



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

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[45] **Date of Patent:** **May 18, 1999**

- [54] **VALVE ENCLOSURE ASSEMBLY**
- [75] Inventors: **James Edwin Gift**, Maple Grove; **Paul James Mahoney**, Stillwater, both of Minn.
- [73] Assignee: **Select Comfort Corporation**, Minneapolis, Minn.
- [21] Appl. No.: **08/901,144**
- [22] Filed: **Jul. 28, 1997**
- [51] **Int. Cl.<sup>6</sup>** ..... **A47C 27/08**
- [52] **U.S. Cl.** ..... **137/224; 137/271; 137/596.16; 137/596.2; 5/710; 5/713**
- [58] **Field of Search** ..... **137/223, 229, 137/596.2, 596.16, 884, 271; 5/710, 713**

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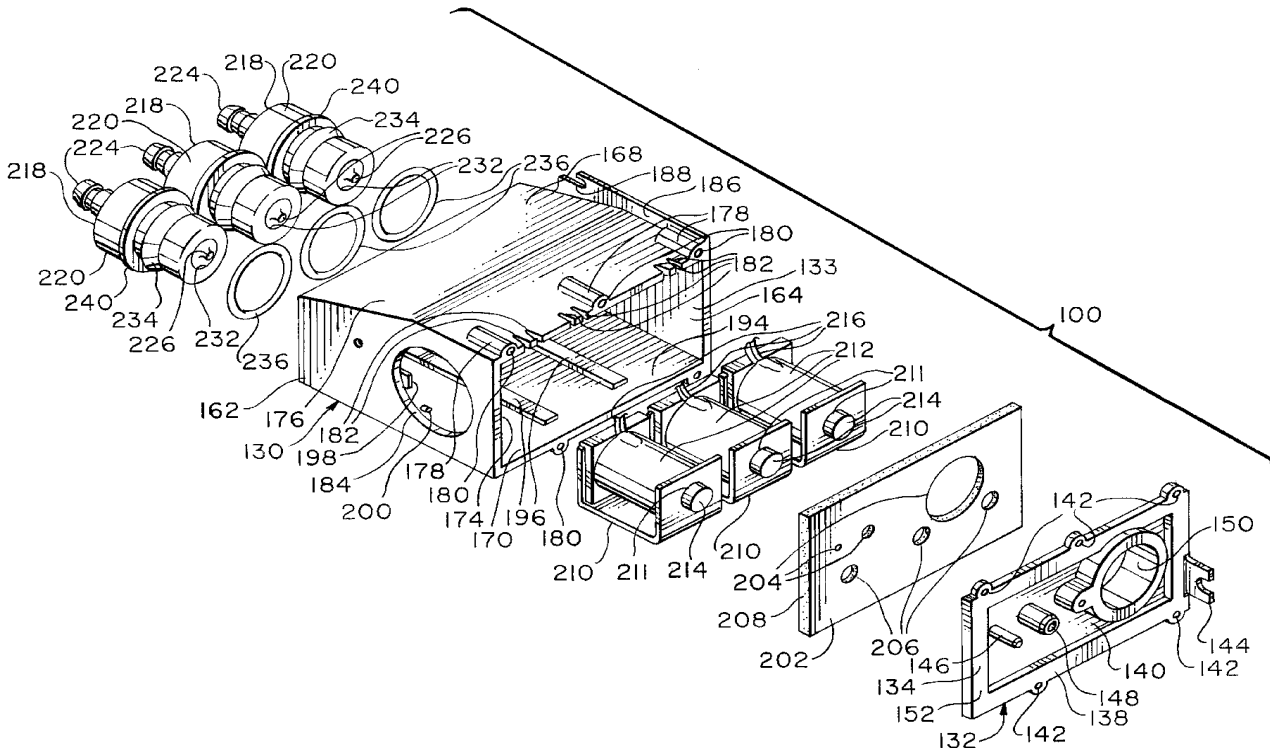
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*Attorney, Agent, or Firm*—Patterson & Keough, P.A.

