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Veasey et al.

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(54) **DRIVE MECHANISMS SUITABLE FOR USE
IN DRUG DELIVERY DEVICES**

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This patent is subject to a terminal dis-
claimer.

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Nov. 8, 2010, now Pat. No. 9,028,454, which is a
(Continued)

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(52) **U.S. Cl.**
CPC **A61M 5/31551** (2013.01); **A61M 5/24**
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(58) **Field of Classification Search**

CPC A61M 5/24; A61M 5/31533; A61M
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(Continued)

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21, 2003, including as-filed specification, drawings, abstract, and
claims, as well as the reissue declaration.

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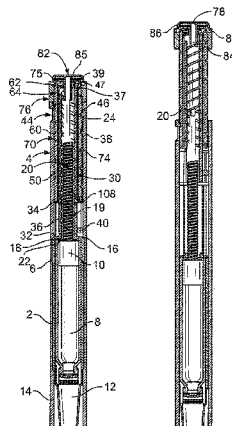
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(57) **ABSTRACT**

A drive mechanism suitable for use in drug delivery devices
is disclosed. The drive mechanism may be used with injec-
tor-type drug delivery devices, such as those permitting a
user to set the delivery dose. The drive mechanism may
include a housing, a dose dial sleeve, and a drive sleeve. A
clutch is configured to permit rotation of the drive sleeve and
the dose dial sleeve with respect to the housing when the
dose dial sleeve and drive sleeve are coupled through the
clutch. Conversely, when the dose dial sleeve and drive
sleeve are in a de-coupled state, rotation of the dose dial
sleeve with respect to the housing is permitted and rotation
of the drive sleeve with respect to the housing is prevented.
In the de-coupled state, axial movement of the drive sleeve

(Continued)



transfers force in a longitudinal direction for actuation of a drug delivery device.

19 Claims, 13 Drawing Sheets

Related U.S. Application Data

continuation of application No. 12/320,189, filed on Jan. 21, 2009, now Pat. No. 7,850,662, which is a continuation of application No. 11/520,598, filed on Sep. 14, 2006, now Pat. No. 7,935,088, which is a continuation of application No. 10/790,866, filed on Mar. 3, 2004, now abandoned.

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(58) **Field of Classification Search**

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See application file for complete search history.

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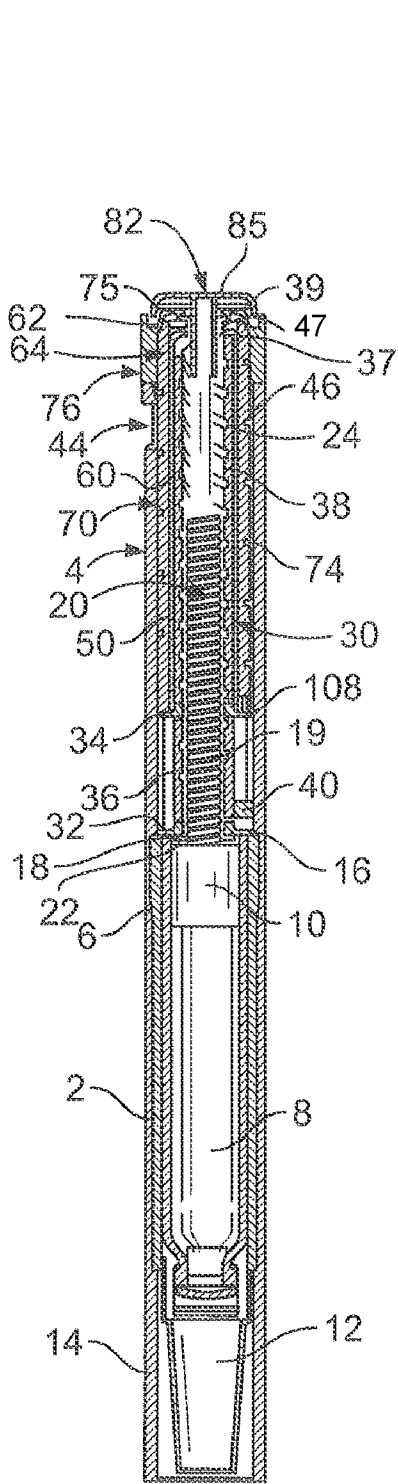


FIG. 1

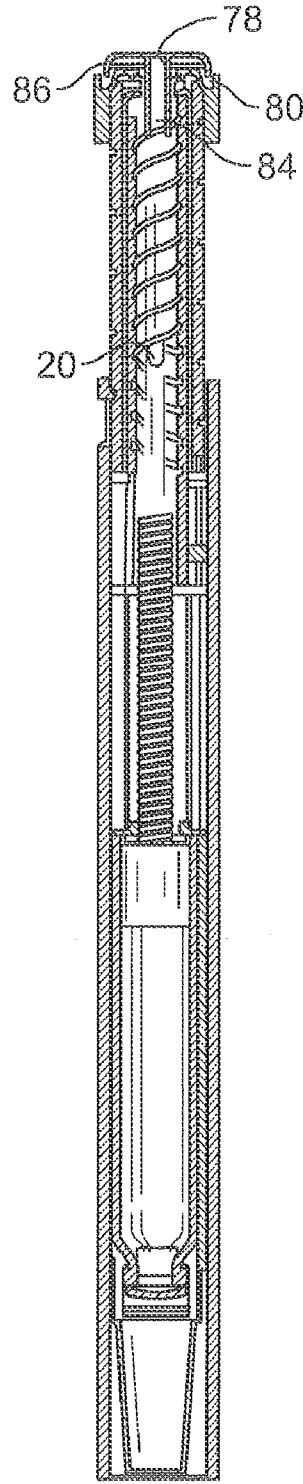


FIG. 2

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