CLAIMS

1. A method of fabricating a pharmaceutical formulation using ~~A~~a dispenser for granules, the dispenser comprising

(i) a granular reservoir;

(ii) a selector disk comprising

(a) a feeder disk comprising at least one protruding member; and

(b) a dispensing disk arranged to rotate in concert with the feeder disk; the dispensing disk comprising at least one dispensing aperture and a non-dispensing portion, the at least one dispensing aperture being in registration with the at least one protruding member; and

(iii) a holding disk comprising at least one through-hole sandwiched between the feeder disk and the dispensing disk and fixedly mounted with respect to the granular reservoir, wherein the selector disk is rotatable relative to the holding disk and the granular reservoir between a first position in which the at least one protruding member is offset from the at least one through-hole to allow a granule to be received from the granular reservoir and held within the at least one through-hole by the non-dispensing portion of the dispensing disk and a second position in which the at least one protruding member occludes the at least one through-hole to allow the granule held in the at least one through-hole to dispense through the at least one dispensing aperture~~.~~; the method comprising:

providing a packaging for the pharmaceutical formulation;

introducing a plurality of granules each comprising at least one active pharmaceutical ingredient of the pharmaceutical formulation into the dispenser; and

dispensing a selected number of the plurality of granules through the at least one dispensing aperture and into the packaging for the pharmaceutical formulation by rotating the selector disk relative to the holding disk and the granular reservoir by a predetermined angle to cause the selected number of the plurality granules to be dispensed from the at least one dispensing aperture

and into the packaging, the selected number of the plurality of granules corresponding to a predetermined dosage of the active ingredient of the pharmaceutical formulation.

2. The method ~~The dispenser for granules~~ according to claim 1, wherein the holding disk comprises a surface on to which the at least one through-hole opens and which is at least partially exposed to the granular reservoir, the surface being operable to receive granules from the granular reservoir, and wherein the protruding member is arranged to slide over the surface to push received granules across the surface as the selector disk is rotated relative to the holding disk and the granular reservoir between the first position and the second position.

3. The method ~~The dispenser for granules~~ according to claim 2, wherein the granular reservoir comprises a wall which cooperates with the feeder disk to form a channel comprising the at least partially exposed surface, the least one protruding member projecting into the channel, the at least one protruding member being further operable to push the received granules along the channel as the selector disk is rotated relative to the holding disk and the granular reservoir between the first position and the second position.

4. The method ~~The dispenser for granules~~ according to claim 3, wherein the channel comprises a channel width sufficient for the surface to receive granules in single file only.

5. The method ~~The dispenser for granules~~ according to any one of the preceding claims, wherein the at least one protruding member comprises a bell-shaped radial profile.

6. The method ~~The dispenser for granules~~ according to any one of the preceding claims, wherein the feeder disk comprises a convex surface arranged to receive granules from the granular reservoir.

7. The method ~~The dispenser for granules~~ according to any one of the preceding claims, wherein the ~~feeder~~holding disk comprises a plurality of through-holes and wherein the at least one protruding member is offset from a corresponding one of the plurality of through-holes in the first position to allow the granule to be received from the granular reservoir and held within the corresponding through-hole, and wherein the at least one protruding member occludes the corresponding through-hole in the second position to allow the granule held in the corresponding through-hole to dispense through the at least one dispensing aperture.

8. The method ~~The dispenser for granules~~ according to any one of the preceding claims, wherein the feeder disk comprises a plurality of protruding members and wherein the dispensing disk comprises a plurality of dispensing apertures, each one of the plurality of dispensing apertures being in registration with a corresponding one of the plurality of protruding members**.**

9. The method ~~The dispenser for granules~~ according to any one of the preceding claims, further comprising a motor operable to drive rotation of the selector disk relative to the holding disk and granular reservoir.

10. The method ~~The dispenser for granules~~ according to claim 9, wherein the selector disk further comprises an axis of rotation and the dispenser further comprises a plurality of shafts extending through the selector disk, the plurality of shafts being distributed around the axis of rotation, the motor being operable to drive rotation of the selector disk relative to the holding disk and the granular reservoir by cycling the plurality of shafts around the axis of rotation.

11. The method ~~The dispenser for granules~~ according to claim 9 or 10, wherein the motor is operable to drive rotation at a speed of from 30RPM to 80RPM.

12. The method ~~The dispenser for granules~~ according to any one of the preceding claims, wherein the feeder disk is integrally formed with the selector disk**.**

13. The method ~~The dispenser for granules~~ according to any one of the preceding claims, further comprising a plurality of granules received in the granular reservoir.

