Claims

1. A device (100) for dispensing a drug or medicament in pellet form, comprising:
a cartridge (200) comprising a chamber (220) for containing a plurality of pellets;
a screw pump configured to receive pellets from the chamber (220) and, upon rotation of the screw pump, transport the pellets from the chamber (220) to be dispensed from the device (100) via the screw pump; and
a rotating member (250) extending through the cartridge (200) and configured to rotate the screw pump so as to dispense pellets therefrom,
wherein the screw pump comprises a screw thread (242), and the screw thread (242) cooperates with an inner cylindrical surface (124', 214) of the cartridge (200) to form the screw pump, such that, as the rotating member (250) rotates in use, the screw thread (242) rotates within the inner cylindrical surface (124', 214), causing pellets contained within the chamber (220) to enter the screw thread (242), and travel down the screw thread (242) for dispensing from the screw pump,
wherein the device (100) is a hand-held device (100).

2. A device as claimed in claim 1, wherein a largest dimension of the pellets is between 150 µm and 1200 µm.

3. A device as claimed in claim 1 or 2, wherein the cartridge (200) extends from a first end to a second, dispensing end, and the screw pump is located at the second, dispensing end of the cartridge (200),
wherein the screw pump is gravity fed, such that pellets held within the chamber (220) are moved from the first end towards the second, dispensing end at least partially by gravity, when the device is in a dispensing orientation.

4. A device as claimed in any preceding claim, wherein the screw thread (242) is formed around the rotating member (250) such that the screw pump comprises part of the rotating member (250).

5. A device as claimed in claim 4, wherein the screw thread (242) consists of one or more starts, each forming a continuous helix that the pellets fill during operation of the device, such that as the rotating member (250) and screw pump are rotated in use, pellets are received into a start of the screw thread (242) and travel down a continuous helix of the screw thread (242).

6. A device as claimed in claim 4 or 5, wherein the screw thread (242) is configured such that a predetermined rotation of the screw pump causes a predetermined amount of pellets to be dispensed from the device.

7. A device as claimed in any preceding claim, wherein the cartridge (200) comprises an exit tube (212) that extends from the chamber (220), and the exit tube (212) comprises the inner cylindrical surface (214) of the screw pump.

8. A device as claimed in claim 7, wherein the chamber (220) comprises a frustoconical or tapered portion that is configured to direct pellets contained in the chamber (220) into the exit tube (212).

9. A device as claimed in any preceding claims, wherein a at least 70% of the length of the rotating member (250) is absent of the screw thread (242) that forms the screw pump.

10. A device as claimed in any preceding claim, further comprising a device (230) configured to force pellets contained within the chamber (220) towards the screw pump, wherein:

a portion of the rotating member (250) within the chamber (220) comprises a further screw thread (252), and the device (230) is configured as a plunger that travels along the further screw thread (252) of the rotating member (250), such that, as the rotating member (250) rotates in use, the plunger (230) moves towards the screw pump so as to force pellets contained within the chamber (220) towards the screw pump.

11. A device as claimed in any preceding claim, further comprising a valve (500, 550, 590, 590') connected to an outlet of the screw pump and configured to prevent pellets from being dispensed from the screw pump when the screw pump is not being rotated or prior to use, and permit pellets to be dispensed from the screw pump upon rotation of the screw pump in use.

12. A device as claimed in any preceding claim, further comprising a plurality of pellets providing an oral dosage form contained within the chamber (220).

13. A device as claimed in any preceding claim, wherein the cartridge (200) and the screw pump are integrated and the device (100) is configured to be attached to an actuator at a first end of the cartridge (200)

14. A method of using a device as claimed in any preceding claim, comprising:

rotating the screw pump, using the rotating member (250), by a predetermined amount of rotation to cause a predetermined amount of pellets to be dispensed from the device (100).

15. A method as claimed in claim 14, further comprising:

filling the chamber (220) with pellets providing an oral dosage form;

determining an amount of rotation of the screw pump that will cause a predetermined amount of the pellets to be dispensed from the device (100); and

rotating the screw pump by the predetermined amount to cause the predetermined amount of pellets to be dispensed from the device (100).