



US005917527A

**United States Patent** [19]  
**Boyd et al.**

[11] **Patent Number:** **5,917,527**  
[45] **Date of Patent:** **\*Jun. 29, 1999**

[54] **INK-JET PEN WITH NEAR NET SIZE  
POROUS MEMBER**

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[73] Assignee: **Hewlett-Packard Company**, Palo Alto, Calif.

[\*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[21] Appl. No.: **08/747,135**

[57] **ABSTRACT**

[22] Filed: **Nov. 12, 1996**

Disclosed is a novel inkjet print cartridge (pen) in which a body of polyurethane foam is inserted into an ink chamber of the pen for ink containment and backpressure. The ink chamber has a tall narrow aspect ratio. The body of polyurethane foam is felted in the width direction of the pen to have a width less than 20% of its pre-felted width. After felting, the body of foam is cut to have a "near net size" as the interior volume of the ink chamber. Specifically, the pre-insertion volume is less than about 130% of the interior volume of the ink chamber. The substantial felting in the width direction provides sufficient stiffness to the foam that it can be inserted into the tall, narrow aspect ratio ink chamber.

**Related U.S. Application Data**

[63] Continuation of application No. 08/331,848, Oct. 31, 1994, abandoned.

[51] **Int. Cl.**<sup>6</sup> ..... **B41J 2/175**

[52] **U.S. Cl.** ..... **347/87; 347/85**

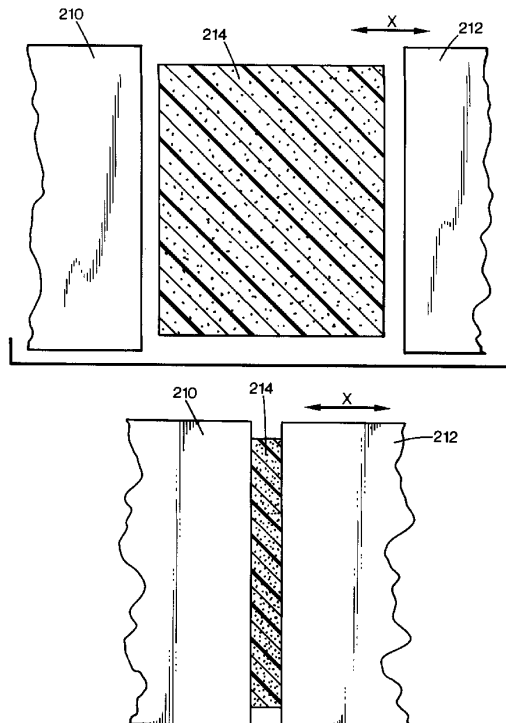
[58] **Field of Search** ..... **347/85, 86, 87**

