CLAIMS:

1. A housing cap apparatus for an inhaler, the housing cap apparatus having one or more ~~a~~ valves for selectively restricting air flow through an air flow passageway of ~~an~~ the inhaler~~.~~

wherein at least a portion of the housing cap apparatus comprises a deformable portion formed of deformable material and including the one or more valves, the deformable portion being deformable between a first configuration in which the valve is restricted and a second configuration in which the valve is open for allowing air flow through an air flow passageway of the inhaler.

~~2. Apparatus as claimed in Claim 1, at least a portion thereof comprising a deformable portion formed of deformable material and including one or more valves, the deformable portion being deformable between a first configuration in which the valve is restricted and a second configuration in which the valve is open for allowing air flow through an air flow passageway of an inhaler.~~

~~3~~2. Apparatus as claimed in Claim 1 ~~or Claim 2~~, in which the housing cap apparatus has a head portion at least partly formed of deformable material, the valve comprising at least one sealing aperture which is deformable between a closed configuration and an open configuration.

~~4~~3. Apparatus as claimed in Claim ~~3~~ 2 in which the head portion is formed at least partly of resiliently deformable material for self-closing the sealing aperture to the closed configuration and self-returning the head portion to a rest configuration thereof.

~~5~~4. Apparatus as claimed in Claim ~~3~~ 2 or Claim ~~4~~ 3 in which the sealing aperture is located on an inwardly concave surface of the head portion so as to be biased towards firmer sealing thereof in response to attempted negative inhaling pressure applied inside the head portion.

~~6~~5. Apparatus as claimed in any one of Claims ~~3~~ 2 to ~~5~~ 4 in which the sealing aperture comprises an elongate sealing slit.

~~7~~6. Apparatus as claimed in Claim ~~6~~ 5 in which the elongate sealing slit is formed in a sidewall of the head portion.

~~8~~7. Apparatus as claimed in Claim ~~7~~6 in which the sidewall is generally at least part-cylindrical or at least part-conical (or has portions of each of these shapes) when the sealing slit is in the closed configuration.

~~9~~8. Apparatus as claimed in Claim ~~7~~6 in which the sidewall has a curved outwardly convex cross-section when the sealing slit is closed.

~~10~~9. Apparatus as claimed in any of Claims ~~6~~5 to ~~9~~8 in which the housing cap apparatus includes at least one corner and in which at least one said sealing slit is located substantially adjacent and/or aligned extending substantially towards the corner.

~~11~~10. Apparatus as claimed in any one of Claims ~~7~~6 to ~~10~~9 which includes a series of said sealing slits arranged around the sidewall.

~~12~~11. Apparatus as claimed in Claim ~~11~~10 when dependent upon Claim ~~10~~9 in which four said sealing slits and four said corners are provided.

~~13~~12. Apparatus as claimed in any one of Claims ~~6~~5 to ~~12~~11 in which, when the sealing slit is closed, the head portion has a generally flat top and the sealing slit is oriented generally parallel to an axis perpendicular to the generally flat top.

~~14~~13. Apparatus as claimed in Claim ~~13~~12 when dependent upon Claim ~~7~~6 in which the generally flat top is relatively rigid compared to the sidewall.

~~15~~14. Apparatus as claimed in Claim ~~14~~13 in which the generally flat top is: of thicker material than the sidewall, formed at least partly of stiffer material than the sidewall (such as being double-shot moulded integrally therewith), or both.

~~16~~15. Apparatus as claimed in Claim ~~14~~13 or claim ~~15~~14 in which the generally flat top includes an insert formed of stiffer and/or harder material than material of the sidewall.

~~17~~16. Apparatus as claimed in Claim ~~7~~ 6 or any preceding claim when dependent upon Claim ~~7~~ 6 in which the sidewall has a Shore A hardness of about 30.

~~18~~17. Apparatus as claimed in Claim ~~13~~ 12 or any preceding claim when dependent upon Claim ~~13~~ 12 in which the flat top has a Shore D hardness of about 40 or less.

