

PATENT SPECIFICATION

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(54) A HAIR DRYER WITH A COLLAPSIBLE HOOD

(71) We, ROBERT KRUPS, a German Kommanditgesellschaft, of 565 Solingen-Wald, Heresbachstrasse 29, Germany, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a hair dryer with a collapsible hood.

According to one aspect of the invention there is provided a hair dryer comprising a hot-air blower and a collapsible hood formed of a double-walled flexible material an intermediate space of which is in communication, by means of a plurality of apertures in an inner wall, with a head space of the hood, and is connectable to a hot-air outlet or outlets of the hot-air blower by means of hose-like extension pieces on the hood, which hose-like extension pieces originate on the hood at positions corresponding to the sides of the head, and can hang down below a head zone of the hood and be coupled singly or jointly to the hot air outlet or a respective hot-air outlet of the hot-air blower.

A hair dryer with a collapsible hood according to the invention can permit the hot-air blower to be suspended so that, when the hair dryer is in use, the hood is in a stable position on the head of the user, rendering special holding measures superfluous. The hot-air blower can be of a construction such that if desired, it can be used independently of the hood.

To permit the weight of the hot-air blower to be kept off the hair to be treated, the hood is preferably provided with a carrier strap which can be looped around the user's neck and can have its ends separately attached to respective coupling members, such coupling members joining the hot-air blower and the hood, or to the hot-air blower. By means of such a carrier strap, the weight of the blower can be transmitted solely to the shoulders of the user and the strain on the hood relieved. To permit easily

adjustable attachment of the carrier strap, the coupling members may include fixed pegs, to secure the carrier strap ends, and strap guides. Alternatively the fixed pegs may be provided on a housing of the blower and the coupling members merely provided with strap guides.

If preferred, end portions of the carrier strap may have coupling pieces, preferably displaceable on the strap and engageable in slots in the housing of the hot-air blower. The coupling pieces are advantageously provided with coupling heads of similar shape and size to the slots, which coupling heads can be passed through the slots, subsequent rotation of the coupling pieces locking the coupling heads against removal.

The hose-like extension pieces on the hood preferably converge at their ends to form a common air inlet connection which can be fitted onto a single hot-air outlet of the hot-air blower, which hot-air outlet is in the form of a connecting nozzle.

Preferably the common air inlet connection includes an elastic ring engageable over the connecting nozzle of the hot-air blower. The connecting nozzle can include projections beneath which the ring can be engaged to secure the common air inlet connection on the connecting nozzle. Advantageously the connecting nozzle of the hot-air blower is oval in cross-section with the projections located in the regions of greatest curvature.

The connecting nozzle of the hot-air blower may be formed with an external circumferential groove.

For easy handling of the common air inlet connection of the head when making the connection to the connecting nozzle of the hot-air blower or when separating it from the connecting nozzle of the hot-air blower, it is recommended that the common air inlet connection of the hood, in the region of the elastic ring, is provided with tear-resistant lugs at oppositely disposed peripheral positions.

The coupling members may have integrally formed marginal strips including

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resilient tongue portions with inwardly directed projections to engage recesses in the sidewall of the connecting nozzle forming the outlet of the hot-air blower.

5 Alternatively the connecting nozzle forming the outlet of the hot-air blower has a circumferentially extending groove in its side wall and the coupling members are each formed with a lower portion of U-shaped cross-section, the arms of the
10 Upshaped cross-section having inwardly directed projections to engage in the groove in the side wall of the nozzle, connection of the coupling members with the nozzle being
15 effected by inward sliding movement from the side.

The housing of the hot-air blower is preferably formed by two shell like housing parts, the connecting nozzle forming the
20 hot-air outlet being inserted between the housing shells and also supporting heating elements of the blower. This provides an extremely simple and lightweight construction of the hot-air blower and also a form of
25 blower which can be conveniently carried by the user of the hair dryer hood. It is ideal for the housing of the hot-air blower to be of flat cylindrical shape with a fan disposed on a radially extending shaft. The outlet nozzle
30 which supports the heating elements preferably has a rear marginal zone held between projecting portions on the housing shells.

