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# United States Patent [19]

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Cowger et al.

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[54] **UNIT PRINT HEAD ASSEMBLY FOR INK-JET PRINTING**

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[21] Appl. No.: **192,087**

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[51] Int. Cl.<sup>6</sup> ..... **B41J 2/155**

[52] U.S. Cl. .... **347/42**

[58] Field of Search ..... **347/42, 49, 50, 347/86, 87**

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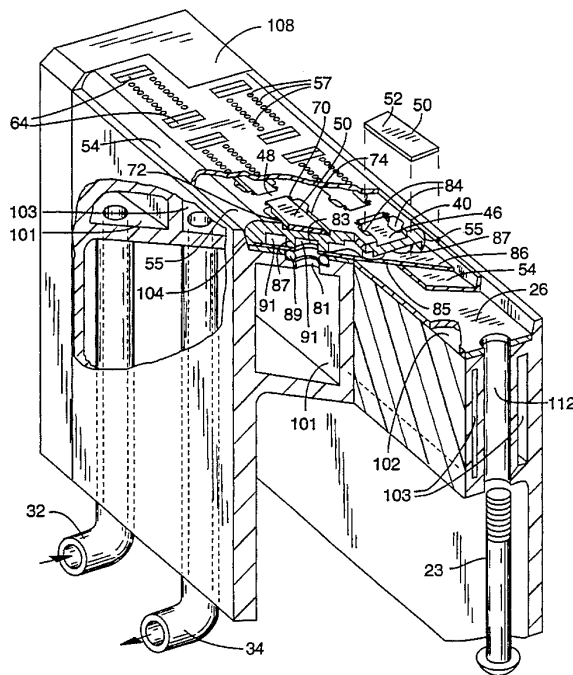
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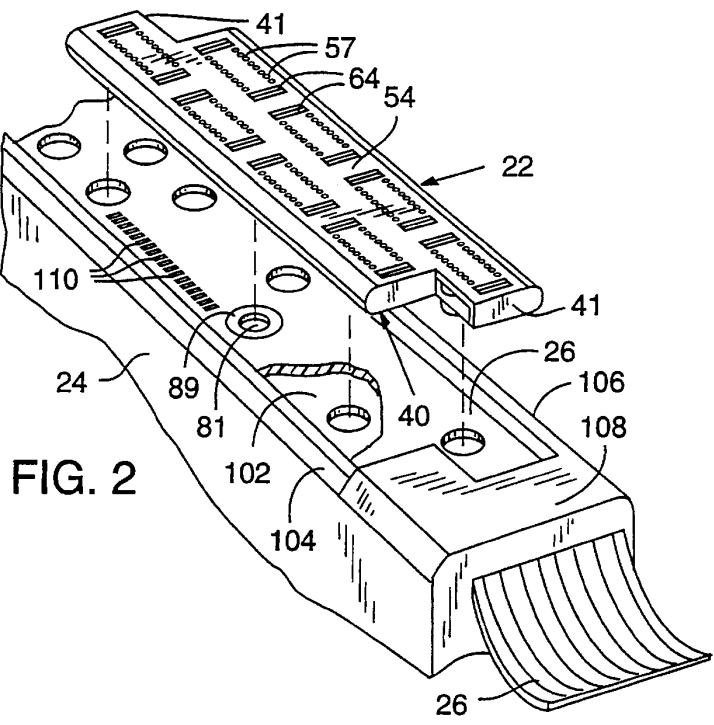
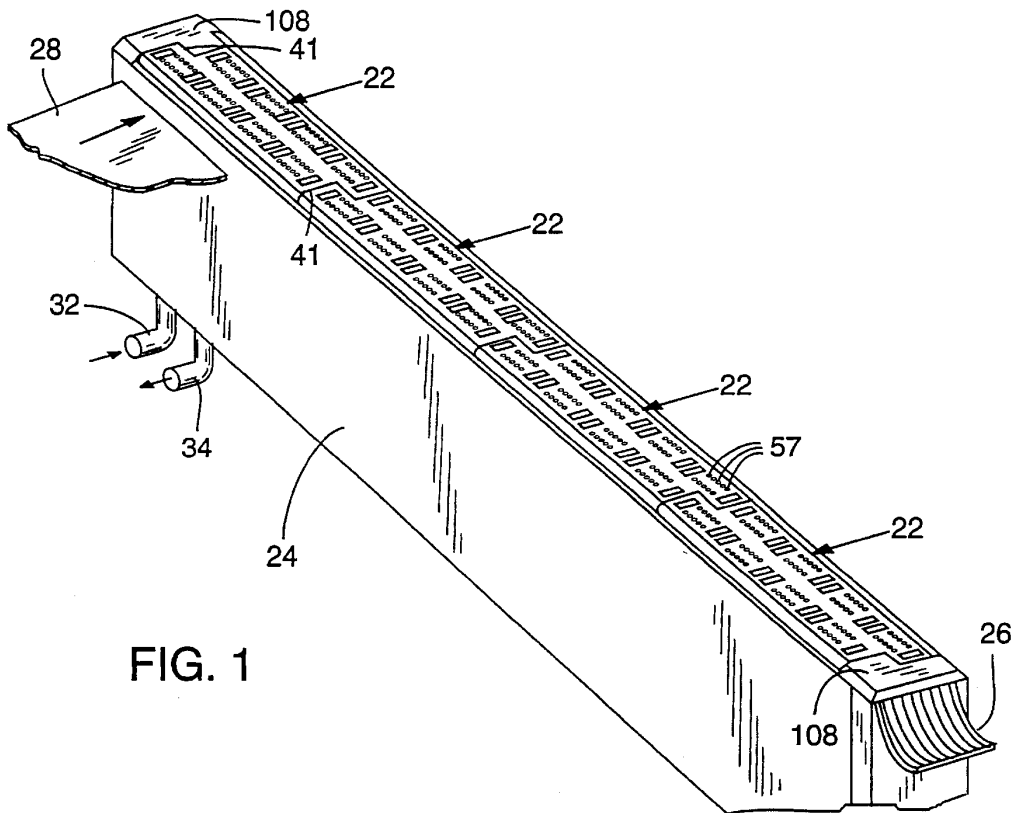
*Primary Examiner*—Benjamin R. Fuller  
*Assistant Examiner*—Craig A. Hallacher

