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Steenfeldt-Jensen et al.

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(54) **INJECTION SYRINGE**

(75) Inventors: **Søren Steinfeldt-Jensen**, Hornbæk;
Steffen Hansen, Hillerød, both of (DK)

(73) Assignee: **Novo Nordisk A/S**, Bagsvaerd (DK)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(22) Filed: **Oct. 28, 1999**

Related U.S. Application Data

(63) Continuation of application No. 09/238,849, filed on Jan. 28, 1999, now Pat. No. 6,004,297.

(60) Provisional application No. 60/073,820, filed on Feb. 5, 1998.

(30) Foreign Application Priority Data

Jan. 30, 1998 (DK) 1998 00130

(51) **Int. Cl.⁷** **A61M 5/00**

(52) **U.S. Cl.** **604/207; 604/211**

(58) **Field of Search** 604/207, 208,
604/210, 211, 218, 187, 232

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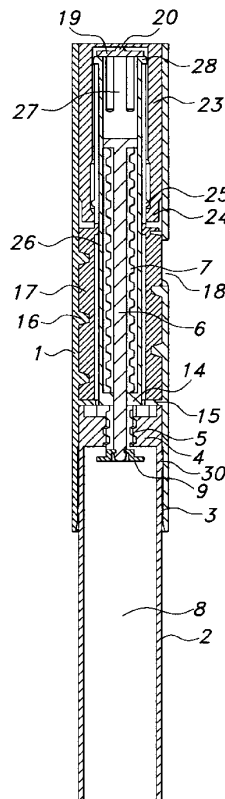
Primary Examiner—John D. Yasko

(74) *Attorney, Agent, or Firm*—Steve T. Zelson, Esq

(57) ABSTRACT

The present invention provides an injection syringe comprises a housing including a holder for containing a cartridge of medicine, a piston rod with a non-circular cross-section having an outer thread, a piston rod drive, a one way coupling having an annular ring of internal ratchet notches, which annular ring can be integral with the housing, and a pawl having at least a pair of resilient arms each having a free end.

