

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AKERMIN, INC.,
Petitioner,

v.

CO2 SOLUTIONS INC.,
Patent Owner.

Case IPR2015-00880
Patent 8,329,458 B2

Held: June 9, 2016

BEFORE: MICHAEL P. TIERNEY, JON B. TORNQUIST, and
ELIZABETH M. ROESEL, Administrative Patent Judges.

The above-entitled matter came on for hearing on Thursday, June 9, 2016, commencing at 1:32 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

Case IPR2015-00880
Patent 8,329,458 B2

APPEARANCES:

ON BEHALF OF THE PETITIONER:

MARC W. VANDER TUIG, ESQUIRE
JOHN R. SCHROEDER, ESQUIRE
Senniger Powers, LLP
100 North Broadway
17th Floor
Saint Louis, Missouri 63102

ON BEHALF OF PATENT OWNER:

SANDIP H. PATEL, ESQUIRE
MICHAEL R. WEINER, ESQUIRE
Marshall Gerstein Borun, LLP
233 South Wacker Drive
6300 Willis Tower
Chicago, Illinois 60606-6357

1 P R O C E E D I N G S

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3 JUDGE ROESEL: Good afternoon. Today we'll hear
4 argument in case number IPR2015-00880, Akermin versus CO2
5 Solutions concerning patent number 8,329,458. Would counsel
6 for the parties please introduce yourselves starting with petitioner.

7 MR. VANDER TUIG: Yes, Your Honor. Marc Vander
8 Tuig, Senniger Powers her on behalf of petitioner, Akermin, Inc.
9 With me today is my colleague, John Schroeder.

10 MR. PATEL: Thank you, Your Honor. My name is
11 Sandip Patel, and I'm here for Marshall, Gerstein & Borun on
12 behalf of CO2 Solutions with my colleague, Michael Weiner.

13 JUDGE ROESEL: Thank you and welcome to the
14 Board. According to our order on June 1, 2016, each side is
15 going to have 45 minutes to argue today. The petitioner will
16 argue first and may reserve rebuttal time. The patent owner may
17 not reserve rebuttal time. And I'll remind the parties that the
18 petitioner here bears the burden of proof by a preponderance of
19 the evidence on its proposition of unpatentability. I will also
20 remind the parties that this hearing is open to the public and a full
21 transcript of the hearing will be made and will become part of the
22 record.

1 So please, as you are going through your slides, I know
2 each side submitted demonstratives for today's hearing, please
3 remember to mention the slide number. That helps us to connect
4 your argument with the slides as we review the record.

5 So if you are ready to begin, we'll start with petitioner.

6 MR. VANDER TUIG: Thank you, Your Honor.

7 JUDGE ROESEL: Is petitioner going to reserve time?

8 MR. VANDER TUIG: Yes, I would like to reserve ten
9 minutes, please.

10 JUDGE ROESEL: Okay. You may begin.

11 MR. VANDER TUIG: Good afternoon. So today we
12 are here on four instituted grounds related to the patent at issue.
13 Four of the grounds -- I'm sorry, five instituted grounds. Four of
14 the grounds relate to the Bonaventura reference. One is an
15 anticipation ground. Three are obviousness grounds, two of
16 which are directed to specific dependent claims. Then we have a
17 separate obviousness ground, 5, with two separate references,
18 Dean and Rau. We'll get to all those in a minute.

19 The '458 patent at issue is a catalytic reactor. It's owned
20 by CO2 Solutions. It was claims priority back to a Canadian
21 application in July of 2001. The main claimed features at issue
22 today are summarized on this table with the figure here. There's a
23 reaction chamber, a biocatalyst seen as 4 in the drawing, which
24 are immobilized. There's a liquid inlet and a gas inlet, a liquid

1 outlet and a gas outlet, and then a filter retention device which is
2 hard to see and from where I stand it's number 9 at the bottom.
3 That retains the immobilized biocatalyst within the reaction
4 chamber.

5 Now, the state of the art, and I think this is undisputed
6 for the most part, is that tri-phasic, that is gas-liquid-solid-type
7 bioreactors were commonly used in a wide variety of industrial
8 applications long before the '458 patent application was filed.

9 In addition, the use of carbonic anhydrase to catalyze
10 the hydration reaction was well known, the hydration reaction of
11 carbon dioxide. Immobilizing enzymes was a well-developed
12 field as of the time, and in fact, carbonic anhydrase, because of its
13 activity, was one of the more highly studied enzymes used in
14 immobilization research. And the reactor vessel configurations
15 used at the time were unremarkable. And this is illustrated in
16 claim 1, which is the bioreactor claim.

17 So what I have done here is we've highlighted in green
18 the features of the bioreactor itself, which is the physical reaction
19 chamber, the inlet, the outlet. So it's undisputed that those are
20 well known and in fact, are reflected in the references that we've
21 submitted.

22 In yellow what we've done is highlighted that portion of
23 the claim that requires using carbonic anhydrates entrapped or
24 immobilized in the porous substrates in order to catalyze this

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