US 20040183031A1

(19) **United States**

(12) **Patent Application Publication**

Silverman et al.

(10) **Pub. No.: US 2004/0183031 A1**

(43) **Pub. Date: Sep. 23, 2004**

(54) **DUAL HEMISPHERICAL COLLECTORS**

(75) Inventors: **Peter J. Silverman**, Palo Alto (CA); **Michael Goldstein**, Ridgefield, CT (US)

Correspondence Address:
FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081 (US)

(73) Assignee: **Intel Corporation**

(21) Appl. No.: **10/394,412**

(22) Filed: **Mar. 20, 2003**

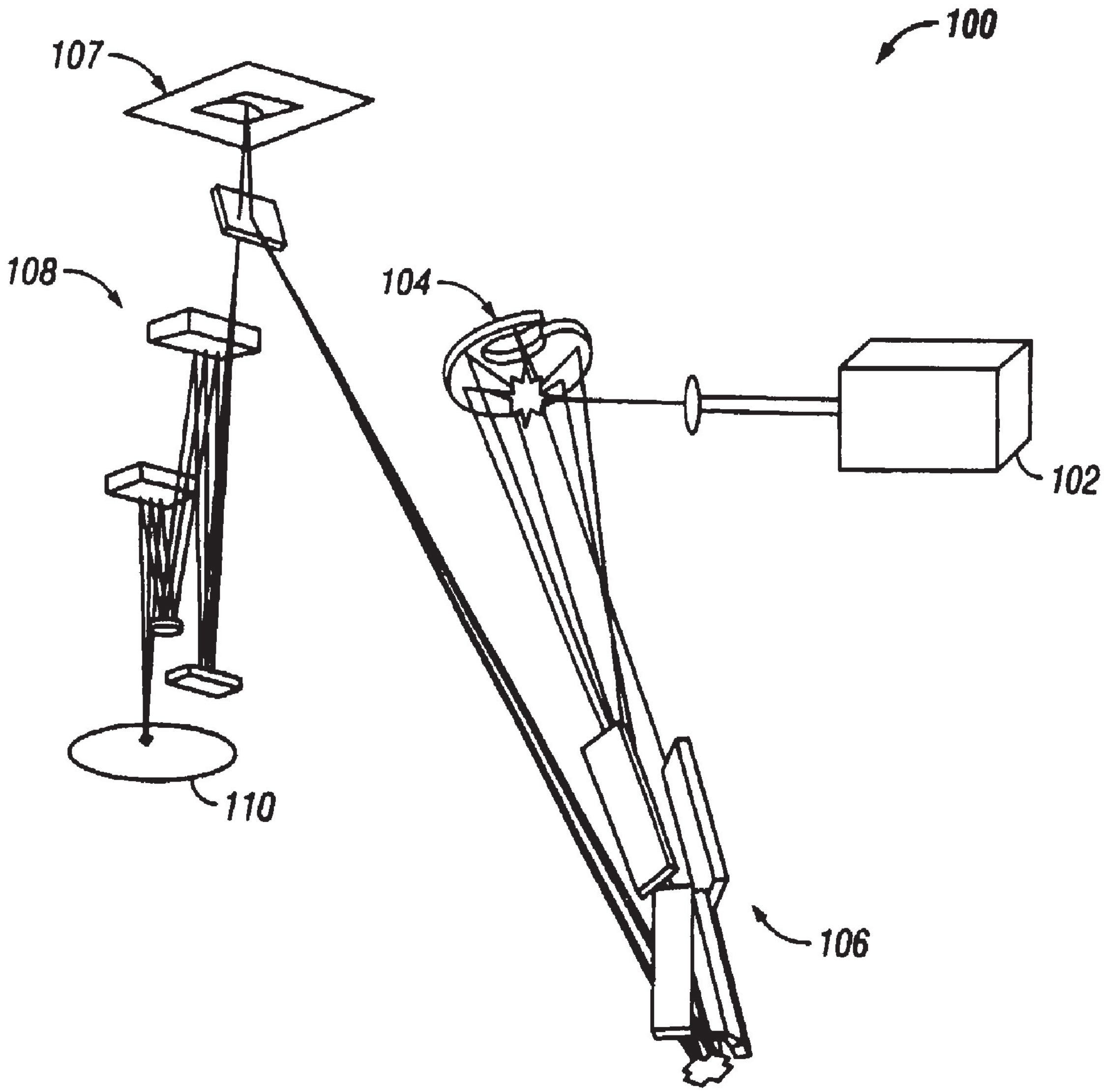
Publication Classification

(51) **Int. Cl.**[7] **G03F 7/207**

(52) **U.S. Cl.** .... **250/492.2**; 250/504 R

(57) **ABSTRACT**

A system and method for collecting radiation, which may be used in a lithography illumination system. The system comprises a first surface shaped to reflect radiation in a first hemisphere of a source to illuminate in a second hemisphere of the source; and a second surface shaped to reflect radiation in the second hemisphere of the source to an output plane.



