



US008740397B2

(12) **United States Patent**
Vasylyev

(10) **Patent No.:** **US 8,740,397 B2**
(45) **Date of Patent:** **Jun. 3, 2014**

(54) **OPTICAL COVER EMPLOYING MICROSTRUCTURED SURFACES**

(75) Inventor: **Sergiy Victorovich Vasylyev**, Elk Grove, CA (US)

(73) Assignee: **SVV Technology Innovations, Inc.**, Sacramento, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 155 days.

(21) Appl. No.: **13/351,800**

(22) Filed: **Jan. 17, 2012**

(65) **Prior Publication Data**

US 2012/0182615 A1 Jul. 19, 2012

Related U.S. Application Data

(60) Provisional application No. 61/461,522, filed on Jan. 18, 2011.

(51) **Int. Cl.**
G02B 5/124 (2006.01)

(52) **U.S. Cl.**
USPC **359/530**

(58) **Field of Classification Search**
CPC G02B 5/124
USPC 359/529, 530
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,975,706	A *	11/1999	Nakayama	359/530
6,064,452	A *	5/2000	Ogino	349/57
6,274,860	B1	8/2001	Rosenberg		
6,333,458	B1	12/2001	Forrest et al.		
6,440,769	B2	8/2002	Peumans et al.		
7,672,549	B2	3/2010	Ghosh et al.		
7,817,885	B1	10/2010	Moore et al.		
2004/0103938	A1	6/2004	Rider		
2008/0264483	A1	10/2008	Keshner et al.		
2009/0126792	A1	5/2009	Gruhlke et al.		
2010/0186798	A1	7/2010	Tormen et al.		
2010/0278480	A1	11/2010	Vasylyev		
2011/0226332	A1	9/2011	Ford et al.		
2012/0012741	A1	1/2012	Vasylyev		

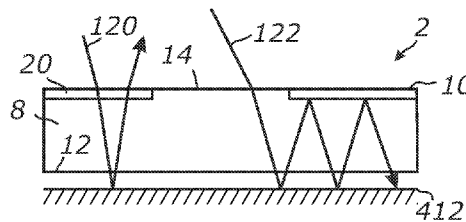
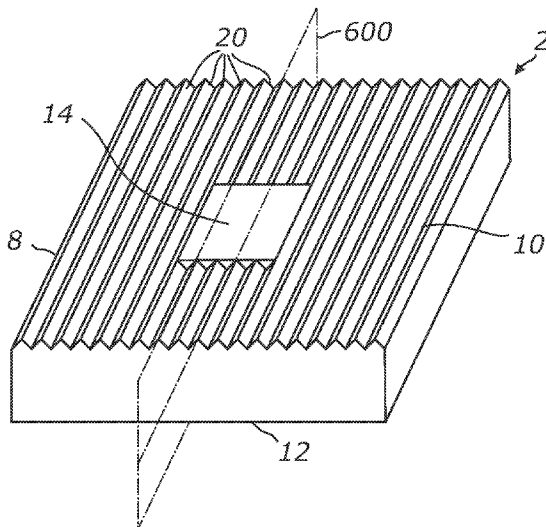
* cited by examiner

Primary Examiner — Euncha Cherry

(57) **ABSTRACT**

A light trapping optical cover employing an optically transparent layer is described. The transparent layer has at least one corrugated surface formed by a plurality of isosceles right-angle prismatic corrugations configured to internally retroreflect light into the transparent layer. The corrugated surface also includes optical windows configured for inputting or outputting light to or from the transparent layer. The optical cover may further employ a focusing array of light collectors being pairwise associated with the respective optical windows.

