



[54] **THREE DIMENSIONAL COORDINATE MEASURING APPARATUS**

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[51] Int. Cl.⁶ **G01B 7/03**

[52] U.S. Cl. **33/503; 33/504; 33/1 PT; 364/413.13**

[58] Field of Search **33/503, 502, 504, 1 V, 33/1 N, 1 M, 1 PT; 364/413.13**

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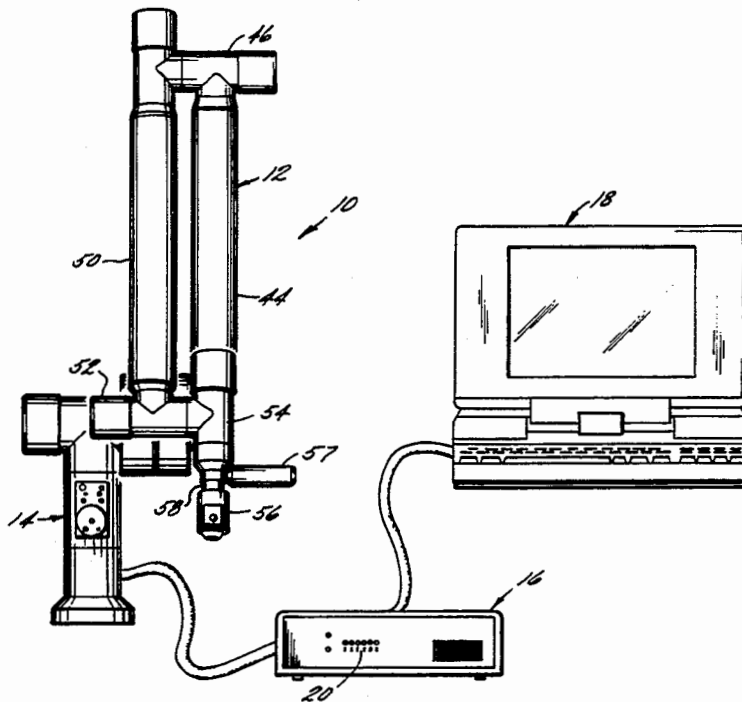
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[57] **ABSTRACT**

A novel, portable coordinate measuring machine comprises a multijointed (preferably six joints) manually positionable measuring arm for accurately and easily measuring a volume, which in a preferred embodiment, comprises a sphere ranging from six to eight feet in diameter and a measuring accuracy of $2\text{ Sigma} \pm 0.005$ inch. In addition to the measuring arm, the present invention employs a controller (or serial box) which acts as the electronic interface between the arm and a host computer.

