

05/20/03  
1c857 U.S. PTO

05-21-03 AIDRON

Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. **EV353872042US**

INVENTOR(S)				
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)		
Niall R.	Lynam	Holland, Michigan		
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto				
TITLE OF THE INVENTION (500 characters max)				
MIRROR REFLECTIVE ELEMENT				
CORRESPONDENCE ADDRESS				
<input checked="" type="checkbox"/> Customer Number		28101		Place Customer Number Bar Code Label here
OR		Type Customer Number here		
<input type="checkbox"/> Firm or Individual Name				
Address				
Address				
City	State	ZIP		
Country	Telephone	Fax		
ENCLOSED APPLICATION PARTS (check all that apply)				
<input checked="" type="checkbox"/> Specification	Number of Pages	13	<input type="checkbox"/> CD(s), Number	
<input checked="" type="checkbox"/> Drawing(s)	Number of Sheets	3	<input type="checkbox"/> Other (specify)	
<input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76				
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT				
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$)
<input checked="" type="checkbox"/> A check or money order is enclosed to cover the filing fees				\$160.00
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:		22-0190		
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.				
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.				
<input checked="" type="checkbox"/> No.				
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____				

1c857 U.S. PTO  
60/471872  
05/20/03

Respectfully submitted,  
SIGNATURE Timothy A. Flory  
TYPED or PRINTED NAME Timothy A. Flory  
TELEPHONE (616) 975-5500

Date 05/20/2003  
REGISTRATION NO. 42 540  
(if appropriate)  
Docket Number: DON01 P-1092

### USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

PATENT  
DON01 P-1092  
Express Mail No. EV353872042US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Niall R. Lynam  
For : MIRROR REFLECTIVE ELEMENT

MS-Provisional Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I certify that the attached return postcard; a check in the amount of \$160.00 for the filing fee; Provisional Application For Patent Cover Sheet (1 page, in duplicate); Patent Application Bibliographic Data Sheet (1 page); 13 pages of specification; and 3 sheets of drawings are being deposited with the United States Postal Service as Express Mail in an envelope having Express Mail Label Number EV353872042US addressed to:

MS-Provisional Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

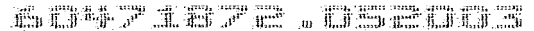
on May 20, 2003.



Susan L. Gasper  
Van Dyke, Gardner, Linn & Burkhardt, LLP  
2851 Charlevoix Drive, S.E.  
P.O. Box 888695  
Grand Rapids, MI 49588-8695  
(616) 975-5500

TAF/slg  
Enclosures

INVENTOR INFORMATION



Inventor One Given Name:: Niall R  
Family Name:: Lynam  
Postal Address Line One:: 248 Foxdown  
City:: Holland  
State or Province:: Michigan  
Country:: USA  
Postal or Zip Code:: 49424  
City of Residence:: Holland  
State or Province of Residence:: Michigan  
Country of Residence:: USA  
Citizenship Country:: US

CORRESPONDENCE INFORMATION

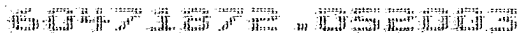
Correspondence Customer Number:: 28101  
Fax One:: (616) 975-5505  
Electronic Mail One:: flory@vglb.com

APPLICATION INFORMATION

Title Line One:: MIRROR REFLECTIVE ELEMENT  
Total Drawing Sheets:: 3  
Formal Drawings?: No  
Application Type:: Provisional  
Docket Number:: DON01 P-1092  
Secrecy Order in Parent Appl.?: No

REPRESENTATIVE INFORMATION

Representative Customer Number:: 28101  
Source:: PrintEFS Version 1.0.1



PROVISIONAL  
DON01 P-1092  
Express Mail No. EV353872042US

MIRROR REFLECTIVE ELEMENT

FIELD OF THE INVENTION

The present invention relates generally to rearview mirror elements for a rearview mirror assembly of a vehicle and, more particularly, to exterior rearview mirror elements comprising multi-radius reflective elements.

