



US007307395B2

(12) **United States Patent**
Bouamra et al.

(10) **Patent No.:** **US 7,307,395 B2**
(45) **Date of Patent:** **Dec. 11, 2007**

(54) **SAFETY DEVICE FOR A SLIDING PANEL DRIVEN BY AN ELECTRICAL MOTOR AND METHOD FOR IMPLEMENTING SUCH A DEVICE**

(75) Inventors: **Mohamed Bouamra**, Strasbourg (FR); **Jésus Zaldua**, Hondarribia - Gipuzkoa (ES); **Javier Vicandi**, Zarautz - Gipuzkoa (ES); **Jésus Iriondo**, Zarautz - Gipuzkoa (ES)

(73) Assignee: **Talltec Technologies Holdings S.A.**, Luxembourg (LU)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 888 days.

(21) Appl. No.: **10/742,777**

(22) Filed: **Dec. 23, 2003**

(65) **Prior Publication Data**

US 2004/0138843 A1 Jul. 15, 2004

Related U.S. Application Data

(62) Division of application No. 09/460,969, filed on Dec. 15, 1999, now Pat. No. 6,772,559.

(30) **Foreign Application Priority Data**

Dec. 15, 1998 (EP) 98123825

(51) **Int. Cl.**
G05B 5/00 (2006.01)

(52) **U.S. Cl.** **318/445**; 318/443; 318/444; 318/449; 318/466; 318/469

(58) **Field of Classification Search** 318/445, 318/443, 444, 449, 466, 467, 468, 469, 280; 340/628

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,051,672 A	9/1991	Yaguchi
5,404,673 A	4/1995	Takeda et al.
5,410,226 A	4/1995	Sekiguchi et al.
5,428,923 A	7/1995	Waggamon
5,774,046 A	6/1998	Ishihara et al.
5,801,347 A	9/1998	Tsuge et al.
5,880,421 A	3/1999	Tsuge et al.
5,932,931 A	8/1999	Tanaka et al.
6,163,080 A	12/2000	Castellon
6,316,846 B1	11/2001	Kashiwazaki et al.
2004/0257235 A1*	12/2004	Right et al. 340/628

FOREIGN PATENT DOCUMENTS

DE 38 09 957 10/1989

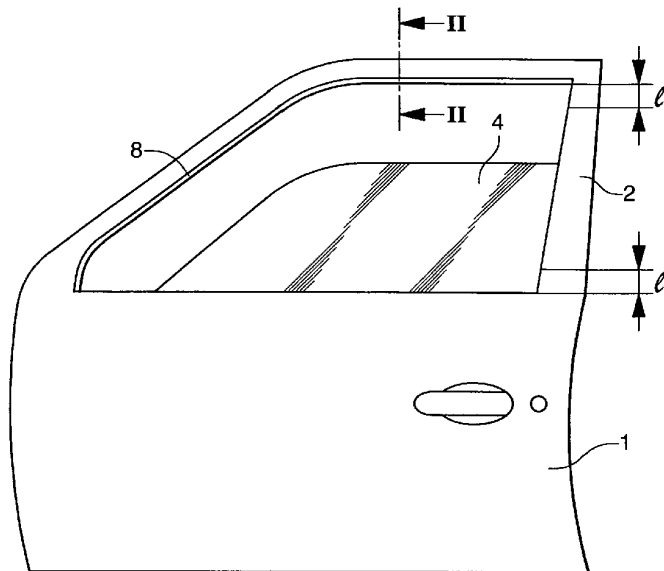
(Continued)

Primary Examiner—Karen Masih
(74) *Attorney, Agent, or Firm*—Sughrue Mion, PLLC

(57) **ABSTRACT**

The invention concerns a sequential safety system associated with a moving closing panel driven so as to slide by an electric motor (6), this safety system including means (20) exploiting the signal originating from an optical fiber to stop and reverse the direction of movement of said moving panel in the event of a change in the signal, as well as additional safety means allowing the end-of-travel positions of the moving panel to be determined without ambiguity via the joint exploitation of the results derived from measuring the frequency of the pulses caused by the rotation of the electric motor (6) driving said moving panel, as well as data originating from the optical fiber.

40 Claims, 11 Drawing Sheets



UUSI, LLC
Exhibit 2024

WEBASTO ROOF
SYSTEMS, INC.
Petitioner

v.
UUSI, LLC
Patent Owner

Case:
IPR2014-00650
Patent: 7,579,802

US 7,307,395 B2

Page 2

FOREIGN PATENT DOCUMENTS

DE	39 11 493	10/1990
DE	40 30 607	4/1992
DE	44 16 803	11/1994
DE	40 30 904	3/1995
DE	43 31 781	3/1995
DE	44 23 104	1/1996

