

Title (en)

Method and device for determining charges of lifting and tension equipments

Title (de)

Verfahren und Vorrichtung zum Erfassen von Belastungen von Hub- und Zugeinrichtungen

Title (fr)

Méthode et dispositif pour déterminer des charges des équipements d'élévation et de tension

Publication

**EP 0737851 A3 19970409 (DE)**

Application

**EP 96250084 A 19960415**

Priority

DE 19514050 A 19950413

Abstract (en)

[origin: EP0737851A2] The method involves measuring the forces acting on the appts. and their duration as time periods. Predetermined load ranges are allocated to the measured forces. Within definite time periods the individual time periods in the predetermined load ranges are summed and stored. The time periods summed in the defined time periods as well as the associated load ranges are used to determine the expiry of the life time of the appts. A sensor arrangement (1) involving piezoelectric or strain-gauge elements measures the forces on the appts., and a timer determines the duration over which the forces act. A device (4) is provided to classify the individual measurement values in the load ranges and to sum the individual time periods. A memory arrangement (6,7) stores the summed time periods in different load ranges.

IPC 1-7

**G01L 5/00**

IPC 8 full level

**B66C 15/00** (2006.01); **G01L 5/00** (2006.01); **G07C 3/00** (2006.01)

CPC (source: EP)

**B66C 15/00** (2013.01); **G07C 3/00** (2013.01)

Citation (search report)

- [Y] US 4947341 A 19900807 - SHINE M CARL [US]
- [Y] DE 4226010 A1 19940210 - PORSCHE AG [DE]
- [A] DE 3121461 A1 19821216 - WESTINGHOUSE ELECTRIC CORP [US]
- [A] DE 2948774 A1 19800619 - FERODO SA
- [A] US 4116050 A 19780926 - TANAHASHI SAKAE, et al
- [A] EP 0228014 A1 19870708 - GEN ELECTRIC [US]
- [A] PATENT ABSTRACTS OF JAPAN vol. 016, no. 225 (P - 1360) 26 May 1992 (1992-05-26)
- [A] PATENT ABSTRACTS OF JAPAN vol. 017, no. 609 (P - 1640) 9 November 1993 (1993-11-09)

Cited by

EP2123589A1; EP1103511A3; RU182820U1; KR101108325B1; EP1356910A1; EP1150019A1; EP1785703A1; US7497137B2; US8200401B2

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