CPC COOPERATIVE PATENT CLASSIFICATION

H02N ELECTRIC MACHINES NOT OTHERWISE PROVIDED FOR

NOTES

1. This subclass covers:
   - electrostatic generators, motors, clutches, or holding devices;
   - other non-dynamo-electric generators or motors;
   - holding or levitation devices using magnetic attraction or repulsion;
   - arrangements for starting, regulating, braking, or otherwise controlling such machines unless in conjoint operation with a second machine.
2. Specific provision for generators, motors, or other means for converting between electric and other forms of energy also exists in other subclasses, e.g. in subclasses H01L, H01M, H02K, H04R.

H02N 1/00 **Electrostatic generators or motors using a solid moving electrostatic charge carrier**

H02N 1/002 . {Electrostatic motors}

H02N 1/004 . . {in which a body is moved along a path due to interaction with an electric field travelling along the path}

H02N 1/006 . . {of the gap-closing type (H02N 1/004 takes precedence)}

H02N 1/008 . . . {Laterally driven motors, e.g. of the comb-drive type}

H02N 1/04 . Friction generators

H02N 1/06 . Influence generators

H02N 1/08 . . with conductive charge carrier, i.e. capacitor machines

H02N 1/10 . . with non-conductive charge carrier

H02N 1/12 . . . in the form of a conveyer belt, e.g. van de Graaff machine

H02N 2/00 **Electric machines in general using piezo-electric effect, electrostriction or magnetostriction** (generating mechanical vibrations in general B06B; piezo-electric, electrostrictive or magnetostrictive devices in general H01L 41/00)

WARNING

This group is not complete pending reorganisation; see provisionally also H01L 41/00

H02N 2/0005 . {producing non-specific motion; Details common to machines covered by H02N 2/02 to H02N 2/16}

H02N 2/001 . . {Driving devices, e.g. vibrators}

H02N 2/0015 . . . {using only bending modes}

H02N 2/002 . . . {using only longitudinal or radial modes}

H02N 2/0025 . . . . {using combined longitudinal modes}

H02N 2/003 . . . {using longitudinal or radial modes combined with bending modes}

H02N 2/0035 . . . . {Cylindrical vibrators}

H02N 2/004 . . . . {Rectangular vibrators}

H02N 2/0045 . . . {using longitudinal or radial modes combined with torsion or shear modes}
H02N 2/005 . . {Mechanical details, e.g. housings (casings for dynamo-electric machines H02K 5/00)}
H02N 2/0055 . . . {Supports for driving or driven bodies; Means for pressing driving body against driven body}
H02N 2/006 . . . . {Elastic elements, e.g. springs (in general F16F 1/00)}
H02N 2/0065 . . . {Friction interface (friction linings F16D 69/00)}
H02N 2/007 . . . . {Materials}
H02N 2/0075 . . {Electrical details, e.g. drive or control circuits or methods}
H02N 2/008 . . . {Means for controlling vibration frequency or phase, e.g. for resonance tracking}
H02N 2/0085 . . . {Leads; Wiring arrangements}
H02N 2/009 . . {Thermal details, e.g. cooling means}
H02N 2/0095 . {producing combined linear and rotary motion, e.g. multi-direction positioners}
H02N 2/02 . producing linear motion, e.g. actuators; Linear positioners; {Linear motors}
H02N 2/021 . . {using intermittent driving, e.g. step motors, piezoleg motors}
H02N 2/023 . . . {Inchworm motors}
H02N 2/025 . . . {Inertial sliding motors}
H02N 2/026 . . {by pressing one or more vibrators against the driven body}
H02N 2/028 . . {along multiple or arbitrary translation directions, e.g. XYZ stages}
H02N 2/04 . . Constructional details
H02N 2/043 . . . {Mechanical transmission means, e.g. for stroke amplification}
H02N 2/046 . . . . {for conversion into rotary motion}
H02N 2/06 . . Drive circuits; Control arrangements {or methods}
H02N 2/062 . . . {Small signal circuits; Means for controlling position or derived quantities, e.g. for removing hysteresis}
H02N 2/065 . . . {Large signal circuits, e.g. final stages}
H02N 2/067 . . . . {generating drive pulses}
H02N 2/08 . . using travelling waves {i.e. Rayleigh surface waves}
H02N 2/10 . producing rotary motion, e.g. rotary motors
H02N 2/101 . . {using intermittent driving, e.g. step motors}
H02N 2/103 . . {by pressing one or more vibrators against the rotor}
H02N 2/105 . . {Cycloid or wobble motors; Harmonic traction motors}
H02N 2/106 . . {Langevin motors}
H02N 2/108 . . {around multiple axes of rotation, e.g. spherical rotor motors}
H02N 2/12 . . Constructional details
H02N 2/123 . . . {Mechanical transmission means, e.g. for gearing}
H02N 2/126 . . . . {for conversion into linear motion}
H02N 2/14 . . Drive circuits; Control arrangements {or methods}
H02N 2/142 . . . {Small signal circuits; Means for controlling position or derived quantities, e.g. speed, torque, starting, stopping, reversing}

