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(54) Title: RETRACTABLE SYRINGE WITH IMPROVED DELIVERY EFFICIENCY AND LOCKING SYSTEM

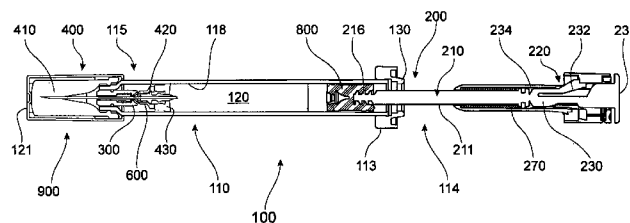


FIG. 1

(57) Abstract: A plunger, a needle assembly and a retractable syringe comprising same are provided. The plunger comprises a plunger member and a plunger outer having a lock spring that prevents or impedes movement of the plunger member after needle retraction. The plunger further comprises another locking member for engaging the barrel to prevent or impede further movement of the plunger outer after delivery of fluid contents. The plunger member has a plunger seal which engages a retractable needle of the needle assembly for retraction. The retractable needle comprises a cannula and needle body with a plurality of fluid channels that co-operate with a fluid conduit of the plunger seal to efficiently direct fluid to the cannula. A needle retainer comprises a plurality of barbed arms releasably coupled to the needle body, whereby an ejector with tabs facilitates release of the retractable needle from the needle retainer to allow compressed spring-driven retraction.