19 Claims, 14 Drawing Sheets



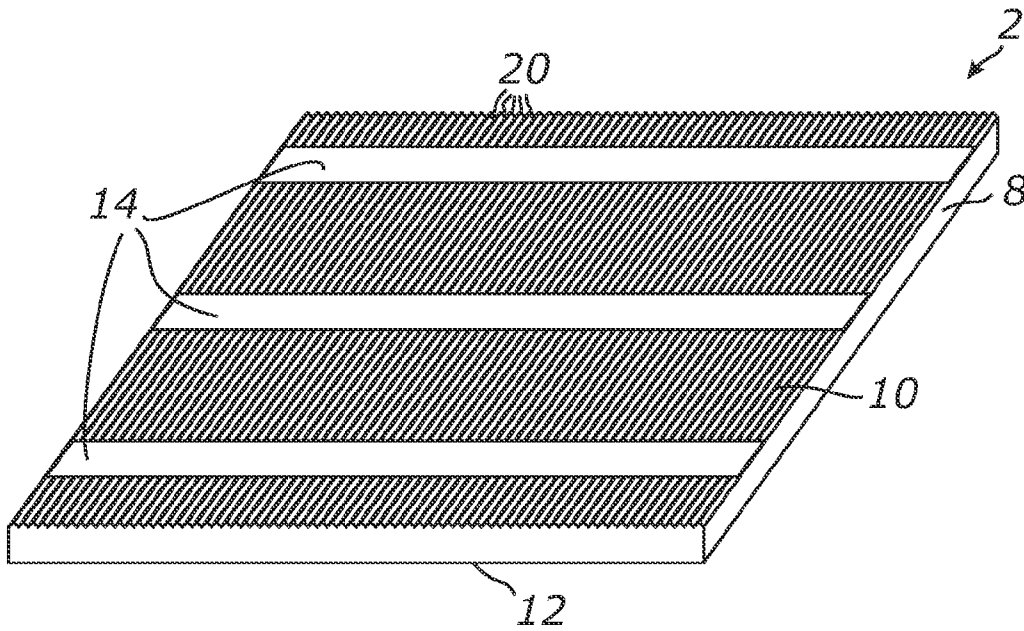


FIG. 1

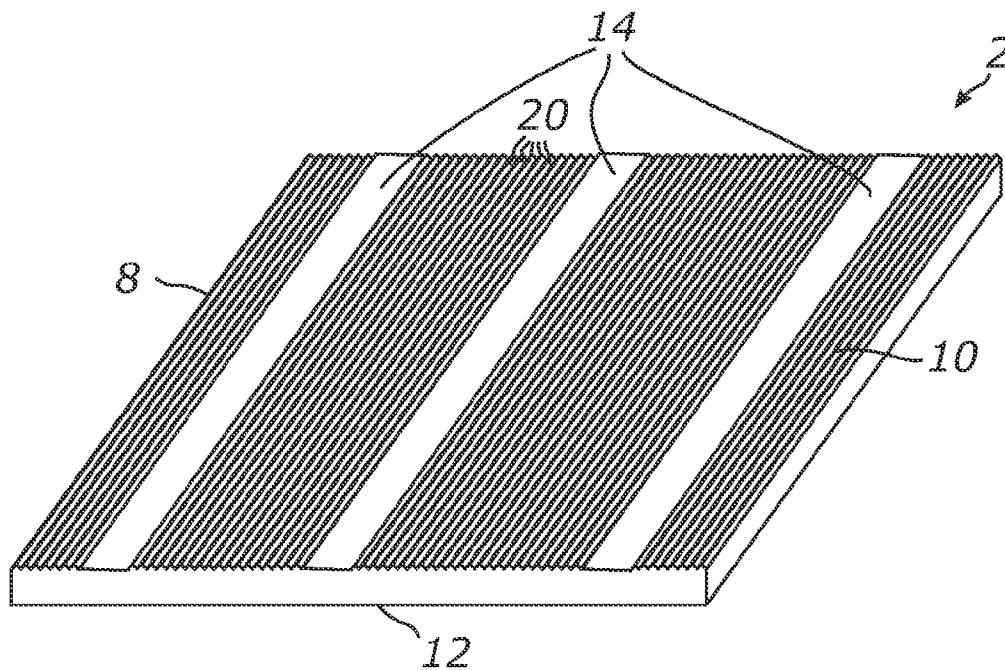
