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 ~~an~~ the inner wall of the first arm is facing ~~an~~ the 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 when the first arm and the second arm are in ~~a~~ 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 airflow towards hair within the cavity, wherein said air outlets extend~~s~~ along the inner wall of ~~at least one of~~ the first arm and the second arm, wherein the air outlet is adapted to emit airflow at an angle in the range from 30° to 60° from a plane of the inner wall~~generally towards an exhaust port~~.

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 ~~an~~ the inner wall of the first arm is facing ~~an~~ the 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 when the first arm and the second arm are in ~~a~~ 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 airflow towards hair within the cavity, wherein said air outlets extend~~s~~ along the inner wall of ~~at least one of~~ the first arm and the second arm, wherein the air outlet is adapted to emit airflow at an angle in the range from 30° to 60° from a plane of the inner wall~~generally towards an exhaust port~~.

2. The hair styling apparatus according to claim 1, wherein the air outlet comprises an aperture, wherein the aperture has a width in the range from 1mm and 3mm.

3. The hair styling apparatus according to claim 2, wherein the aperture has a width in the range from 1.5mm and 2.5mm.

4. The hair styling apparatus according to any of claims 2 to 3, wherein the aperture has a length in the range from 90mm and 180mm.

5. The hair styling apparatus according to any of claims 2 to 4, wherein the aperture is a slot.

6. The hair styling apparatus according to any of claims 2 to 5, wherein the aperture is located in parallel alignment with the longitudinal axis of the arm.

~~7. The hair styling apparatus according to any preceding claim, wherein the air outlet is adapted to emit airflow at an angle in the range from 30° and 60° from a plane of the inner wall.~~

~~8.~~7. The hair styling apparatus according to any preceding claim ~~7~~, wherein the air outlet is adapted to emit airflow at an angle in the range from 40° and 50° from the plane of the inner wall.

~~9.~~8. The hair styling apparatus according to any of claims 2 to 7~~8~~, wherein the air outlet comprises a channel between the plenum and the cavity, said channel terminating in said aperture.

~~10.~~9. The hair styling apparatus according to claim 8~~9~~, wherein the channel has substantially parallel walls for a pre-determined distance prior to the air outlet.

~~11.~~10. The hair styling apparatus according to claim 8~~9~~, wherein the channel has gradually converging walls for a pre-determined distance prior to the air outlet.

~~12.~~11. The hair styling apparatus according to any of claims 8~~9~~ to 10~~11~~, wherein the air outlet comprises at least one vane disposed within the channel.

~~13.~~12. The hair styling apparatus according to claim 11~~12~~, wherein the at least one vane is adapted to modify the emitted airflow direction in a longitudinal ~~an x-~~ axis of the apparatus.

~~14.~~13. The hair styling apparatus according to any of claims 2 to 12~~13~~, wherein the aperture has a constant width along the length of the air outlet.

~~15.~~14. The hair styling apparatus according to any of claims 2 to 12~~13~~, wherein the aperture has a non-constant width along the length of the air outlet.

~~16.~~15. The hair styling apparatus according to any preceding claim ~~1~~, wherein air outlets are located symmetrically in each of the first arm and the second arm.

~~17.~~16. The hair styling apparatus according to any preceding claim ~~1~~, wherein the air outlets are located asymmetrically in each of the first arm and the second arm.