CARDIAC VALVE REPAIR**

2006/0167541 A1* 7/2006 Lattouf 623/2.11
2007/0112422 A1* 5/2007 Dehdashtian 623/2.11
2009/0005863 A1* 1/2009 Goetz et al. 623/2.18

(75) Inventor: **James S. Gammie**, Stevenson, MD (US)

FOREIGN PATENT DOCUMENTS

(73) Assignee: **University of Maryland, Baltimore**, Baltimore, MD (US)

WO WO 2006/078694 7/2006

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 296 days.

* cited by examiner

Primary Examiner—Suzette J Gherbi
(74) *Attorney, Agent, or Firm*—Squire, Sanders & Dempsey L.L.P.

(21) Appl. No.: **11/683,282**

(57) **ABSTRACT**

(22) Filed: **Mar. 7, 2007**

Related U.S. Application Data

(60) Provisional application No. 60/780,521, filed on Mar. 7, 2006.

(51) **Int. Cl.**
A61F 2/24 (2006.01)

(52) **U.S. Cl.** **623/2.11**; 623/904

(58) **Field of Classification Search** 128/898;
607/9; 623/2.1–2.37, 904

See application file for complete search history.

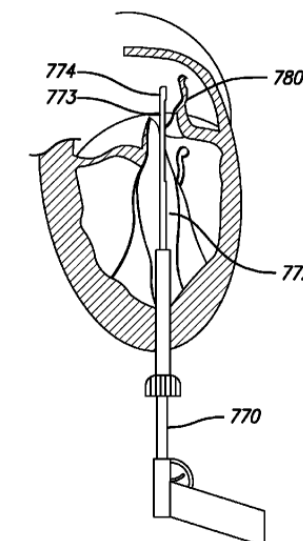
References Cited

U.S. PATENT DOCUMENTS

6,010,531 A * 1/2000 Donlon et al. 623/2.1
6,840,246 B2 * 1/2005 Downing 128/898
6,978,176 B2 * 12/2005 Lattouf 607/9
7,291,168 B2 * 11/2007 Macoviak et al. 623/2.36
7,294,148 B2 * 11/2007 McCarthy 623/2.36
2005/0149093 A1* 7/2005 Pokorney 606/185
2006/0100698 A1* 5/2006 Lattouf 623/2.11

The present invention is directed to methods and devices for repairing a cardiac valve. Generally, the methods involve a minimally invasive procedure that includes creating an access in the apex region of the heart through which one or more instruments may be inserted so as to repair a cardiac valve, for instance, a mitral or tricuspid valve. Accordingly, the methods are useful for performing a variety of procedures to effectuate a repair. For instance, in one embodiment, the methods are useful for repairing a cardiac valve by implanting one or more artificial heart valve chordae tendinae into one or more cardiac valve leaflet tissues so as to restore the proper leaflet function and thereby prevent reperfusion. In another embodiment, the methods are useful for repairing a cardiac valve by resecting a portion of one or more cardiac valve leaflets and implanting one or more sutures into the resected valve tissues, which may also include the implantation of an annuloplasty ring. In an additional embodiment, the methods are useful for performing an edge to edge bow-tie repair (e.g., an Alfieri repair) on cardiac valve tissues. Devices for performing the methods of the invention are also provided.

23 Claims, 9 Drawing Sheets



PATENT BASICS

TYPES OF US UTILITY PATENTS

Provisional Patent Applications (US only)

- Temporary application (12 months)
- Puts a “stake in the ground” for having patentable subject matter at the filing date (“priority date” from which to evaluate earlier—not later—prior art)
- Can be the basis of priority of non-provisional patent applications
 - Non-provisionals “claim the benefit of” or “claim priority” to provisional patent applications
- Held at the USPTO in confidence
 - If no claim of priority after 12 months, the provisional is abandoned and deleted
 - If a non-provisional claims priority within 12 months, the provisional is publicly available
- Never examined for patentability
 - Will never become an issued patent
- Very limited formal requirements

Non-Provisional Patent Applications

- Examined for patentability and written description by a USPTO patent examiner
 - Can become an issued patent according to prosecution process
- Can claim the benefit of previous patent applications
 - To secure a priority date ahead of potential prior art
 - Can claim the benefit of provisional or non-provisional applications
- Generally published 18 months after earliest priority date
 - “US Patent Application Publication”
 - Publications are permanently public
- Very strict formal requirements
- Other types
 - PCT Applications, Divisionals, Continuations, Continuations-in-Part
 - Used to develop a patent portfolio



WHAT IS PRIOR ART?

A LOT

- Patented
 - Issued patent *anywhere in the world*
 - Alive or expired
- Described in a printed publication
 - Abandoned patent application
 - Manuscript
 - Webpage
 - Library Book
 - Journal
 - Newspaper
 - Poster
- Public use
 - Used or described in public
 - Limited exception for experiments
- On sale
 - Actual sale
 - Offer for sale
 - Trade secrets *can* be prior art
- Otherwise available to the public



COPYRIGHT BASICS

- Copyrightable work = *original expression of an idea*
- Typical ways to protect inventions with copyrights
 1. “Common law copyright”
 - Created the instant the material is made
 - Protects bundle of rights
 2. Federal copyright registration
 - Same protections as “common law”
 - Adds enforcement mechanisms
 - Some review
- Copyright “author” ≠ Scholarly “author”
 - Copyright author = **Anyone* who has made a **creative contribution* to the **original work*
- Licensable like other types of IP
- Notice – Using the “©” Symbol
 - Often, but not always, used
 - Can indicate to others that work is protected
- Length of protection depends on creator (>70yrs)

How a Copyright is Made

1. Original work → *New software*
2. Tangibly fixed → *Saved on PC*
3. By an author → *A person*

Bundle of Rights in a Copyright

- Reproduction
- Performance
- Make derivatives
- Display publicly
- Distribution
- Broadcast

Example Copyright Notices

- Copyright 2022, University of Maryland, Baltimore. All rights reserved.
- © 2022, University of Maryland, Baltimore
- © 2022 UMB
- © 2022

OTHER TYPES OF INTELLECTUAL PROPERTY

- Trademarks and Service-marks
 - Protects marks that identify the source of goods or services to the goods or services used in commerce
 - Images, symbols, words, sounds, smells
 - Different levels of protection based on distinctiveness
 - Federal (“registered”) and state protections
 - USPTO and individual states
 - Based on use in commerce
- Trade Secrets and Know-How
 - Protects commercially valuable information as long as the information remains secret
 - Requires measures to keep information secret
 - Physical safeguards, IT protections, CDAs/NDAs, employment agreements and policies, etc.



THANK YOU!



UNIVERSITY OF MARYLAND
UM VENTURES
BALTIMORE

COMMERCIALIZE DISCOVERIES. **CREATE ECONOMIC IMPACT.**