

Title (en)

OSCILLATING MECHANISM FOR RECTILINEAR AND UNIFORM SHUTTTLING MOTIONS OF A CARRIER OR THE LIKE

Publication

**EP 0093389 B1 19860129 (DE)**

Application

**EP 83104110 A 19830427**

Priority

US 37380282 A 19820503

Abstract (en)

[origin: US4461984A] A linear motor shuttling system for shuttling the print head (11) of a dot matrix line printer is disclosed. The print head (11) is supported by a pair of flexures (13, 15) such that the head is free to move back and forth along a print line. One end of the flexure supported print head is attached to the coil (31) of a voice coil linear motor (23). The linear motor (23) is also flexure (27, 29) supported. The linear motor (23) is positioned such that the axis of coil movement is co-axial with the axis of movement of the print head (11). Further, the resonant vibration frequency of the combination of the linear motor and the linear motor flexure support is tuned to the resonant vibration frequency of the combination of the print head and the print head flexure support. A position sensor (51), preferably in the form of a pair of windows (W1, W2) connected to the print head (11) to move therewith and control the light impinging on a pair of differentially connected photovoltaic cells (A, B), produces a signal denoting the actual position of the print head. The actual position signal is compared with a commanded position signal in a control loop and the resultant error signal is used to control the magnitude and polarity of the current applied to the coil of the linear motor and, thus, the position of the print head. The signals produced by the photovoltaic cells (A, B) are also used to control the intensity of the light impinging on the cells so that the sum of the photovoltaic cell signal is a constant.

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