11 Claims, 5 Drawing Sheets



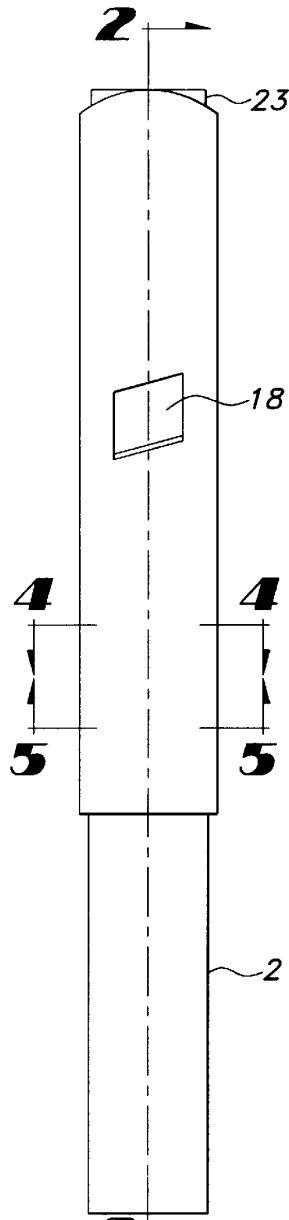


FIG 1

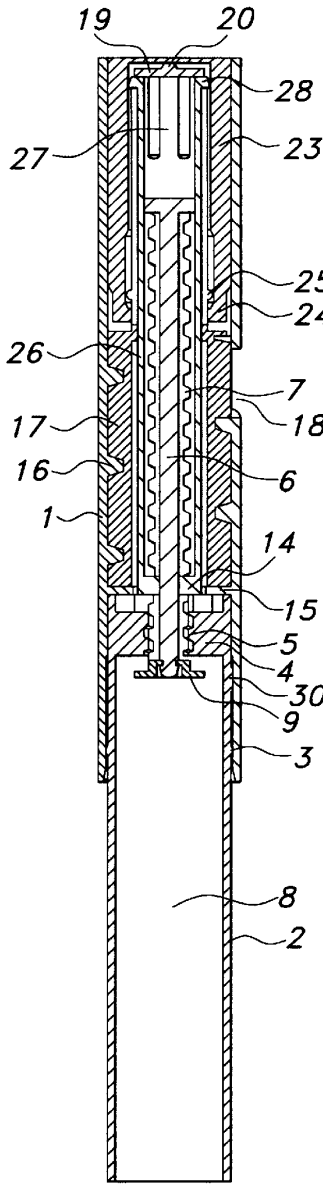


FIG 2

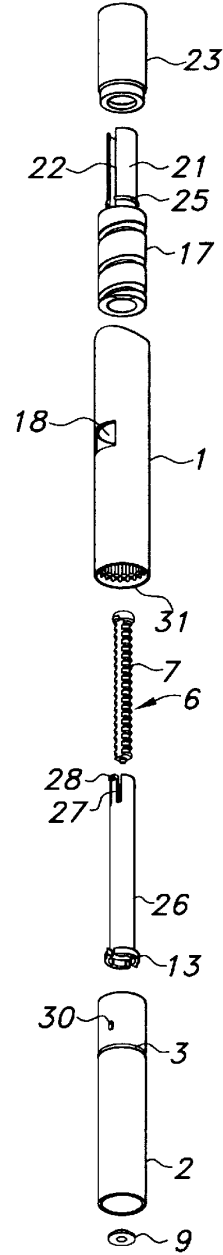


FIG 3

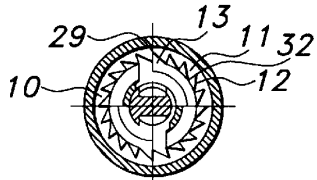


FIG 4

