

Title (en)
ACCURATE DOSE CONTROL MECHANISMS AND DRUG DELIVERY SYRINGES

Title (de)
GENAUE DOSISSTEUERMECHANISMEN UND SPRITZEN ZUR WIRKSTOFFFREISETZUNG

Title (fr)
MÉCANISMES PRÉCIS DE CONTRÔLE DE DOSE ET SERINGUES D'ADMINISTRATION DE MÉDICAMENT

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Application
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Abstract (en)
[origin: CA3026708A1] A dose control mechanism (510, 610) for a syringe includes an engaging screw thread arrangement between an exterior surface of a plunger (514, 614) and a longitudinally extending channel (520D, 620D) of a housing (520, 620). The engaging screw thread arrangement includes at least one thread segment (514B, 614B) and a pitch guide (520C, 620C) including a variable pitch thread. At least a portion of the longitudinally extending channel (520D, 620D) of the housing (520, 620) including one of the pitch guide (520C, 620C) and the at least one thread segment (514B, 614B), and the plunger (514, 614) includes the other of the pitch guide (520C, 620C) and the at least one thread segment (514B, 614B). The plunger (514, 614) resides at least partially within the housing (520, 620) with the at least one thread segment (514B, 614B) engaged with the pitch guide (520C, 620C). An accurate dose drug delivery syringe (500, 600) includes such a dose control mechanism (510, 610), a barrel (540, 640), a plunger seal (536, 636), and a barrel adapter assembly (450) having a barrel tip (452) and a needle (454). The syringe (500, 600) may be a fill-at-time-of-use syringe, a pre-filled syringe, or a safety syringe having integrated needle retraction or needle sheathing safety features, or a combination thereof. Methods of assembly, manufacturing, and operation are similarly disclosed.

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