Attachment for a Hand Held Appliance

This disclosure relates to an attachment for a hand held appliance, in particular an attachment for a hairdryer and an appliance, particularly a hairdryer comprising such an attachment.

Blowers and in particular hot air blowers are used for a variety of applications such as drying substances such as paint or hair and cleaning or stripping surface layers.

Generally, a motor and fan are provided which draw fluid into a body; the fluid may be heated prior to exiting the body. The motor is susceptible to damage from foreign objects such as dirt or hair so conventionally a filter is provided at the fluid intake end of the blower. Conventionally such appliances are provided with a nozzle which can be attached and detached from the appliance and changes the shape and velocity of fluid flow that exits the appliance. Such nozzles can be used to focus the outflow of the appliance or to diffuse the outflow depending on the requirements of the user at that time.

In one aspect, the present disclosure refers to a hairdryer comprising a handle; a body comprising a duct; a fan unit for generating a fluid flow from a fluid inlet through which the fluid flow enters the hairdryer to an end of the duct for emitting the fluid flow from the body; and an attachment partially insertable into the end of the duct and which at least partially defines at least one aperture for emitting the fluid flow when the attachment is located in the duct, and wherein the attachment has an external surface located downstream from said at least one aperture and over which fluid emitted from said at least one aperture is directed, and wherein the external surface of the attachment comprises a Coanda surface.

According to a first example, the disclosure provides a hairdryer comprising a handle; a body comprising a duct; a fluid flow path extending through the duct and from a fluid inlet through which a fluid flow enters the hairdryer to a fluid outlet for emitting the fluid flow from a front end of the body; a primary fluid flow path extending at least partially through the body from a primary fluid inlet through which a primary fluid flow enters the hairdryer to a primary fluid outlet; a fan unit for drawing the primary fluid flow through the primary fluid inlet, and wherein the fluid flow is drawn through the fluid flow path by fluid emitted from the primary fluid outlet, and an attachment for adjusting at least one parameter of fluid emitted from the hairdryer, the attachment being attachable to the hairdryer so that the attachment protrudes from the front end of the body.

It is preferred that the nozzle comprises a side wall between the first end and the second end, and wherein a portion of the side wall which is located between the first end and the second end of the nozzle at least partially defines the nozzle fluid inlet. Preferably, the side wall is tubular in shape. Preferably, the nozzle fluid inlet is formed in the side wall. It is preferred the side wall extends about an inner wall, and wherein the nozzle fluid inlet is located between the inner wall and the side wall. Preferably, the inner wall is tubular in shape.

It is preferred that the side wall extends from the first end to the second end, and the nozzle comprises an outer wall extending at least partially about the side wall, and wherein the nozzle fluid inlet is located between the outer wall and the side wall.
Preferably, the outer wall is tubular in shape. It is preferred that the nozzle fluid outlet is located between the walls.

Preferably, the nozzle comprises a further nozzle fluid inlet through which the fluid flow enters the nozzle. Preferably, the fluid flow and the primary fluid flow combine within the nozzle fluid flow path to form a combined fluid flow which is emitted from the nozzle fluid outlet.

Preferably, the nozzle comprises means for closing the further nozzle fluid inlet depending on the extent to which the nozzle has been inserted within the duct. It is preferred that the means for closing the further nozzle fluid inlet is configured to move from an open position to a closed position when the primary fluid flow enters the nozzle.

Preferably, the nozzle comprises a further nozzle fluid outlet for emitting the fluid flow, and wherein within the nozzle the primary fluid flow is isolated from the fluid flow.

According to a second example, the disclosure provides a hairdryer comprising a handle; a body comprising a fluid outlet and a primary fluid outlet; a fan unit for generating fluid flow through the hairdryer, the hairdryer comprising a fluid flow path extending from a

It is preferred that the primary fluid outlet is configured to emit the primary fluid flow into the primary nozzle fluid flow path, and wherein the primary nozzle fluid inlet is located between the first end and the second end of the nozzle.

Preferably, the nozzle comprises a side wall between the first end and the second end, and wherein a portion of the side wall which is located between the first end and the second end of the nozzle at least partially defines the primary nozzle fluid inlet. It is preferred that the side wall is tubular in shape. Preferably, the side wall extends about an inner wall, and wherein the primary nozzle fluid inlet is located between the inner wall and the side wall. It is preferred that the inner wall is tubular in shape.

Preferably, the side wall extends from the first end to the second end, and the nozzle comprises an outer wall extending at least partially about the side wall, and wherein the primary nozzle fluid inlet is located between the outer wall and the side wall. It is preferred that the outer wall is tubular in shape.

