(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 June 2001 (21.06.2001)

PCT

(10) International Publication Number
WO 01/44013 A1

(51) International Patent Classification[7]: B60R 1/06, 1/12, F21V 33/00

(21) International Application Number: PCT/US00/34313

(22) International Filing Date:
15 December 2000 (15.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/172,711 17 December 1999 (17.12.1999) US
09/482,204 12 January 2000 (12.01.2000) US

(71) Applicant *(for all designated States except US)*: **BRITAX VISION SYSTEMS (NORTH AMERICA) INC.** [US/US]; 1855 Busha Highway, Marysville, MI 48040 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **HENION, Paul, R.** [US/US]; 4965 Lakeshore Road, Fort Gratiot, MI 48059 (US). **STUREK, James, S.** [US/US]; 46 Golfside Drive, St. Clair, MI 48079-3574 (US). **MCCLOY, Graham, B.** [AU/AU]; 2 Kendall Parade, Cundletown, NSW 2430 (AU). **GILBERT, Robert, W.** [AU/AU]; South Road, Willung, S.A. 5172 (AU). **DUROUX, Bernard** [FR/FR]; 19, domaine de la Boissiere, F-78890 Gharancières (FR).

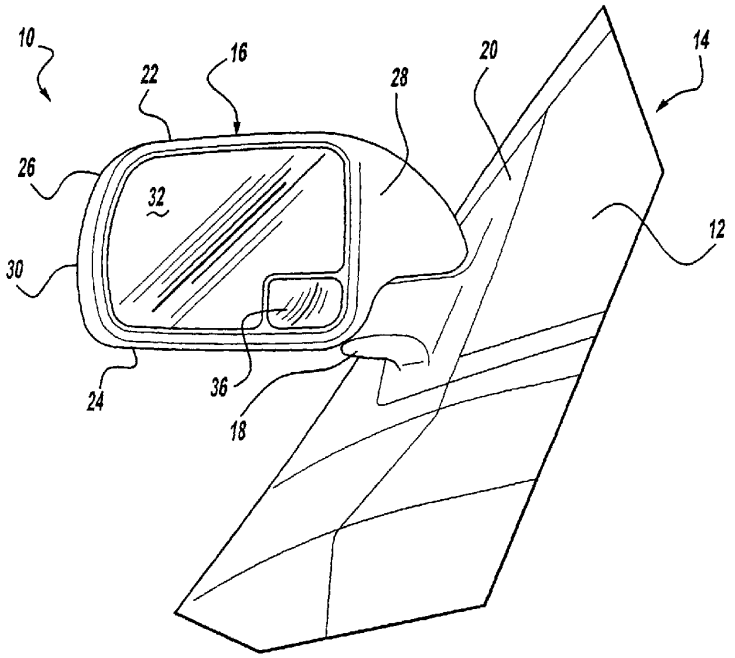
(74) Agent: **WARN, Philip, R.**; Warn IP Law Office, P.O. Box 70098, Rochester Hills, MI 48307 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: SIDE VIEW MIRROR WITH INTEGRAL LIGHTING



(57) Abstract: A mirror assembly (10) in which a mirror housing (16) and multi-function backing plate (34) provides various useful functions. The multi-function backing plate supports not only a conventional reflective element (32) but also supports a wide angle reflective element (36). The multi-function backing plate further supports an indicator light assembly (96) so that the mirror assembly can provide an indicator light function.

WO 01/44013 A1

IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *With international search report.*

SIDE VIEW MIRROR WITH INTEGRAL LIGHTING

The present invention relates generally to improvements in mirror assemblies.

Background and Summary of the Invention

In automotive vehicles, exterior, rear-view mirror assemblies typically enable the driver to conveniently view reward and sideward portions of the vehicle to check for obstacles or other vehicles. Typically, the mirror assembly includes a housing which attaches to the vehicle and supports a backing assembly which supports the reflective element. The reflective element typically adjusts so that various rearward and sideward portions around the vehicle may be viewed by the driver. The reflective element is typically a flat assembly.

Present assemblies include many useful features such as indicator lights, turn signal lighting, and spotlights. However, existing designs do not fully utilize the overall structure of the mirror assembly in order to most efficiently implement and utilize such features.

Thus, the subject invention is directed to improvements in multi-function mirror assemblies.

The subject invention is also directed to the inclusion of several additional features in exterior, rear-view mirror assemblies.

For a more complete understanding of the invention, its objects and advantages, reference should be made to the following specification and to the accompanying drawings.

Brief Description of the Drawings

Fig. 1 is a perspective view of an exterior rear view mirror assembly having an integral spotter or fish-eye mirror arranged in accordance with the principles of the present of the invention;

Fig. 2 is a front view of the mirror assembly of Fig. 1;

Fig. 3 is a crosssectional view of the mirror assembly of Figs. 1 and 2 having a spot mirror fixed with respect to the multi-function backing plate;

Fig. 4 is a crosssectional view of the mirror assembly of Figs. 1 and 2 having an adjustable spot mirror;

Fig. 5 is a perspective view of the dampener assembly for the adjustable spot mirror of Fig. 4;

Fig. 6 is a front view of a mirror assembly including a multi-function backing plate having an indicator light assembly arranged in accordance with the principles of the present invention;

Fig. 7 is a crosssectional view of the mirror assembly taken along the lines 7-7 of Fig. 6;

Fig. 8 is an expanded view of the indicator light assembly of Fig. 7;

Fig. 9 is a front view of a mirror assembly having an indicator light assembly formed on the multi-function backing plate beneath the reflective element arranged in accordance with the principles of the present invention;

Fig. 10 is a perspective view of a mirror assembly having a conventional reflective element, a spotter reflective element, and an indicator light assembly beside the conventional reflective element;

Fig. 11 is a front view of a mirror assembly having an indicator light assembly placed on the multi-function backing plate of the mirror assembly beside the reflective element, including a spotter element below the reflective element;

Fig. 12 is a front view of a mirror assembly having an indicator light assembly placed between the reflective element and the spotter element arranged in accordance with the principles of the present invention;

Fig. 13 is a horizontal, crosssectional view of a mirror assembly having an adjustable approach light arranged in accordance with the principles of the present invention;

Fig. 14 is a horizontal, crosssectional view of the mirror assembly of Fig. 13 with the approach light in an exposed position;

Fig. 15 is a block diagram of a control system for a smart mirror system, particularly for operating the mirror assembly of Figs. 13 and 14;

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.