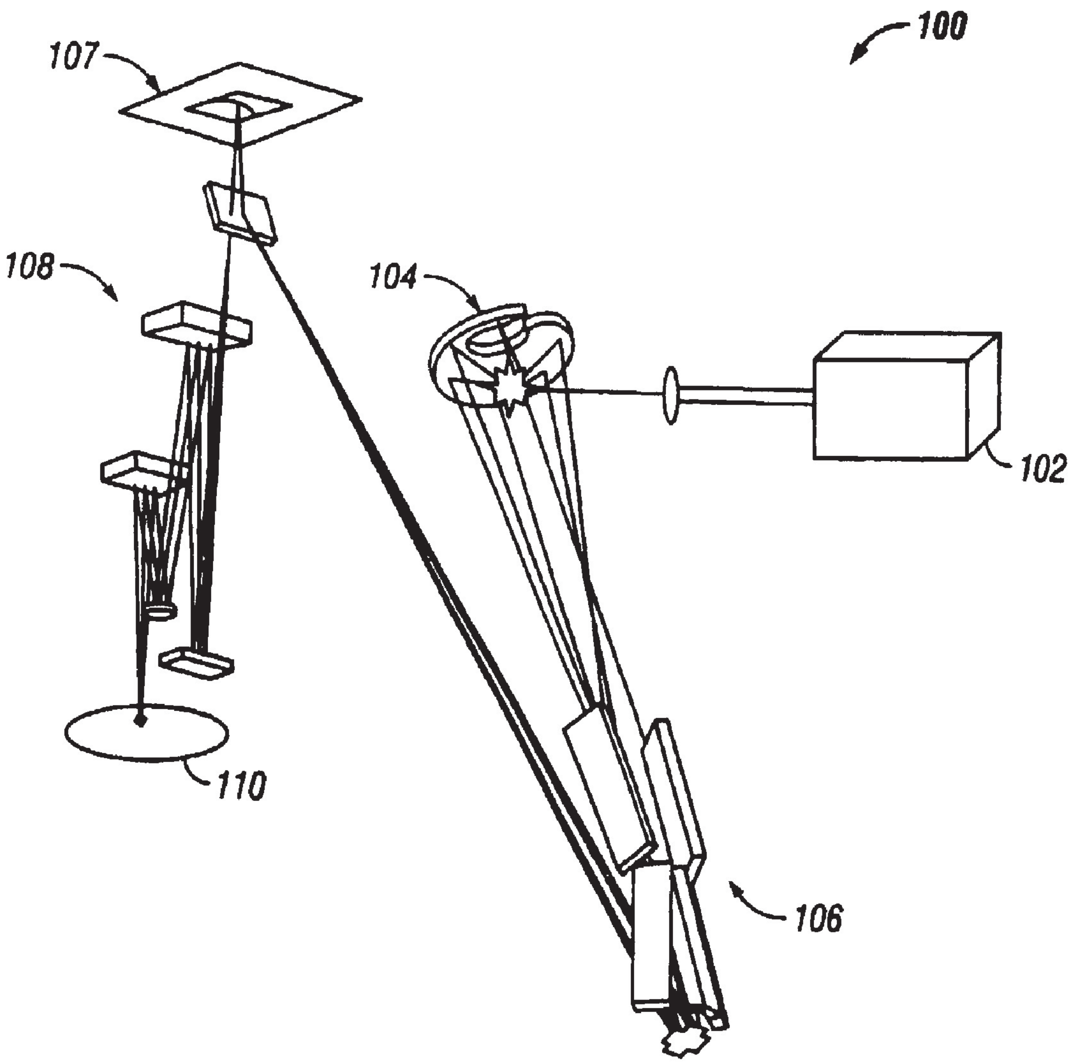


FIG. 1

