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(54) Title: AUTOMATIC INJECTION AND RETRACTION SYRINGE

(57) Abstract: An automatic injection and retraction syringe having a medicine cartridge, an injection assembly, and a retraction assembly is provided. The retraction assembly is selectively securable to the injection assembly to house the medicine cartridge. The retraction assembly includes an end cap, a hypodermic needle, a retraction spring, and an upper seal. The retraction spring is maintained in a partially compressed condition between the needle hub and the end cap. The upper seal is urged against a sealing surface by the retraction spring in the partially compressed condition to form a hermetic seal. In some embodiments, the injection assembly includes an injection spring, a plunger engaged to the injection spring, and a safety element to prevent the plunger from escaping the injection assembly if the injection spring is released from the normally stressed condition before the assemblies are secured to one another.