



US005344384A

**United States Patent** [19]**Ostrow et al.**[11] **Patent Number:** **5,344,384**[45] **Date of Patent:** **Sep. 6, 1994**[54] **MAGNETOTHERAPY APPARATUS**[75] **Inventors:** **Alvin Ostrow; Grigory Grinshpon,**  
both of Englewood, N.J.[73] **Assignee:** **Electromagnetic Bracing Systems,**  
**Inc., Boca Raton, Fla.**[21] **Appl. No.:** **989,336**[22] **Filed:** **Dec. 11, 1992**[51] **Int. Cl.<sup>5</sup>** ..... **A61N 1/00**[52] **U.S. Cl.** ..... **600/13**[58] **Field of Search** ..... **600/9-15;**  
**604/20; 607/48-52**[56] **References Cited****U.S. PATENT DOCUMENTS**

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*Primary Examiner*—Lee S. Cohen*Assistant Examiner*—J. P. Lacyk*Attorney, Agent, or Firm*—Natter & Natter[57] **ABSTRACT**

A magnetotherapy apparatus includes an applicator wrap segmented into a grid of hinged panels. The wrap is adapted to be placed around an injured body member to provide a brace or preform for a conventional cast. Each of the panels further includes a magnetic coil for generating an electromagnetic field directionally oriented perpendicular to a target area. The magnetic fields generated in the adjacent panels are of opposite polarity and cumulatively interact for deeper magnetic flux penetration. An electrostimulation component includes stimulator pads which are selectively energized to provide muscle and/or transcutaneous nerve stimulation for pain sedation. Alternatively, the stimulator pads are used for an electrophoretic pharmaceutical delivery system wherein electrically charged porous pads are in fluid communication with a drug medium.