[57] **ABSTRACT**

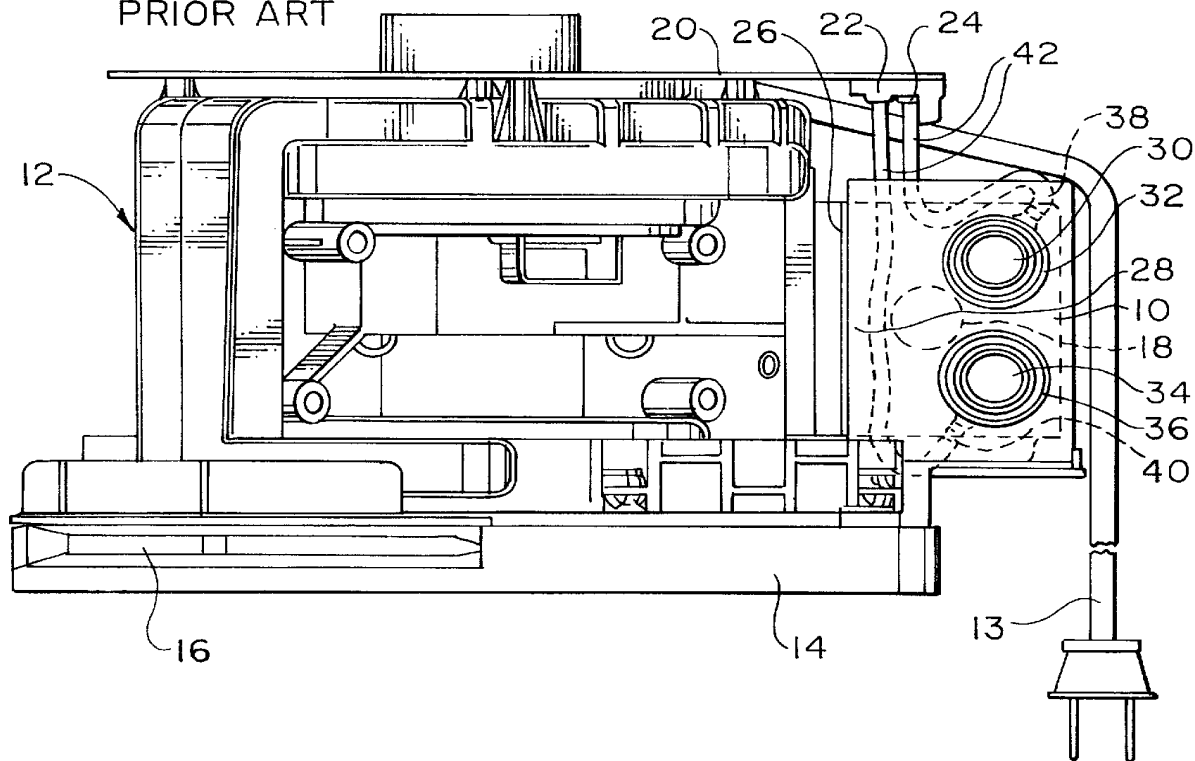
An improved valve enclosure assembly for use with an inflatable mattress includes at least one air bladder, a pump fluidly coupled to the at least one air bladder for providing compressed air thereto, and a processor for providing commands to the improved valve enclosure assembly during an inflate/deflate cycle. The improved valve enclosure assembly is fluidly coupled intermediate the pump and the at least one air bladder for controlling the inflation of the at least one air bladder. An enclosure defines a substantially fluidly sealed air chamber and has at least one air inlet to the air chamber being fluidly coupled to the pump. A pressure monitor is operably coupled to the processor and is in fluid communication with the at least one bladder for continuously monitoring the pressure in the at least one bladder. A method of effecting a desired pressure in a bladder of an inflatable mattress is also disclosed.

