



United States Patent [19]

Henderson et al.

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[54] **TENSIONLESS PIER FOUNDATION**

[76] Inventors: **Allan P. Henderson**, 5919 Mohawk Dr., Bakersfield, Calif. 93308; **Miller B. Patrick**, 5808 Baywood, Bakersfield, Calif. 93309

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[21] Appl. No.: **346,935**

[22] Filed: **Nov. 23, 1994**

[51] Int. Cl.⁶ **E02D 5/38; E02D 27/32**

[52] U.S. Cl. **52/295; 52/223.4; 52/741.15; 52/742.14; 405/233; 405/236; 405/239; 405/249**

[58] **Field of Search** 52/294, 295, 296, 52/741.11, 741.14, 741.15, 742.14, 223.4, 223.5; 405/229, 232, 233, 236, 237, 238, 239, 242, 249

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Assistant Examiner—Kevin D. Wilkens
Attorney, Agent, or Firm—Jacobson, Price, Holman & Stern, PLLC

[57] **ABSTRACT**

A hollow, cylindrical pier foundation is constructed of cementitious material poured in situ between inner and outer cylindrical corrugated metal pipe shells. The foundation is formed within a ground pit and externally and internally back filled. The lower end of the foundation has a circumferential ring fully embedded therein and sets of inner and outer circumferentially spaced bolts have their lower ends anchored to the anchor ring, their upper ends projecting up outwardly of the top of the foundation and a majority of the midportions thereof free of connection with the cementitious material of which the foundation is constructed. The base flange of a tubular tower is positioned downwardly upon the upper end of the foundation with the upper ends of the inner and outer sets of bolts projecting upwardly through holes provided therefor in the base flange and nuts are threaded downwardly upon the upper ends of the bolts and against the base flange. The nuts are highly torqued in order to place the bolts in heavy tension and to thus place substantially the entire length of the cylindrical foundation in heavy axial compression.