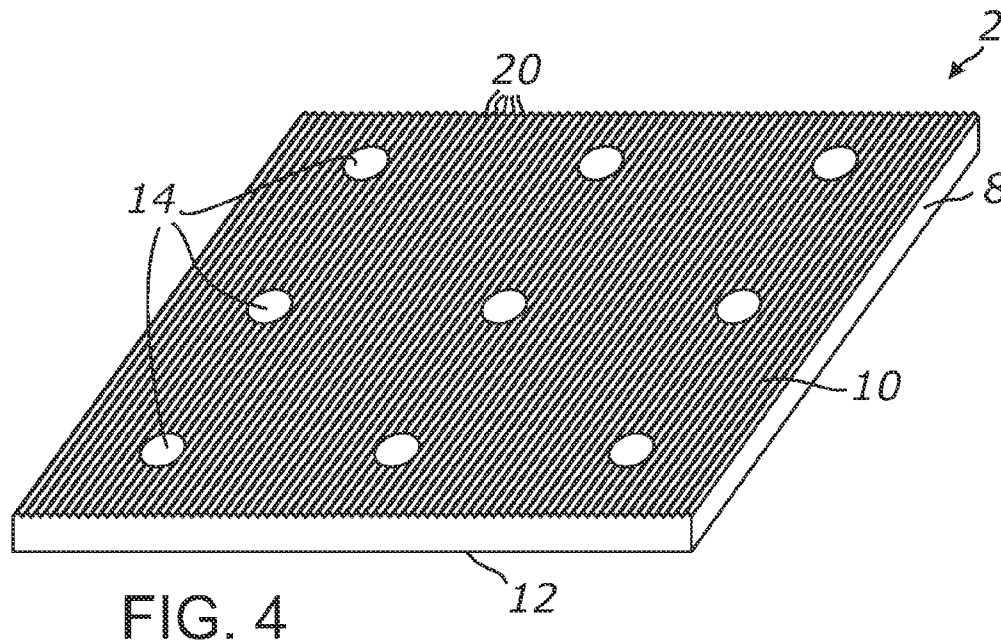
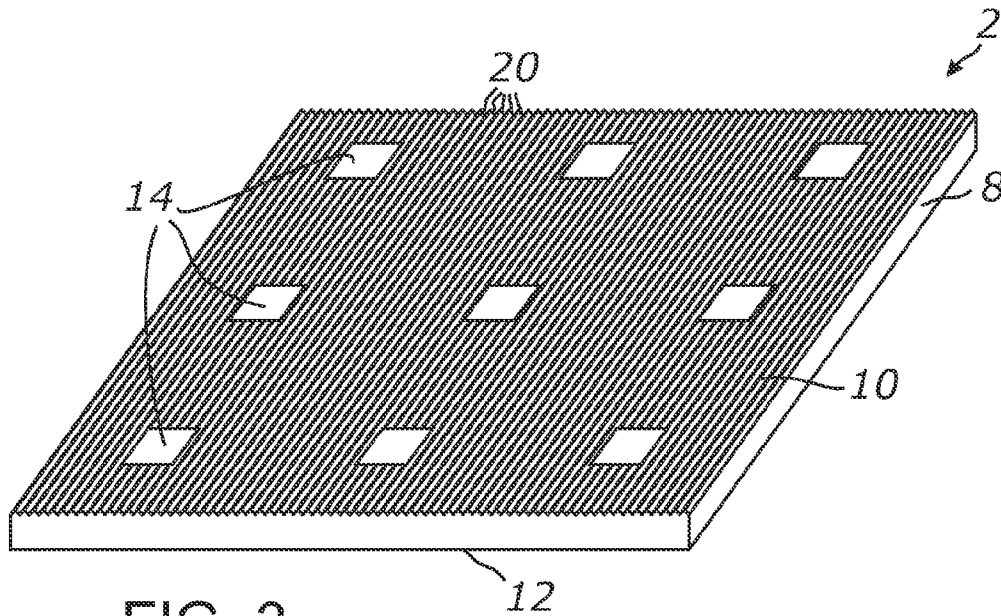


