Title (en)

Electromagnetic drive, in particular for an impact printer.

Title (de)

Elektromagnetischer Stösselantrieb, insbesondere für Anschlagdrucker.

Title (fr)

Elément d'actionnement électromagnétique, en particulier pour imprimante à impact.

Publication

EP 0176618 A1 19860409 (DE)

Application

EP 84111869 A 19841004

Priority

EP 84111869 A 19841004

Abstract (en)

1. Electromagnetic actuator for performing individual step, switch or impact movements, comprising an electromagnet assembly and a moving element (1) with a tongue-shaped contour, where-in the electromagnet assembly includes yokes (2, 3) excitable by an electromagnet coil (6), the facing pole ends of which define magnetic coplanar operating gaps (7, 8), the electromagnet assembly on either side of the plane of the operating gaps (7, 8), is yoke and coil symmetric, the longitudinal medium plane of the moving element (1) extends through the magnetic operating gaps and comprises a number of softmagnetic elements, the geometrical shape of which is of the order of that of the magnetic operating gaps (7, 8), and each soft-magnetic element in its starting position in the non-excited state of the electromagnet assembly is positioned substantially external to its associated magnetic operating gap (7, 8), being pulled into said gap upon excitation of the electromagnet assembly and accelerated in the process, thus actuating the moving element (1), charactérized in that the moving element (1) id frame-shaped, for obtaining a higher bending resistance, the frame perpendicular to the moving element's (1) direction of movement in the direction of the magnetic flux in the operating gap is wider than the soft-magnetic elements acting as armature bars (9-1, 9-2) and extending inside the frame, the electromagnet assembly comprises a basic yoke (6, 2-3, 3-3), encompassed by an excitation coil, extending perpendicularly through the plane of the moving element, said basic yoke continuing on either side of the plane of the moving element in the form of further yokes, between whose pole ends (2-10, 3-10 ; 2-20, 3-20), facing the plane of the moving element, operating gaps (7, 8) are formed, and between the operating gaps (7, 8) and the outer circumference of the excitation coil (6) adequate space is provided for the movement of the armature bars (9-1, 9-2).

Abstract (de)

Elektromagnetische Antriebsanordnung mit einem biegesteifen, rahmenartigen, zungenförmigen Stößel (1) mit kreisringsegmentförmigen Ankerstegen (9-1; 9-2) aus magnetisierbarem Material. Diese Ankerstege werden bei Erregung der symmetrisch zur Stößelebene aufgebauten Elektromagneteinheit mit nur einer Spule (6) in ihnen zugeordnete und ihrer Form und ihrem Volumen angepaßte Arbeitsspalte (7, 8) hineingezogen.

IPC 1-7

B41J 9/133; B41J 9/38; H01F 7/08

IPC 8 full level

B41J 9/133 (2006.01); **B41J 9/38** (2006.01); **H01F 7/08** (2006.01)

CPC (source: EP)

B41J 9/133 (2013.01); **B41J 9/38** (2013.01); **H01F 7/08** (2013.01)

Citation (search report)

- [AD] EP 0063233 A2 19821027 - IBM DEUTSCHLAND [DE], et al
- [AD] EP 0021335 A1 19810107 - IBM [US]

Designated contracting state (EPC)

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DOCDB simple family (application)

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