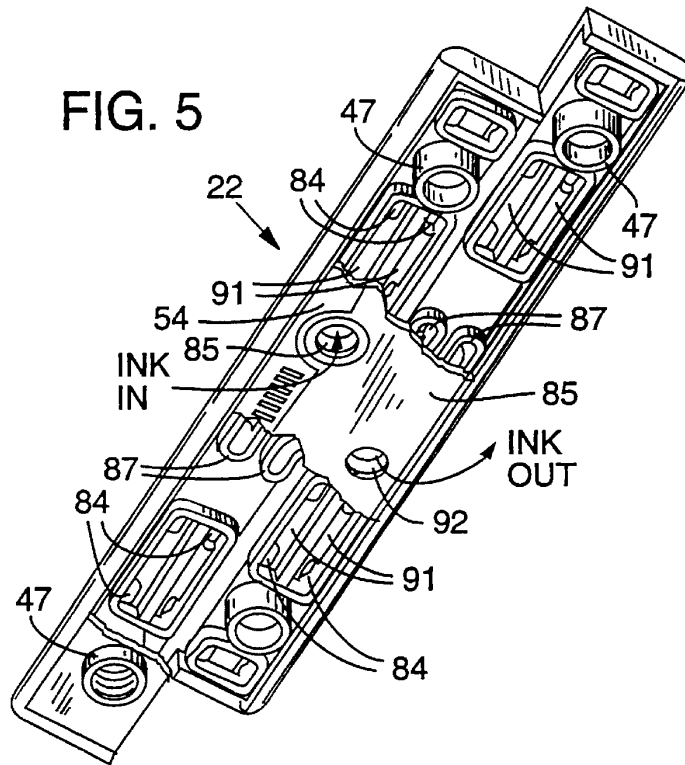
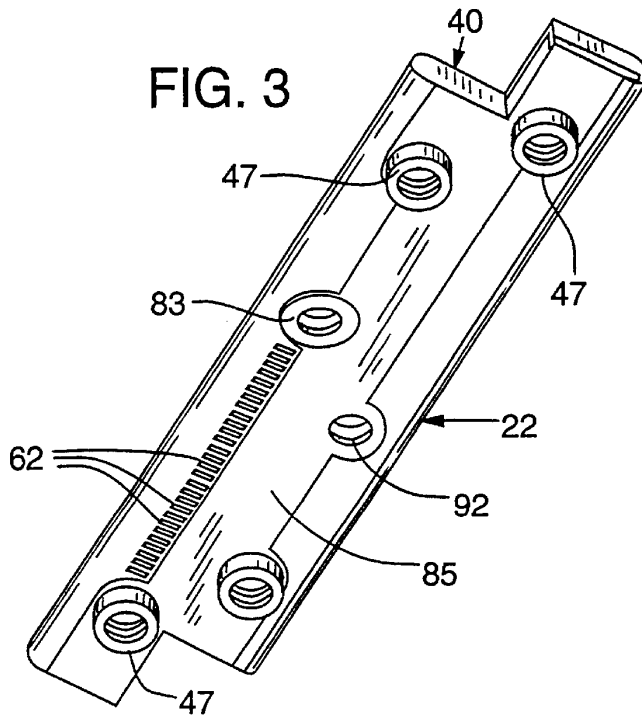
### [57] ABSTRACT

