

## US005549665A

## United States Patent [19]

## Vesely et al.

[56]

4,259,753

4,725,274

4,851,000

5,326,370

220097

5,258,023 11/1993 Reger.

[11] **Patent Number:**  5,549,665

**Date of Patent:** [45]

8300617

WO94/01060

Aug. 27, 1996

[54]	BIOPROSTETHIC VALVE				
[75]	Inventors:	Ivan Vesely; Slawomir Krucinski; Gordon Campbell; Derek Boughner; Mohan Dokainish, all of London, Canada			
[73]	Assignee:	<b>London Health Association</b> , London, Canada			
[21]	Appl. No.: <b>261,983</b>				
[22]	Filed:	Jun. 17, 1994			
[30]	Foreign Application Priority Data				
Jun.	18, 1993 [	GB] United Kingdom 9312666			

References Cited

U.S. PATENT DOCUMENTS

5,163,953 11/1992 Vince ...... 623/2

FOREIGN PATENT DOCUMENTS

4/1981 Liotta et al. ...... 623/2

2/1988 Lane et al. ..... 623/2

7/1994 Love et al. ..... 623/2

3/1987 European Pat. Off. ...... 623/2

1/1994	WIPO .	

3/1983 WIPO ...... 623/2

#### OTHER PUBLICATIONS

"Numerical Simulation of Leaflet Flexure in Bioprosthetic Valves Mounted on Rigid and Expansile Stents," 28 Dec. 1992, by S. Krucinski, I. Veley, M. A. Dokainish, and G. Campbell.

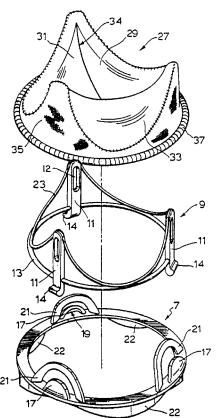
"Pivoting Stent Posts Reduce Stresses in Pericardial Bioprosthetic Valves: A Numerical Analysis," by I. Vesely and S. Krucinski.

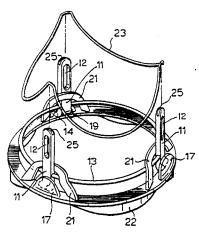
Primary Examiner-Michael Milano Attorney, Agent, or Firm-Fay, Sharpe, Beall, Fagan, Minnich & McKee

#### [57] ABSTRACT

A bioprosthetic valve comprising a support ring having three spaced apart end stops projecting upwardly therefrom, a stent post ring having three spaced apart stent posts pivotally connected thereto and adapted to engage respective ones of the end stops so as to permit outward pivoting of the stent posts and to prevent inward pivoting thereof, a leaflet valve having three generally triangular leaflets defining respective cusps, the leaflets being joined at respective commissures, and a sewing ring for attaching the leaflet valve to the stent post ring and support ring.

