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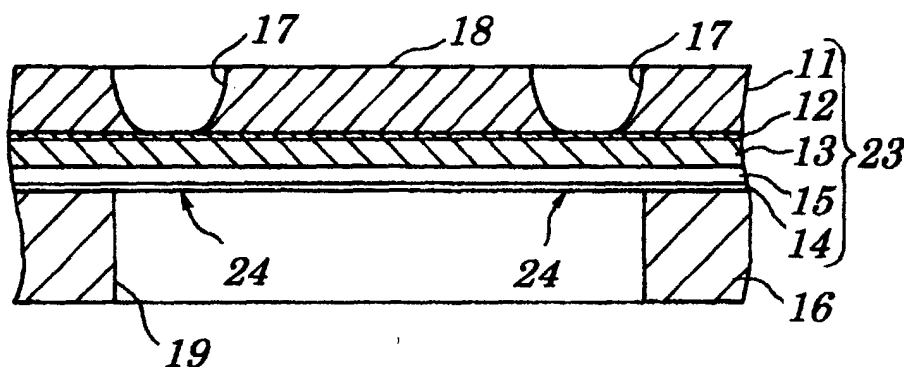
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(54) **Ink jet recording head and method for manufacturing the same**

(57) An ink jet recording head (55) may improve the packing efficiency of the ink into the pressure generating chamber (19), and improve the ejection efficiency of the ink through the ink ejection nozzle (41) to realize a high quality gradation expression in printing operations. The recording head (55) comprises: a pressure generating chamber (19) communicating with an ink reservoir (40); a vibrating plate (23) which faces the pressure generating chamber (19) and is provided with an island-like convex portion (18); and, a piezoelectric element (20) arranged so as to be brought into contact with the island-

like convex portion (18) of the vibrating plate (23) to vibrate the plate (23), and thereby forcing ink droplets to be ejected from the nozzle (41). The vibrating plate (23) comprises: a first metallic layer or stainless steel member (11) brought into contact with the piezoelectric element (20), a second metallic layer or thin nickel film (15) exposed to the pressure generating chamber (19), and a polymer film (13) of a high polymeric organic compound interposed between the first metallic layer (11) and the second metallic layer (15). The island-like convex portion (18) of the vibrating plate (23) is formed by etching a surface of the first metallic layer (11).

**FIG.4E**





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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 6532

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Place of search		Date of completion of the search	Examiner
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<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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