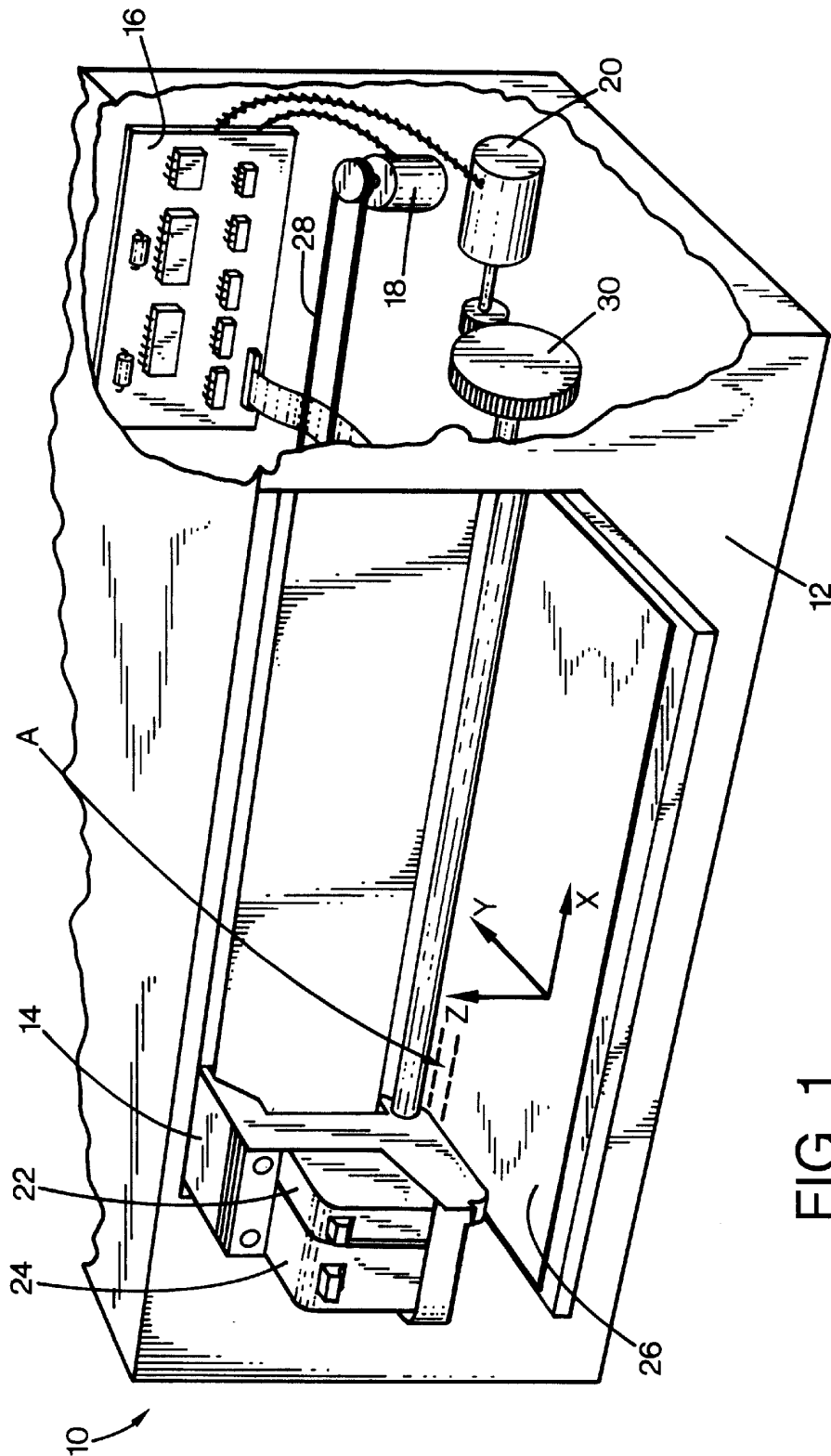
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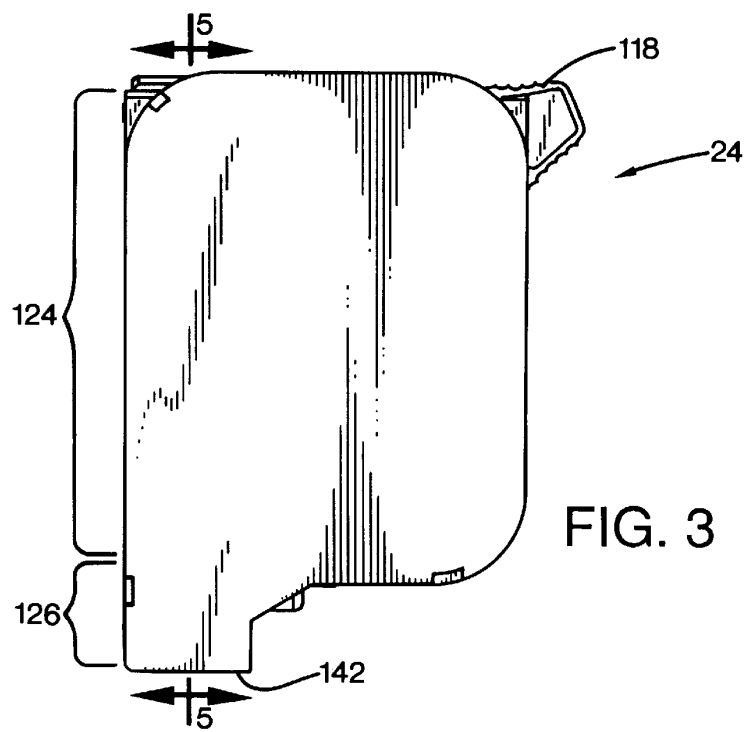
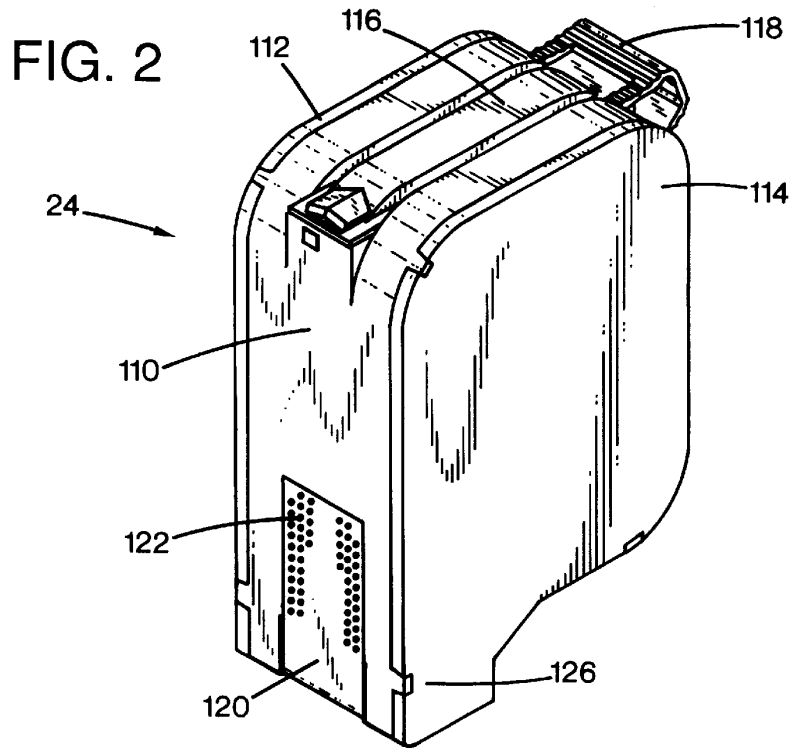
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**13 Claims, 6 Drawing Sheets**