~~14. A method of dispensing one or more granules of the plurality of granules received in the granular reservoir of the dispenser for granules according to claim 13, the method comprising:~~

~~rotating the selector disk relative to the holding disk and the granular reservoir to cause the one or more granules to be dispensed from the at least one dispensing aperture.~~

~~15. The method of dispensing one or more granules of the plurality of granules received in the granular reservoir of the dispenser for granules according to claim 14, wherein rotating the selector disk relative to the holding disk and the granular reservoir comprises rotating the selector disk relative to the holding disk and the granular reservoir at a frequency of from 40 revolutions per minute to 80 revolutions per minute.~~

~~16. A method of dispensing one of the plurality of granules received in the granular reservoir of the dispenser for granules according to claim 13, the method comprising: rotating the selector disk relative to the holding disk and the granular reservoir from the first position to the second position.~~

~~17. The method of dispensing one of the plurality of granules received in the granular reservoir according to claim 16, wherein the holding disk comprises *t* through-holes, and wherein rotating the selector disk relative to the holding disk and the granular reservoir from the first position to the second position~~

~~comprises rotating the selector disk relative to the holding disk and the granular reservoir by an angle of (360/*t*)°.~~

~~18. A method of fabricating a pharmaceutical formulation, comprising:~~

~~providing a packaging for the pharmaceutical formulation;~~

~~introducing a plurality of granules each comprising at least one active pharmaceutical ingredient of the pharmaceutical formulation into the dispenser for granules according to any one of claims 1 to 12; and~~

~~dispensing a selected number of the plurality of granules through the at least one dispensing aperture and into the packaging for the pharmaceutical formulation by rotating the selector disk relative to the holding disk and the granular reservoir by a predetermined angle to cause the selected number of the plurality granules to be dispensed from the at least one dispensing aperture and into the packaging, the selected number of the plurality of granules corresponding to a predetermined dosage of the active ingredient of the pharmaceutical formulation.~~

~~19~~14. A <u>non-transitory computer-readable storage medium storing a</u> computer program comprising computer executable instructions that, when executed by a processor, cause the processor to control an additive manufacturing apparatus to manufacture ~~the dispenser for granules according to any one of claims 1 to 12.~~ <u>a dispenser for granules, the dispenser comprising (i) a granular reservoir; (ii) a selector disk comprising (a) a feeder disk comprising at least one protruding member; and (b) a dispensing disk arranged to rotate in concert with the feeder disk; the dispensing disk comprising at least one dispensing aperture and a non-dispensing portion, the at least one dispensing aperture being in registration with the at least one protruding member; and (iii) a holding disk comprising at least one through-hole sandwiched between the feeder disk and the dispensing disk and fixedly mounted with respect to the granular reservoir, wherein the selector disk is rotatable relative to the holding disk and the granular reservoir between a first position in which the at least one protruding member is offset from the at least one through-hole to allow a granule to be</u>

received from the granular reservoir and held within the at least one through-hole by the non-dispensing portion of the dispensing disk and a second position in which the at least one protruding member occludes the at least one through-hole to allow the granule held in the at least one through-hole to dispense through the at least one dispensing aperture.

~~20~~15. A method of manufacturing ~~the~~a dispenser for granules ~~according to any one of claims 1 to 12~~ via additive manufacturing, the dispenser comprising (i) a granular reservoir; (ii) a selector disk comprising (a) a feeder disk comprising at least one protruding member; and (b) a dispensing disk arranged to rotate in concert with the feeder disk; the dispensing disk comprising at least one dispensing aperture and a non-dispensing portion, the at least one dispensing aperture being in registration with the at least one protruding member; and (iii) a holding disk comprising at least one through-hole sandwiched between the feeder disk and the dispensing disk and fixedly mounted with respect to the granular reservoir, wherein the selector disk is rotatable relative to the holding disk and the granular reservoir between a first position in which the at least one protruding member is offset from the at least one through-hole to allow a granule to be received from the granular reservoir and held within the at least one through-hole by the non-dispensing portion of the dispensing disk and a second position in which the at least one protruding member occludes the at least one through-hole to allow the granule held in the at least one through-hole to dispense through the at least one dispensing aperture, the method comprising:

obtaining an electronic file representing a geometry of the dispenser for granules; and

controlling an additive manufacturing apparatus to manufacture, over one or more additive manufacturing steps, the dispenser for granules according to the geometry specified in the electronic file.