**18 Claims, 7 Drawing Sheets**

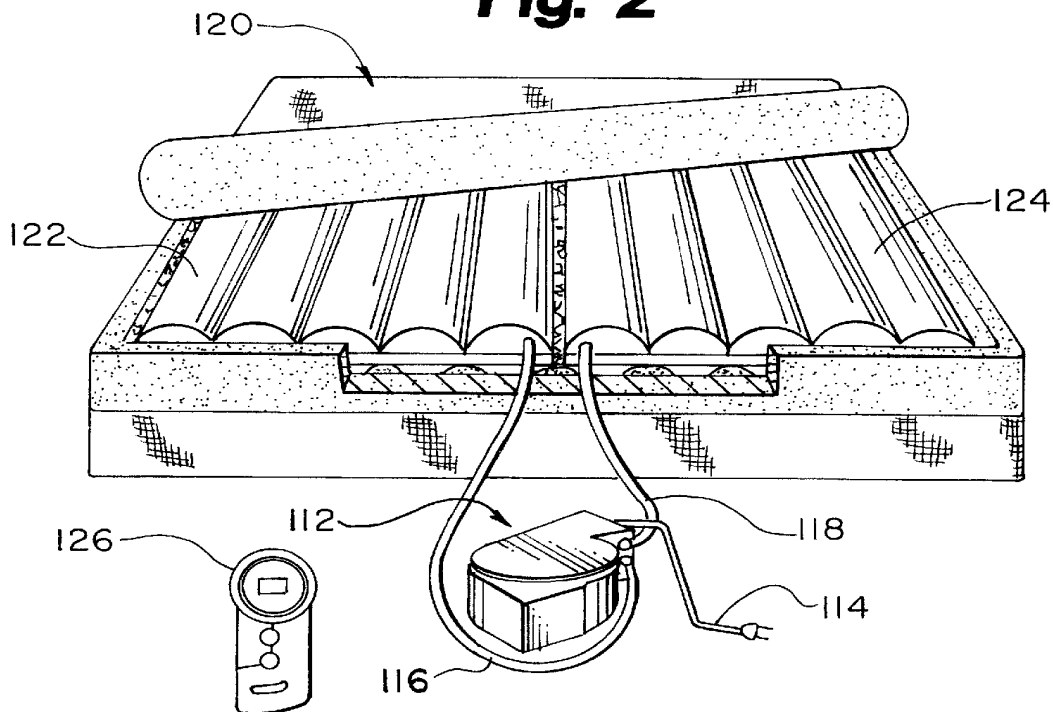