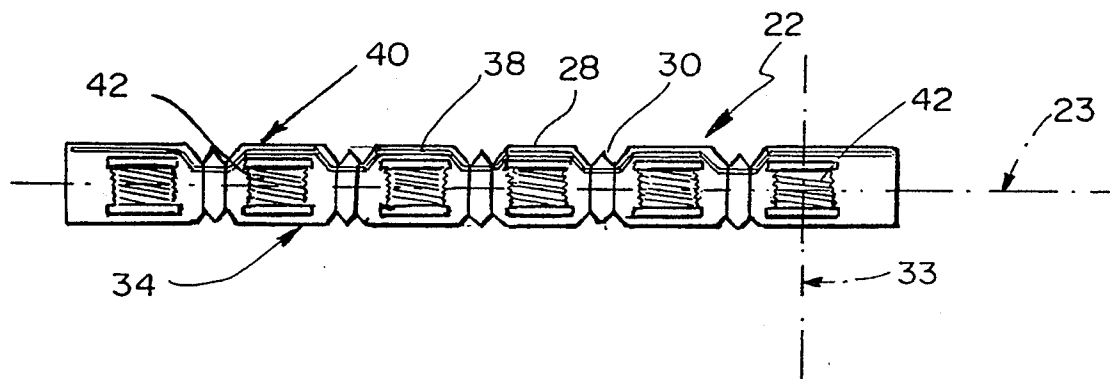
**9 Claims, 4 Drawing Sheets**

FIG. 1

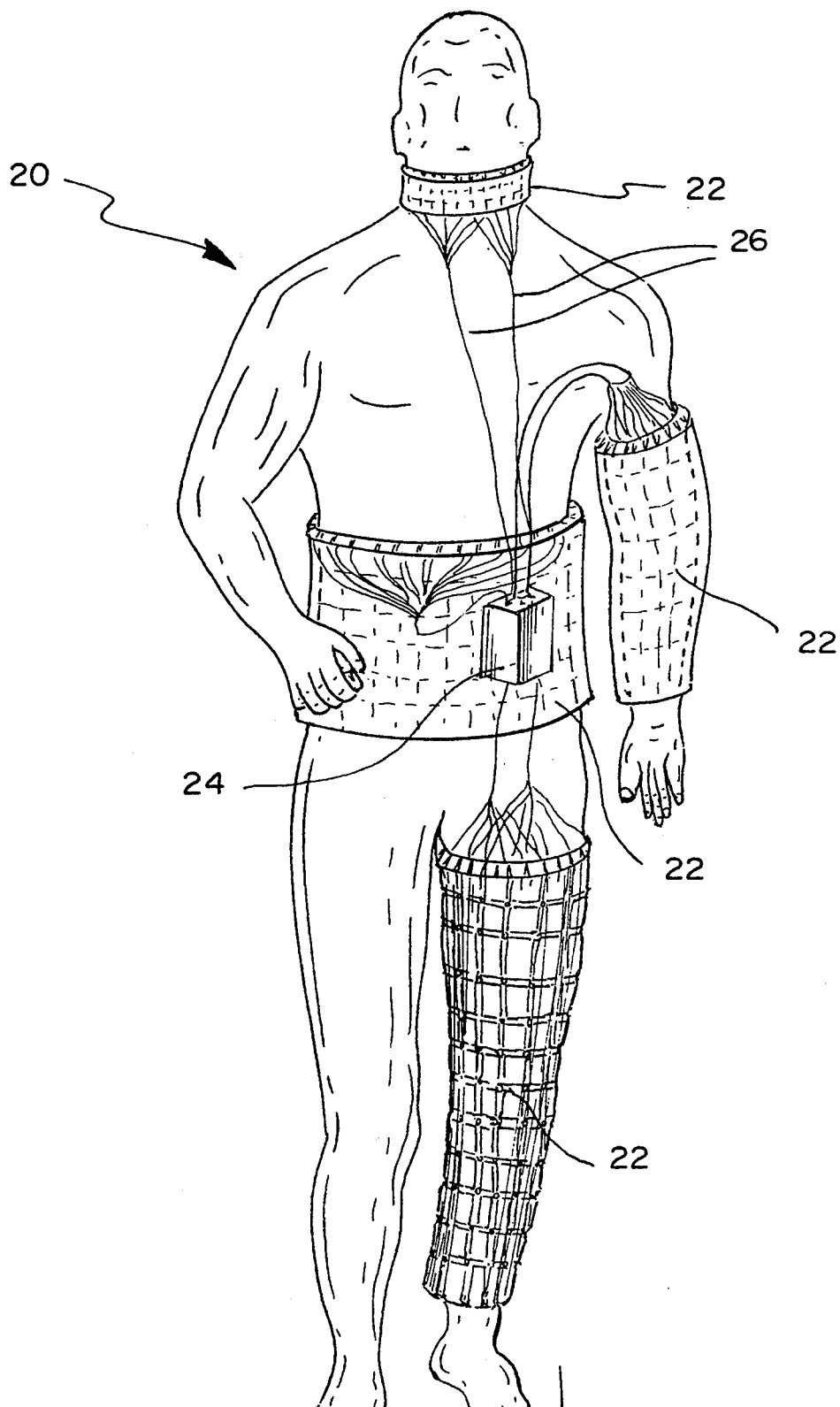


FIG. 2

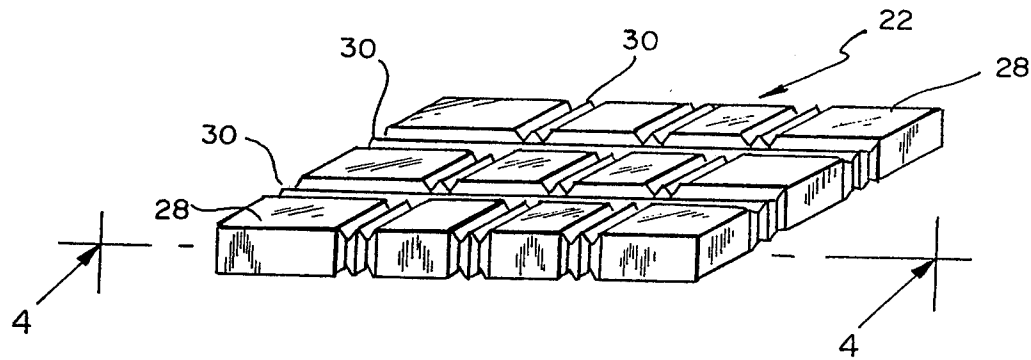


FIG. 3

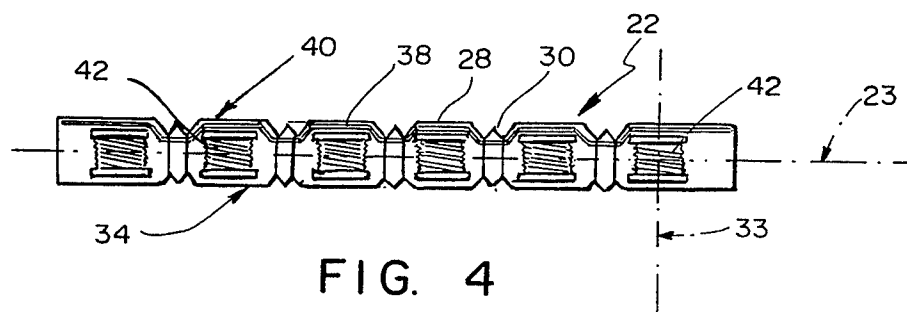