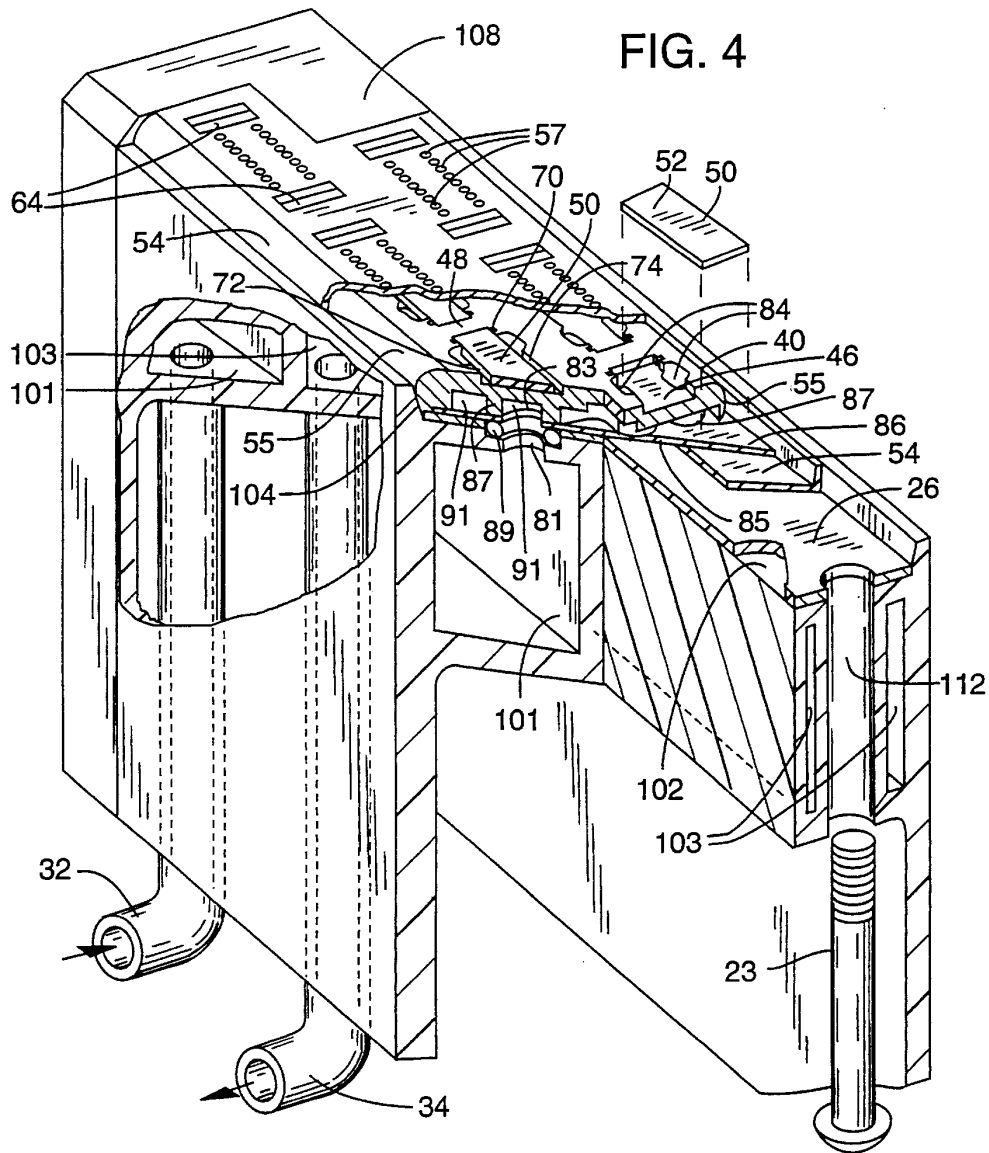
Ink-jet pens having multiple print heads are manufactured with readily replaceable unit print head assemblies that facilitate testing of print head performance prior to complete assembly of the pen.

