# A HAIR STYLING APPLIANCE

The present invention relates to a hair styling appliance. Heated hair styling appliances are designed to use the action of heat and mechanical means and airflow to form hair into a desired shape or style.

A hair straightener utilises heated plates attached to pivoted arms which can be held, by a user, in a closed position with a tress of hair clamped between the heated plates. The tress of hair can be styled into a changed shape once the hair is heated above a transition temperature.

Whilst a hair tress is gripped between closed arms of a hair straightener and subjected to high temperatures from the heated plates, there is a possibility of heat damage to the hair. Also, a tress of hair gripped between two flat and rigidly fixed heating plates is forced to splay widely across the plates, which is detrimental when styling hair into straight, even tresses. Further, hair is a thermal insulator and therefore transfer of heat from the heated plates into the centre of a hair tress is poor. It is therefore desirable to provide an improved hair styling apparatus.

A first example of the present disclosure provides a hair styling apparatus comprising a first arm and a second arm coupled together at a first end thereof, wherein an inner wall of the first arm is facing an inner wall of the second arm, and the first arm and the second arm are arranged to receive hair within a cavity formed between the first arm and the second arm, and wherein at least one of the first arm and second arm comprise a plenum, said plenum comprising an air inlet for receiving airflow from a fan unit and an air outlet for emitting airflow towards hair within the cavity, wherein said air outlet extends along the inner wall of at least one of the first arm and the second arm.

In a first aspect, the present disclosure refers to a hair styling apparatus comprising;

a first arm and a second arm coupled together at a first end thereof to allow the first arm and the second arm to be movable between an open position and a closed position in which an inner wall of the first arm and an inner wall of the second arm are parallel and wherein the inner wall of the first arm is facing the inner wall of the second arm, wherein the first arm and the second arm are arranged to receive hair within a cavity formed between the first arm and the second arm when the first arm and the second arm are in the closed position, and wherein each of the first arm and second arm comprise a plenum, each said plenum comprising an air inlet for receiving airflow from a fan unit and an air outlet for emitting air towards hair within the cavity, and

a hair clamp comprising a pair of clamping members for gripping hair therebetween, wherein each clamping member is supported by the inner wall of the first arm and second arm, respectively, and wherein

each clamping member comprises an elongate bar extending longitudinally on the inner wall of the respective arm, and wherein

each inner wall comprises an edge which is generally aligned with the longitudinal axis of each arm, and the respective clamping member is disposed between the edge and the air outlet.

The fan unit in the hair styling apparatus may generate around 3.5 – 3.9kPa of pressure to create high velocity and high pressure airflow through the apparatus from the central body to the plenum in each arm.

CLAIMS

1. A hair styling apparatus comprising;
a first arm and a second arm coupled together at a first end thereof to allow the first arm and the second arm to be movable between an open position and a closed position in which an inner wall of the first arm and an inner wall of the second arm are parallel and wherein the inner wall of the first arm is facing the inner wall of the second arm, wherein the first arm and the second arm are arranged to receive hair within a cavity formed between the first arm and the second arm when the first arm and the second arm are in the closed position, and wherein each of the first arm and second arm comprise a plenum, each said plenum comprising an air inlet for receiving airflow from a fan unit and an air outlet for emitting air towards hair within the cavity, and
a hair clamp comprising a pair of clamping members for gripping hair therebetween, wherein each clamping member is supported by the inner wall of the first arm and second arm, respectively, and wherein
each clamping member comprises an elongate bar extending longitudinally on the inner wall of the respective arm, and wherein
each inner wall comprises an edge which is generally aligned with the longitudinal axis of each arm, and the respective clamping member is disposed between the edge and the air outlet.

2. The hair styling apparatus as claimed in claim 1, wherein each clamping member is adapted to move relative to the arm upon which it is supported, between an extended position and a retracted position, and the movement is biased towards the extended position.

3. The hair styling apparatus as claimed in claim 2, wherein each clamping member comprises a clamping face for contacting hair.

4. The hair styling apparatus as claimed in claim 3, wherein, in the extended position, the distance between the pair of clamping faces is less than the distance between the inner wall of the first arm and the inner wall of the second arm.

5. The hair styling apparatus as claimed in any preceding claim, wherein each clamping member comprises a metallic material.

6. The hair styling apparatus as claimed in any preceding claim, wherein each clamping member comprises a resiliently deformable material.

7. The hair styling apparatus as claimed in any preceding claim, wherein each clamping member is located in parallel alignment with the arm.

8. The hair styling apparatus as claimed in any preceding claim, wherein each arm comprises a groove extending longitudinally along the inner wall of the arm, and the clamping member is mounted partially within said groove.

9. The hair styling apparatus as claimed in claim 8, wherein a resilient means is disposed within the groove and the clamping member is positioned on the resilient means.

10. The hair styling apparatus as claimed in claim 9, wherein the resilient means is at least one spring.

11. The hair styling apparatus as claimed in claim 9, wherein the resilient means is at least one silicone support.

12. The hair styling apparatus as claimed in any preceding claim, wherein each clamping member has a straight longitudinal profile.

13. The hair styling apparatus as claimed in any preceding claim, wherein each clamping member has a concave longitudinal profile.

14. The hair styling apparatus as claimed in any preceding claim, wherein the first arm and the second arm are coupled together at the first end thereof via a hinge.