According to another aspect of the invention there is provided a collapsible hair
35 dryer hood formed of a double-walled flexible material, an intermediate space of which is in communication, by means of a plurality of apertures in an inner wall, with a head space and is connectable to an outlet
40 or outlets of a hot-air blower by means of hose-like extension pieces on the hood, which hose-like extension pieces originate on the hood at positions corresponding to
45 the sides of the head, can hang down below a head zone of the hood and have a coupling or couplings whereby they can singly or jointly be coupled to an outlet or outlets of a hot-air blower.

The invention is diagrammatically illustrated by way of example in the accompanying drawings, in which:—

Figure 1 is a perspective view of a first embodiment of a hair dryer with a collapsible hood according to the invention;

55 Figure 2 is a longitudinal section through a hot-air blower and a connecting zone of the hair dryer of Figure 1;

Figure 3 is a perspective view of a second embodiment of hair dryer with a collapsible
60 hood according to the invention;

Figure 4 is a cross-section through a hot-air blower and a connecting zone of the hair
65 dryer of Figure 3; and:

Figure 5 is a sectional view of the outlet of a hot-air blower and connection to the hood

part of the embodiment of Figures 3 and 4 with an alternative construction of hose attachment.

Referring to Figures 1 and 2, a hair dryer has a hood 10 made from a double-walled
70 flexible material which can, when not in use, be collapsed to occupy little space. When arranged already for use, as shown in Figure 1, the hood 10 is inflated by the introduction of warm air from a hot-air blower 11 into an
75 intermediate space between an outside wall 12 and an inside wall 13. The inside wall 13 is furthermore, in the head zone, provided with a plurality of wall apertures 14 through which the hot air is supplied to the head
80 zone from the intermediate space in the hood. For connection to the blower 11, the hood 10 is provided with hose-like extension pieces 15 which terminate in a respective
85 rigid coupling member 16 whereby the extension pieces 15 can be connected to a connecting nozzle 17 of the hot-air blower 11. The coupling between the extension
90 pieces 15 and the connecting nozzle 17 is constructed as a rapid-action coupling. In one embodiment the coupling members 16 of the extension pieces 15 each have a
95 downwardly extending marginal strip including resilient tongue portions with inwardly directed projections to engage recesses in the side wall of the connecting
100 nozzle 17. Alternatively, the connecting nozzle 17 of the blower 11 can have a circumferentially extending groove in its side wall and the coupling members 16 can each
105 be formed with a lower portion of U-shaped cross-section, the arms of the U-shaped cross-section having inwardly directed projections to engage in the groove in the
sidewall of the nozzle 17, connection of the coupling members 16 with the nozzle 17 then being made by inward sliding movement from the side.

Inside each extension piece 15 of the hood part there is a flexible intermediate
110 wall 18, the lower portion of which is airtightly connected to the lower portion of a hose wall 19 of the extension piece 15 on the side of the extension piece 15 which in use will be adjacent the face of the user, and the
115 upper end portion being free.

The hood 10 is furthermore fitted with a carrier strap 20 which is loose around the back of the hood, ends 21 of the strap 20
120 extending through strap guides 22 provided on portions of the coupling members 16 which lie outside the walls 19 of the extension pieces 15. The hot air blower 11 is provided, adjacent the connecting nozzle 17, with fixed pegs 23 over which holes in the ends 21 of the carrier strap can be engaged, so that the entire weight of the
125 blower 11 and of the coupling parts 16 is transmitted via the carrier strap 20 to the shoulders of the user.

The hot-air blower 11 has a flat generally cylindrical housing and, as Figure 2 shows, a fan 24 is disposed on a radially extending shaft so that a radial direction of flow of air is created. The fan 24, together with an electric drive motor 25 and electrically heated elements 26 is supported by the connecting nozzle 17, a marginal zone 27 of which is in turn held between projections 28 on the blower housing 29. The blower housing 29 is assembled from two half shells, between which the connecting nozzle 17 with the heated elements 26, the electric drive motor 25 and the fan mounted thereon, need only be fitted.

Referring to Figures 3 and 4, a second embodiment of hair dryer differs from the embodiment of Figures 1 and 2 in that the extension pieces 15 of the hood 10 are joined together to form a common air inlet connection 30 which can be coupled to the hot-air blower 11. In figures 3 and 4, parts which are the same as in the embodiment of Figures 1 and 2 are identified by the same reference numerals, different reference numerals being used only for parts which are different.

