

**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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DUANE ROTH and LARRY M. MORRISON

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Appeal No. 95-3071  
Application No. 08/028,013<sup>1</sup>

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ON BRIEF

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

KRASS, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal from the final rejection of claims 1, 2, 4, 6, 7, 9 through 11, 14 and 15. Claims 3, 5, 8, 12, 13 and 16 have been indicated by the examiner as being directed to allowable subject matter.

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<sup>1</sup>Application for patent filed March 8, 1993.

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The invention is directed to image processing. More particularly, an image is processed in order to discriminate a moving target from clutter within the image. Through the use of target centering and leaky integration, increased target to clutter ratio is attained.

Independent apparatus claim 1 is reproduced as follows:

1. An image processing device for discriminating a target from clutter in an image containing a moving target, said device comprising:

a means for detecting a moving target in an image input, said means additionally having a target centering input;

a means, connected to said detecting means, for extracting the edge content of said target;

a means, connected to said edge extracting means for integrating the extracted edges of said image over time to reject clutter, said integrating means providing an output image;

a means, connected to said integrating means, for estimating the optical flow of said target; and

a means, connected to receive as an input the output of said estimating means and having its output connected as an input to said detection means, for centering the target in said image to permit the integrating means to increase the target to clutter ratio.

The examiner relies on the following reference:



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stating that the means for centering "comprises..." or "further comprise..." has been omitted) and appellants have not contested this rejection. As such, we find that claim 9 fails to further limit the subject matter of the claim from which it depends. Therefore, claim 9 is an improper dependent claim within the meaning of 35 U.S.C. 112, fourth paragraph.

Turning now to the rejection of claims 1, 2, 4, 10 and 11 under 35 U.S.C. 102(b), we will not sustain this rejection because Lawton clearly does not disclose or otherwise teach all of the claimed subject matter.

Independent claims 1 and 10 require, inter alia, detection of a moving target and centering the target to permit an integrating means to increase the target to clutter ratio.

Lawton is directed to a machine vision method and apparatus which permits a robot to determine movement in a 2-dimensional field of view and follow a path to an intended target. Therefore, unlike the instant claimed invention, Lawton is not concerned with a moving target. In Lawton, the target remains stationary and the robot moves. Further, we find no evidence in Lawton of any centering of a target in

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order to permit an integration means to increase the target to clutter ratio, as claimed.

The examiner somehow equates either the best path to a final destination or the desired destination, or view thereof, in Lawton to the claimed target centering. However, there is no discussion in Lawton regarding target centering and, to the extent the examiner is reading the focus of Lawton on the final destination as somehow centering a target, we disagree. There is absolutely no indication in Lawton that the target, or final destination, is kept centered in the image, as claimed, and it is unclear, even giving the term "centering the target" its broadest possible meaning, how the examiner interprets Lawton's best path to a final destination as "centering the target."

Accordingly, we will not sustain the rejection of claims 1, 2, 4, 10 and 11 under 35 U.S.C. 102(b).

Turning now to the rejection of claims 6, 7, 14 and 15 under 35 U.S.C. 103 as unpatentable over Lawton, we also will not sustain this rejection. Whether or not it would have been obvious to employ an integrator, of the specific form recited in claims 6, 7, 14 and 15, in Lawton, Lawton clearly fails to

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disclose or suggest the centering of a moving target, as discussed supra.

We have sustained the rejection of claim 9 under 35 U.S.C. 112, fourth paragraph but we have not sustained the rejections based on prior art.

Accordingly, the examiner's decision is affirmed-in-part.

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

**AFFIRMED-IN-PART**

	JAMES D. THOMAS	)	
	Administrative Patent Judge)	)	
		)	
		)	
	ERROL A. KRASS	)	BOARD OF
PATENT	Administrative Patent Judge)	)	APPEALS AND
		)	INTERFERENCES
		)	
	JERRY SMITH	)	
	Administrative Patent Judge)	)	

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