

The opinion in support of the decision being entered today  
was not written for publication and is not binding  
precedent of the Board

Paper No. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** AKIRA YAMAGUCHI

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Appeal No. 2004-1101  
Application 09/262,325

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HEARD: JULY 15, 2004

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Before WALTZ, KRATZ, and PAWLIKOWSKI, Administrative  
Patent Judges.

PAWLIKOWSKI, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134  
from the examiner's final rejection of claims 13 and 16-25.

Claim 13 is representative of the subject matter on  
appeal and is set forth below, wherein the text in bold is  
for emphasis only:

13. A nonaqueous-electrolyte secondary battery  
comprising:

a battery casing; and

a coiled electrode contained in said battery casing;

wherein said coiled electrode comprises an elongated positive electrode, and elongated negative electrode, and a separator, said positive electrode and negative electrode separated by the separator and wound so that the positive electrode forms an outermost electrode of the coil;

wherein said positive electrode comprises a positive-electrode mix layer and a positive-electrode collector made of a metallic foil having a first surface, a second surface, an outermost end, and an innermost end;

wherein said positive-electrode mix layer is not formed on either the first or second surface of the positive electrode collector at the outermost end of the positive electrode collector;

wherein said positive-electrode mix layer is formed on either but not both of the first or second surfaces of the positive electrode collector at a position adjacent to the outermost end of the positive electrode collector;

wherein said positive-electrode mix layer is formed on both the first and second surface of the positive electrode collector on at least a portion of the positive electrode collector;

wherein said negative electrode comprises a negative-electrode mix layer containing a negative-electrode material which permits lithium ions to be doped/dedoped and a negative-electrode collector made of a metallic foil having a first surface, a second surface, an outermost end, and an innermost end;

wherein said negative-electrode mix layer is not formed on either the first or second surface of the negative electrode collector at the outermost end of the negative electrode collector;

wherein said negative-electrode mix layer material is formed on both the first and second surface of the negative electrode collector on at

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least a portion of the negative electrode collector;

wherein a negative electrode lead is formed on the outermost end of the outer surface of the negative electrode collector;

**wherein the outermost end of said negative-electrode collector is positioned, in the direction of the innermost ends to the outermost ends of the negative-electrode and positive electrode collectors, more forward than the outermost end of the positive electrode collector;**

wherein  $d$  is the diameter of the coil electrode and  $L$  is the distance from the outermost end of said negative-electrode collector to the outermost end of said positive-electrode collector and the relationship  $0 < L \leq \pi d$  is satisfied; and

wherein insulating members are placed on the two vertical surfaces of the coiled electrode.

The examiner relies upon the following references as evidence of unpatentability:

Narukawa et al. (Narukawa)	5,508,122	Apr. 16, 1996
Yamashita	5,989,743	Nov. 23, 1999
Linden, "Handbook of Batteries,"	Second edition, pages	
3.16; 5.3;14.20; 14.35;14.84; 33.4; 36.29; 36.43; and 35.44		
(1995)		

Claims 13 and 16-25 stand rejected under 35 U.S.C. 103 as being obvious over Yamashita in view of Narukawa and further in view of Linden.

#### OPINION

Critical to the determinations made herein is the claim interpretation of claim 13, which is in dispute.

On page 4 of the answer, the examiner states that the claim does not require the outermost end of the negative

electrode collector to be more forward than the outermost end of the positive electrode collector "on the last wind of both the positive and negative electrode current collectors".<sup>1</sup> Answer, page 4. The examiner states that if one follows a direction from the innermost ends to the outermost ends of the negative electrode and positive electrode collectors, the outermost end of the negative electrode collector as depicted in Figure 5 of Yamashita is more forward than the outermost end of the positive electrode collector. Answer, page 4. On page 3 of Paper No. 22, the examiner states that even though the positive electrode collector shown in Figure 5 of Yamashita is coiled more times than the negative electrode collector, Figure 5 clearly shows that, in a direction from the innermost ends to the outermost ends of the collectors, the outermost end of the negative collector is more forward than the outermost end of the positive collector.

On page 3 of the brief, appellant argues that the clear meaning of the claim language, in the context of a coiled structure, is that for the end of the negative collector to be forward than the end of the positive collector, the negative collector must extend beyond the positive collector. Appellant argues that if one uncoils the electrode shown in Figure 5 of Yamashita, it is the end of the positive collector which comes first.

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<sup>1</sup> We disagree with the examiner's statement here. The outermost end of the collector (negative or positive) would have to be at the end of the collector, which would be at the end of the last wind.

We find that appellant's Figure 4 shows 6a, which is the location of the outermost end of negative electrode 6. Figure 4 also shows 3a, which is the location of the outermost end of positive electrode 3. As one travels from the innermost end of the negative electrode collector to the outermost end of the negative electrode collector at 6a, one travels further to reach location 6a as compared to when one travels from the innermost end of the positive electrode collector to the outermost end of the positive electrode collector at 3a. In this way, the location of 6a is more forward than the location of 3a.

In contrast, Figure 5 of Yamuguchi depicts the outermost end of the negative electrode collector at item 12. The location of the outermost end of the positive electrode collector is located at the end of the dashed line shown in Figure 5. Therefore, as one travels from the innermost end of the positive electrode collector to the outermost end of the positive electrode collector, one travels further than when one travels from the innermost end of the negative electrode collector to the outermost end of the positive electrode collector (at location 12). In this way, the location of the outermost end of the positive electrode collector is more forward than the outermost end of the negative electrode collector (item 12). This is the opposite of what is claimed in appellant's claim 13.

Hence, we disagree with the examiner's position and reverse the rejection. The other applied references do not remedy this deficiency in the rejection.

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**CONCLUSION**

The rejection is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

**REVERSED**

Thomas A. Waltz	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
Peter F. Kratz	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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Beverly A. Pawlikowski	)	
Administrative Patent Judge	)	

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