

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(2) is not binding precedent of the Board.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. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte SOPHIE CARANHAC  
and YVES THENOZ

---

Appeal No. 1997-3446  
Application 08/373,237<sup>1</sup>

---

HEARD: Jan. 13, 2000

---

Before KRASS, BARRETT, and BARRY, Administrative Patent  
Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

---

<sup>1</sup>Application for patent filed January 5, 1995. This application is a U.S. national stage application based on international application PCT/FR94/00506, filed May 3, 1994, under 35 U.S.C. § 371.

Appeal No. 1997-3446  
Application No. 08/373,237

This is a decision on appeal from the final rejection of claims 6 through 10 and 13. The rejection of claims 11 and 12 has been withdrawn by the examiner.

The invention pertains to charge-coupled devices (CCD) and, more particularly, to a photodiode comprising means for draining away charges to a storage gate. The drainage device includes a potential well which has a continuously varying depth. The photosensitive region of the photodiode device has two portions, one which is adjacent to the storage gate, or region, and one portion which is remote from the storage region. The drainage device, located within the remote portion, drains charges which are created in the remote portion toward the storage region.

Independent claim 6 is reproduced as follows:

6. A photosensitive device, comprising:

a non-photosensitive storage region,

at least one photosensitive region adjacent to said non-photosensitive storage region, said photosensitive region having a first portion adjacent to said storage region and a second portion remote from said storage region, wherein said storage region receives charges created in said photosensitive region during illumination thereof, and

a drainage device located within said photosensitive second portion, wherein said drainage device drains towards said storage region charges created in said second portion

Appeal No. 1997-3446  
Application No. 08/373,237

during illumination, said drainage device including a potential well having a continuously varying depth.

The examiner relies on the following references:

Iizuka	5,182,622	Jan. 26, 1993
Miwada (EP)	0 457 192	Nov. 21, 1991

Claims 6 through 8, 10 and 13 stand rejected under 35 U.S.C. § 102(b) as anticipated by Miwada. Claim 9 stands rejected under 35 U.S.C. § 103 as unpatentable over Miwada in view of Iizuka.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

#### OPINION

We reverse.

At the outset, we note that the examiner has set forth the teachings of Miwada at pages 4-5 of the answer but while the examiner has pointed out the various p- and n- type doped regions and gate and transfer gate electrodes of Miwada, the examiner never correlates these teachings to the elements of the instant claims. Thus, the examiner's rationale presents no prima facie case of anticipation.

Nevertheless, we have reviewed Miwada and find that, with reference to Figure 11 of Miwada, Miwada discloses a photosensitive device comprising a non-photosensitive region [those regions covered by mask, or photo-shield plate, 29] and at least one photosensitive region [that region exposed by the slot 29a]. The photosensitive region may be said to have a first portion adjacent the storage region [shift register 27], and a second portion remote from the storage region. Quite clearly, the storage region [shift register 27] does receive charges created in the photosensitive region and there is a drainage device which "allows electric charges accumulated in the photo-electric converting region 23b and 23d to flow into the vertical shift register 27" [Miwada, column 7, lines 2-5]. The charges may also be said to have been created in the second portion during illumination. It might also be said that the drainage device includes a potential well having "a continuously varying depth" [see projections 28a and 28b in Miwada].

However, independent claim 6 also requires that the drainage device be "located within said photosensitive second portion." This is not shown or suggested by Miwada. The

Appeal No. 1997-3446  
Application No. 08/373,237

drainage device, comprising projections 28a and 28b, and the outlet subregions 24a and 24b are located beneath the photo-shield plate 29 and, therefore, not even in the photosensitive region. Moreover, even if the photo-shield plate 29 did not cover elements 24a, 24b, 28a and 28b, constituting the drainage device, and the drainage device could be said to be in a photosensitive region, the drainage device would still, at best, be located at a first portion of a photosensitive region, adjacent the storage region, rather than at a second portion of the photosensitive region, remote from the storage region, as required by claim 6.

While the examiner is correct, in general, that "remote" is a relative term, in this case, it is clear that the terms "adjacent" and "remote" are used to clearly describe portions of a photosensitive region with regard to those portions' proximity to a storage region, i.e., the portion "adjacent" being closer to the storage region than the portion "remote" from the storage region. The drainage device in Miwada is clearly in a region "adjacent" to, and not "remote" from, the storage region. Thus, the drainage device in Miwada would not be "within said photosensitive second portion," as required by

Appeal No. 1997-3446  
Application No. 08/373,237

claim 6 and, as indicated supra, Miwada's drainage device is not even in the photosensitive region at all since the drainage device is shielded by plate 29.

Accordingly, Miwada cannot anticipate claims 6 through 8, 10 and 13.

With regard to dependent claim 9, Iizuka does not provide for the deficiency of Miwada, noted supra, with regard to independent claim 6. We also find no reason, within the meaning of 35 U.S.C. 103, for the skilled artisan to have modified Miwada, either alone, or in view of Iizuka, in order to arrive at the instant claimed subject matter. Accordingly, we will not sustain the rejection of claim 9 under 35 U.S.C. § 103.

The examiner's decision rejecting claims 6 through 8, 10 and 13 under 35 U.S.C. § 102(b) and claim 9 under 35 U.S.C. § 103 is reversed.

REVERSED

Errol A. Krass )  
Administrative Patent Judge )

Appeal No. 1997-3446  
Application No. 08/373,237

		)	
		)	
		)	
	Lee E. Barrett	)	BOARD OF
PATENT		)	
	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES
		)	
		)	
	Lance Leonard Barry	)	
	Administrative Patent Judge	)	

tdl

Appeal No. 1997-3446  
Application No. 08/373,237

OBLON SPIVAK, MCCLELLAND  
MAIER & NEUSTADT, P.C.  
1755 Jefferson Davis Hwy., 4th Fl.  
Arlington, VA 22202