



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.
12/853,871	08/10/2010	Richard YingQing Xu	OMS4-49434-US (BAO0654US)	6687
44639	7590	11/18/2016	EXAMINER	
CANTOR COLBURN LLP- BAKER HUGHES INCORPORATED 20 Church Street 22nd Floor Hartford, CT 06103			LOIKITH, CATHERINE A	
			ART UNIT	PAPER NUMBER
			3674	
			NOTIFICATION DATE	DELIVERY MODE
			11/18/2016	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):

usptopatentmail@cantorcolburn.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD YINGQING XU

Appeal 2015-001294^{1,2}
Application 12/853,871
Technology Center 3600

Before ANTON W. FETTING, PHILIP J. HOFFMANN, and
CYNTHIA L. MURPHY, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–19. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ Our decision references Appellant’s Specification (“Spec.,” filed Aug. 10, 2010), Appeal Brief (“Appeal Br.,” filed Aug. 11, 2014), and Reply Brief (“Reply Br.,” filed Oct. 29, 2014), as well as the Final Office Action (“Final Action,” mailed Mar. 26, 2014) and the Examiner’s Answer (“Answer,” mailed Sept. 23, 2014).

² According to Appellant, “BAKER HUGHES INCORPORATED” is the real party in interest. Appeal Br. 1.

According to Appellant, the invention is directed to a system and method for fracturing a subterranean formation, for purposes relating to hydrocarbon exploration and recovery. *See* Spec. ¶¶ 1, 4, 5. Claims 1, 9, and 19 are the only independent claims. *See* Appeal Br., Claims App. We reproduce claim 1, below, as representative of the appealed claims.

1. A system for fracturing a subterranean formation comprising:

a housing having one or more radially directed ports therein;

a valve disposed within the housing proximate the one or more ports; and

a seat member interactive with the valve to rapidly prevent or substantially retard a fluid flow therethrough, resulting in a local pressure spike in the fluid created solely by a retardation of fluidic momentum when the system is in use, the pressure spike initiating fracture formation without pressuring up from surface.

Id.

REJECTIONS AND PRIOR ART

The Examiner rejects claims 1–8 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The Examiner rejects claims 1, 3, 9–11, 16, and 19 under 35 U.S.C. § 102(b) as anticipated by Lopez de Cardenas (US 2007/0272411 A1, pub. Nov. 29, 2007).

The Examiner rejects claims 2, 12, and 17 under 35 U.S.C. § 103(a) as unpatentable over Lopez de Cardenas.

The Examiner rejects claims 4–8, 13–15, and 18 under 35 U.S.C. § 103(a) as unpatentable over Lopez de Cardenas and Garcia (US 6,732,803 B2, iss. May 11, 2004).

See Final Action 2–8; *see also* Answer 2.

ANALYSIS

Written description

The Examiner rejects claims 1–8 as failing to comply with the written description requirement. *See* Final Action 2. Specifically, the Examiner determines that

[a] local pressure spike where “the pressure spike initiat[es] fracture formation without pressuring up from surface” as claimed in amended claim 1 is not properly described in the application as filed. There is no specific recitation of such a limitation in the present Specification. While there is no positive teaching of relying on a pressure spike from the surface to initiate fracture formation, there is also no positive teaching of a total lack of a pressure spike from the surface.

Final Action 2. Based on our review, however, we determine that the originally-filed Specification reasonably conveys that Appellant had possession of the claimed invention, including creation of a pressure spike initiating fracture formation without pressuring up from the surface, at the time the application was filed.

For example, we agree with Appellant that, when taken as a whole, the application is understood to provide an alternative to prior art systems that require pressuring up from the surface. *See* Appeal Br. 5; *see also* Reply Br. 2. Further, the Specification, as originally filed, describes

[a] system for fracturing a subterranean formation including a housing having one of more radially directed ports therein; and a

configuration within the housing capable of rapidly and substantially retarding fluidic momentum of a fluid flowing therethrough *resulting in a pressure spike sufficient to initiate fracture formation in a subterranean formation.*

Spec. ¶ 6 (emphasis added). Restated, the Specification describes creation of a pressure spike that is sufficient to initiate fracture formation without the use of any other mechanism. Still further, the Specification describes “[f]lowing fluid in a conduit having a given pressure will experience a rapid increase in pressure at a location where that fluid is caused to suddenly decrease velocity or stop. The pressure spike generated by such phenomena is harnessed to initiate a fracture as described herein.” *Id.* at ¶ 11. Thus, this portion of the Specification also describes creation of a pressure spike that initiates fracture formation without the use of any other mechanism. Based on the foregoing, we determine that the statements in the Specification describing the creation of a pressure spike sufficient to initiate fracture formation in a subterranean formation, without reference to any other mechanism for creating a pressure spike including a mechanism for pressuring up from the surface, provide support for the claim recitation of “the pressure spike initiating fracture formation without pressuring up from [the] surface” as recited by claim 1.

Anticipation and Obviousness

Independent claim 1 requires

a seat member interactive with the valve to rapidly prevent or substantially retard a fluid flow therethrough, resulting in a local pressure spike in the fluid created solely by a retardation of fluidic momentum when the system is in use, the pressure spike initiating fracture formation without pressuring up from surface.

Appeal Br., Claims App. Appellant argues that Lopez de Cardenas does not teach such a seat member, because Lopez de Cardenas requires pressure to

be applied from the surface, and also does not otherwise disclose that a seat member creates a pressure spike sufficient to initiate fracture formation by itself. *See id.* at 6–7; *see* Reply Br. 2–4. In response, the Examiner finds that Lopez de Cardenas’s paragraph 35 describes alternate embodiments—one of which applies pressure from the surface, and another that does not. *See* Answer 4. Based on our review of Lopez de Cardenas, we conclude that the Examiner’s finding that Lopez de Cardenas discloses an embodiment that does not apply pressure from the surface is not supported by substantial evidence. Thus, we do not sustain the anticipation rejection of claim 1.

We also do not sustain the anticipation rejection of independent claims 9 and 19, which each recite a similar limitation and which the Examiner rejects based on similar reasoning. Further, we do not sustain the anticipation or obviousness rejections of claims 2–8 and 10–18 that depend from the independent claims, inasmuch as the Examiner does not rely on any other reference to remedy the deficiency in the independent claims’ rejection.

DECISION

We REVERSE the Examiner’s written description, anticipation, and obviousness rejections of claims 1–19.

REVERSED