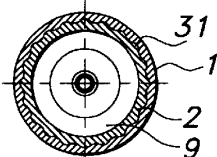


FIG 5

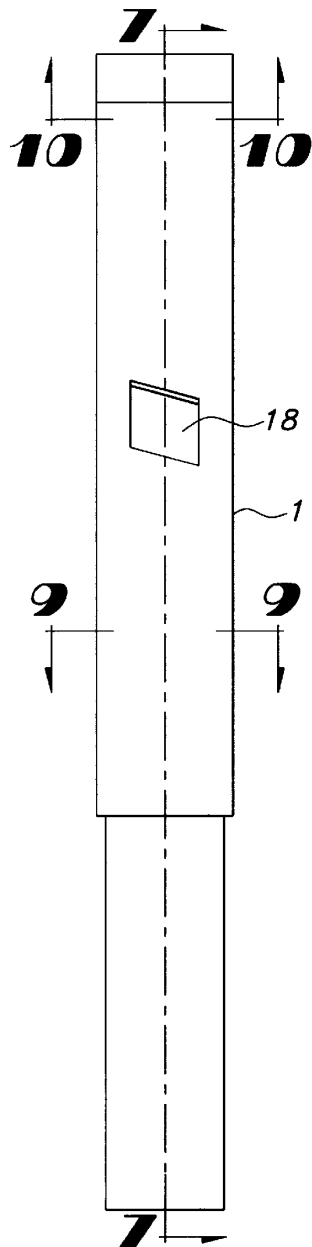


FIG 6

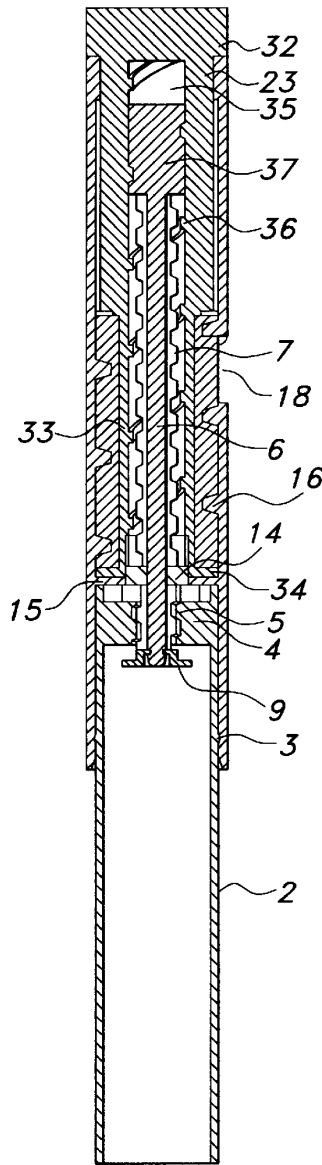


FIG 7

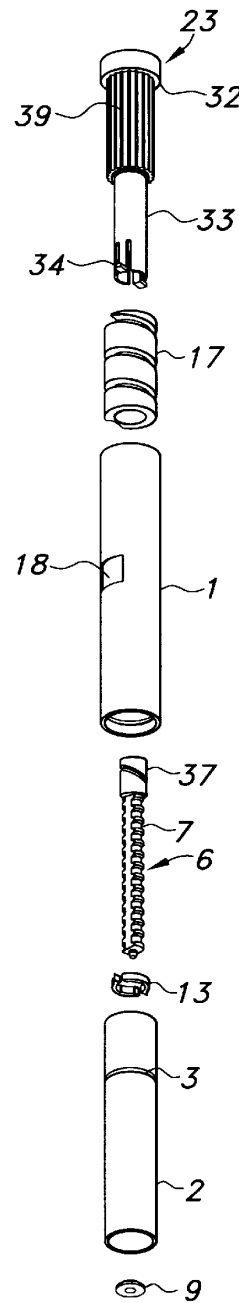


FIG 8

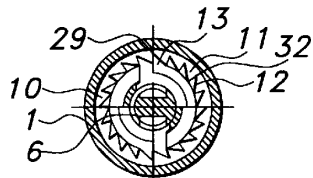


