Claims

1. A blister piercing element for puncturing the lid of a blister containing a dose of medicament for inhalation by a user, comprising a body having a surface and an opening in the surface for the passage of air, or for the passage of medicament entrained in air, through the body, wherein the body includes a pair of spaced cutting teeth upstanding from the surface in spaced side-by-side relation, each cutting tooth projecting in cantilevered form over said opening, each tooth comprising a~~n~~ single upright portion extending from the surface adjacent to, or from, a periphery of the opening and a cantilevered portion that extends from an upper end of the single upright portion and projects out over said opening, each tooth having a distal cutting edge at a free end remote from said surface, each tooth further comprising an apex that lies on the distal cutting edge and which is configured for initially puncturing a blister lid, said distal cutting edge extending away from the apex of each tooth in two different directions and at an angle towards the surface, wherein a first part of the distal cutting edge of each tooth extends from the apex in a direction toward the apex of the other tooth and a second part of the distal cutting edge of each tooth extends from the apex in a direction away from the other tooth, a secondary cutting edge extending from the apex of each tooth along the cantilevered portion towards the upright portion, the first part of the distal cutting edge of each tooth being configured to initiate ~~an~~ a ~~initial~~ slit in the blister lid initially punctured by the apex of each tooth and the secondary cutting edge configured to cut ~~an~~ a further ~~initial~~ slit in a direction extending away from the apex along the cantilevered portion towards the edge of the blister lid from which the tooth upstands when pressure is applied to the blister lid by the teeth, the teeth being spaced from each other so that the ~~separate initial~~ slits cut by the first part of the distal cutting edge of each tooth propagate in a direction toward each other between the teeth as the teeth continue to penetrate the blister lid, ~~said pair of spaced cutting teeth thereby forming~~so that a single continuous slit is created by the secondary cutting edges and the first part of the distal cutting edges~~when said initial slits are joined up as the teeth penetrate further through the blister lid~~, thereby ~~defining~~ forming a single flap which is folded into the blister by the teeth as the teeth penetrate further through the blister lid.

2. A blister piercing element according to claim 1, wherein the teeth are symmetrical about a plane extending between the teeth, which is perpendicular to the surface.

3. A blister piercing element according to claim 2, wherein the opening has first and second opposite edges and the teeth upstand from the surface adjacent to the first edge and project in cantilevered form in a direction towards the second edge to an extent that the distal cutting edge is closer to the second edge than to the first edge.

4. A blister piercing element according to any preceding claim, wherein it is the first distal cutting edge parts of each tooth that are configured such that the initial slits cut by the distal cutting edge of each tooth propagate toward each other as the teeth penetrate a blister lid to form said single continuous slit extending between the apex of each tooth.

5. A blister piercing element according to claim 4, wherein said first distal cutting edge part of each tooth are configured so that the slit extending between the apex of each tooth is linear.

6. A blister piercing element according to any preceding claim, wherein the secondary cutting edge extends from the apex at an angle towards the surface.

7. A blister piercing element according to any preceding claim, wherein the secondary cutting edges of respective teeth extend at an angle away from each other.

8. A blister piercing element according to any preceding claim, wherein each tooth has a first angled facet bound by said first part of the distal cutting edge extending from the apex of a tooth towards the other tooth, and its secondary cutting edge.

9. A blister piercing element according to claim 8, wherein each tooth has a second angled facet bound by said second part of the distal cutting edge extending from the apex of a tooth in a direction away from the other tooth, and its secondary cutting edge.

10. A blister piercing element according to any preceding claim, wherein the first part of the distal cutting edge of each tooth extends from the apex towards said surface at an angle which is smaller than the angle at which the second part of the distal cutting edge of each tooth extends from the apex towards said surface, said angle being defined with respect to a direction defined by the intersection of a plane parallel to the surface with a plane perpendicular to the surface and comprising said first/second part of the distal cutting edge.

11. A blister piercing element according to any preceding claim, wherein the opening in the surface comprises a first opening and the pair of spaced cutting teeth comprise a first pair of spaced cutting teeth, the body comprising a second opening in the surface, a second pair of spaced cutting teeth upstanding from the surface in spaced side-by-side relation, each cutting tooth projecting in cantilevered form over said second opening, each tooth of the second pair of spaced cutting teeth comprising a~~n~~ single upright portion extending from the surface adjacent to, or from, a periphery of the second opening and a cantilevered portion that extends from an upper end of the single upright portion and projects out over said second opening, each tooth having a distal cutting edge at a free end remote from said surface, each tooth further comprising an apex that lies on the distal cutting edge and which is configured for initially puncturing ~~a~~ the blister lid, said distal cutting edge extending away from the apex of each tooth in two different directions and at an angle towards the surface, wherein a first part of the distal cutting edge of each tooth extends from the apex in a direction toward the apex of the other tooth and a second part of the distal cutting edge of each tooth extends from the apex in a direction away from the other tooth, a secondary cutting edge extending from the apex of each tooth along the cantilevered portion towards the upright portion, the first part of the distal cutting edge of each second tooth being configured to initiate ~~an~~ a ~~initial~~ slit in the blister lid initially punctured by the apex of each tooth and the secondary cutting edge configured to cut ~~an~~ a ~~initial~~ further slit in a direction extending away from the apex along the cantilevered portion towards the edge of the blister lid from which the tooth upstands when pressure is applied to the blister lid by the second teeth at the same time pressure is applied to the blister lid by the first teeth, the second teeth being spaced from each other so that ~~an initial slit~~ slits cut by the first part of the

distal cutting edge of each second tooth propagates in a direction toward each other between the second teeth as the second teeth continue to enter the blister lid, so that a single continuous slit is ~~formed~~ created by the secondary cutting edges and the first part of the distal cutting edges, ~~when said initial slits are joined up in the blister lid by said second pair of spaced cutting teeth~~ thereby forming ~~to define~~ a single flap that is folded into the blister by the second teeth as the teeth penetrate further through the blister lid.

12. A blister piercing element according to claim 11, wherein the first and second pairs of spaced cutting teeth are positioned in back-to-back relation so that the first pair of spaced cutting teeth project in cantilevered form over the first opening in an opposite direction to the direction in which the second pair of spaced cutting teeth project in cantilevered form over the second opening.

13. A blister piercing element according to claim 12, wherein the body has a flow channel extending from the second opening to direct drug laden air that has passed through the second opening into a mouthpiece of a dry powder inhalation device.

14. An inhalation device having a blister piercing element according to any one of the preceding claims.