Claims:

1. Dose setting mechanism for a drug delivery device, the mechanism comprising:
a dose setting member (3),
a drive member (4),
a clutch member (5) located between the dose setting member (3) and the drive member (4), the clutch member (5) being axially movable relative to the dose setting member (3) and to the drive member (4) and being rotationally fixed to the drive member (4), providing a first clutch (5a, 5b) for rotationally coupling and de-coupling the dose setting member (3) and the drive member (4),
a clicker (6) comprising a first clicker component (6') and a second clicker component (6'') axially movable relative to each other for producing a tactile and/or audible feedback during relative rotational movement there between,
wherein the first clicker component (6') is axially movable relative to the drive member (4) providing a second clutch (10, 11) for rotationally coupling and de-coupling the drive member (4) and the first clicker component (6'),
wherein the first clutch (5a, 5b) and the second clutch (9, 11) are designed and adapted to each other such that at any time during operation either the first clutch (5a, 5b) rotationally couples the dose setting member (3) and the drive member (4) and/or the second clutch (9, 11) rotationally couples the drive member (4) and the first clicker component (6').

2. Dose setting mechanism according to claim 1, characterized in that the first clicker (6') follows the axial movement of the clutch member (5) during the axial movement of the clutch member (5) for rotationally de-coupling the first clutch (5a, 5b) between drive member (4) and the dose setting member (3), wherein the second clutch (10, 11) rotationally couples the drive member (4) and the first clicker component (6') prior to the first clutch (5a, 5b) rotationally de-coupling the dose setting member (3) and the drive member (4).

3. Dose setting mechanism according to claim 1 or 2, characterized in that the clutch member (5) follows the axial movement of the first clicker (6') during the axial movement of the first clicker (6') for rotationally de-coupling the drive member (4) and the first clicker component (6'), wherein the first clutch (5a, 5b) rotationally couples the dose setting member (3) and the drive member (4) prior to the second clutch (10, 11) rotationally de-coupling the drive member (4) and the first clicker component (6').

4. Dose setting mechanism according to any of the preceding claims, characterized in that the second clutch comprises first clutch teeth or splines (10) provided on the drive member (4) and corresponding second clutch teeth or splines (11) provided on the first clicker component (6').

5. Dose setting mechanism according to any of the preceding claims, characterized in that the first clutch comprises first clutch teeth (5a) or splines provided on the dose setting member (3) and corresponding second clutch teeth (5b) or splines provided on a clutch member (5).

6. Dose setting mechanism according to claim 5, characterized in that the first clicker component (6') is interposed between the clutch member (5) of the first clutch and the second clicker component (6'').

7. Dose setting mechanism according to claim 5 or 6, characterized in that the first clicker component (6') comprises first coupling teeth or splines (8a) and the clutch member (5) comprises corresponding second coupling teeth or splines (8b) for rotationally aligning the first clicker component (6') and the clutch member (5).

8. Dose setting mechanism according to any of the preceding claims further comprising a housing member (2), characterized in that the first clicker component (6') is permanently rotationally coupled to the housing member (2) and the second clicker component (6'') is permanently rotationally coupled to the drive member (4).

9. Dose setting mechanism according to any of the preceding claims, characterized in that a clicker spring (7) is provided acting upon the second clicker component (6'').

10. Dose setting mechanism according to any of the preceding claims, characterized in that the dose setting member comprises a dose dial sleeve or number sleeve (3) which is rotatable relative to the housing member (2) to set a dose, and that the drive member comprises a drive sleeve (4) which is movable in a first axial direction relative to the housing member (2) during dose setting, and which is movable in a second axial direction relative to the housing member (2) during dose dispensing, which second axial direction is opposite to said first axial direction.

11. Dose setting mechanism according to any of the preceding claims, characterized in that the clutch member (5) rotationally couples the dose setting member (3) and the drive member (4) during dose setting and rotationally de-couples the dose setting member (3) and the drive member (4) during dose dispensing.

12. Dose setting mechanism according to any of the preceding claims, characterized in that the first clicker component (6') and the second clicker component (6'') are allowed to rotate relative to each other during dose setting and are rotationally locked together during dose dispensing.

13. Dose setting mechanism according to any of the preceding claims, characterized in that the second clicker component (6'') free to move axially relative to the drive member (4) but is rotationally locked to the drive member (4).

