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(54) **RADIOPHARMACEUTICAL ADMINISTRATION METHODS, FLUID DELIVERY SYSTEMS AND COMPONENTS THEREOF**

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(57) **ABSTRACT**

A fluid path set for a fluid delivery system includes a tube coil that is designed to optimally position one or more volumes of a pharmaceutical within an ionization chamber to optimally measure and prepare a pharmaceutical dose for administration to a patient. The tube coil may be maintained in a desired dimensional geometry by means of a core structure around which the tube coil is positioned. Novel developments in radiopharmaceutical administration methods and systems include, but are not limited to, the configuration and layout of a fluid path set for use in a fluid delivery system, arrangements for piercing and drawing fluid from a pharmaceutical container (such as a vial), arrangements for optimizing the positioning of a tube coil within an ionization chamber, a handling system for transporting vial shields that maintain an operator's hand and fingers at a safe distance from a pharmaceutical vial, a method for calibrating a radiopharmaceutical delivery system in which the difference between the expected and measured activities of two radioisotopes are used to calculate an estimated error in the measured activity of a third radioisotope and a vial access system that ensures an optimal draw of fluid from a radiopharmaceutical container.

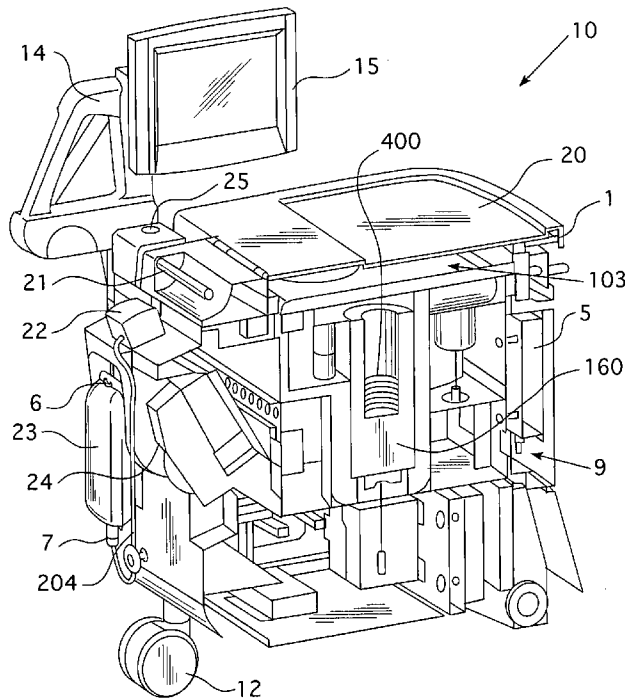
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(60) Provisional application No. 60/979,541, filed on Oct. 12, 2007, provisional application No. 60/878,304, filed on Jan. 1, 2007.