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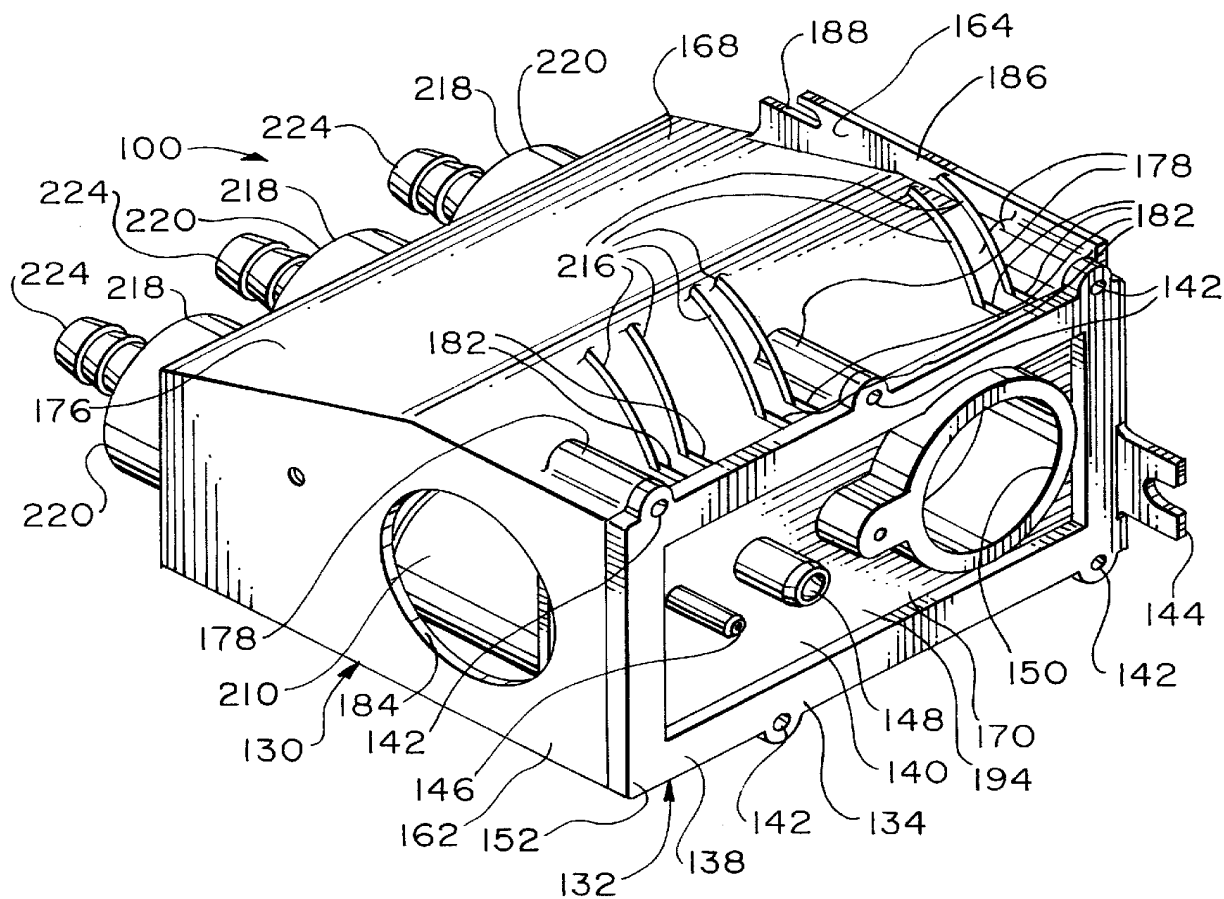
**Fig. 1**  
PRIOR ART