13 Claims, 4 Drawing Sheets

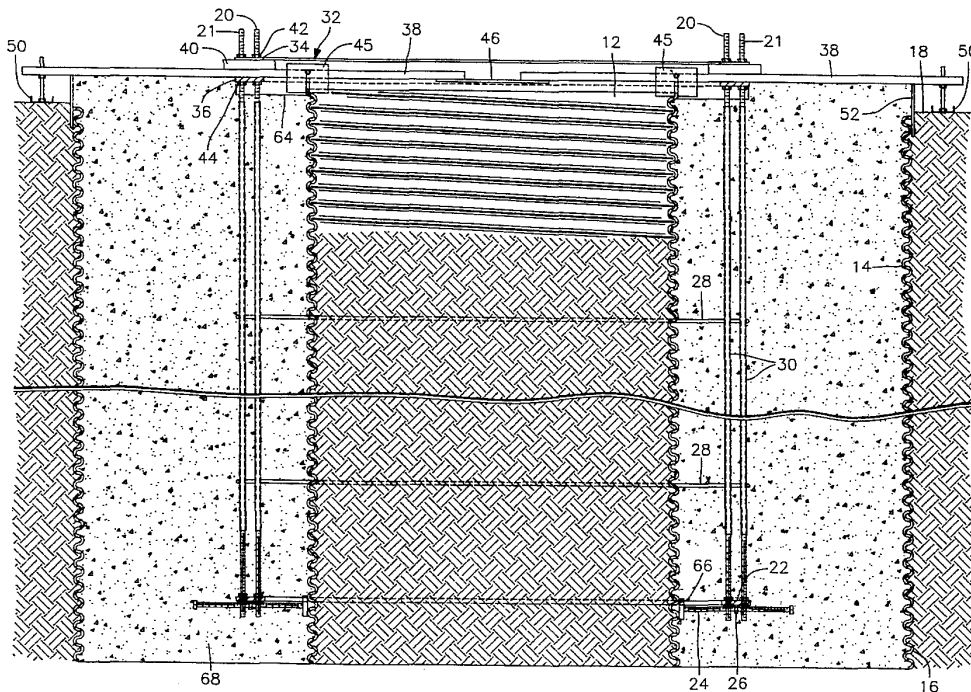


FIG. 1

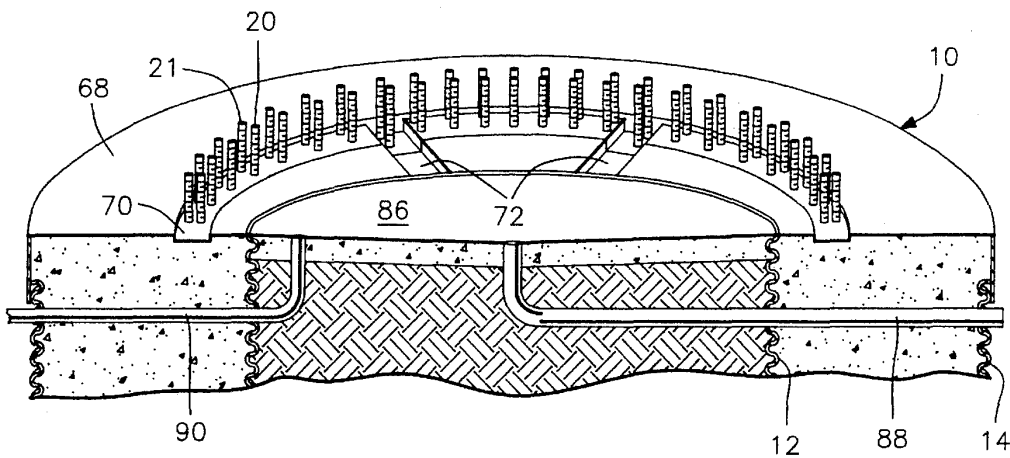


FIG. 4

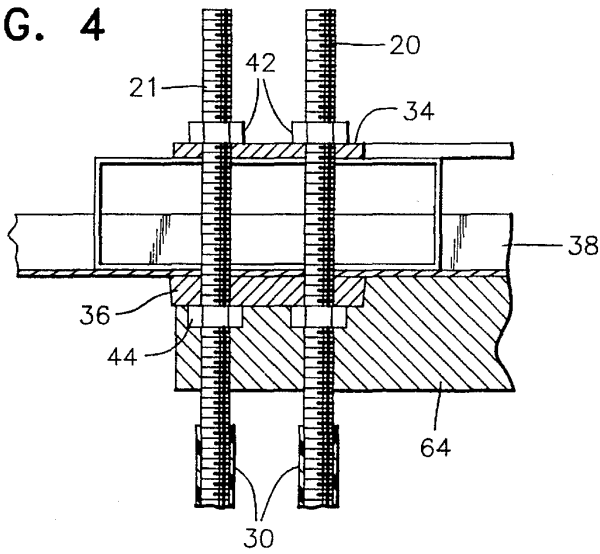


FIG. 5

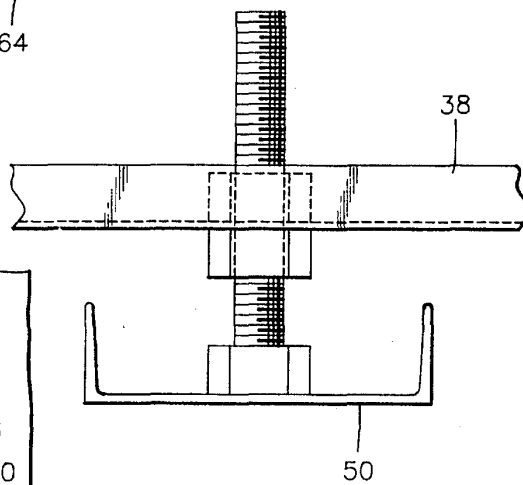
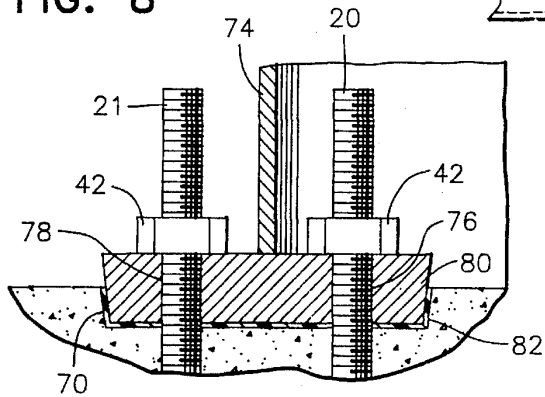


