

Title (en)  
HIGHLY EFFICIENT LINEAR MOTOR

Title (de)  
HOCHEFFIZIENTER LINEARMOTOR

Title (fr)  
MOTEUR LINÉAIRE À HAUTE EFFICACITÉ

Publication  
**EP 3782271 A4 20220112 (EN)**

Application  
**EP 20783566 A 20200210**

Priority  
• US 201916370576 A 20190329  
• US 2020017422 W 20200210

Abstract (en)  
[origin: WO2020205064A1] An electrical system including a linear motor in which energized forcer and thruster coils are used for the field and armature elements. In accordance with exemplary embodiments, one or more thruster coils may be provided on a shaft with opposing single or multiple fixed forcer coils. Using coils as the electromagnets for forcer and thruster coils advantageously provides necessary power while also minimizing system weight and decreases in magnetism typically encountered with permanent magnets with rising temperature, resulting in higher and more controllable magnetic forces over varying temperatures. Ferrous elements, such as a ferrous system housing and/or open ferrous containers for the thruster coils may be further included to advantageously focus the magnetic forces. Additionally, multiple forcer and thruster coils may be disposed in various arrangements along the shaft. Exemplary applications include use of such a system for controlling oscillations of a poppet valve in an internal combustion engine.

IPC 8 full level  
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Citation (search report)  
• [XYI] US 4228373 A 19801014 - FUNDERBURG WILLIAM S  
• [XI] US 4404503 A 19830913 - WARD WILLIAM L [US], et al  
• [Y] US 2017321620 A1 20171109 - HUTCHINS RICHARD H [US]  
• See also references of WO 2020205064A1

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DOCDB simple family (publication)  
**WO 2020205064 A1 20201008**; EP 3782271 A1 20210224; EP 3782271 A4 20220112; GB 202115618 D0 20211215; GB 2597031 A 20220112; GB 2597031 A8 20220727; GB 2597031 B 20240501; GB 2621516 A 20240214; KR 20220017891 A 20220214

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