~~19~~18. Apparatus as claimed in Claims ~~13~~ 12 or any preceding claim when dependent upon Claim ~~13~~ 12 in which the flat top has a Shore A hardness of about 85.

~~20~~19. Apparatus as claimed in any one of Claims ~~7~~ 6 to ~~19~~ 18 in which the sidewall is arranged to adopt a deformed bulging configuration (such as an at least part-oblate spheroidal, an at least part-prolate spheroidal or at least part-spherical configuration) when the sealing slit is in the open configuration.

~~21~~20. Apparatus as claimed in Claim ~~3~~ 2 or any preceding claim when dependent upon Claim ~~3~~ 2 in which the head portion has an engagement portion arranged to engage, move and fire a metered dose canister.

~~22~~21. Apparatus as claimed in Claim ~~21~~ 20 in which the engagement portion comprises a component, such as an insert, the component having a wall or flange of at least partly circular form for engaging a metered dose canister.

~~23~~22. Apparatus as claimed in any preceding claim in which the housing cap apparatus includes a skirt arrangement arranged to sealingly engage a housing of an inhaler.

~~24~~23. Apparatus as claimed in Claim ~~23~~ 22 in which the skirt arrangement includes a stiffening portion, the stiffening portion having greater stiffness and/or hardness (durometer) than a sidewall portion of the housing cap apparatus.

~~25~~24. Apparatus as claimed in Claim ~~23~~ 22 or Claim ~~24~~ 23 in which the skirt arrangement has a shape arranged to fittingly match a similarly-shaped end of an inhaler housing in only one relative angular configuration.

~~26~~25. Apparatus as claimed in any preceding Claim, wherein the valve is operably-connected to a top of the cap apparatus such that depression of the top of the cap apparatus opens the valve from its closed, rest position.

~~27~~26. Apparatus as claimed in Claim ~~26~~25, wherein the top of the cap apparatus is shaped to provide a corner aligned, adjacent or otherwise in communication with the valve, to facilitate opening of the valve.

~~28~~27. Apparatus as claimed in Claim ~~26~~25, wherein a top of the cap apparatus comprises an insert providing a corner aligned, adjacent or otherwise in communication with the valve, to facilitate opening of the valve.

~~29~~28. Apparatus as claimed in Claim ~~27~~ 26 or Claim ~~28~~27, comprising a corner per valve, preferably four corners one for each of the four valves.

~~30~~29. An inhaler for inhalation into the airway of a user, the inhaler having a housing at least partially defining a flow passageway extending through the inhaler from an air inlet to an outlet, the inhaler including an apparatus as claimed in any one of the preceding claims and, optionally, a metered dose canister located in the housing.

~~31~~30. An inhaler for inhalation into the airway of a user, the inhaler having:

_____a housing at least partially defining a flow passageway extending through the inhaler from an air inlet to an outlet,

_____wherein a valve is provided for selectively restricting the flow passageway, wherein the valve includes a sealing ring arranged to selectively form a seal between a metered dose canister and an inner wall of the housing, and wherein the sealing ring is flexible and is arranged to deform from a closed configuration to an open configuration in which it permits air flow along the flow passageway.

~~32~~31. An inhaler as claimed in Claim ~~31~~30, comprising a housing cap apparatus as claimed in any one of Claims 1 to ~~29~~28.

~~33~~32. An inhaler as claimed in ~~Claim 30, Claim~~ Claim ~~31~~30 ~~or Claim 32~~, the inhaler having a housing at least partially defining a flow passageway extending through the inhaler from an air inlet to an outlet, the inhaler having a deformable portion formed of deformable material and including at least one valve, the deformable portion being deformable between a first configuration in which the valve is restricted and a second configuration in which the valve is open for allowing air flow through the air flow passageway.

~~34. An inhaler as claimed in Claim 33 in which the deformable portion comprises at least part of the housing cap apparatus.~~

~~35~~33. An inhaler as claimed in any one of Claims ~~30~~ 29 to ~~34~~ 32 in which the outlet comprises an aperture in a mouthpiece of the housing.

