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## (12) United States Patent Eiland et al.

# (54) SYRINGE DEVICE WITH A DOSE LIMITING MECHANISM AND AN ADDITIONAL SAFETY MECHANISM

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claimer.

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(56) References Cited

U.S. PATENT DOCUMENTS

4,498,904 A 2/1985 Turner et al. 4,865,591 A 9/1989 Sams (Continued)

FOREIGN PATENT DOCUMENTS

DE 20209051 U1 4/2003 DE 69810860 T2 11/2003 (Continued)

#### OTHER PUBLICATIONS

Non-Final Office Action issued by the PTO for U.S. Appl. No. 11/996,397 dated Dec. 31, 2008.

(Continued)

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#### (57) ABSTRACT

A syringe device for ejecting a dose of a medicament, the syringe device comprising: a dose limiting mechanism arranged to interact with a dose ejecting mechanism to prevent ejection of a dose exceeding a set dose, and a safety mechanism, which is arranged such with respect to the dose ejecting mechanism that, if the dose limiting mechanism fails, the safety mechanism prevents ejection of a dose exceeding the set dose.

#### 7 Claims, 1 Drawing Sheet