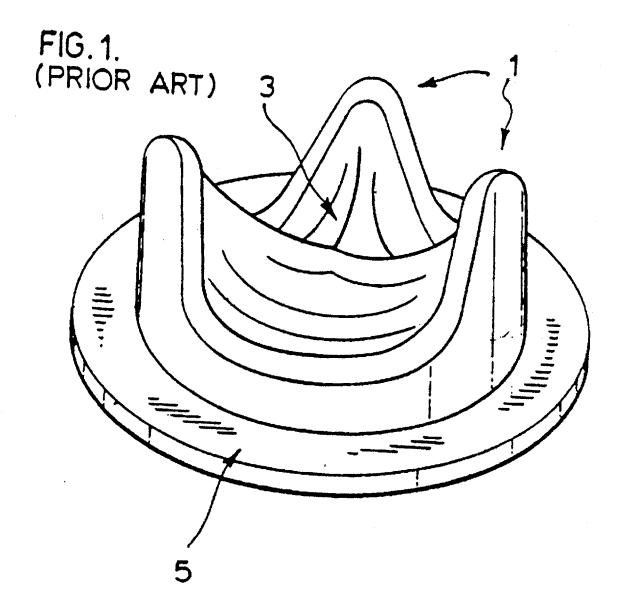
### 21 Claims, 4 Drawing Sheets



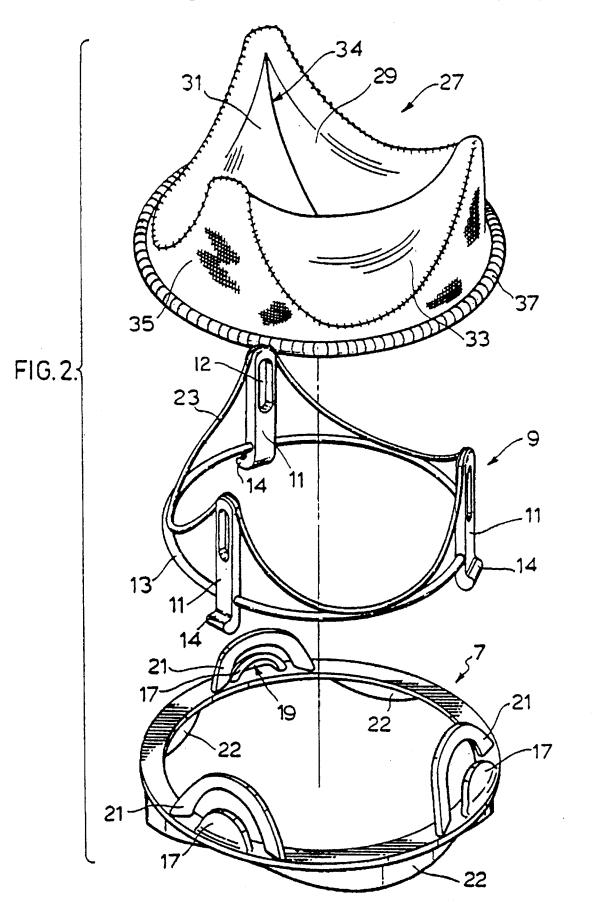


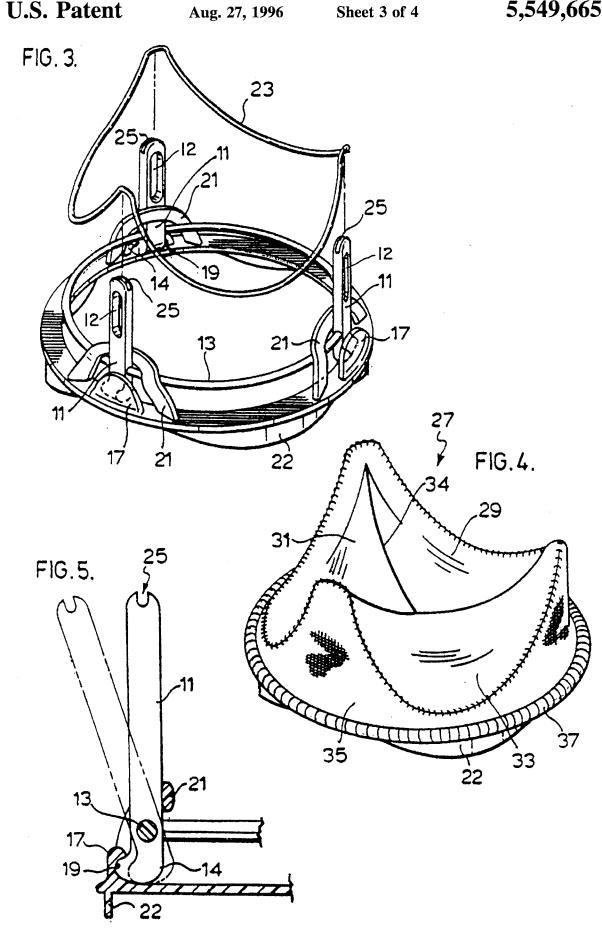
NORRED EXHIBIT 2307 - Page 1 Medtronic, Inc., Medtronic Vascular, Inc., & Medtronic Corevalve, LLC

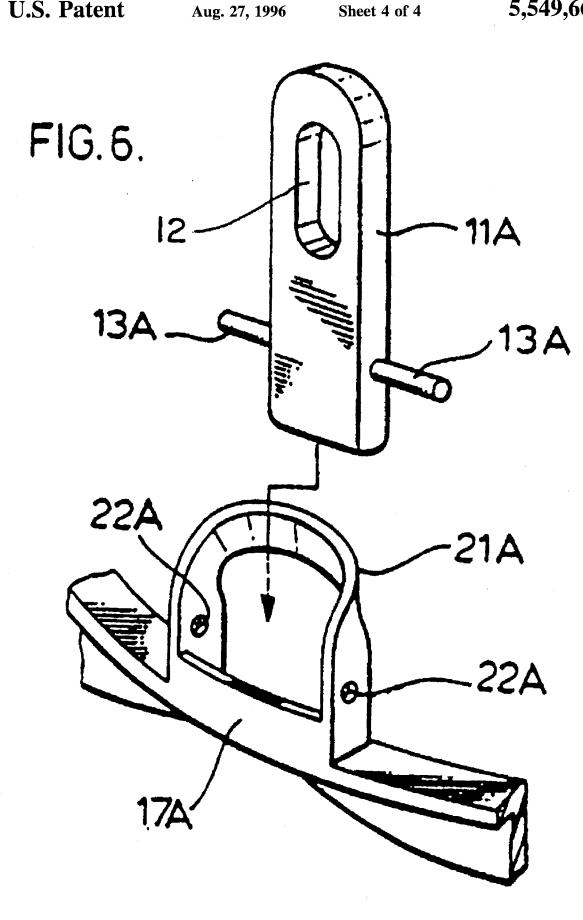














# DOCKET A L A R M

## Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

## **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