14. Dose setting mechanism according to any of the preceding claims, further comprising a clicker spring (7) which
biases the first clicker component (6') and the second clicker component (6'') together,
biases the first clicker component (6') and the clutch member (5) together,
biases the dose setting member (1) and the clutch member (5) into engagement,

biases two parts of the drive member (4), which comprises a distal and proximal drive member part, into an engaged position,
provide a force during dose dispense that drives the distal (front) part of the drive member (4) forwards, and/or
resists decoupling of the distal and proximal drive member parts with a force in the magnitude order of gravity.

15. Injection device comprising a dose setting mechanism according to any of the preceding claims and a medicament which is preferably contained in a cartridge.

CLAIMS

1. A dose setting mechanism for a drug delivery device, the mechanism comprising:

a dose setting member,

a drive member,

a clutch member located between the dose setting member and the drive member, the clutch member being axially movable relative to the dose setting member and to the drive member and being rotationally fixed to the drive member, providing a first clutch for rotationally coupling and de-coupling the dose setting member and the drive member,

a clicker comprising a first clicker component and a second clicker component axially movable relative to each other for producing a tactile and/or audible feedback during dose setting of the drug delivery device,

wherein the first clicker component is axially movable relative to the drive member providing a second clutch for rotationally coupling and de-coupling the drive member and the first clicker component,

wherein the first clutch and the second clutch are designed and adapted to each other such that at any time during operation either the first clutch rotationally couples the dose setting member and the drive member and/or the second clutch rotationally couples the drive member and the first clicker component.

2. The dose setting mechanism according to claim 1,

characterized in that the first clicker follows the axial movement of the clutch member during the axial movement of the clutch member for rotationally de-coupling the first clutch between drive member and the dose setting member, wherein the second clutch rotationally couples the drive member and the first clicker component prior to the first clutch rotationally de-coupling the dose setting member and the drive member.

3. The dose setting mechanism according to claim 1, characterized in that the clutch member follows the axial movement of the first clicker during the axial movement of the first clicker for rotationally de-coupling the drive member and the first clicker component, wherein the first clutch rotationally couples the dose setting member and the drive member prior to the second clutch rotationally de-coupling the drive member and the first clicker component.

4. The dose setting mechanism according to claim 1, characterized in that the second clutch comprises first clutch teeth or splines provided on the drive member and corresponding second clutch teeth or splines provided on the first clicker component.

5. The dose setting mechanism according to claim 1, characterized in that the first clutch comprises first clutch teeth or splines provided on the dose setting member and corresponding second clutch teeth or splines provided on the clutch member.

6. The dose setting mechanism according to claim 5, characterized in that the first clicker component is interposed between the clutch member of the first clutch and the second clicker component.

7. The dose setting mechanism according to claim 5, characterized in that the first clicker component comprises first coupling teeth or splines and the clutch member comprises corresponding second coupling teeth or splines for rotationally aligning the first clicker component and the clutch member.

8. The dose setting mechanism according to claim 1 further comprising a housing member, characterized in that the first clicker component is permanently rotationally coupled to the housing member and the second clicker component is permanently rotationally coupled to the drive member.

9. The dose setting mechanism according to claim 1, characterized in that a clicker spring is provided acting upon the second clicker component.

10. The dose setting mechanism according to claim 1, characterized in that the dose setting member comprises a dose dial sleeve or number sleeve which is rotatable relative to a housing member to set a dose, and that the drive member comprises a drive sleeve which is movable in a first axial direction relative to the housing member during dose setting, and which is movable in a second axial direction relative to the housing member during dose dispensing, which second axial direction is opposite to said first axial direction.

11. The dose setting mechanism according to claim 1, characterized in that the clutch member rotationally couples the dose setting member and the drive member

during dose setting and rotationally de-couples the dose setting member and the drive member during dose dispensing.

12. The dose setting mechanism according to claim 1, characterized in that the first clicker component and the second clicker component are allowed to rotate relative to each other during dose setting and are rotationally locked together during dose dispensing.

13. The dose setting mechanism according to claim 1, characterized in that the second clicker component free to move axially relative to the drive member but is rotationally locked to the drive member.

14. The dose setting mechanism according to claim 1, further comprising

a clicker spring which

biases the first clicker component and the second clicker component together,

biases the first clicker component and the clutch member together,

biases the dose setting member and the clutch member into engagement,

biases two parts of the drive member, which comprises a distal and proximal drive member part, into an engaged position,

provide a force during dose dispense that drives the distal (front) part of the drive member forwards, and/or

resists decoupling of the distal and proximal drive member parts with a force in the magnitude order of gravity.

15. Injection device comprising the dose setting mechanism of claim 1 and a cartridge containing a medicament.