DE	196 23 420	12/1997
DE	197 24 952	12/1997
EP	345 914	1/1989
EP	419 267	9/1990
GB	2 125 572	3/1984

* cited by examiner

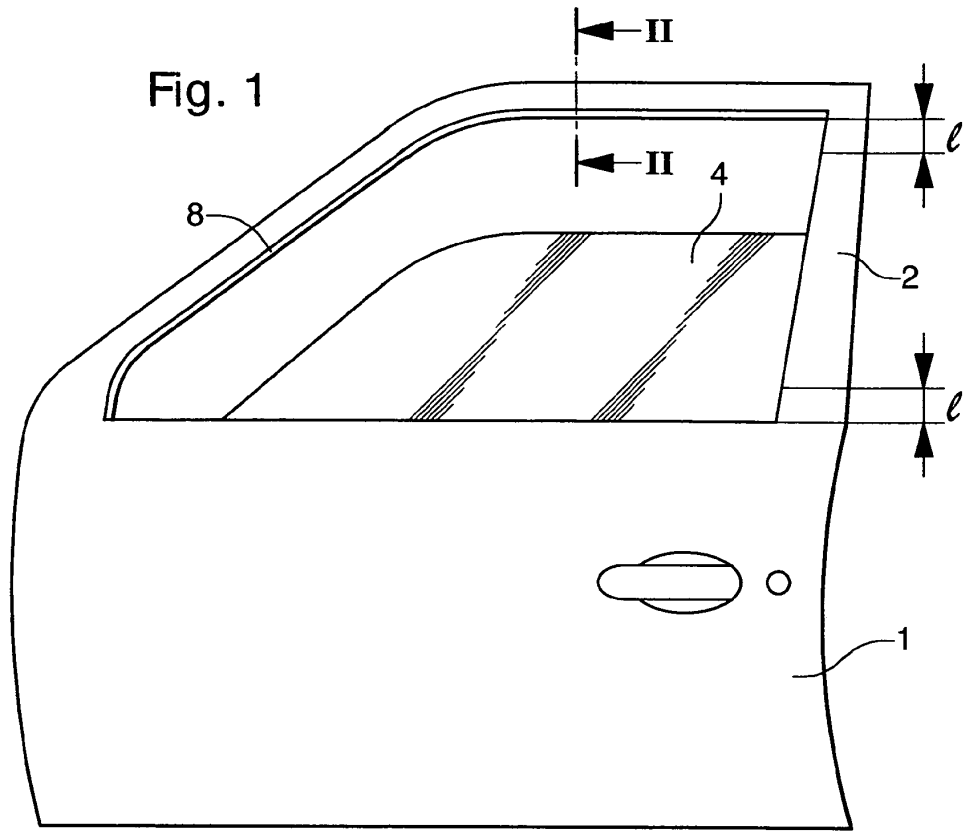


Fig. 2

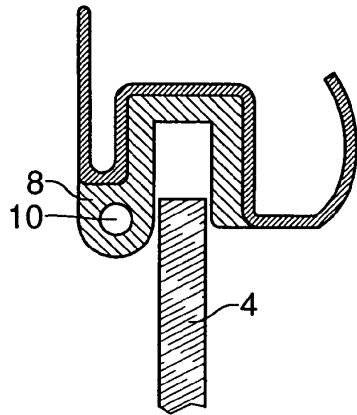
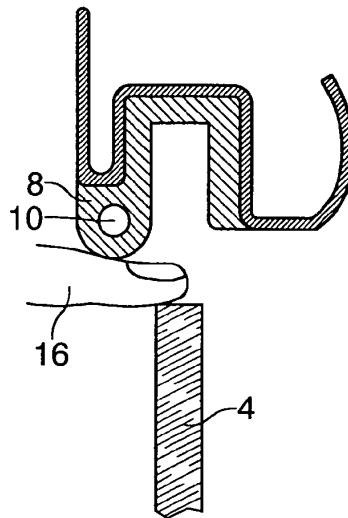


