



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/816,631	04/22/2013	Subramanian Venkatraman	055514/429902	9146
826	7590	09/24/2019	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			MARCETICH, ADAM M	
			ART UNIT	PAPER NUMBER
			3781	
			NOTIFICATION DATE	DELIVERY MODE
			09/24/2019	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@alston.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* SUBRAMANIAN VENKATRAMAN, LEI SHANG,  
YIN CHIANG FREDDY BOEY, and TINA WONG

---

Appeal 2018-006830<sup>1</sup>  
Application 13/816,631  
Technology Center 3700

---

Before MURRIEL E. CRAWFORD, PHILIP J. HOFFMANN, and  
BRADLEY B. BAYAT, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal from the final rejection of claims 1–5, 7–14, and 17. The invention relates generally to a glaucoma valve, a casing for containing a glaucoma valve, and a glaucoma drainage device comprising either the valve, the casing, or both. Spec. ¶ 2.

---

<sup>1</sup> The Appellants identify Nanyang Technological University and Singapore Health Services Pte Ltd. as the real parties in interest. Appeal Br. 2.

Claim 1 is illustrative:

1. A glaucoma valve, the valve comprising
  - a) a flow channel having an inlet and an outlet; and
  - b) a valve member connected to the outlet of the flow channel, wherein the valve member comprises a degradable polymer and a steroid, wherein the valve member is adapted to start degradation when a fibrous capsule is developing around the valve, wherein the steroid is mixed with the degradable polymer to form the valve member, and wherein the degradable polymer is configured to degrade during formation of the fibrous capsule so as to release the steroid in therapeutic levels concurrently with degradation of the degradable polymer.

The Examiner rejected claims 1–3, 14, and 17 under 35 U.S.C.

§ 103(a) as unpatentable over Brown et al., (US 2004/0162545 A1, pub. Aug. 19, 2004) (“Brown”), Butuner (US 2009/0280158 A1, pub. Nov. 12, 2009), and E. I. Shishatskaya et al., “Tissue response to the implantation of biodegradable polyhydroxyalkanoate sutures”, *Journal Of Materials Science: Materials In Medicine*, Vol. 15, 2004, pp. 719-728 (“Shishatskaya”).

The Examiner rejected claims 4, 5, and 7–11 under 35 U.S.C. § 103(a) as unpatentable over Brown, Butuner, Shishatskaya, and Pacetti et al., (US 2009/0004243 A1, pub. Jan. 1, 2009) (“Pacetti”).

The Examiner rejected claim 12 under 35 U.S.C. § 103(a) as unpatentable over Brown, Butuner, Shishatskaya, and Cuevas (US 2011/0230963 A1, pub. Sept. 22, 2011).

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as unpatentable over Brown, Butuner, Shishatskaya, and Ramzipoor et al., (US 2010/0004734 A1, pub. Jan. 7, 2010) (“Ramzipoor”).

We REVERSE.

## ANALYSIS

We are persuaded by the Appellants' arguments that the Examiner has failed to establish a prima facie case of obviousness of the pending claims.

In rejecting claim 1, the Examiner finds that Brown, at Figure 13C and paragraph 62, discloses "the degradable polymer is configured to degrade," but, rather than degrading "during formation of a fibrous capsule," as claimed, degrades "at some time *after* formation of the fibrous capsule." Answer 4 (emphasis added). The Examiner further finds that the combination of Brown and Butner is "silent" on the member starting degradation "when a fibrous capsule is developing around the valve," but "Shishatskaya discloses a study of polyhydroxyalkanoate / PHA sutures" that discloses the degrading during formation of the fibrous capsule. Answer 4–5. The Examiner articulates that "Shishatskaya establishes . . . that macrophages will begin eroding the implant even before the capsule forms," and that "Shishatskaya further describes a stage preceding this capsule, and shows that circulating macrophages will degrade the implant shortly after introducing it." Answer 7.

The Appellants argue, citing evidence in Shishatskaya, that no degradation while "a fibrous capsule is developing," as claimed is disclosed in Shishatskaya, because "there was no degradation of the implant in Shishatskaya, thereby showing that mere presence of macrophages surrounding a biodegradable polymer does not mean that degradation of the biodegradable polymer is taking place. Instead, the increase in activity of AcP relates to results obtained four weeks after the surgery, during which a fibrous capsule has already formed around the sutures (i.e., from Week 2 onwards)." Appeal Br. 4 (emphasis omitted); *see also id.* at 3.

In response, the Examiner argues “the polymers of Brown can be expected to degrade along the same timeframe as Appellant’s invention.” Answer 15. In addition, the Examiner asserts that the “term ‘when a fibrous capsule is developing’ is broad, since it does not narrowly select a specific step of capsule development” (Appeal Br. 1), and that the “claims fail to set forth a particular timeline in which the claimed events occur” (*id.* at 2).

We are persuaded by the Appellants’ arguments that the Examiner has not shown the obviousness of a degradable polymer, mixed with a steroid, adapted to start degradation when a fibrous capsule is developing around the claimed valve, as claimed. First, the Examiner articulates, and Brown discloses, that Brown’s biodegradable member dissolves or disintegrates “after formation of the fibrous capsule,” rather than “when a fibrous capsule is developing.” See Answer 3; Brown ¶ 62. Thus, we are unpersuaded by the Examiner’s later statement, that “the polymers of Brown can be expected to degrade along the same timeframe” as the claimed structure, as establishing degradation *during* formation of a fibrous capsule, as claimed. Answer 15.

Second, because the Examiner fails to rebut the Appellants’ argument, that Shishatskaya fails to disclose degradation during formation of a fibrous capsule, we accept the Appellants interpretation of Shishatskaya.

Third, because the claim specifically calls for a member, comprising a mixture of degradable polymer and a steroid, which is both “adapted to start degradation when a fibrous capsule is forming,” and “configured to degrade during formation of the fibrous capsule,” the Examiner would need to demonstrate that the polymer/steroid member in the art is specifically adapted and configured to degrade at a particular time. However, the

Examiner has not shown a member comprising a mixture of degradable polymer and steroid that was adapted or configured as claimed. Instead, in the end, the Examiner relies on a combination of materials that *might* degrade in the expected time during the claimed conditions. This speculation about the possible behavior of materials, (materials which have not been combined and configured as claimed in the art, but only in the theoretical combination the Examiner advances), does not meet the claim language, which requires a definitive adaption and configuration as claimed. The claim language is thus not so broad as to encompass the Examiner's assertions about the theoretical combination of elements from the prior art references.

Because the Examiner has not established a prima facie case of obviousness of claim 1 over the cited art, for the three reasons above, we do not sustain the rejection of claims under 35 U.S.C. § 103(a).

#### DECISION

We reverse the rejections under 35 U.S.C. § 103(a) of claims 1–5, 7–14, and 17.

REVERSED