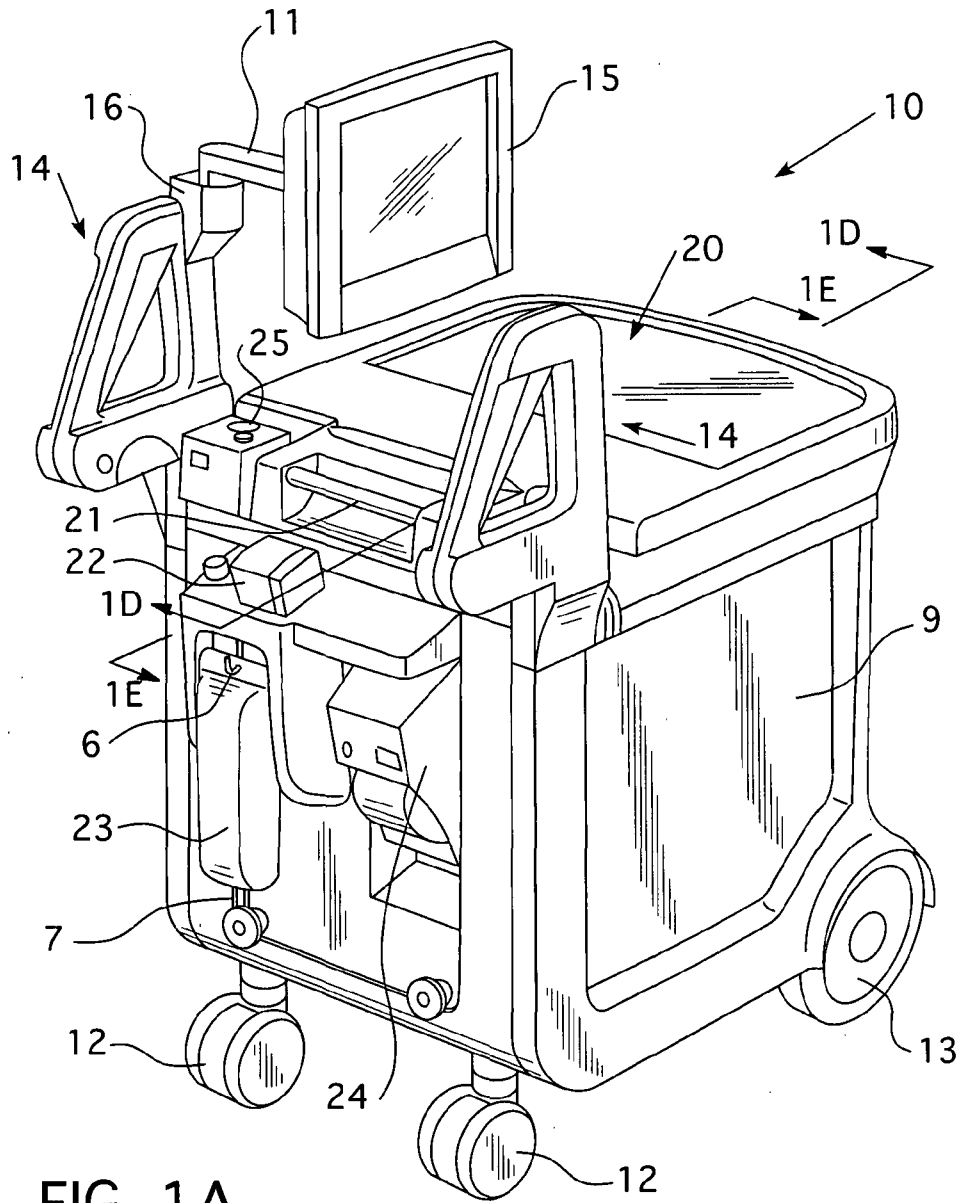


FIG. 1A



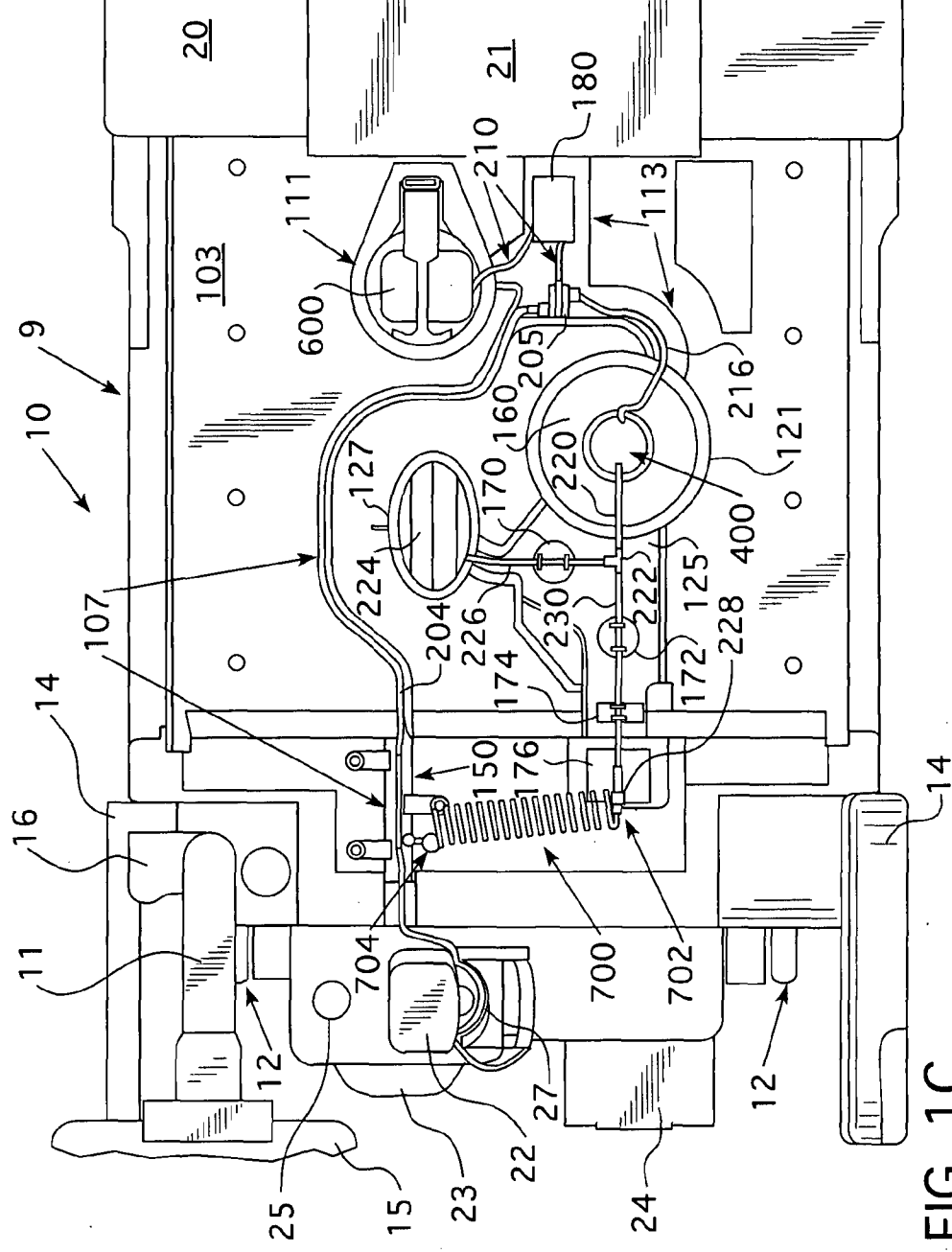


FIG. 1C