41 Claims, 17 Drawing Sheets



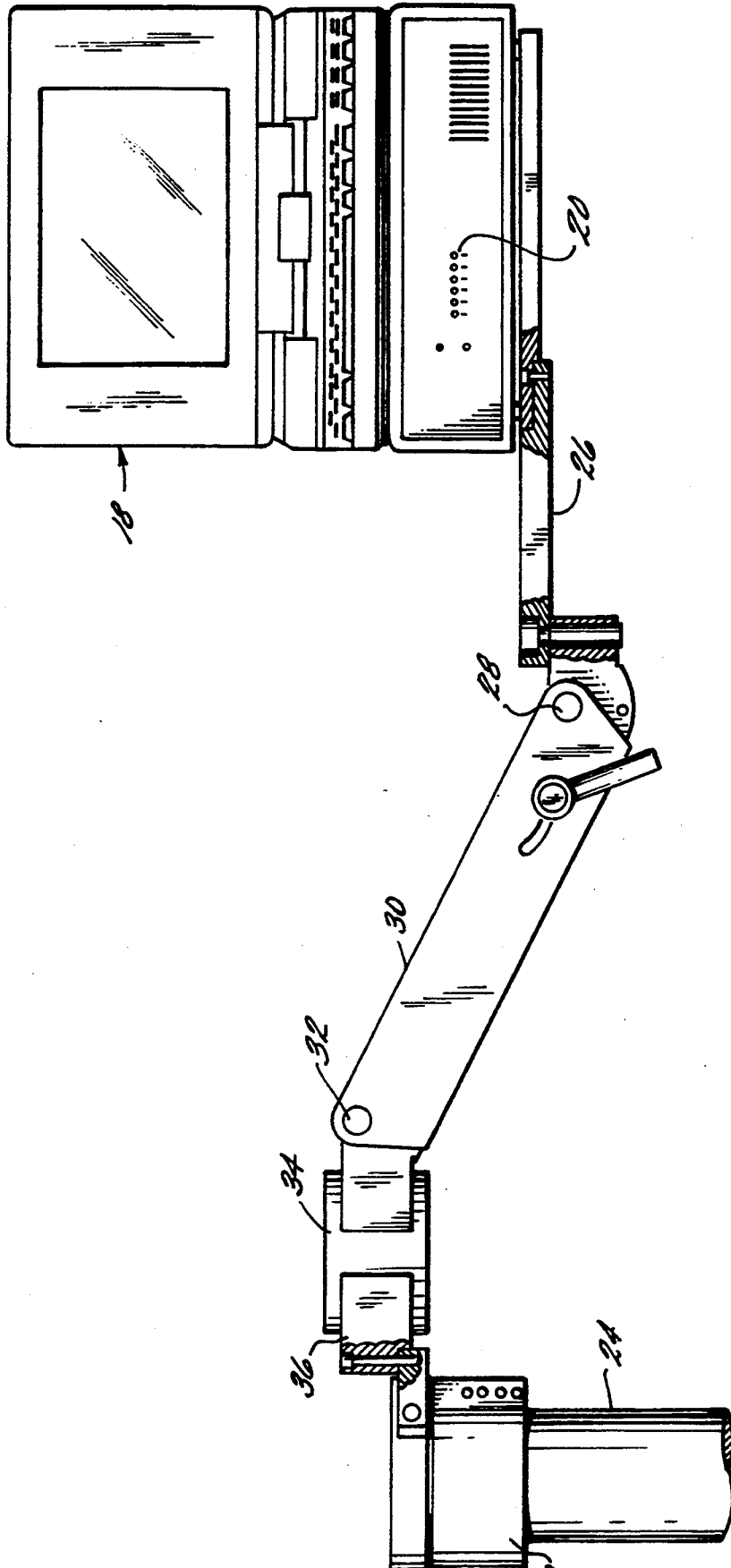


FIG. 2

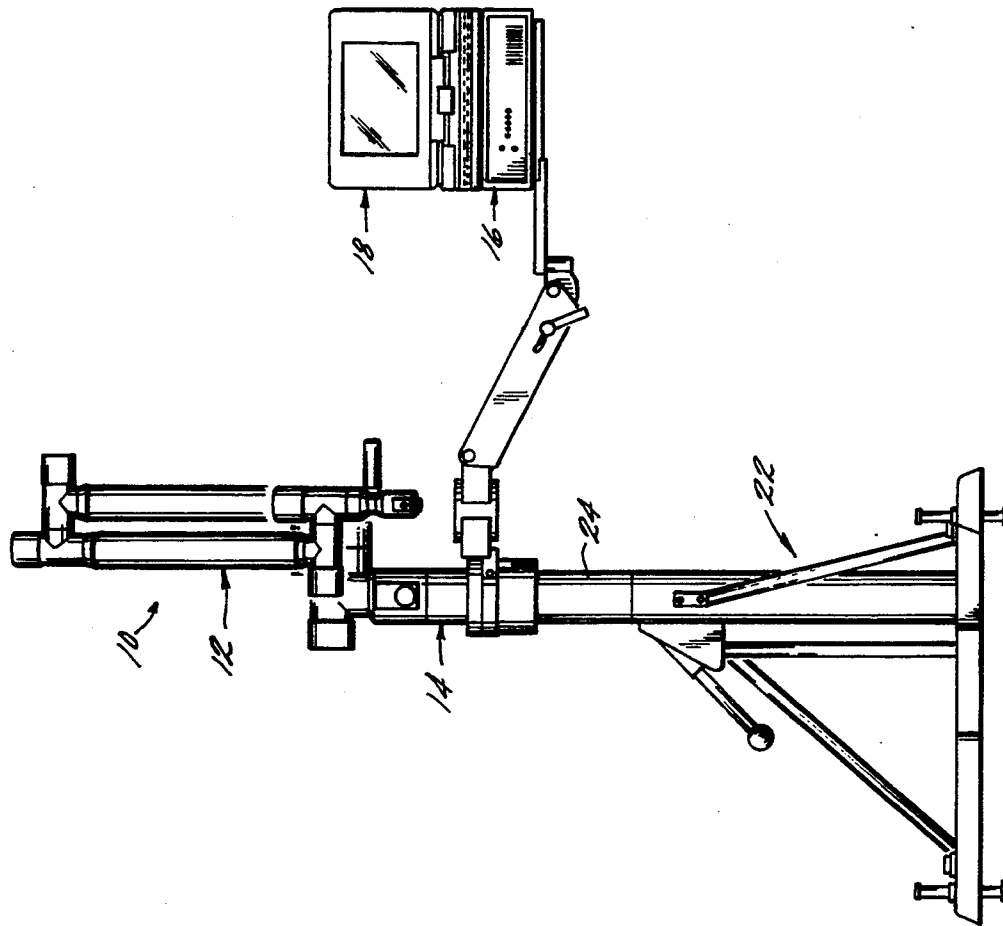


FIG. 3