FIG. 8



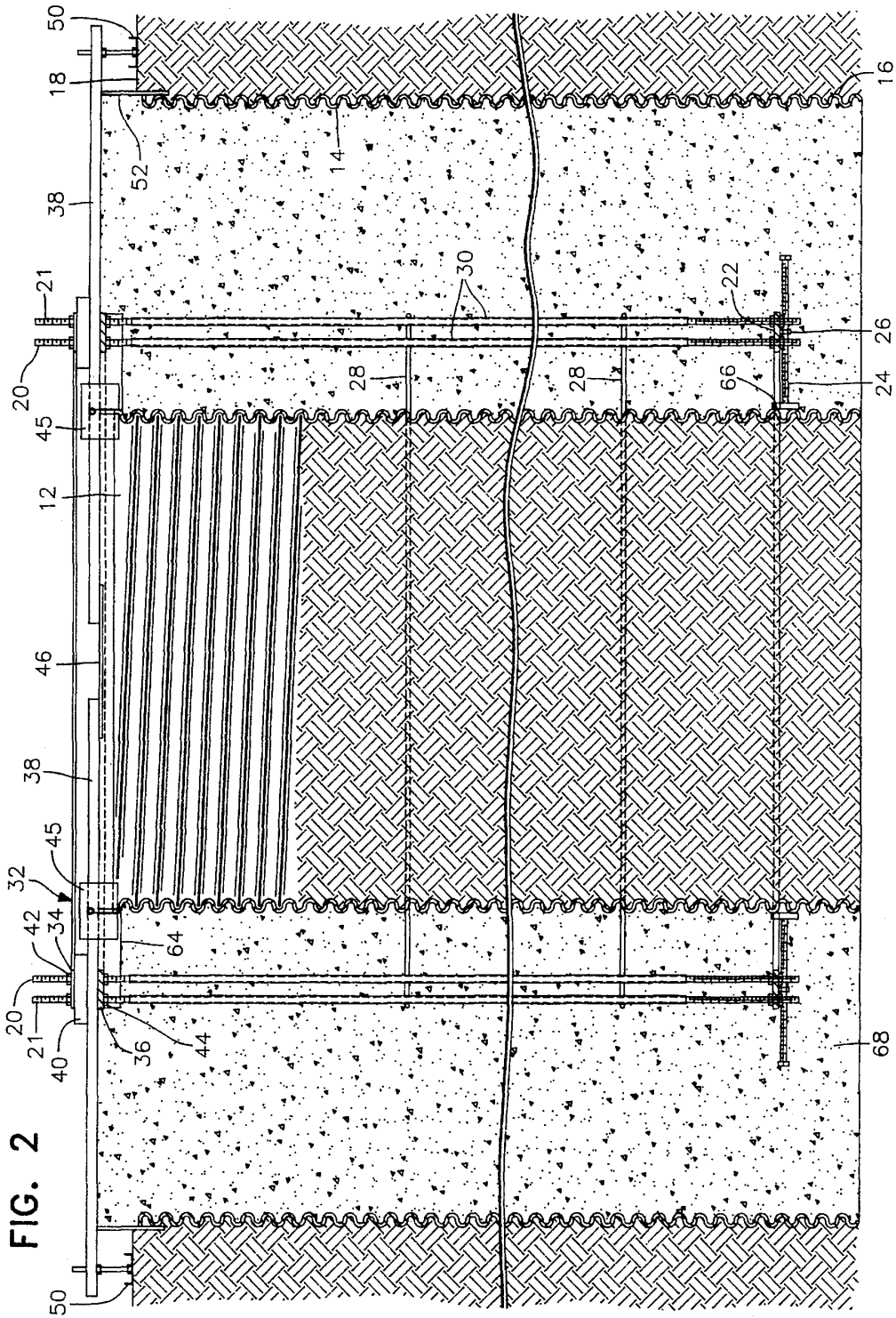


FIG. 2

FIG. 3

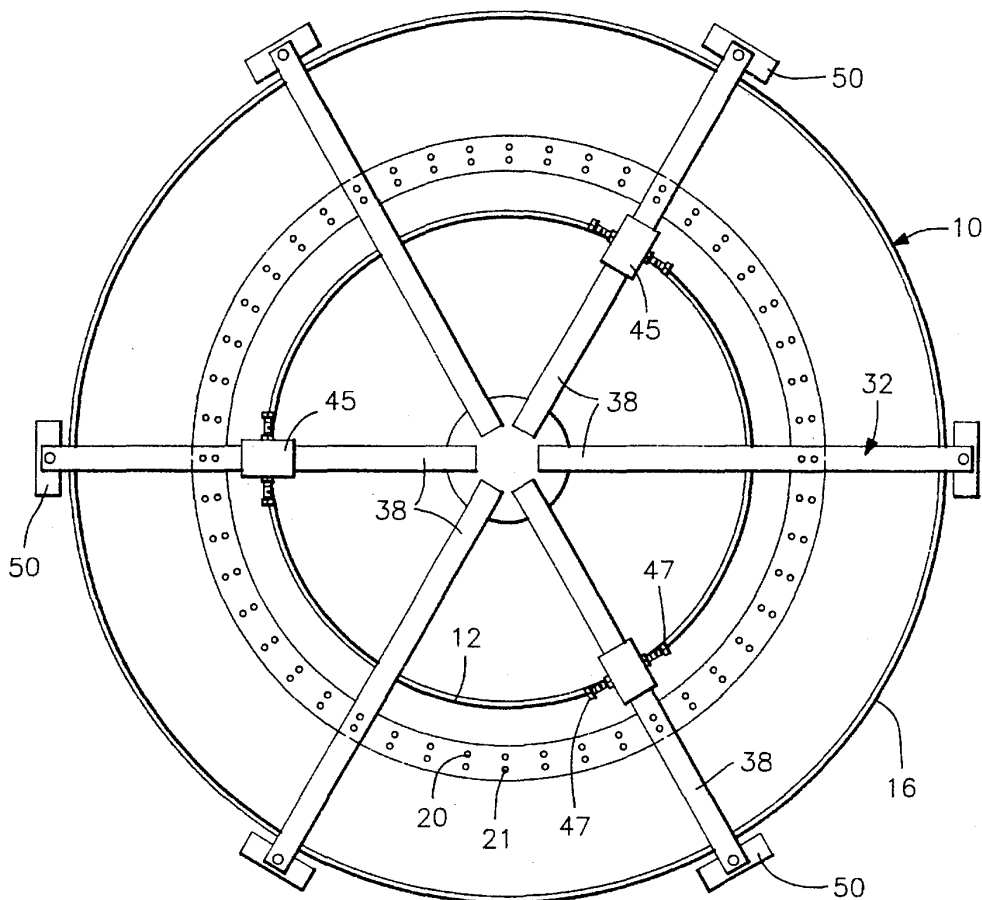


FIG. 6

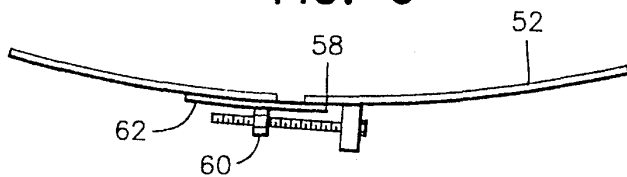


FIG. 7

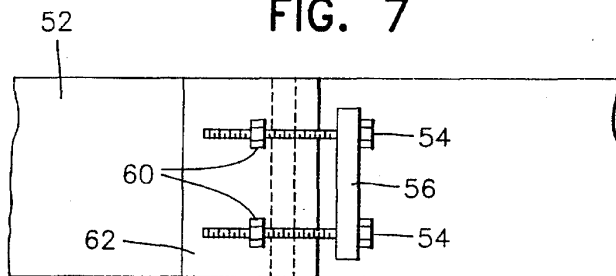