FIG. 2



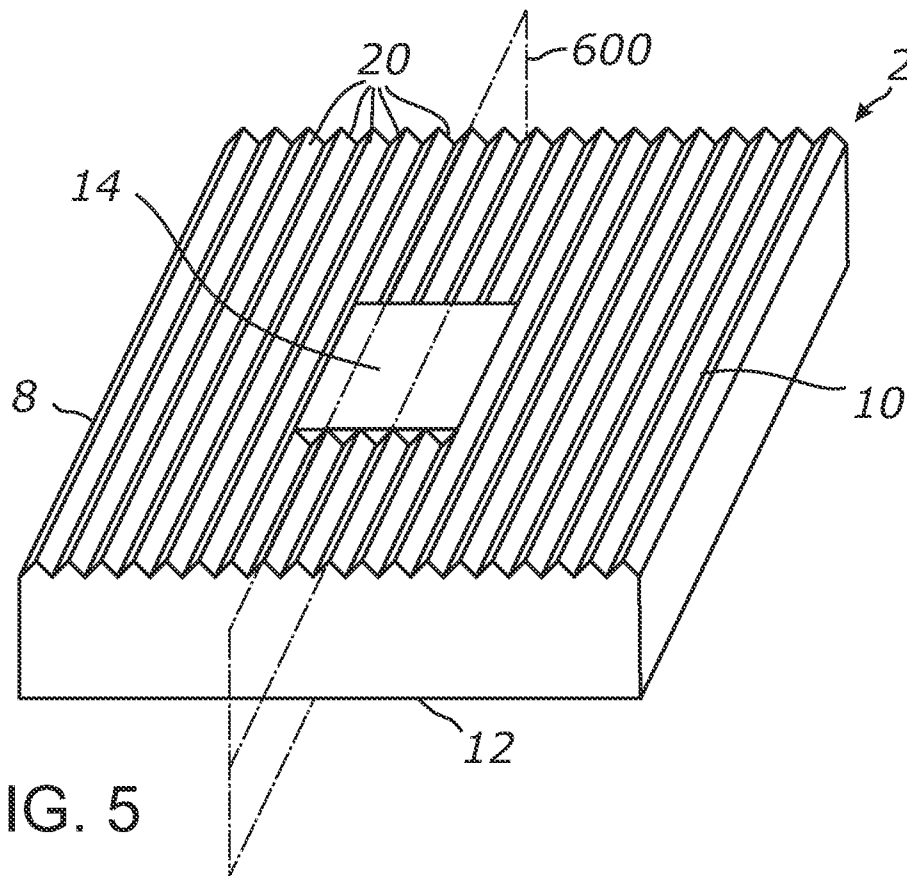


FIG. 5

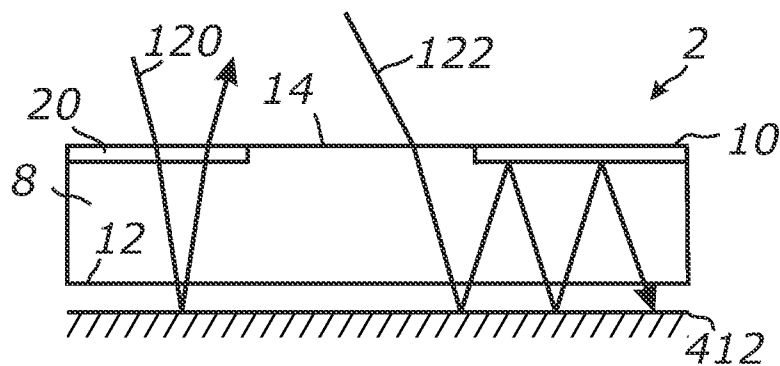


FIG. 6

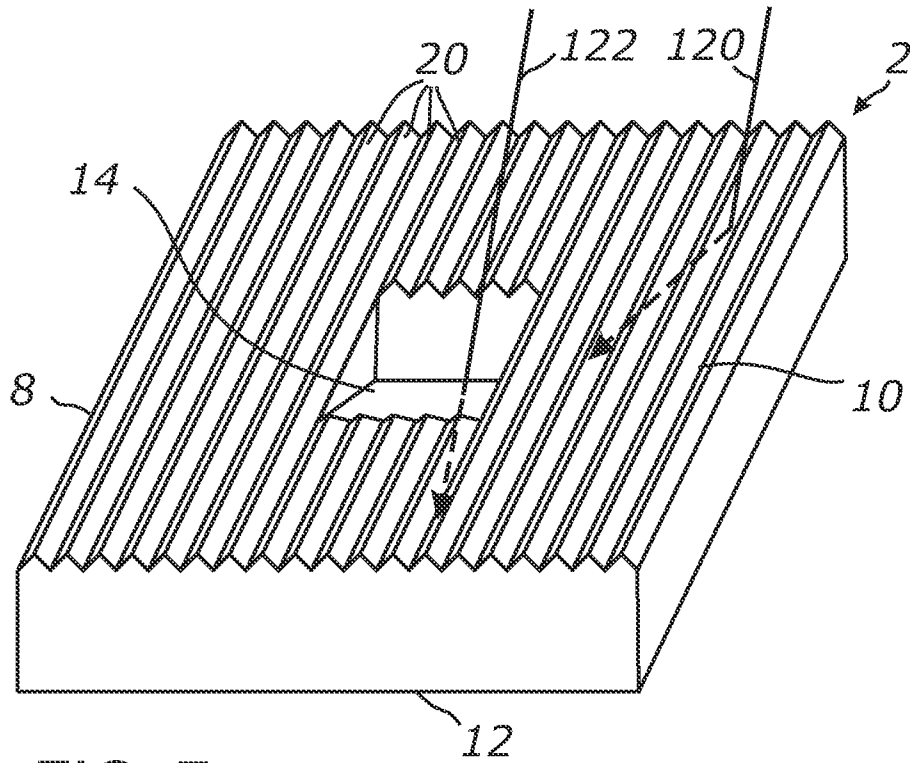


FIG. 7

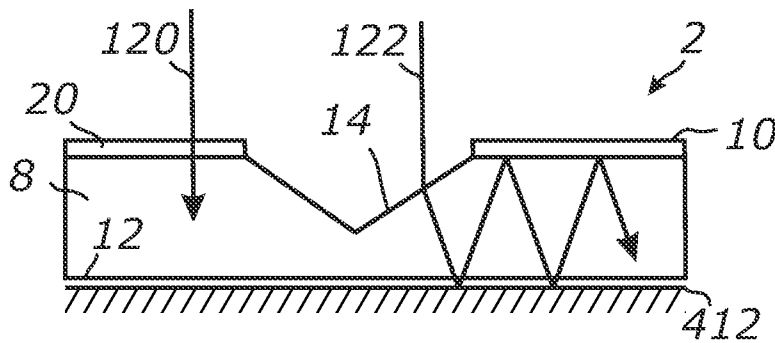


FIG. 8

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.