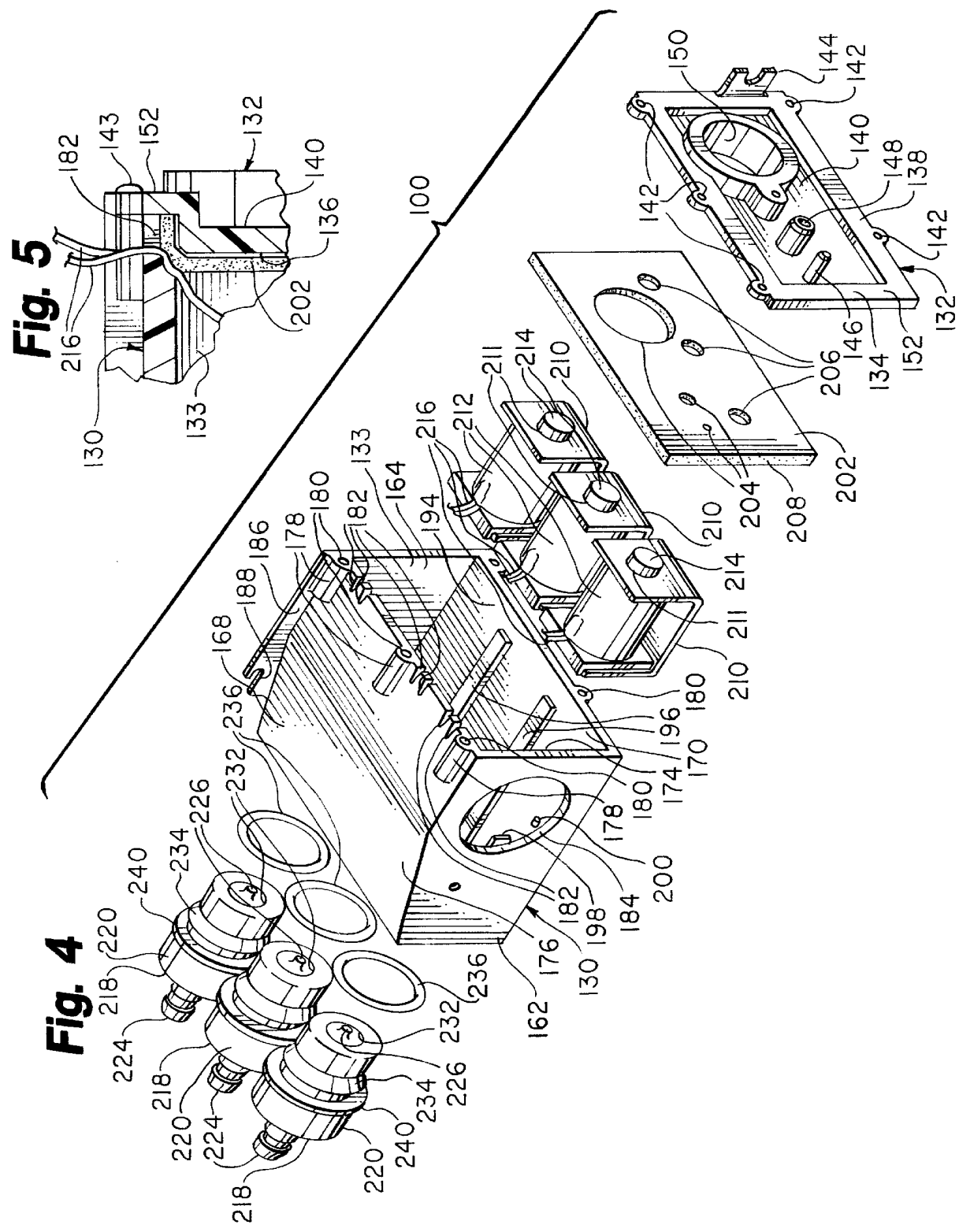


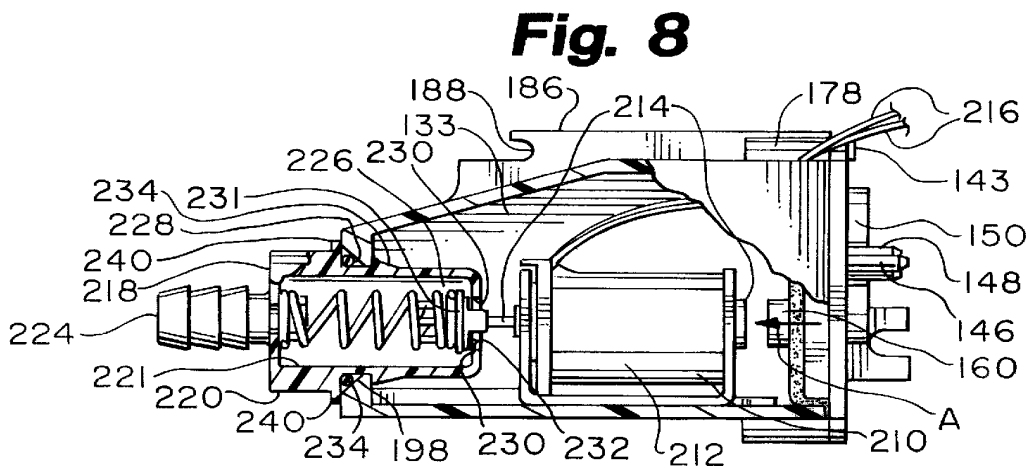
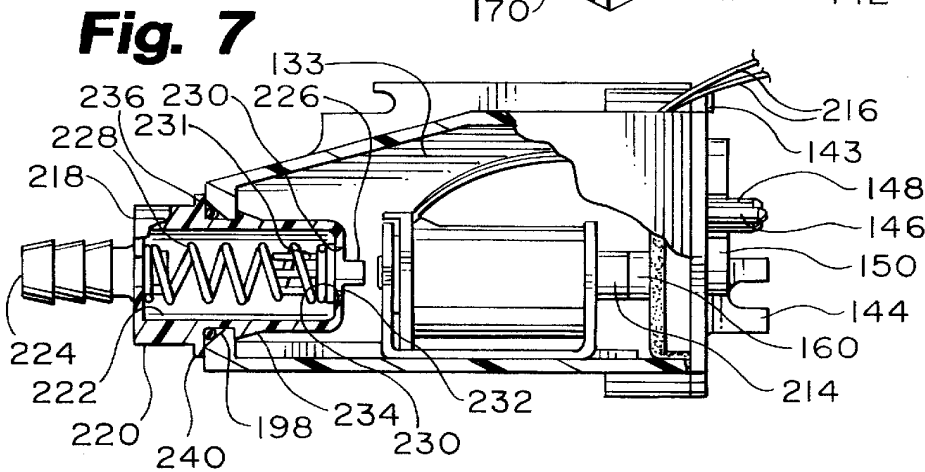