According to a third example the disclosure provides a nozzle for a hairdryer comprising a handle; a body comprising a fluid outlet and a primary fluid outlet; a fan unit for generating fluid flow through the hairdryer; a fluid flow path extending from a fluid inlet through which a fluid flow enters the hairdryer to the fluid outlet, and a primary fluid flow path extending from a primary fluid inlet to the primary fluid outlet; and a heater for heating a primary fluid flow drawn through the primary fluid inlet;

wherein the nozzle is attachable to the body, the nozzle comprising a primary nozzle fluid inlet for receiving the primary fluid flow from the primary fluid outlet, and a primary nozzle fluid outlet for emitting the primary fluid flow, a further nozzle fluid inlet for receiving the fluid flow from the fluid outlet, a further nozzle fluid outlet for emitting the first fluid flow, a primary nozzle fluid inlet for receiving the primary fluid flow from the primary fluid outlet, and a primary nozzle fluid outlet for emitting the primary fluid flow, and wherein within the nozzle the fluid flow is isolated from the primary fluid flow

wherein the primary nozzle fluid inlet is located between the outer wall and the side wall. Preferably, the outer wall is tubular in shape.

Preferably, the shape of the nozzle fluid outlet is adjustable.

Preferably, the attachment is configured to inhibit the emission of the fluid flow from the hairdryer. Alternatively, the attachment is configured to inhibit the generation of the fluid flow. Preferably, the attachment comprises means for inhibiting the flow of fluid along the fluid flow path to the fluid outlet.

It is preferred that the means for inhibiting the flow of fluid along the flow path to the fluid outlet comprises a barrier which is located within the duct when the attachment is attached to the hairdryer. Preferably, the barrier is located at the first end of the nozzle. It is preferred that the barrier is substantially orthogonal to the longitudinal axis of the nozzle. Alternatively, the barrier is inclined to the longitudinal axis of the nozzle.

Preferably, said at least one parameter of the fluid flow emitted from the hairdryer comprises at least one of the shape, profile, orientation, direction, flow rate and velocity of the fluid flow emitted from the hairdryer.

According to a fourth example, the disclosure provides a hairdryer comprising a handle; a body comprising a fluid outlet, the fluid outlet comprising at least one aperture; a fan unit for generating a fluid flow from a fluid inlet through which the fluid flow enters the hairdryer to the fluid outlet; means for occluding at least part of the fluid outlet, the occluding means being moveable relative to the fluid outlet; and means for receiving an attachment for varying the shape of a fluid flow emitted from the hairdryer, wherein the attachment comprises means for engaging the occluding means as the attachment is received by the receiving means to effect movement of the occluding means relative to the fluid outlet.

Preferably, the engaging means is arranged to move the occluding means away from said at least part of the fluid outlet as the attachment is received by the receiving means.

It is preferred that the occluding means is arranged to move in a direction parallel to a plane in which said at least part of the fluid outlet is located. Preferably, the occluding means is slidably moveable in said direction relative to said at least part of the fluid outlet. Alternatively, the occluding means is arranged to move in a direction substantially orthogonal to a plane in which said at least part of the fluid outlet is located.

It is preferred that the engaging means is arranged to move the occluding means from a first position to a second position as the attachment is received by the receiving means.
Preferably, the fluid outlet comprises a first aperture and a second aperture, and wherein in the first position the occluding means is arranged to occlude only the second aperture.
It is preferred that the first aperture is spaced from the second aperture.

Preferably, the first aperture is located in a first plane and the second aperture is located in a second plane which is angled relative to the first plane. It is preferred that the second plane is orthogonal to the first plane. Preferably, the second aperture is located at an end of the hairdryer.

In one example, the fluid outlet comprises an aperture which is partially occluded when the occluding means is in the first position, and wherein the engaging means is arranged to move the occluding means away from said aperture as the attachment is received by the receiving means. It is preferred that wherein the occluding means is biased towards the first position

Preferably, the engaging means extends about part of the attachment. It is preferred that the attachment comprises a side wall, and wherein the engaging means extends about the wall. Preferably, the engaging means surrounds the side wall. It is preferred that

the side wall is tubular in shape, and the engaging means comprises a lip upstanding from the side wall.

Preferably, the hairdryer includes a bore extending through the body, and wherein said at least part of the fluid outlet is arranged to emit fluid into the bore.

It is preferred that said at least part of the fluid outlet is annular in shape.

According to a fifth example the disclosure provides a hairdryer comprising a handle; a body comprising a duct; a fan unit for generating a fluid flow from a fluid inlet through which the fluid flow enters the hairdryer to an end of the duct for emitting the fluid flow from the body; and an attachment partially insertable into the end of the duct and which at least partially defines at least one aperture for emitting the fluid flow when the attachment is located in the duct, and wherein the attachment has an external surface located downstream from said at least one aperture and over which fluid emitted from said at least one aperture is directed.

Preferably, the external surface of the attachment at least partially defines said at least one aperture. It is preferred that the external surface of the attachment is convex in shape. Preferably, the external surface of the attachment comprises a Coanda surface. It is preferred that a front portion of the external surface of the attachment tapers towards a longitudinal axis of the nozzle. Preferably, the front portion of the external surface of the attachment tapers to a point.

It is preferred that the attachment comprises a collar at least partially surrounding the external surface, and wherein the internal surface of the collar and the external surface define an external fluid flow path through which fluid from outside the hairdryer is drawn by fluid emitted from said at least one aperture. Preferably, said at least one aperture is located between the internal surface of the duct and the external surface of the attachment.