H02N 2/145 . . . {Large signal circuits, e.g. final stages}

H02N 2/147 . . . . {Multi-phase circuits}

H02N 2/16 . . using travelling waves {i.e. Rayleigh surface waves}

H02N 2/163 . . . {Motors with ring stator}

H02N 2/166 . . . {Motors with disc stator}

H02N 2/18 . producing electrical output from mechanical input, e.g. generators (for measurement devices G01)

H02N 2/181 . . {Circuits; Control arrangements or methods}

H02N 2/183 . . {using impacting bodies (high voltage generators in spark lighters F23Q)}

H02N 2/185 . . {using fluid streams}

H02N 2/186 . . {Vibration harvesters}

H02N 2/188 . . . {adapted for resonant operation}

H02N 2/22 . {Methods relating to manufacturing, e.g. assembling, calibration}

H02N 3/00 **Generators in which thermal or kinetic energy is converted into electrical energy by ionisation of a fluid and removal of the charge therefrom** (discharge tubes functioning as thermionic generators H01J 45/00)

H02N 10/00 **Electric motors using thermal effects {**(motors using expansion or contraction of bodies due to heating or cooling F03G 7/06)**}**

H02N 11/00 **Generators or motors not provided for elsewhere; Alleged perpetua mobilia obtained by electric or magnetic means** (by hydrostatic pressure F03B 17/04; {by mechanical means F03G 7/10;} by dynamo-electric means, {including arrangements of permanent magnets interacting with other permanent magnets,} H02K 53/00)

H02N 11/002 . {Generators}

H02N 11/004 . . {adapted for producing a desired non-sinusoidal waveform}

H02N 11/006 . {Motors}

H02N 11/008 . {Alleged electric or magnetic perpetua mobilia}

H02N 13/00 **Clutches or holding devices using electrostatic attraction, e.g. using Johnson-Rahbek effect**

H02N 15/00 **Holding or levitation devices using magnetic attraction or repulsion, not otherwise provided for** (electric or magnetic devices for holding work on machine tools B23Q 3/15; {monorail vehicle propulsion or suspension B60L 13/00}; sliding or levitation devices for railway systems B61B 13/08; material handling devices associated with conveyers incorporating devices with electrostatic or magnetic grippers B65G 47/92; separating thin or filamentary articles from piles using magnetic force B65H 3/16; delivering thin or filamentary articles from magnetic holders by air blast or suction B65H 29/24; bearings using magnetic or electric supporting means F16C 32/04; relieving bearing loads using magnetic means F16C 39/06; magnets H01F 7/00; dynamo-electric clutches or brakes H02K 49/00; {electric furnaces with simultaneous levitation and heating H05B 6/32})

H02N 15/02 . by Foucault currents

H02N 15/04 . Repulsion by the Meissner effect (superconductors or hyperconductors in general H01L 39/00)

H02N 99/00 **Subject matter not provided for in other groups of this subclass**