In the embodiment of Figures 3 and 4, the hot-air blower 11, for connection to the common air inlet connection 30 of the hood, has an air outlet in the form of a connecting nozzle 31. The common air inlet connection 30 of the hood is so dimensioned that it can be fitted onto the connecting nozzle 31 and to attach it to the connecting nozzle, is provided with an elastic ring 32 which is preferably of rubber. The connecting nozzle 31 which receives the common air inlet connection 30 has a seating in the form of a circumferential groove 33 into which the elastic ring 32 can fit.

If the cross-section of the connecting nozzle 31 is oval as in the embodiment shown in Figure 5 anchoring projections 34 may be provided each of which forms a shoulder on the connecting nozzle 31 beneath which the ring 32 can engage. The anchoring projections 34 are preferably provided at each end of the oval, i.e. in the zones of greatest curvature. For easy handling of the common air inlet connection 30 of the hose-like extension pieces 15 when making and separating the connection with the connecting nozzle 31, there are, adjacent the elastic ring 32 and at oppositely disposed peripheral positions on the common air inlet connection 30, tear-resistant lugs 35. The lugs 35 are so placed that they lie adjacent the anchoring projections 34.

In the embodiment shown in Figure 5, an alternative method of making the connection between the hot-air blower 11 and the carrier strap 20 is used. The ends 21 of the carrier strap 20 are in this case fitted

with coupling pieces 36 each having a buckle-portion which can be displaceably held on the carrier strap, and a coupling head 37 which can be passed through a respective slot 38 in the blower housing 29. Each coupling head 37 is of similar shape and size to the respective slot 38 but, in the held position, has its greater dimension extending transverse to the longitudinal direction of the respective slot 38 in the housing, so that the coupling heads 37 can be inserted into the slots 38 in the wall and then rotated to lock them in position.

As already mentioned, the embodiments illustrated are only examples of the invention, which is not confined to them; instead, many other alternatives are possible within the scope of the appended claims.

WHAT WE CLAIM IS:—

1. A hair dryer comprising a hot-air blower and a collapsible hood formed of a double-walled flexible material an intermediate space of which is in communication, by means of a plurality of apertures in an inner wall, with a head space of the hood, and is connectable to a hot-air outlet or outlets of the hot-air blower by means of hose-like extension pieces on the hood, which hose-like extension pieces originate on the hood at positions corresponding to the sides of the head and can hang down below a head zone of the hood and be coupled singly or jointly to the hot-air outlet or a respective hot-air outlet of the hot-air blower.
2. A hair dryer according to claim 1, including a carrier strap, which can be looped around the neck of the user and have its ends releasably connected to coupling members by means of which coupling members the hose-like extension pieces are coupled to the outlet of the hot-air blower.
3. A hair dryer according to claim 2, including strap guides on the coupling members and fixed pegs for attachment of the carrier strap, the fixed pegs being provided on the coupling members or on a housing of the hot-air blower.
4. A hair dryer according to claim 1, including a carrier strap, which can be looped around the neck of the user and coupling pieces, displaceably fitted on the end portions of the carrier strap, engageable in slots in a housing of the hot-air blower to secure the carrier strap to the housing.
5. A hair dryer according to claim 4, in which the coupling pieces of the carrier strap are provided with coupling heads of similar shape and size to the slots, which coupling heads can be passed through the slots, subsequent rotation of the coupling pieces locking the coupling heads against removal.
6. A hair dryer according to claim 1, claim



The hot-air blower 11 has a flat generally cylindrical housing and, as Figure 2 shows, a fan 24 is disposed on a radially extending shaft so that a radial direction of flow of air is created. The fan 24, together with an electric drive motor 25 and electrically heated elements 26 is supported by the connecting nozzle 17, a marginal zone 27 of which is in turn held between projections 28 on the blower housing 29. The blower housing 29 is assembled from two half shells, between which the connecting nozzle 17 with the heated elements 26, the electric drive motor 25, and the fan mounted thereon, need only be fitted.

Referring to Figures 3 and 4, a second embodiment of hair dryer differs from the embodiment of Figures 1 and 2 in that the extension pieces 15 of the hood 10 are joined together to form a common air inlet connection 30 which can be coupled to the hot-air blower 11. In figures 3 and 4, parts which are the same as in the embodiment of Figures 1 and 2 are identified by the same reference numerals, different reference numerals being used only for parts which are different.

