

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HUGH P. McADAMS and
CHING-YUH TSAY

Appeal No. 1997-1364
Application 08/343,276

ON BRIEF

Before THOMAS, JERRY SMITH, and BARRY, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 5, 6, 14, and 15, which constitute all the claims on appeal.

Representative claim 5 is reproduced below:

5. A substrate bias pumping arrangement comprising:

first and second charge pump circuits connected in separate circuit paths between an input terminal and a substrate, the first and second charge pump circuits operating alternatively supplying charge to the substrate in response to

alternative levels of an input signal applied to the input terminal, each of the charge pump circuits including:

a pumping capacitor;

a p-channel pumping transistor having a control electrode and having a conduction path connected in a series circuit path with the pumping capacitor between the input terminal and the substrate; and

a bootstrap circuit connected between the input terminal and the control electrode for enabling the p-channel pumping transistor to conduct charge from the pumping capacitor to the substrate without imparting all of a threshold voltage of the p-channel pumping transistor as a voltage loss.

The following references are relied on by the examiner:

Truong	4,733,108	Mar. 22, 1988
Furuyama	5,343,087	Aug. 30, 1994
	(filing date June 10, 1991)	

Claims 5, 6, 14, and 15 stand rejected under 35 U.S.C.

§ 103. As evidence of obviousness, the examiner relies upon Truong alone as to claims 14 and 15, with the addition of Furuyama as to claims 5 and 6.¹

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and the answer for the respective details thereof.

OPINION

¹ A separate rejection of claim 14 under 35 U.S.C. § 103 over a patent to Douglas was withdrawn at page 2 of the answer.

We reverse the rejections of claims 5, 6, 14, and 15 under 35 U.S.C. § 103.

Each of independent claims 5 and 14 in part recites the feature of a bootstrap circuit which enables the p-channel pumping transistor to conduct a charge from the pumping capacitor to the substrate claimed "without imparting all of a threshold voltage of the p-channel pumping transistor as a voltage loss."

The examiner relies upon Truong in both rejections for independent claims 5 and 14 on appeal. The answer correlates the bootstrap circuit of the claim to transistor and capacitor circuit elements at the bottom of Figure 5. Neither the statement of the rejection at pages 4 and 5 of the answer, nor the responsive arguments portion of the answer beginning at page 6 discusses specifically the above noted quoted feature of each independent claim on appeal.

For their part, appellants urge the patentability of each independent claim on appeal based upon common arguments which are set forth at pages 10 and 11 of the brief as to the first rejection of claim 5 and at pages 17 and 18 as to the rejection of claim 14. There, appellants set forth what they

allege is the second major difference between the pending claims and the Truong patent, which feature is essentially assuming for the sake of argument that the examiner's position that it would have been obvious to the artisan to have substituted the n-channel pumping transistor 70 in Figure 5 of Truong for a p-channel pumping transistor, the above quoted feature would not have been met. That is, their position is that "the full threshold voltage V_{tp} of the p-channel transistor 70 is imparted as a voltage loss to the output." See, for example, the paragraph bridging pages 10 and 11 of the brief. The examiner's answer never comes to grips with this argument nor the limitation itself as indicated earlier.

According to the description of Figure 5 at the bottom of column 2 of Truong, the full FET 70 voltage drop of approximately 0.2 volts maximum would still obtain or remain once this transistor is conducting to impart the negative bias to the substrate depicted in Figure 5, for example. Both appellants' disclosed and claimed invention as well as Truong consider this as a threshold voltage associated with the transistor with respect to pumping transistors of each device. On the basis of the examiner's failure to address this limitation, on the strength of appellants' arguments which

have not been traversed by the examiner, as well as the actual teachings and suggestions to the artisan in Truong, it appears that Truong's chip biased generator would not function in the manner set forth at the end of each of independent claims 5 and 14 on appeal in accordance with the quoted language above.

In view of the foregoing, we must therefore reverse the rejection of independent claims 5 and 14 on appeal. The additional teachings of Furuyama as to the rejection of claim 5 do not appear to us and the examiner does not assert that Furuyama buttresses the teachings of Truong as to the above-quoted limitation. As such, we must therefore reverse the rejection of dependent claims 6 and 15 on appeal. Therefore, the decision of the examiner rejecting claims 5, 6, 14 and 15 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
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) BOARD OF PATENT
JERRY SMITH)
Administrative Patent Judge) APPEALS AND
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) INTERFERENCES
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LANCE LEONARD BARRY)
Administrative Patent Judge)

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Richard B. Havill
Texas Instruments Inc.
Patent Activity, M/S 219
P.O. Box 655474
Dallas, TX 75262