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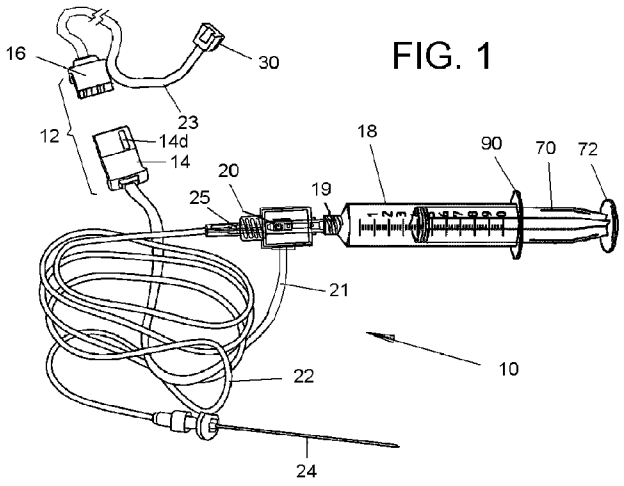


FIG. 1

(57) Abstract: An automatic injection apparatus uses non-continuous fluid-flow of drugs to identify an intended injection site and includes a drive mechanism, a sensor and a controller for establishing fluid flow and pressure and preventing fluid flow until the pressure drops below a predetermined threshold. The pressure threshold is determined based on an internal pressure generated during an injection and more fluid will not flow until it drops below a predetermined pressure. An injection is performed to establish an initial pressure threshhold and then to stop the fluid flow into a patient until the pressure drops below a predetermined pressure which allows fluid flow to resume, thus identifying a fluid filled tissue space. The initial pressure threshold is used as a control parameter to a microprocessor below which controls the rate of injection. Fluid flows below certain pressures are also used to identify a specific location within the body during injections.

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