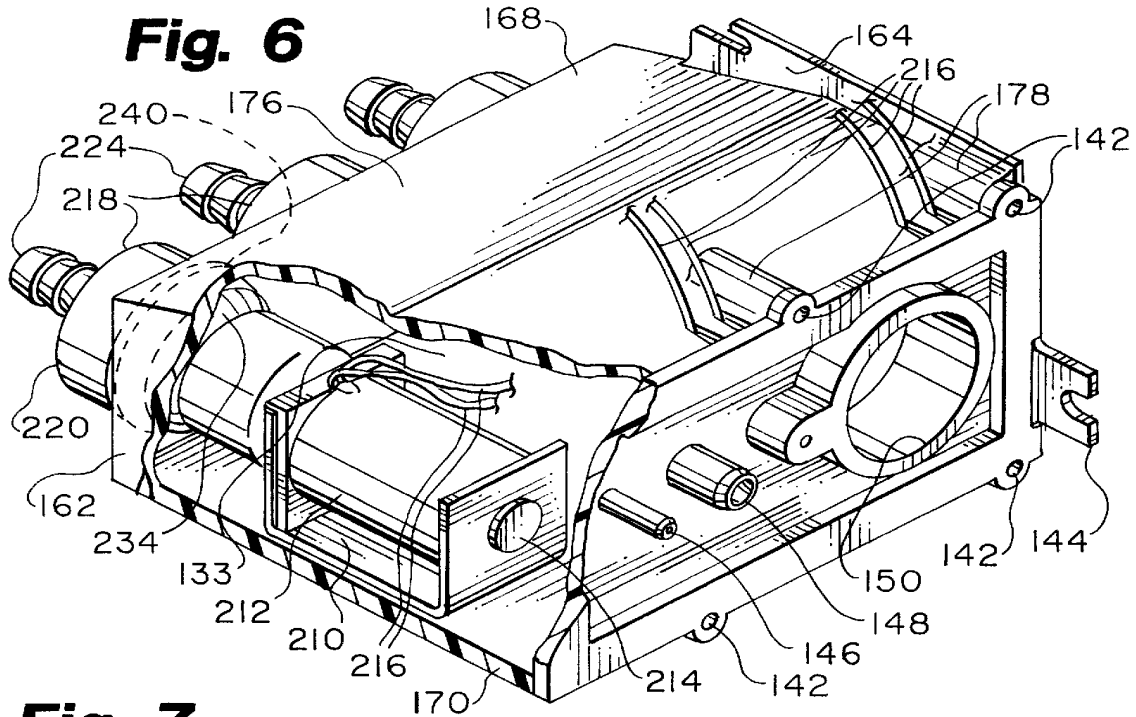
**Fig. 2**



**Fig. 3**







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