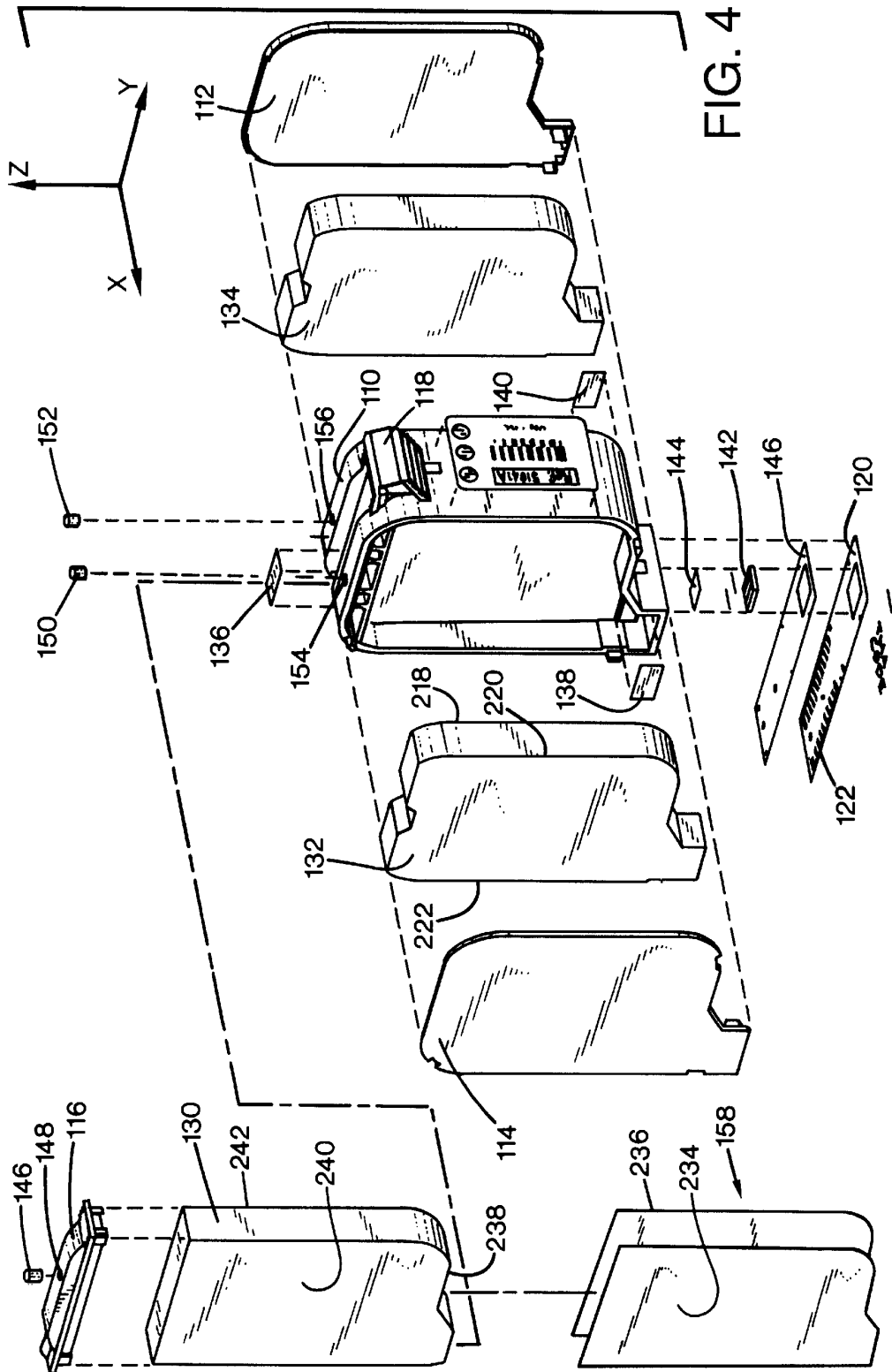
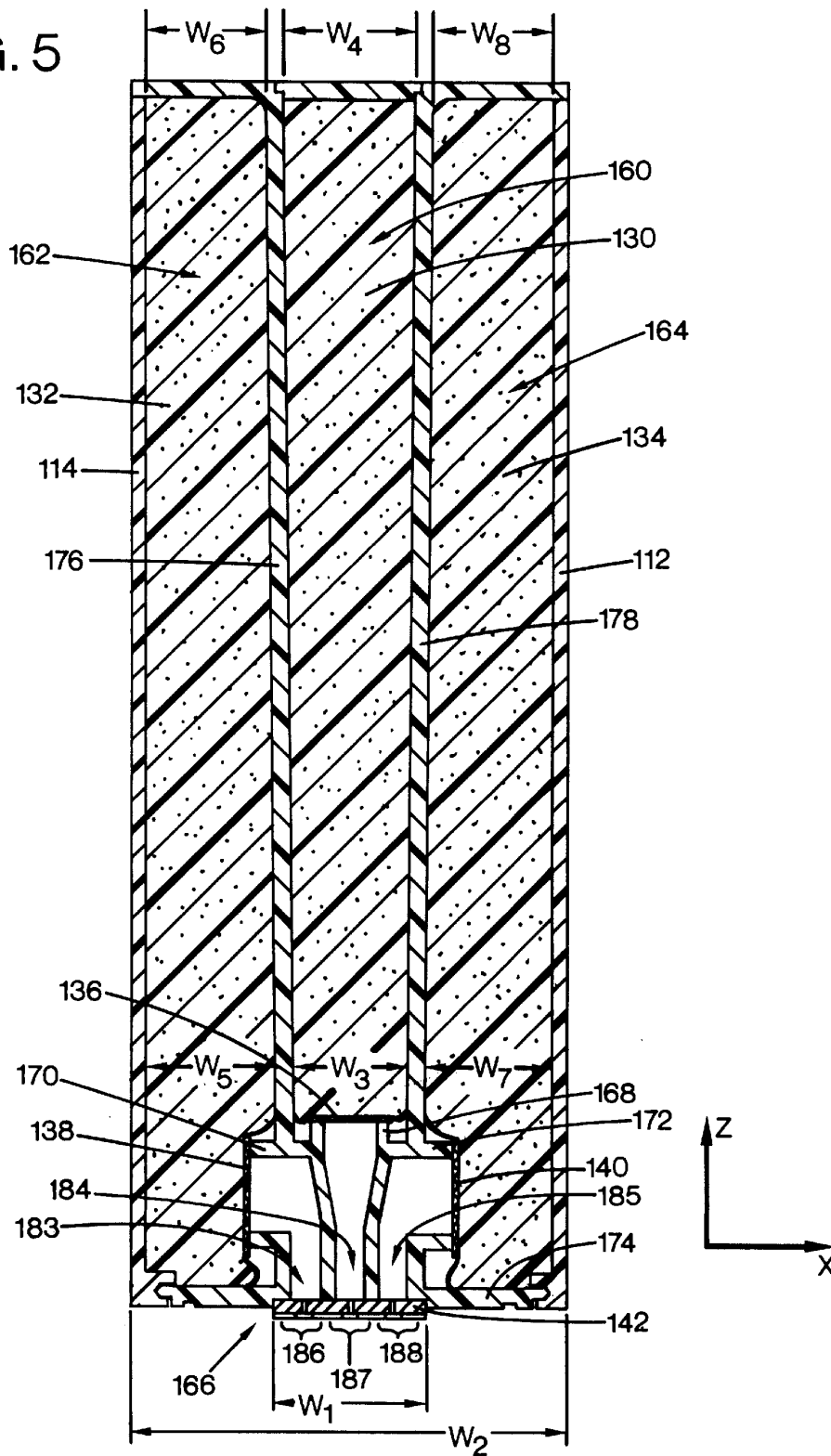


FIG. 4

FIG. 5



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