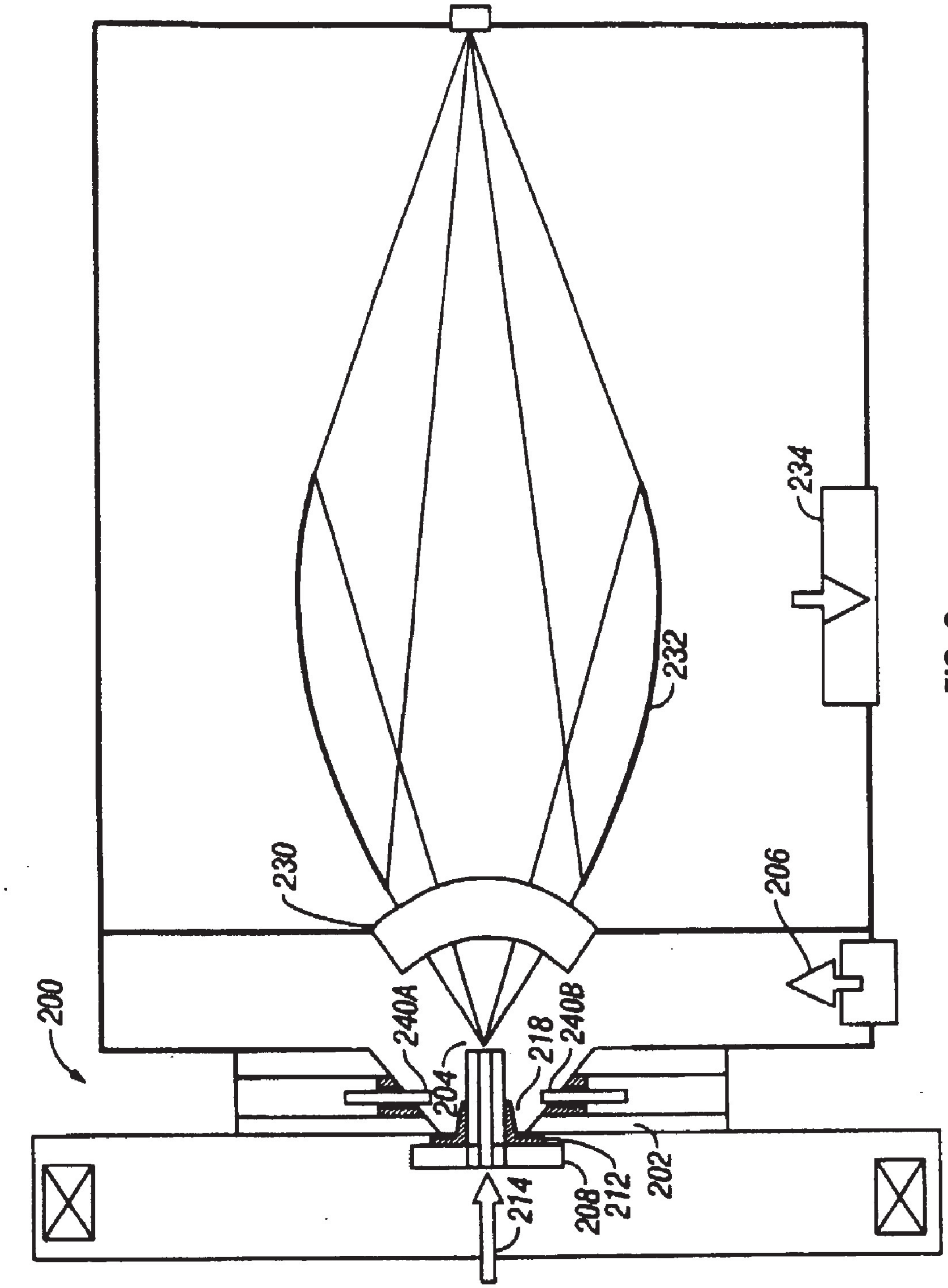
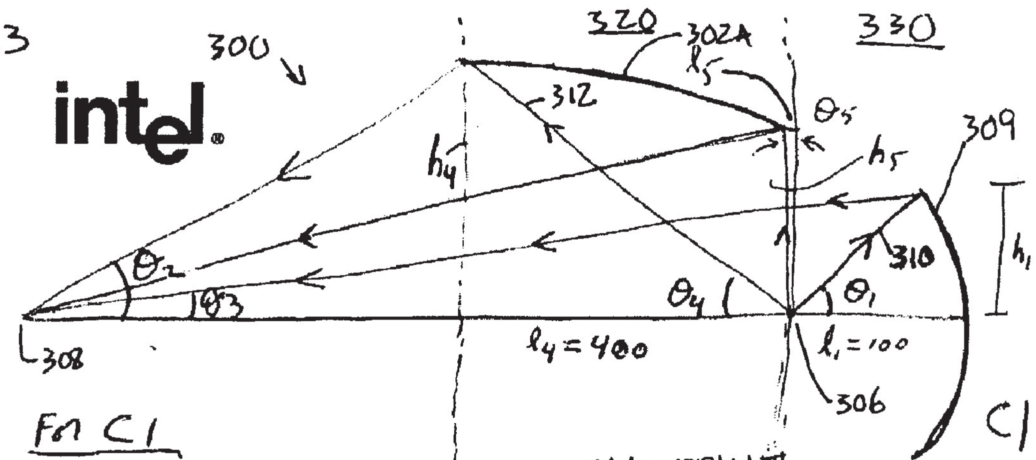