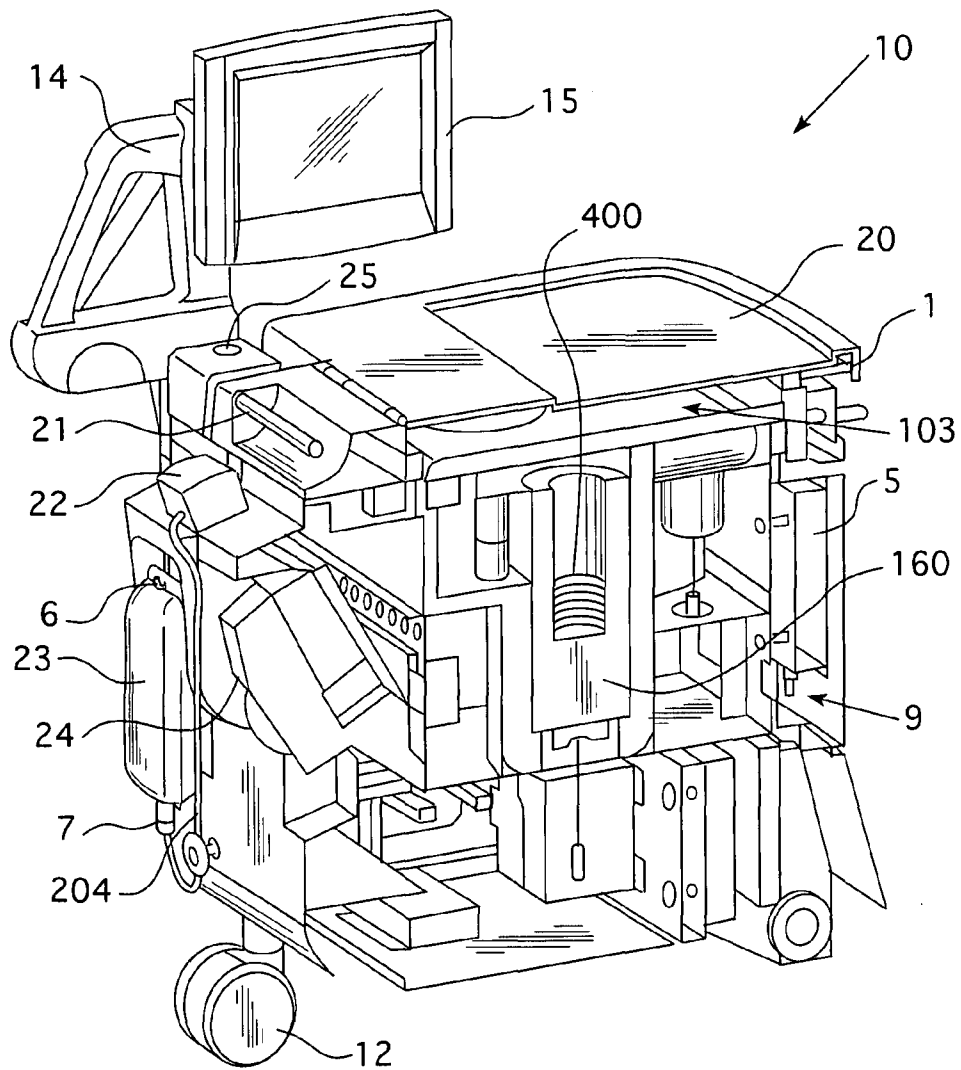


FIG. 1D

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