CLAIMS

1. Device (3) for dispensing a plurality of unitary doses (2) of dry powder, comprising:

- a casing (5) provided with a mouthpiece (6) for inhalation by a user,

- first (25a) and second (25b) supports respectively for two carriers (15) each having a plurality of housings for respective unitary doses (2) adapted to be connected to the mouthpiece for inhalation of the dose, the first (25a) and second (25b) supports being moveably mounted within the casing (5) for sequentially connecting the housings to the mouthpiece,

- an indexing mechanism (76, 81) adapted to engage and move the first (25a) and second (25b) supports, the indexing mechanism (76, 81) and the supports (25a, 25b) being configured so that

in a first dispensing state of the device, the first support (25a) is in engagement with the indexing mechanism (76, 81) so as to be moveable with respect to the casing (5), and the second support (25b) is disengaged from the indexing mechanism (76, 81) so as to be stationary with respect to the casing (5),

in a subsequent second dispensing state of the device, the second support (25b) is in engagement with the indexing mechanism (76, 81) so as to be moveable with respect to the casing (5), and the first support (25a) is disengaged from the indexing mechanism (76, 81) so as to be stationary with respect to the casing (5),

- changeover means (90) adapted to cause the device (3) to pass from the first dispensing state to the second dispensing state,

the device (3) being characterised in that the changeover means (90) are adapted to lock the second support (25b) in its stationary position while the device (3) is in the first dispensing state, and to lock the first support (25a) in its stationary position while the device (3) is in the second dispensing state.

2. Device (3) according to claim 1, wherein the changeover means (90) are adapted to release the second support (25b) from its stationary

position and to place the second support (25b) into engagement with the indexing mechanism (76, 81) while disengaging the first support (25a) from the indexing mechanism (76, 81).

3. Device (3) according to claim 1 or 2, wherein the changeover means comprise a changeover mechanism (90) which is arranged between the first (25a) and second (25b) supports and is moveably mounted within the casing (5).

4. Device (3) according to claim 3, wherein the changeover means comprise first and second engaging portions (37) provided on the first (25a) and second (25b) supports respectively, the changeover mechanism (90) comprises first (95) and second (115) engaging sections and a locking arrangement (100, 105, 120, 125, 130) arranged to cooperate with the first (25a) and second (25b) supports so that

the second engaging section (115) engages the second engaging portion (37), and the locking arrangement prevents the changeover mechanism (90) from moving with respect to the casing (5) while the device (3) is in the first dispensing state,

the first (95) and second (115) engaging sections engage respectively the first and second engaging portions (37), and the locking arrangement allows the changeover mechanism (90) to move with respect to the casing (5) while the first support (25a) is disengaging from the indexing mechanism (76, 81),

the first engaging section (95) engages the first engaging portion (37), and the locking arrangement prevents the changeover mechanism (90) from moving with respect to the casing (5) while the device (3) is in the second dispensing state.

5. Device (3) according to claim 4, wherein the first (25a) and second (25b) supports comprise respectively first and second contact surfaces (48), and the locking arrangement comprises first (100, 105) and second (120, 125, 130) abutting sections arranged on the changeover mechanism (90) to cooperate respectively with the first and second contact surfaces (48) so that

the first abutting section ~~(100, 105)~~ abuts the first contact surface ~~(48)~~ while the device ~~(3)~~ is in the first dispensing state,

the first ~~(100, 105)~~ and second ~~(120, 125, 130)~~ abutting sections do not abut the first and second contact surfaces ~~(48)~~ while the first support ~~(25a)~~ is disengaging from the indexing mechanism ~~(76, 81)~~,

the second abutting section ~~(120, 125, 130)~~ abuts the second contact surface ~~(48)~~ while the device ~~(3)~~ is in the second dispensing state.

6. Device ~~(3)~~ according to claim 5, wherein the first ~~(25a)~~ and second ~~(25b)~~ supports further comprise first and second notches ~~(49)~~ arranged respectively in correspondence with the first and second engaging portions ~~(37)~~, the first and second notches ~~(49)~~ being adapted to remove the abutments of the first ~~(100, 105)~~ and second ~~(120, 125, 130)~~ abutting sections on the first and second contact surfaces ~~(48)~~ while the first support ~~(25a)~~ is disengaging from the indexing mechanism ~~(76, 81)~~.

7. Device ~~(3)~~ according to claim 5 or 6, wherein the changeover mechanism ~~(90)~~ is integrally made.

8. Device ~~(3)~~ according to claim 7, wherein the first ~~(25a)~~ and second ~~(25b)~~ supports are superposed and the changeover mechanism ~~(90)~~ is rotatably mounted within the casing ~~(5)~~, the changeover mechanism ~~(90)~~ having first ~~(92)~~ and second ~~(93)~~ sides cooperating respectively with the first ~~(25a)~~ and second ~~(25b)~~ supports.

9. Device ~~(3)~~ according to claim 7 or 8, wherein each of the first ~~(95)~~ and second ~~(115)~~ engaging sections is made of gear teeth adapted to mesh with gear teeth ~~(37)~~ of each of the first and second engaging portions, and each of the first ~~(100, 105)~~ and second ~~(120, 125, 130)~~ abutting sections comprises surfaces angularly offset with respect to the respective first ~~(95)~~ and second ~~(115)~~ engaging sections.

10. Device ~~(3)~~ according to claim 9, wherein the respective surfaces of the first ~~(100, 105)~~ and second ~~(120, 125, 130)~~ abutting sections are at least partly formed on the gear teeth of the first ~~(95)~~ and second ~~(115)~~ engaging sections.

11. Device ~~(3)~~ according to any of claims 1 to 10, wherein the first ~~(25a)~~ and second ~~(25b)~~ supports are of circular configuration, the first ~~(25a)~~ and second ~~(25b)~~ supports being rotatably mounted within the casing ~~(5)~~ about a central axis ~~(A)~~.

12. Inhaler ~~(1)~~ comprising a device ~~(3)~~ for dispensing a plurality of unitary doses of dry powder according to any of claims 1 to 11, and two carriers ~~(15)~~ each having a plurality of housings for respective unitary doses, the two carriers ~~(15)~~ being associated respectively with the first ~~(25a)~~ and second ~~(25b)~~ supports.