FIG 9

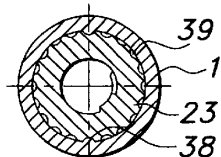


FIG 10

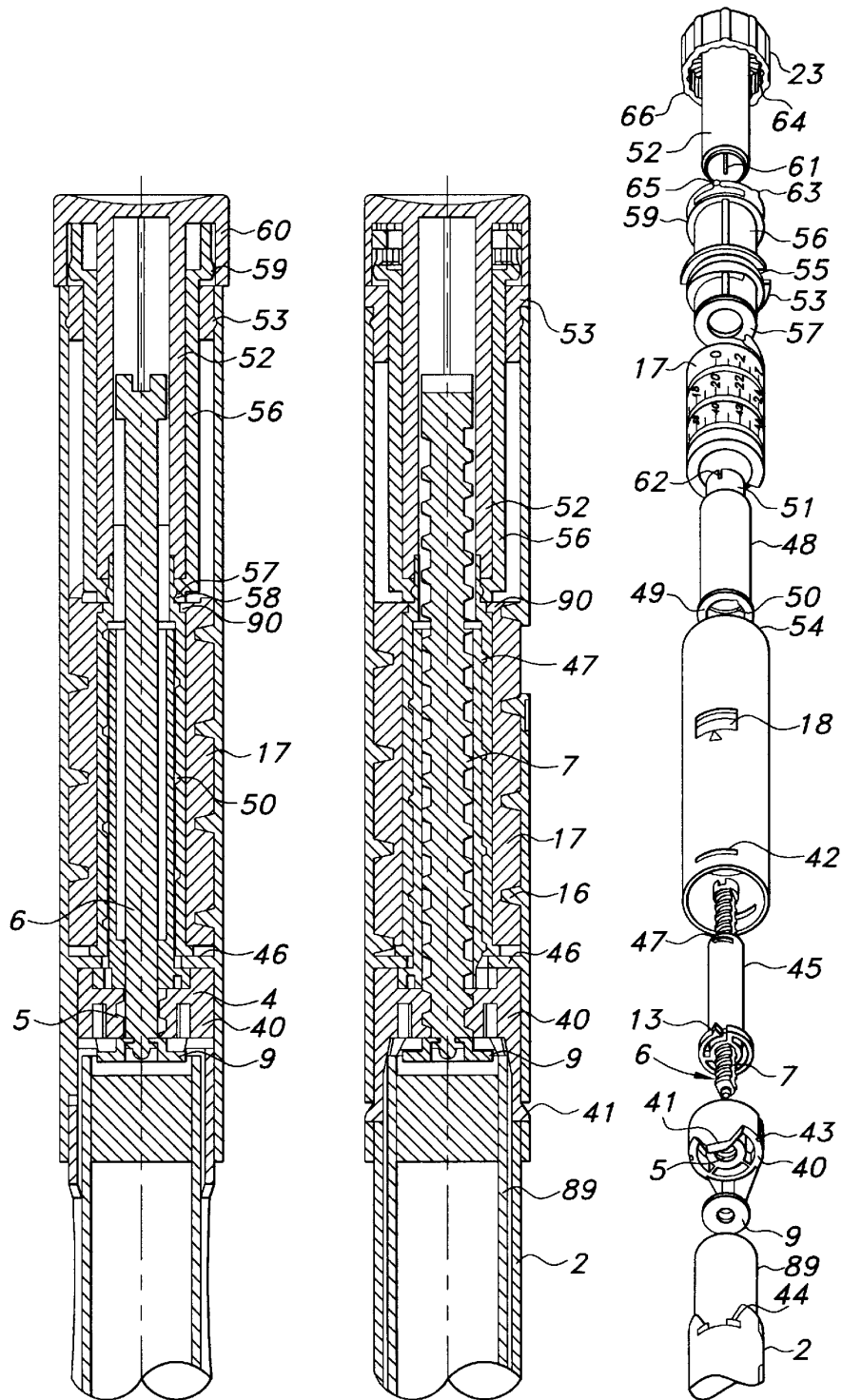


FIG 11 FIG 12 FIG 13

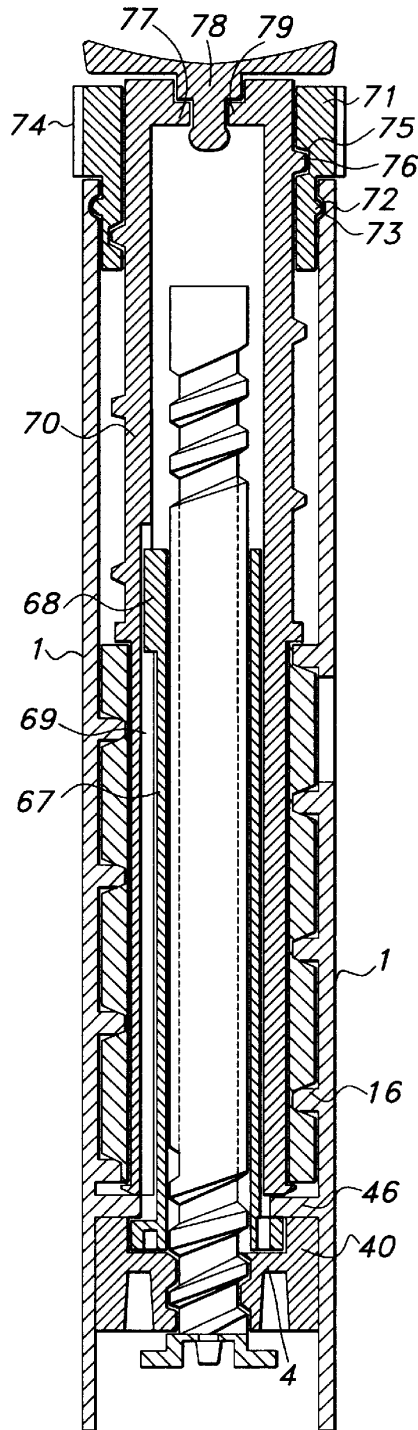


FIG 14

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