Exhibit P

US010376652B2

(12) United States Patent

Markussen

54) AUTOMATIC INJECTION DEVICE WITH A TOP RELEASE MECHANISM

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(72) Inventor: Tom Hede Markussen, Bagsvaerd

(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 LLS C 154(b) by 0 days

U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-

claimer.

(21) Appl. No.: 15/441,638

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Related U.S. Application Data

(63) Continuation of application No. 14/797,350, filed on Jul. 13, 2015, now Pat. No. 9,616,180, which is a (Continued)

(30) Foreign Application Priority Data

Jan. 21, 2005 (DK) 2005 00113

(51) Int. Cl.

A61M 5/315

A61M 5/20

(2006.01) (2006.01)

(Continued)

(52) U.S. Cl.

CPC A61M 5/31551 (2013.01); A61M 5/20 (2013.01); A61M 5/3156 (2013.01);

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(45) **Date of Patent:** *Aug. 13, 2019

(58) Field of Classification Search

CPC A61M 5/315–31596; A61M 5/2033; A61M 5/326; A61M 2005/206; A61M 2005/208 See application file for complete search history.

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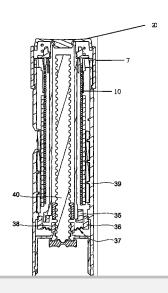
Danish Patent Application No. PA 2004 01576, filed Oct. 14, 2004.

Primary Examiner — Laura A Bouchelle (74) Attorney, Agent, or Firm — Wesley Nicolas

(57) ABSTRACT

The present invention relates to a handheld mechanical injection device by which set doses of a liquid medicament can be injected from a medical reservoir. The medicament is expelled through an injection needle by release of a power reservoir in the device, the power reservoir being fully or partially released by actuation of a user operable release member being positioned at or near an upper end of the injection device, the upper end being that end of the injection device which is opposite the injection needle.

15 Claims, 13 Drawing Sheets





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Related U.S. Application Data

continuation of application No. 13/326,738, filed on Dec. 15, 2011, now Pat. No. 9,108,002, which is a continuation of application No. 11/813,435, filed as application No. PCT/DK2006/000032 on Jan. 20, 2006, now Pat. No. 8,096,978.

- (60) Provisional application No. 60/647,320, filed on Jan. 26, 2005.
- (51) **Int. Cl.**A61M 5/31 (2006.01)

 A61M 5/24 (2006.01)
- (52) U.S. CI.

 CPC A61M 5/31525 (2013.01); A61M 5/31528

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 (2013.01); A61M 2005/202 (2013.01); A61M

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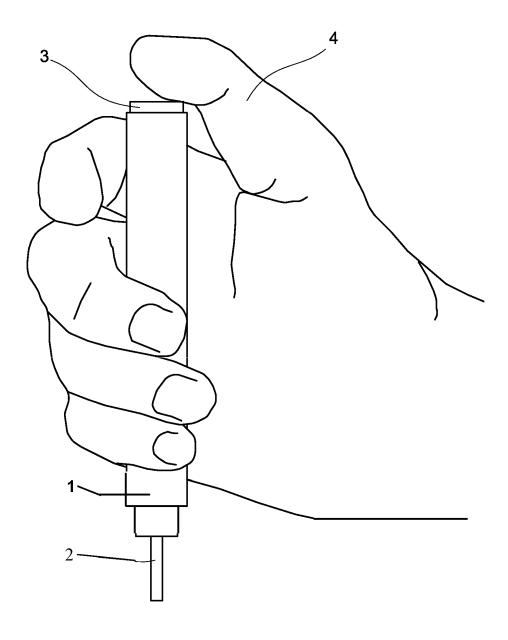


FIG. 1

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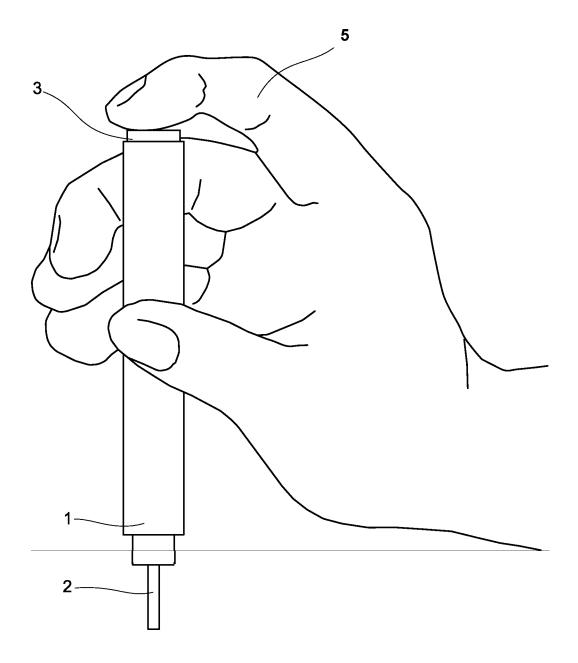


FIG. 2

DOCKET

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