

Title (en)

METHODS FOR PULSE-DRIVEN ENHANCED VIBRATION MODES IN SHAPE MEMORY ALLOY MASSAGER

Title (de)

VERFAHREN FÜR IMPULSGESTEUERTE VERBESSERTE VIBRATIONSMODI IN EINEM
FORMGEDÄCHTNISLEGIERUNGSMASSEGEVORRICHTUNG

Title (fr)

PROCÉDÉS CONCERNANT DES MODES DE VIBRATION AMÉLIORÉS ENTRAÎNÉS PAR DES IMPULSIONS DANS UN DISPOSITIF DE
MASSAGE EN ALLIAGE À MÉMOIRE DE FORME

Publication

EP 3582851 A2 20191225 (EN)

Application

EP 18754476 A 20180219

Priority

- US 201762460856 P 20170219
- US 2018018644 W 20180219

Abstract (en)

[origin: WO2018152476A2] Pulse schemes employ voltage pulses to drive SMA wires to heat and contract and also cause the SMA wires to emit a percussive response and vibrate vigorously as they are heated from a cool state through the transition temperature range. Multiple pulses are delivered to each SMA wire, the first one or few pulses heating the SMA material into the transformation temperature range. Each subsequent pulse delivered to the transitioning SMA material causes a throbbing percussive vibrational report. The spacing of the pulses by intervening cooling pauses extends the time that the material remains in the transformation temperature range and prolongs the time in which the audible and percussive outputs are generated. These vibration effects are useful for any number of applications such as massage, haptic feedback or other 'warning' systems employing SMA wires built into a seat or chair. Pulses to plural SMA wires may be alternated rapidly to enable a small power supply to operate multiple wires virtually simultaneously.

IPC 8 full level

A61N 1/36 (2006.01); **A61H 1/00** (2006.01); **A61H 11/00** (2006.01)

CPC (source: EP)

A61H 7/001 (2013.01); **A61H 7/007** (2013.01); **A61H 11/00** (2013.01); **A61H 23/02** (2013.01); **B60N 2/976** (2018.01); **A61H 2011/005** (2013.01); **A61H 2023/0209** (2013.01); **A61H 2201/0149** (2013.01); **A61H 2201/0207** (2013.01); **A61H 2201/0228** (2013.01); **A61H 2201/1207** (2013.01); **A61H 2201/165** (2013.01); **A61H 2201/169** (2013.01); **A61H 2201/1697** (2013.01); **A61H 2201/5005** (2013.01); **A61H 2201/5007** (2013.01); **A61H 2205/081** (2013.01)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2018152476 A2 20180823; **WO 2018152476 A3 20181004**; EP 3582851 A2 20191225; EP 3582851 A4 20201216

DOCDB simple family (application)

US 2018018644 W 20180219; EP 18754476 A 20180219