FIG. 9

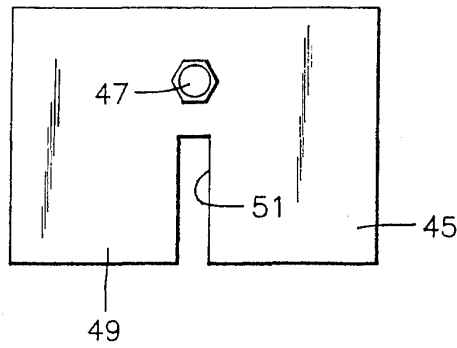


FIG. 10

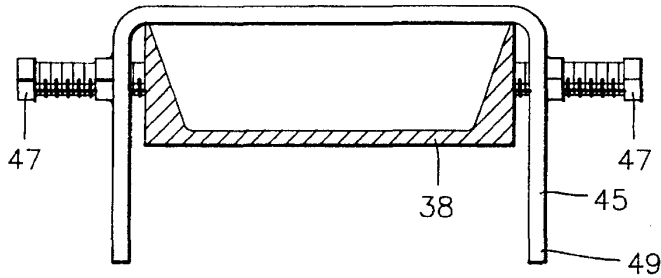
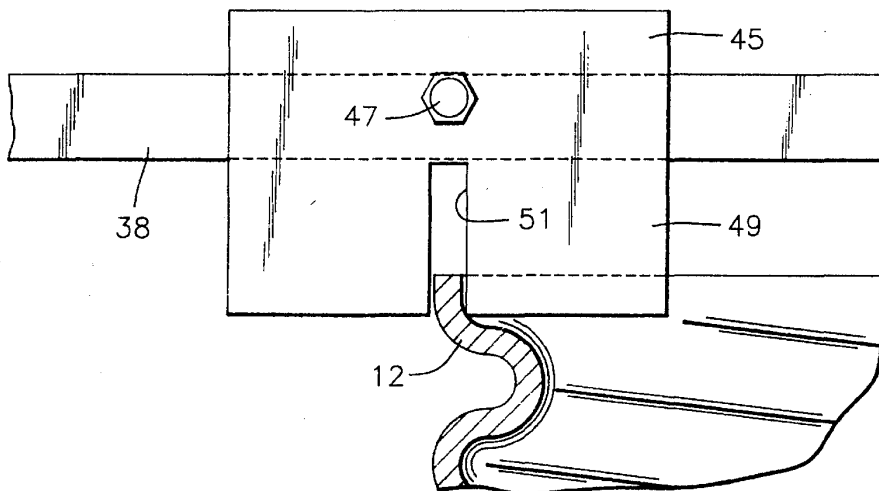


FIG. 11



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