Title (en)

LEAKY RAYLEIGH WAVE NOZZLELESS LIQUID DROPLET EJECTORS

Publication

EP 0216589 B1 19920415 (EN)

Application

EP 86307099 A 19860916

Priority

US 77629185 A 19850916

Abstract (en)

[origin: EP0216589A2] A nozzleless print head for ink jet printing and the like comprises one or more essentially planar surface acoustic wave transducers (12a) which are submerged at a predetermined depth in a liquid filled reservoir (13a) so that each of the transducers (12a) launches a converging cone of leaky, coherent Rayleigh waves into the reservoir, thereby producing an acoustic beam (33a) which comes to a generally circular focus at or near the surface (17) of the reservoir (13a) (i.e., the liquid/air interface). The acoustic beam (33a) may be intensity modulated to control the ejection timing, or an external source (34) may be used to extract droplets from the acoustically excited liquid on the surface (17) of the reservoir (13a) on demand. Regardless of the timing mechanism employed, the size of the ejected droplets is determined by the waist diameter of the focused acoustic beam (33a). To control, the direction in which the droplets are ejected, provision (43, 44) may be made for producing a controllable acoustical asymmetry for steering the focused acoustic beam (33a) in a direction generally parallel to the surface (17) of the reservoir (13a).

IPC 1-7

B41J 2/045

IPC 8 full level

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CPC (source: EP)

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EP 0216589 A2 19870401; **EP 0216589 A3 19880914**; **EP 0216589 B1 19920415**; BR 8604299 A 19870505; CA 1265702 A 19900213; DE 3684850 D1 19920521; JP H078561 B2 19950201; JP S6266943 A 19870326

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