~~36~~34. An inhaler as claimed in any one of Claims ~~30~~ 29 to ~~35~~ 33 in which the housing has a canister-receiving portion arranged to receive a metered dose canister.

~~37~~35. An inhaler as claimed in Claim ~~36~~34, which includes a metered dose canister arranged to be located in the canister-receiving portion, the canister having a main body which is movable in the canister-receiving portion for firing a metered dose of drug into the flow passageway.

~~38~~36. An inhaler as claimed in Claim ~~37~~ 35 in which the canister has a stem extending from the main body and a metering valve, the main body being pressurised and movable relative to the valve stem for firing the metered dose via the metering valve.

~~39~~37. Apparatus or an inhaler as claimed in any preceding Claim in which the valve is fully closable for fully preventing air flow.

~~40~~38. Apparatus or an inhaler as claimed in any preceding Claim in which the valve is operable in response to a manual operation so as to permit air flow.

~~41~~39. ~~Apparatus~~ An inhaler as claimed in Claim ~~39~~ 37 when dependent upon Claim ~~37~~ 35 in which the canister and the valve are arranged for co-ordinated opening of the valve and firing of the metered dose in response to a manual operation, the canister being movable in the housing in response to the manual operation.

~~42~~40. An inhaler as claimed in any one of Claims ~~30~~ 29 to ~~41~~ 39 which includes a housing cap apparatus arranged to fit on the housing, at least part of the housing cap apparatus being movable relative to the housing for opening and closing the valve.

~~43~~41. An inhaler as claimed in Claim ~~42~~ 40 in which the housing cap apparatus has a skirt arranged to sealingly fit the housing.

~~44. An inhaler as claimed in any one of Claims 30 to 43 in which the valve includes a sealing ring arranged to selectively form a seal between a metered dose canister and an inner wall of the housing.~~

~~45~~42. An inhaler as claimed in ~~Claim 44~~any one of Claims 29 to 41 including a metered dose canister located in the housing, the canister having a cylindrical surface arrange to selectively seal inside the sealing ring, the canister having a neck portion of smaller cross-dimension than the cylindrical surface and being slidable in the housing for placing the neck portion adjacent the sealing ring and spaced inwardly therefrom so as to open the valve.

~~46~~43. An inhaler as claimed in Claim ~~44 or Claim 45~~42 which includes a ring located in the housing and arranged to steady a canister inside the housing.

~~47. An inhaler as claimed in any one of Claims 44 to 46 in which the sealing ring is flexible and is arranged to deform from a closed configuration to an open configuration in which it permits air flow along the flow passageway.~~

~~48. An inhaler as claimed in any one of Claims 30 to 47 in which the housing has at least one aperture formed in an outer wall thereof and a housing cap has at least one inlet aperture formed through a wall thereof, the housing cap being movable relative to the housing to place the apertures in and out of register with one another for opening and closing the valve, respectively.~~

~~49~~44. Apparatus as claimed in ~~any one of~~ Claims ~~13~~12 ~~to 29~~ in which the generally flat top includes a central concave finger grip.

~~50~~45. Apparatus as claimed in Claim ~~49~~ 44 in which the finger grip is surrounded by a chamfer.

~~51~~46. Apparatus as claimed in ~~any one of~~ Claims ~~13~~12 ~~to 29 or Claims 49 to 50~~ in which the generally flat top has a lower surface thereof arranged to mate on top of a metered dose canister.

~~52~~47. Apparatus as claimed in Claim ~~51~~46, in which the lower surface has a downwardly convex central dome surrounded by a concave annular gutter leading to a downwardly extending cylindrical wall portion of the generally cylindrical flat top.

~~53~~48. Apparatus as claimed in any one of Claims 1 to ~~29~~ 28 or Claims ~~49~~ 44 to ~~52~~ 47 which includes a skirt arranged to sealingly engage a housing of an inhaler.

~~54~~49. Apparatus as claimed in any one of Claims 1 to ~~29~~ 28 or claims ~~49~~ 44 to ~~53~~ 48 in which the cap is arranged to be connectable to an inhaler housing by provision of mutually engaging threads which permit a threaded twisting removal or connection thereof.