BACKGROUND OF THE INVENTION

Typically, mirror reflective elements are formed of glass and have a reflective coating deposited thereon, such as via vacuum deposition or wet chemical silvering or the like, such as on a silver line, such as described in U.S. Pat. No. 4,737,188, which is hereby incorporated herein by reference. Polymeric reflective elements are also known, such as are described in U.S. Pat. Nos. 6,409,354; 4,944,581; 4,385,804; 4,193,668; 4,666,264; and 5,483,386, which are hereby incorporated herein by reference. For such polymeric mirror reflective elements, the need exists for a hard coat or surface on the first or outer or exterior surface of the element which is contacted by the exterior elements, such as rain, road debris, or the like, or contacted, for example, by a person scraping ice or wiping snow or condensation off the mirror element outer surface, such as during winter. A variety of hard coats have been proposed in the art, typically applied by dip coating or vacuum deposition techniques. However, a need exists for an automotive mirror reflective element which has the properties of plastic (i.e., a specific gravity roughly half that of glass), and which has a glass-like exterior surface.

Also, exterior rearview mirror reflective elements may be aspheric or multi-radius, and may typically have a less curved or substantially flat (around 2000 mm radius or thereabouts) inboard portion or surface at the inboard side of the reflective element (i.e., closer to the side body of the vehicle when the mirror assembly is mounted to the vehicle), and a more curved multi-radius portion or surface at the outboard side of the reflective element (i.e., further from the side body of the vehicle when the mirror assembly is mounted to the vehicle), in order to provide an extended field of view. It is typically desirable to have the reflective elements or substrates of such exterior mirror elements to be formed of a glass material because glass material typically provides an enhanced scratch resistance over conventional optical resins and the like.

Therefore, there is a need in the art for a mirror reflective element that overcomes the shortcomings of the prior art elements and substrates.

SUMMARY OF THE INVENTION

The present invention provides a molded wide angle or multi-radius substrate for a reflective element. The molded substrate comprises a polymeric optical resin transparent material and has a curved exterior surface, which may have a less curved/flatter or substantially flat inboard portion or surface and a more curved outboard portion or surface. The molded substrate may have an anti-abrasion film or layer, such as an ultrathin glass film, applied over the exterior surface or first surface to provide substantial protection against scratches occurring to the molded substrate. The inner surface or second surface of the reflective element substrate may have a reflective coating or layer, such as a polymeric reflective film, laminated or adhered or otherwise applied thereto.

According to an aspect of the present invention, a reflective element for a mirror assembly for a vehicle comprises a substrate having an exterior surface, and an anti-abrasion film applied to the exterior surface. The substrate comprises a polymeric resin material, such as a transparent optical polymeric resin material. The anti-abrasion film preferably comprises a glass material (such as a soda lime glass or a borosilicate or the like) and has a thickness of less than approximately 0.8 mm, and is flexible to conform to the exterior surface.

The substrate may be cut from a strip or sheet of molded or extruded or cast substrate material (or less preferably, may be cut from an injected molded strip or sheet). The flexible glass film may be unrolled from a reel or roll and applied to the exterior surface of the elongated strip or sheet of substrate material. The substrate, including the glass film or layer, may then be cut from the elongated strip or sheet.

The substrate may comprise a wide angle substrate and/or may comprise a multi-radius exterior surface having a less curved inboard portion or surface and a more curved outboard portion or surface.

A reflective film or layer may be applied to the inner surface or side of the substrate or strip opposite the exterior surface. The reflective film may comprise a polymeric reflective film laminated or otherwise adhered or applied to the inner side of the substrate or strip. The reflective film may comprise an all polymer-thin-film multilayer, high reflective mirror film comprising multiple coextrusion of many plastic layers to form a highly reflective mirror film.

Optionally, a reflective film or layer may be applied to the exterior surface of the substrate or sheet or strip, and the glass film or layer or sheet may be applied over the

# 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.