FIG. 2

FIG. 3



For C1

$NA_1 = 0.75$, $l_1 = 100$, $\theta_1 = \sin^{-1}(NA_1)$ CAN DETERMINE $\rightarrow h_1 = 113.389$

$$\frac{1}{l_1} + \frac{1}{a+c} = \frac{2}{r_1}$$

302B

For C2

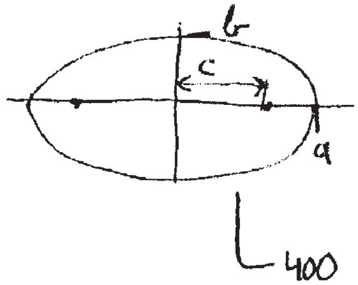
Solve $(2c - l_4)\tan[\sin^{-1}(NA_2)] = \frac{b}{a}\sqrt{a-c+l_4}\sqrt{2a-a+c-l_4}$

$c^2 = a^2 - b^2$, and $2\sqrt{c^2+b^2} = \sqrt{h_4^2+(2c-l_4)^2} + \sqrt{h_4^2+l_4^2}$

With $l_4 = 400$, $NA_2 = \frac{0.25}{4} = 0.0625$, $\theta_4 \rightarrow h_4$

θ_4	a	b	c	$-k = \frac{c}{a}$	r_2	$h_1 = a - c$	r_1
25°	1712.86	283.312	1689.27	0.986226	46.8607	23.5929	194.289
30°	2078.46	377.408	2043.91	0.983376	68.5298	34.5521	195.263

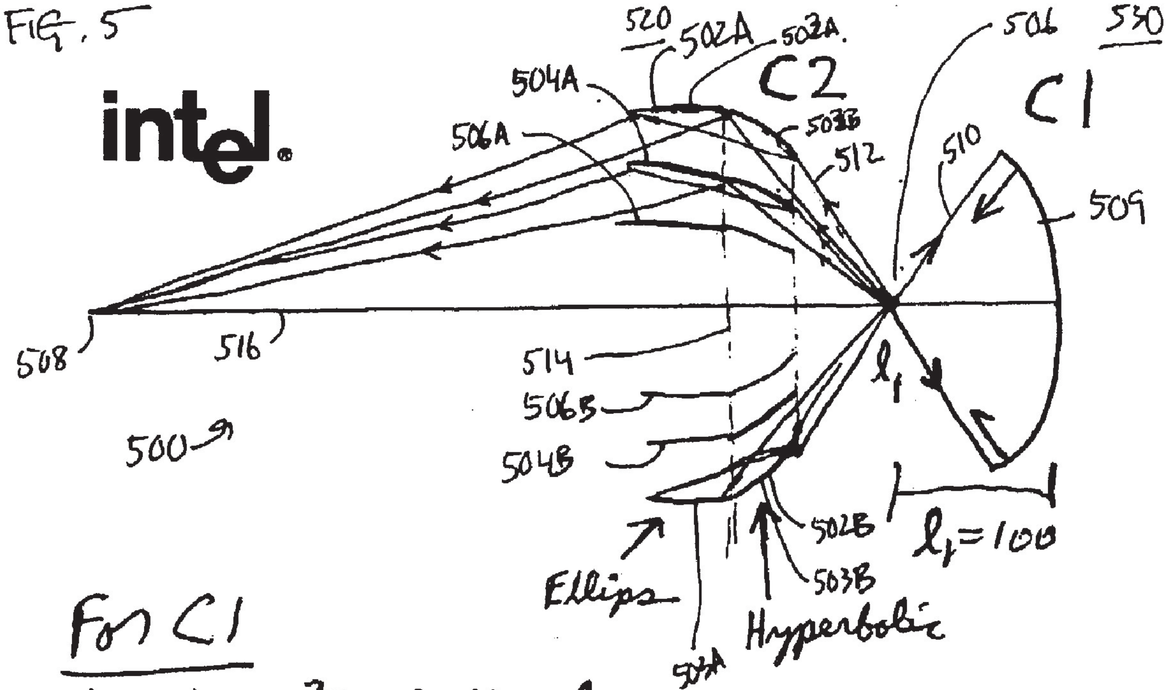
Rem; $z = a\left(1 - \sqrt{1 - x^2/b^2}\right)$, $x = \frac{b}{a}\sqrt{z}\sqrt{2a - z}$



$$z = \frac{x^2/r_2}{1 + \sqrt{1 - (1+k)(x/r_2)^2}}$$

FIG. 4

FIG. 5



For C1

$$\frac{1}{l_1} + \frac{1}{l_2} = \frac{2}{r_1} \rightarrow r = l_1$$

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

WHAT WILL YOU BUILD? | **sales@docketalarm.com** | **1-866-77-FASTCASE**

fastcase® Smarter legal research.