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Kessler et al.

OPENABLE AND CLOSABLE MOTOR (54) VEHICLE WINDOW

- (75) Inventors: Michael Kessler, Offenbach (DE); Peter Hagedorn, Seeheim-Jugenheim (DE); Hans Jürgen Salzburger, Neunkirchen (DE); Ansgar Wilbrand, Rees-Haldern (DE)
- Assignee: Brose Fahrzeugteile GmbH & Co. (73)KG, Coburg (DE)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 08/481,199
- (22) Filed: Jun. 7, 1995

Related U.S. Application Data

(63) Continuation of application No. 08/060,906, filed on May 12, 1993, now abandoned.

(30)**Foreign Application Priority Data**

- May 13, 1992 (DE) 42 15 744
- (51) Int. Cl.⁷ E06B 3/00
- Field of Search 49/26, 27, 28, (58) 49/506

(56)**References Cited**

U.S. PATENT DOCUMENTS

3,727,348 A	*	4/1973	Steinmann et al 49/28
4,023,156 A	*	5/1977	Galvin 340/274 R
4,351,016 A	*	9/1982	Felbinger 49/28 R
4,458,445 A	*	7/1984	Sauer et al 49/26
5,229,748 A	*	7/1993	Ehringer et al 340/566
			Toyozumi et al 49/26

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FOREIGN PATENT DOCUMENTS

DE	2246337	4/1974	
DE	2432063	1/1976 * 6/1978	40/20
DE	2127207	0/19/8	49/28
DE	2719955	11/1978	
DE	3034118	3/1982	
DE	3136746	6/1983	
DE	3528380	2/1987	
DE	3236631	3/1988	
DE	3712950	11/1988	
DE	3438050	4/1989	
GB	1347474	* 2/1974	49/28

OTHER PUBLICATIONS

Dr. Dan Russell, "Acoustics Animations", Acoustics and Vibrations Animations page, http://WWW.gmi.edu, 2001.

* cited by examiner

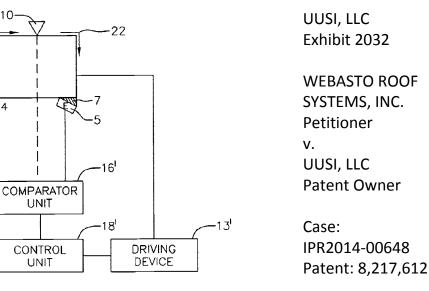
Primary Examiner-Jerry Redman

(74) Attorney, Agent, or Firm-Christie, Parker & Hale, LIP

(57)ABSTRACT

Device for restricting or controlling and regulating the movement of remote-controlled parts, more particularly parts of a vehicle bodywork as well as a process for operating the device. The device and process can be used with particular advantage as a collision protection for window winders, sunroofs, doors or flaps, more particularly in connection with electrical displacement devices for motor vehicles. The device is characterized by an actuator and a sensor which are mounted on a cohesive uninterrupted transmission path which is a constituent part of the closing surface area of the remote-controlled part and/or of the fixed part interacting therewith. The arrangement is selected so that a part of the energy supplied by actuator is converted into acoustic surface waves which can scatter over the transmission path and can be received by the sensor.

20 Claims, 6 Drawing Sheets



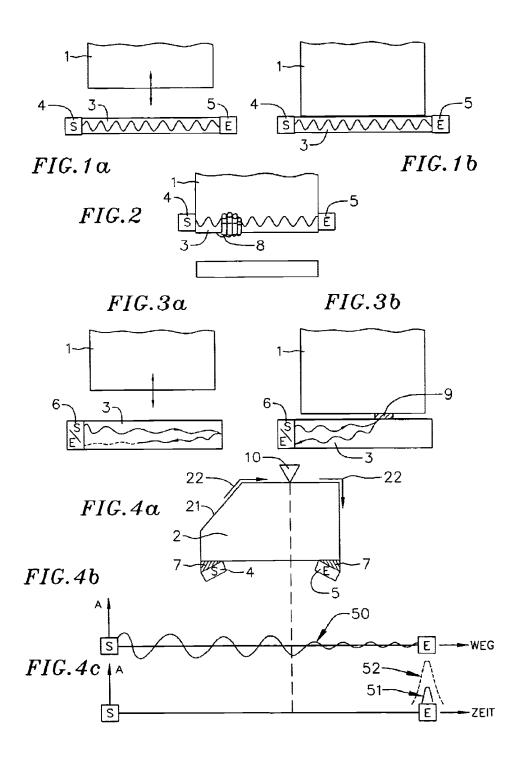
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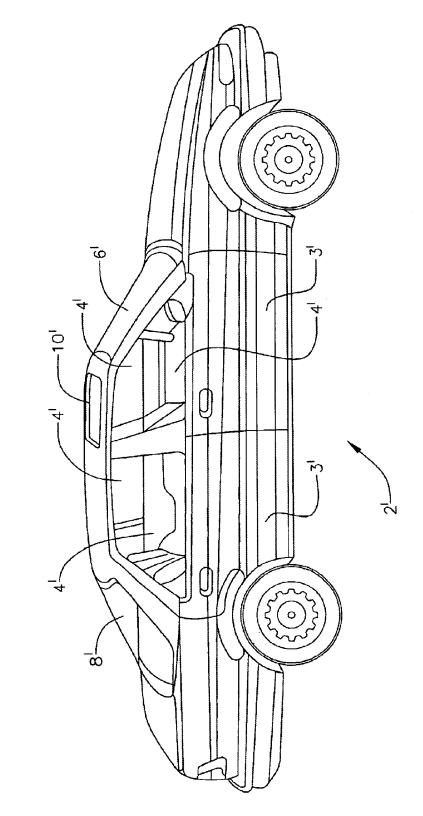
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 $FIG.1 \alpha\alpha$

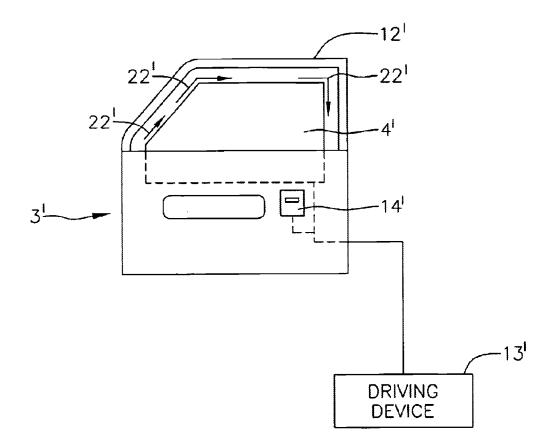
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FIG. 1 ab



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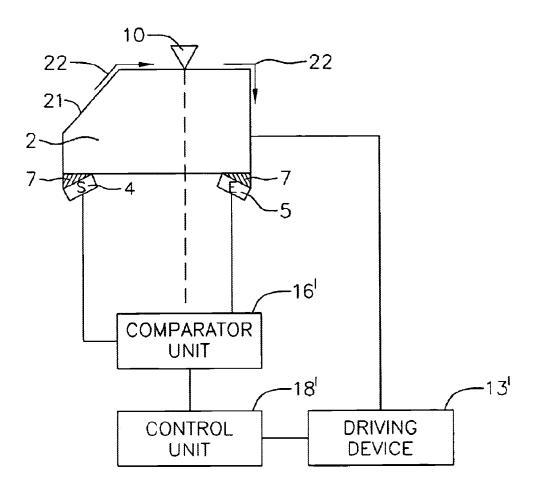
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FIG. $4\alpha^{\dagger}$



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