Claims

1. An reusable inhaler device comprising;

a housing,

a mouthpiece,

a seat for receiving a unit dose blister, the unit dose blister comprising a blister pocket and a blister lid,

and a punch for piercing a lid of the unit dose blister received in the seat,

wherein the housing comprises a housing base and a housing lid pivotally joined by a hinge, such that the housing lid is pivotable from a first 'closed' position in which it abuts the housing base to define a cavity, to a second 'open' position in which the cavity can be accessed,

wherein the seat and the punch are adapted to lie within the cavity when the lid is in the first 'closed' position and

wherein moving the housing lid from the 'open' position to the 'closed' position causes the punch to pierce a lid of a unit dose blister received in the seat

and wherein only the lid of the unit dose blister is pierced,

and wherein the device further comprises a unit dose blister retainer which holds the blister in a predetermined relationship with the housing base as the punch is withdrawn from the blister by moving the housing lid from the 'closed' position to the 'open' position.

2. An inhaler device as claimed in claim 1 wherein the punch comprises a first piercing blade and a second piercing blade, and the first and second piercing blades are arranged such that movement of the housing lid from the second position to the first position causes the first piercing blade to engage and pierce the lid of the unit dose blister inserted in the seat before the second piercing blade engages and pierces the lid of the unit dose blister.

3. An inhaler device as claimed in claim 1 or claim 2 wherein the housing cooperates with the lid of the unit dose blister to form a dosing channel which divides an airflow through the device into a pocket airflow, and a bypass airflow, wherein the pocket airflow aerosolizes a powder held within the unit dose blister and the bypass airflow circumvents the unit dose blister.

4. An inhaler device as claimed in any preceding claim further comprising a mouthpiece cover which can be attached to the inhaler device to enclose the mouthpiece, wherein the housing lid can be moved from the 'open' position to the 'closed' position without removing the mouthpiece cover such that the device cavity is substantially sealed from the external environment when the unit dose blister is fully opened by the punch.

5. An inhaler device as claimed in claim 4 wherein an inlet provided to the housing is covered by the mouthpiece when it is attached to the housing to enclose the mouthpiece.

6. An inhaler device as claimed in claim 4 or claim 5 wherein the mouthpiece depends from a first region of a curved mouthpiece bulkhead, and an air inlet is provided to a second region of the curved mouthpiece bulkhead, wherein the air inlet is set back from the first region of the bulkhead towards the inhaler cavity.

7. An inhaler device as claimed in any preceding claim wherein the mouthpiece comprises a duct having a proximal end in flow communication with the housing, and a distal free end, wherein the housing communicates with the duct via an aperture which is smaller than the duct to minimise contact of powder laden air with an inner wall of the duct.

~~8. An inhaler device as claimed in claim 1 wherein the device further comprises a unit dose blister retainer which holds the blister in a predetermined relationship with the housing base as the punch is withdrawn from the blister by moving the housing lid from the 'closed' position to the 'open' position.~~

~~9~~8. An inhaler device as claimed in ~~claim 8~~any preceding claim, wherein the retainer comprises a hook.

~~10~~9. An inhaler device as claimed in claim ~~9~~8, wherein the hook is formed integral with the device housing.

~~11~~10. An inhaler device as claimed in claim 1, ~~A punch for an inhaler device, the punch adapted to pierce the lid of a blister comprising a base sheet defining a pocket, a pocket wall, and a lid covering the pocket,~~

wherein the punch comprises a downstream piercing blade adapted to pierce and define an exit aperture in the lid, wherein the exit aperture is spaced apart from the pocket wall to define an overhang region of the lid,

an upstream blade adapted to pierce and define an inlet aperture in the lid

and wherein the downstream blade is further adapted to enter the pocket of the blister after piercing the lid to define a nozzle in cooperation with the wall of the blister pocket, such that when an airflow is generated through the pocket towards the exit aperture, the nozzle directs the airflow towards the overhang region of the lid so that it follows a torturous path before reaching the aperture~~.~~,

~~12. A punch as claimed in claim 11 further comprising an upstream blade adapted to pierce and define an inlet aperture in the lid.~~

~~13. A punch as claimed in claim 12~~ wherein the downstream blade is ~~wider than the upstream blade, preferably~~ about 40% wider than the upstream blade.

~~14~~11. An inhaler device ~~punch~~ as claimed in ~~claim 12 or claim 13~~claim 10 wherein at least one piercing blade comprise a semi-oval planar element.

~~15~~12. An inhaler device ~~punch~~ as claimed in ~~any of claims 12 through 14~~claim 10 or claim 11, wherein the first piercing blade and second piercing blades diverge from one another.