Fig. 3



U.S. PATENT

Fig. 4

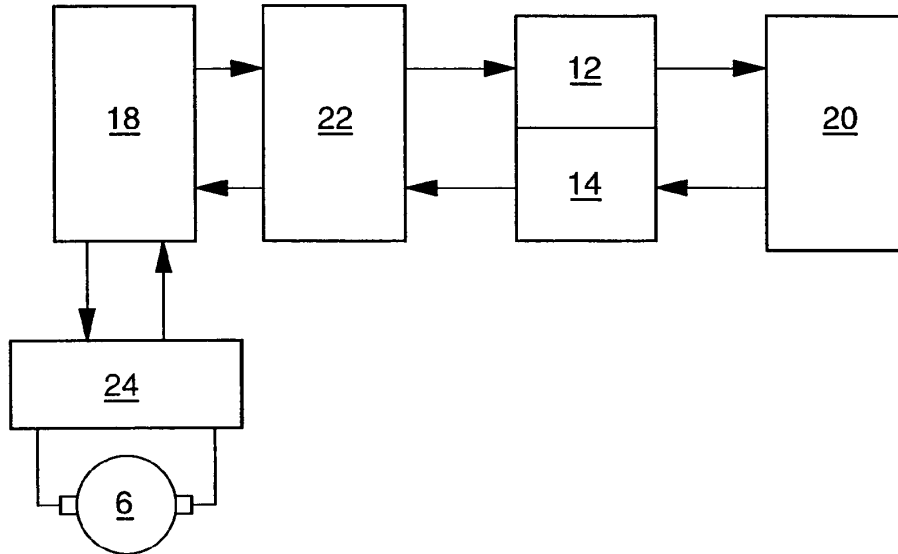


Fig. 5

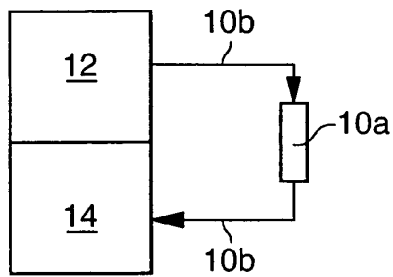
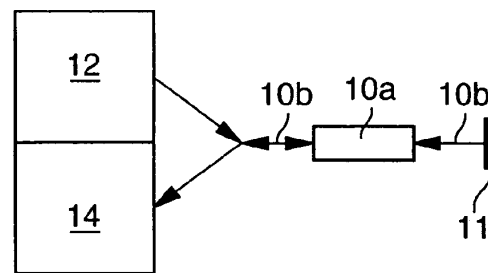
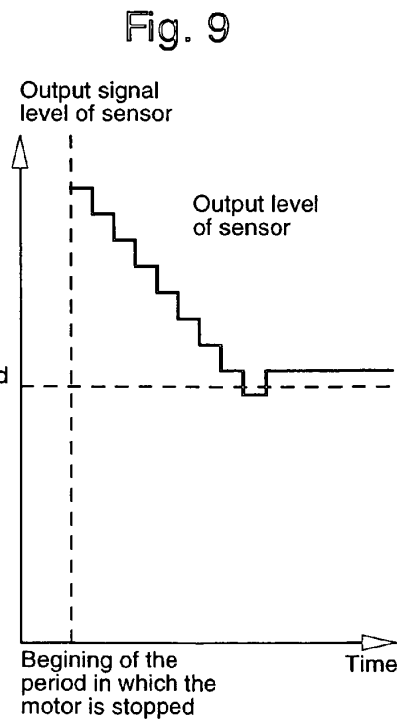
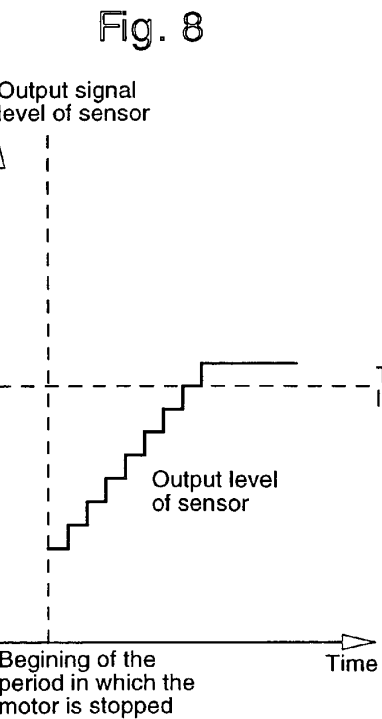
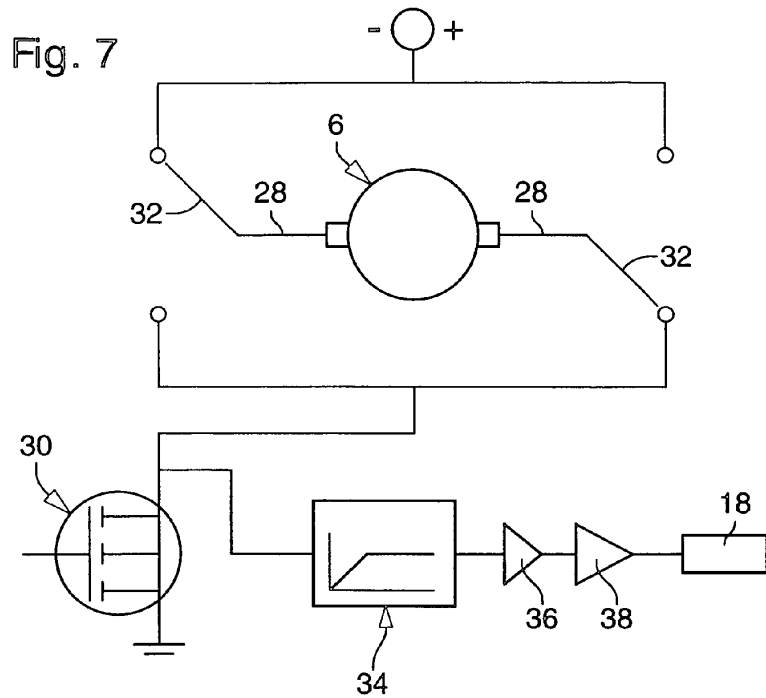


Fig. 6



U.S. PATENT



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.