

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD.,
Petitioner,

v.

PROMOS TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2017-01416
Patent 6,172,554 B1

Record of Oral Hearing
Held: August 16, 2018

Before JAMESON LEE, KEVIN F. TURNER, and JOHN A. HUDALLA,
Administrative Patent Judges.

Case IPR2017-01416
Patent 6,172,554 B1

APPEARANCES:

ON BEHALF OF THE PETITIONER:

PAUL M. ANDERSON, ESQUIRE
NAVEEN MODI, ESQUIRE
CHETAN BANSAL, ESQUIRE
DANIEL ZEILBERGER, ESQUIRE
Paul Hastings
875 15th Street, N.W.
Washington, D.C. 20005

ON BEHALF OF PATENT OWNER:

KEVIN JONES, ESQUIRE
JERRY CHEN, ESQUIRE
CRAIG R. KAUFMAN, ESQUIRE
MICHAEL TING, ESQUIRE
Tech Knowledge Law Group, LLP
100 Marine Parkway
Suite 200
Redwood Shores, California 94065

The above-entitled matter came on for hearing on Thursday, August 16, 2018, commencing at 10:00 a.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

P R O C E E D I N G S

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3 JUDGE TURNER: Good morning. We are convened for oral
4 argument for IPR2017-01416 which challenges U.S. patent 6,172,554. I am
5 Judge Turner. And I'm here along with Judges Lee and Hudalla. I would
6 like to start with appearances this morning. Can we begin with petitioner.
7 Please approach the podium and let me know who is going to be arguing and
8 who is represented for petitioner.

9 MR. MODI: Good morning, Your Honors. Naveen Modi from
10 Paul Hastings on behalf of petitioner, Samsung. With me I have my
11 colleagues Dan Zeilberger, Paul Anderson and Chetan Bansal. And Mr.
12 Zeilberger willing be presenting for Samsung today for the '554 patent.

13 JUDGE TURNER: Thank you. And for patent owner?

14 MR. KAUFMAN: Good morning, Your Honor. Craig Kaufman
15 from Tech Knowledge Law Group for patent owner. With me today are my
16 colleagues, Kevin Jones, Jerry Chen and Mike Ting. Mr. Jones will be
17 presenting for the '554 patent this morning.

18 JUDGE TURNER: Thank you and welcome to both sides. Each
19 side, per the oral hearing order, will have 30 minutes to argue this morning.
20 Petitioner has the ultimate burden of proving unpatentability and will argue
21 first and may reserve rebuttal time. Patent owner will proceed thereafter to
22 respond to petitioner's case and may respond on rebuttal if warranted. Are
23 there any questions about the logistics of this morning from either side?

1 Any questions either side has? Seeing or hearing none, we would like to
2 proceed. Petitioner.

3 MR. ZEILBERGER: Thank you, Your Honor. If I may, may I
4 approach the bench with physical copies of the demonstratives for the judges
5 present?

6 JUDGE LEE: Yes, please. Thank you.

7 JUDGE TURNER: And would you like to reserve any rebuttal
8 time this morning?

9 MR. ZEILBERGER: Yes, Your Honor. I would like to reserve
10 five minutes of rebuttal time.

11 JUDGE TURNER: Okay. I will ask Judge Lee to set the clock.
12 When he indicates that it's set up, you may begin.

13 JUDGE LEE: Let me say, it's been a while since I operated this.
14 Let me just set it in my mind and I'll look at the clock on the wall. I'll give
15 you a two-minute warning when your 25 minutes are about to be due.

16 MR. ZEILBERGER: Thank you, Your Honor.

17 JUDGE TURNER: Thank you. You may proceed.

18 MR. ZEILBERGER: Good morning and may it please the Board,
19 please turn to slide 2. So slide 2 just has a reproduction of the instituted
20 grounds. I'm sure Your Honors are well aware of what's at issue here. For
21 purposes of today, I'm going to focus on the two grounds that have been at
22 issue post institution in terms of arguments by the parties, the anticipation
23 ground based on Ito and the obviousness ground based on Park.

1 Turning to slide 4, please, so slide 4 has claim 22 which is at issue
2 in the anticipation ground based on Ito. As Your Honors see, it has
3 essentially two core limitations, a voltage generator and a detector circuit.
4 The voltage generator generates a bias voltage. The detector circuit detects
5 the bias voltage and regulates the voltage generator to maintain the bias
6 voltage at a substantially constant negative value. The detector circuit
7 allows the bias voltage to get arbitrarily close to the ground voltage but not
8 allowing the bias voltage to become positive.

9 Slide 5, please. So just briefly going over Ito, on slide 5 we have
10 Figure 9 which is the figure that we relied on in our petition. At the high
11 level what's happening here is the voltage of VBB is being monitored. And
12 essentially, if it goes too far below the threshold voltage of the PMOS
13 transistor 5, then the pumping circuit will turn on and bring it back up. And
14 if it goes too high -- if it goes too low, then the pumping circuit will be
15 turned back off and then VBB will be allowed to rise again.

16 If you go to slide 8, please, that's what you see on slide 8, which is
17 Figure 2 of Ito. You can see VBB is rising when charge pumping is off.
18 And then after VBB exceeds the threshold voltage of the transistor, charge
19 pumping turns on, it goes back down and then the process repeats.

20 Slide 9, please. So there's actually only one limitation that's in
21 dispute between the parties, and that's what you see here highlighted in
22 yellow, the detector circuit allowing the bias voltage V1 to get arbitrarily
23 close to the ground voltage.

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