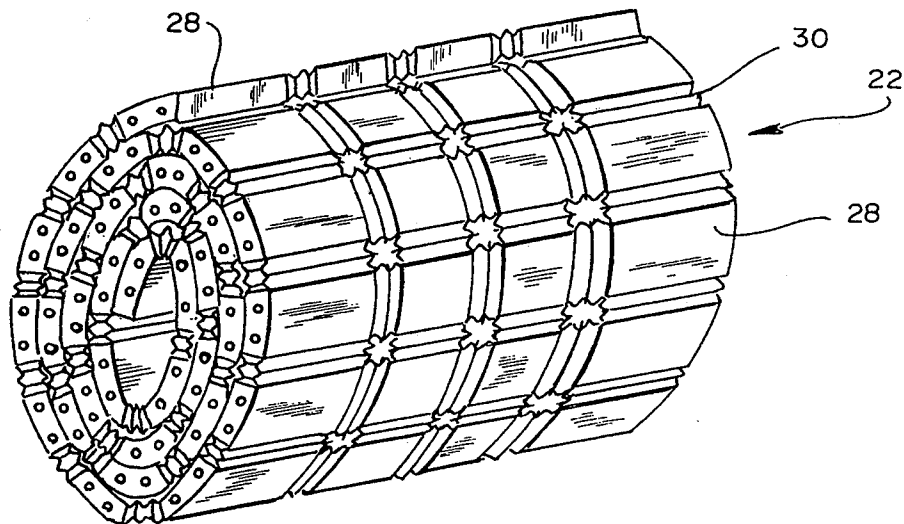


FIG. 4

FIG. 5

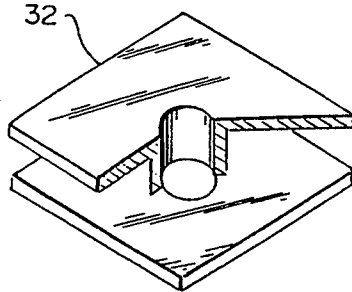


FIG. 6

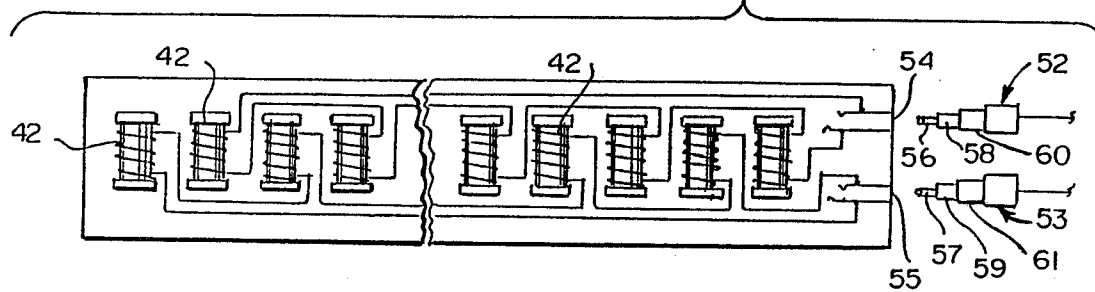


FIG. 7

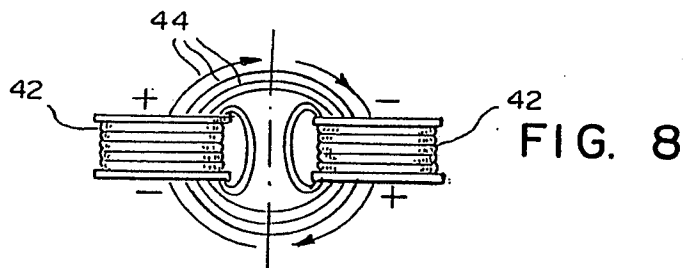
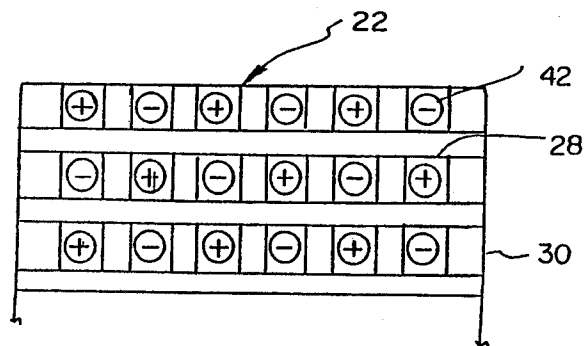