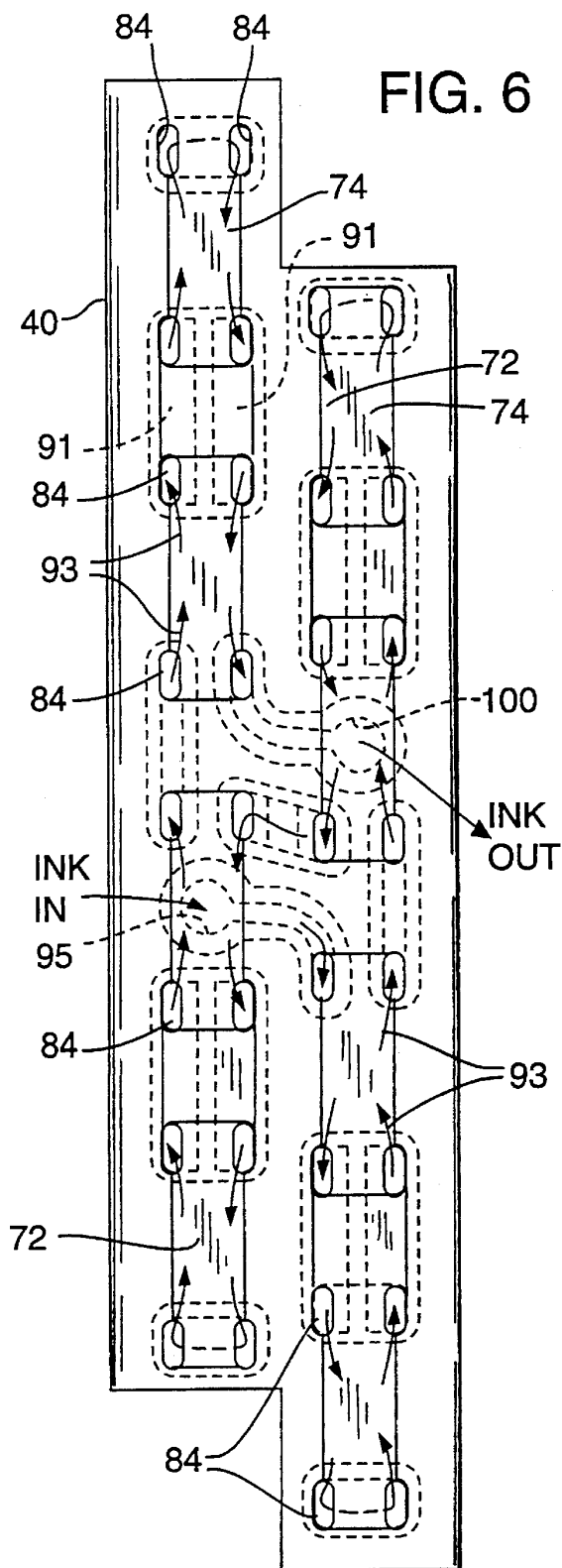
**10 Claims, 5 Drawing Sheets**











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