It is preferred that the body comprises a fluid outlet for emitting the fluid flow into the duct, and wherein the attachment comprises a fluid inlet for receiving the fluid flow from the fluid outlet, and a fluid flow path extending from the fluid inlet to said at least one aperture.

Preferably, the attachment comprises a first end which is insertable within the duct, and a second end remote from the first end, and wherein the fluid inlet is located between the first end and the second end of the attachment.

It is preferred that the fluid inlet comprises at least one aperture extending at least partially about the longitudinal axis of the attachment.

Preferably, the attachment comprises a side wall between the first end and the second end of the attachment, and wherein a portion of the side wall which is located between the first end and the second end of the attachment at least partially defines the fluid inlet. It is preferred that the side wall is tubular in shape.

Preferably, the attachment comprises an outer wall extending about an inner wall which at least partially defines the fluid flow path. It is preferred that the inner wall is tubular in shape. It is preferred that the external surface of the attachment extends about the inner wall. Preferably, the inner wall is open at each end, and wherein a fluid flow is drawn through the duct and the inner wall by the fluid flow emitted from said at least one aperture.

In one example, the attachment comprises a first side wall extending from the first end to the second end, and a second side wall extending at least partially about the first side wall, and wherein the fluid flow path is located between the side walls. Preferably, each of the first and second side walls is tubular in shape. It is preferred that the external surface of the attachment extends about the first side wall. Preferably, the first side wall is open at each end, and wherein a fluid flow is drawn through the duct and the first side wall by the fluid flow emitted from said at least one aperture.

CLAIMS

1. A hairdryer comprising a handle; a body comprising a duct; a fan unit for generating a fluid flow from a fluid inlet through which the fluid flow enters the hairdryer to an end of the duct for emitting the fluid flow from the body; and an attachment partially insertable into the end of the duct and which at least partially defines at least one aperture for emitting the fluid flow when the attachment is located in the duct, and wherein the attachment has an external surface located downstream from said at least one aperture and over which fluid emitted from said at least one aperture is directed, and wherein the external surface of the attachment comprises a Coanda surface.

2. A hairdryer according to claim 1, wherein the external surface of the attachment at least partially defines said at least one aperture.

3. A hairdryer according to claim 1 or claim 2, wherein the external surface of the attachment is convex in shape.

4. A hairdryer according to claim 1 or claim 2, wherein a front portion of the external surface of the attachment tapers towards a longitudinal axis of the nozzle.

5. A hairdryer according to claim 4, wherein the front portion of the external surface of the attachment tapers to a point.

6. A hairdryer according to claim 1 or claim 2, wherein the attachment comprises a collar at least partially surrounding the external surface, and wherein the internal surface of the collar and the external surface define an external fluid flow path through which fluid from outside the hairdryer is drawn by fluid emitted from said at least one aperture.

7. A hairdryer according to claim 1 or claim 2, wherein said at least one aperture is located between the internal surface of the duct and the external surface of the attachment.

8. A hairdryer according to claim 1 or claim 2, wherein the body comprises a fluid outlet for emitting the fluid flow into the duct, and wherein the attachment comprises a fluid inlet for receiving the fluid flow from the fluid outlet, and a fluid flow path extending from the fluid inlet to said at least one aperture.

9. A hairdryer according to claim 8, wherein the attachment comprises a first end which is insertable within the duct, and a second end remote from the first end, and wherein the fluid inlet of the attachment is located between the first end and the second end of the attachment.

10. A hairdryer according to claim 9, wherein the fluid inlet of the attachment comprises at least one aperture extending at least partially about the longitudinal axis of the attachment.

11. A hairdryer according to claim 9, wherein the attachment comprises a side wall between the first end and the second end of the attachment, and wherein a portion of the side wall which is located between the first end and the second end of the attachment at least partially defines the fluid inlet of the attachment.

12. A hairdryer according to claim 11, wherein the side wall is tubular in shape.

13. A hairdryer according to claim 8, wherein the attachment comprises an outer wall extending about an inner wall which at least partially defines the fluid flow path.

14. A hairdryer according to claim 13, wherein the inner wall is tubular in shape.

15. A hairdryer according to claim 14, wherein the external surface of the attachment extends about the inner wall.

16. A hairdryer according to claim 13, wherein the inner wall is open at each end, and wherein a fluid flow is drawn through the duct and the inner wall by the fluid flow emitted from said at least one aperture.

17. A hairdryer according to claim 9, wherein the attachment comprises a first side wall extending from the first end to the second end, and a second side wall extending at least partially about the first side wall, and wherein the fluid flow path is located between the side walls.

18. A hairdryer according to claim 17, wherein each of the first and second side walls is tubular in shape.

19. A hairdryer according to claim 18, wherein the external surface of the attachment extends about the first side wall.

20. A hairdryer according to claim 18, wherein the first side wall is open at each end, and wherein a fluid flow is drawn through the duct and the first side wall by the fluid flow emitted from said at least one aperture.