FIG. 8

FIG. 9

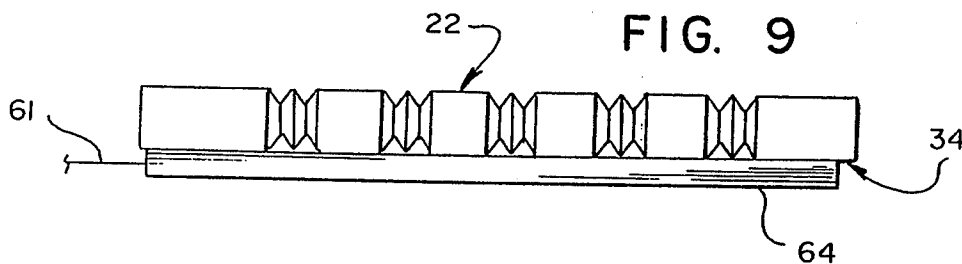


FIG. 10

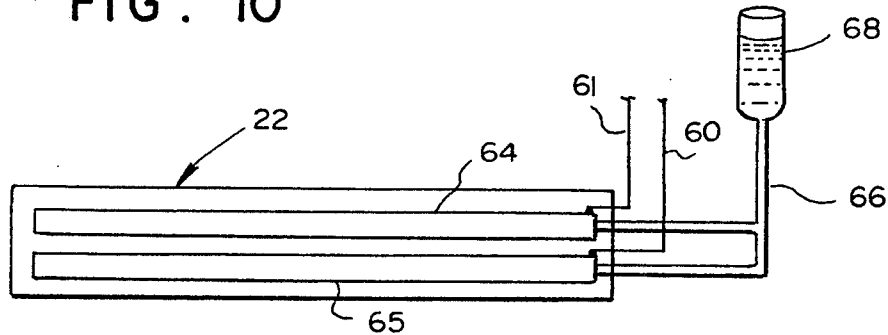
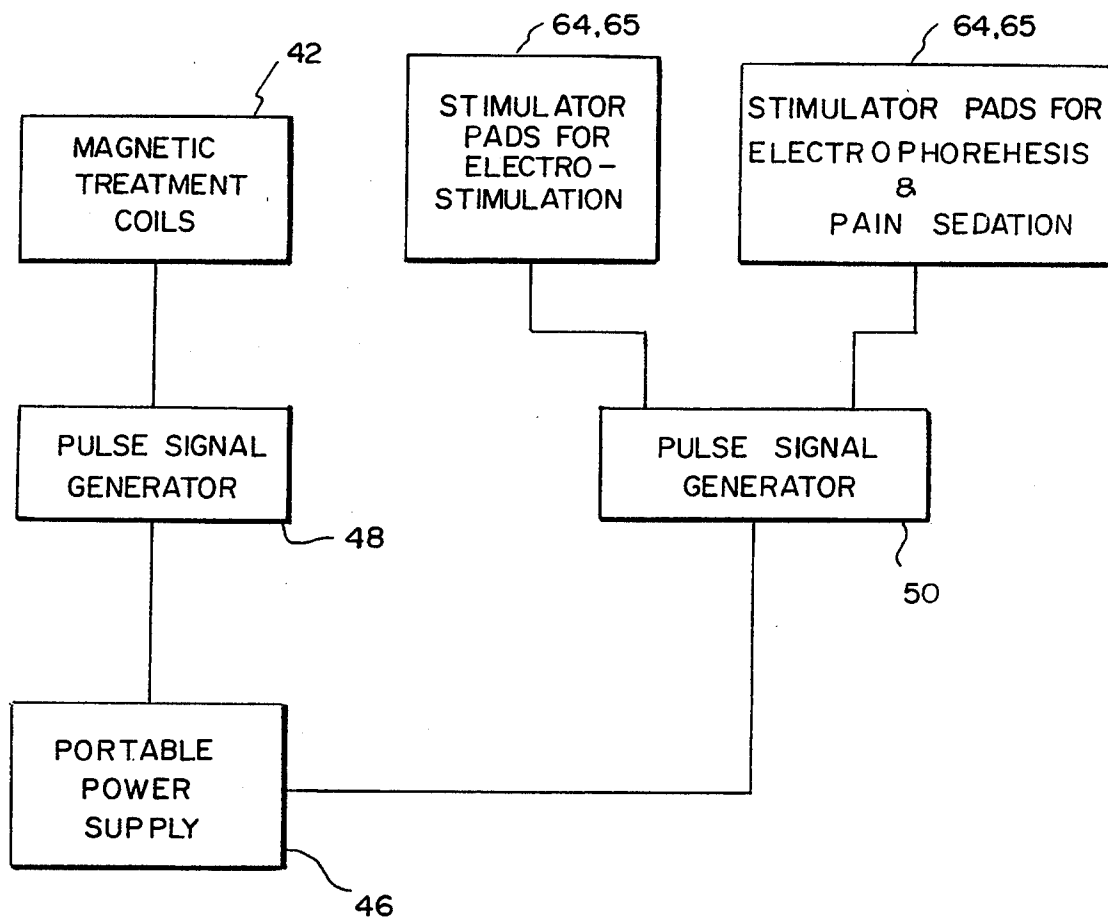


FIG. 11



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