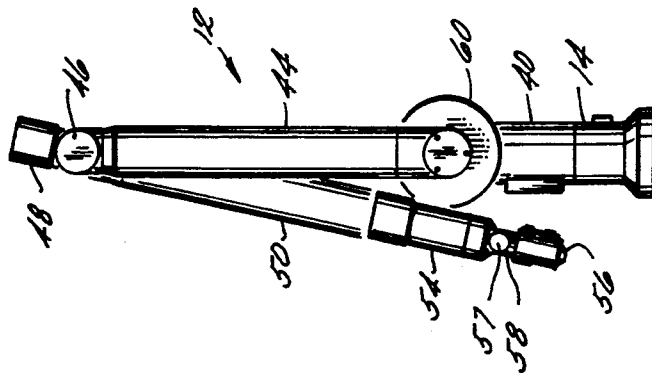


FIG. 4

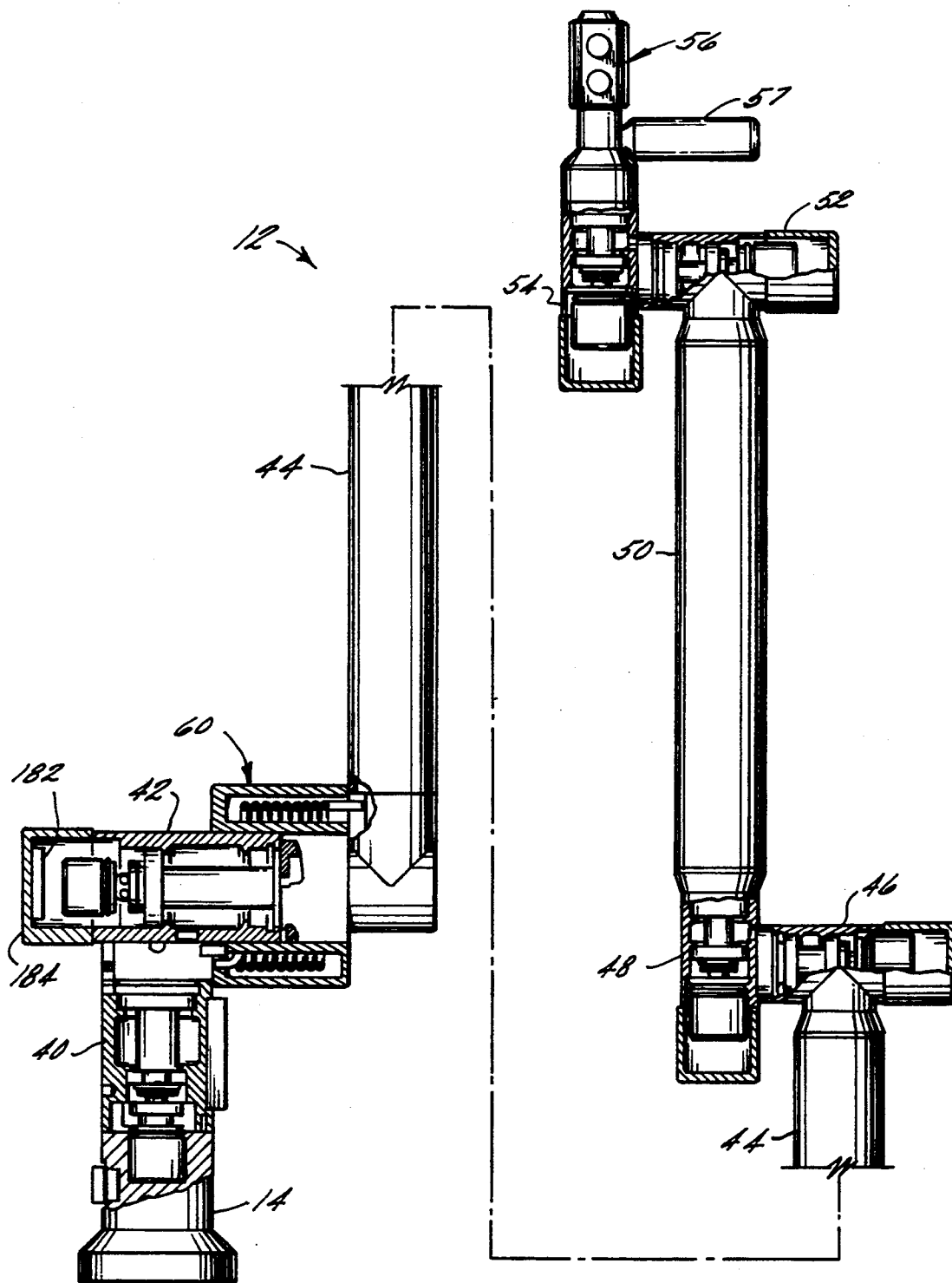


FIG. 5

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