In the embodiment of Figures 3 and 4, the hot-air blower 11, for connection to the common air inlet connection 30 of the hood, has an air outlet in the form of a connecting nozzle 31. The common air inlet connection 30 of the hood is so dimensioned that it can be fitted onto the connecting nozzle 31 and to attach it to the connecting nozzle, is provided with an elastic ring 32 which is preferably of rubber. The connecting nozzle 31 which receives the common air inlet connection 30 has a seating in the form of a circumferential groove 33 into which the elastic ring 32 can fit.

If the cross-section of the connecting nozzle 31 is oval as in the embodiment shown in Figure 5 anchoring projections 34 may be provided each of which forms a shoulder on the connecting nozzle 31 beneath which the ring 32 can engage. The anchoring projections 34 are preferably provided at each end of the oval, i.e. in the zones of greatest curvature. For easy handling of the common air inlet connection 30 of the hose-like extension pieces 15 when making and separating the connection with the connecting nozzle 31, there are, adjacent the elastic ring 32 and at oppositely disposed peripheral positions on the common air inlet connection 30, tear-resistant lugs 35. The lugs 35 are so placed that they lie adjacent the anchoring projections 34.

In the embodiment shown in Figure 5, an alternative method of making the connection between the hot-air blower 11 and the carrier strap 20 is used. The ends 21 of the carrier strap 20 are in this case fitted

with coupling pieces 36 each having a buckle-portion which can be displaceably held on the carrier strap, and a coupling head 37 which can be passed through a respective slot 38 in the blower housing 29. Each coupling head 37 is of similar shape and size to the respective slot 38 but, in the held position, has its greater dimension extending transverse to the longitudinal direction of the respective slot 38 in the housing, so that the coupling heads 37 can be inserted into the slots 38 in the wall and then rotated to lock them in position.

As already mentioned, the embodiments illustrated are only examples of the invention, which is not confined to them; instead, many other alternatives are possible within the scope of the appended claims.

WHAT WE CLAIM IS:—

1. A hair dryer comprising a hot-air blower and a collapsible hood formed of a double-walled flexible material an intermediate space of which is in communication, by means of a plurality of apertures in an inner wall, with a head space of the hood, and is connectable to a hot-air outlet or outlets of the hot-air blower by means of hose-like extension pieces on the hood, which hose-like extension pieces originate on the hood at positions corresponding to the sides of the head and can hang down below a head zone of the hood and be coupled singly or jointly to the hot-air outlet or a respective hot-air outlet of the hot-air blower.

2. A hair dryer according to claim 1, including a carrier strap, which can be looped around the neck of the user and have its ends releasably connected to coupling members by means of which coupling members the hose-like extension pieces are coupled to the outlet of the hot-air blower.

3. A hair dryer according to claim 2, including strap guides on the coupling members and fixed pegs for attachment of the carrier strap, the fixed pegs being provided on the coupling members or on a housing of the hot-air blower.

4. A hair dryer according to claim 1, including a carrier strap, which can be looped around the neck of the user and coupling pieces, displaceably fitted on the end portions of the carrier strap, engageable in slots in a housing of the hot-air blower to secure the carrier strap to the housing.

5. A hair dryer according to claim 4, in which the coupling pieces of the carrier strap are provided with coupling heads of similar shape and size to the slots, which coupling heads can be passed through the slots, subsequent rotation of the coupling pieces locking the coupling heads against removal.

6. A hair dryer according to claim 1, claim

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- 4 or claim 5, in which the hose-like extension pieces of the hood converge at their ends to form a common air inlet connection which can be fitted onto a single hot-air outlet of the hot-air blower, which hot-air outlet is in the form of a connecting nozzle.
7. A hair dryer according to claim 6, in which the common air inlet connection includes an elastic ring engageable over the connecting nozzle of the hot-air blower.
8. A hair dryer according to claim 7, in which the connecting nozzle includes projections beneath which the ring can be engaged to secure the common air inlet connection on the connecting nozzle.
9. A hair dryer according to claim 8, in which the connecting nozzle of the hot-air blower is oval in cross-section with the projections located in the regions of the greatest curvature.
10. A hair dryer according to claim 7, in which connecting nozzle of the hot-air blower is formed with an external circumferential groove.
11. A hair dryer according to any one of claims 7 to 10, in which the common air inlet connection of the hood is, in the region of the elastic ring, provided with tear-resistant lugs at oppositely disposed peripheral positions.
12. A hair dryer according to claim 2 or claim 3, in which the coupling members have integrally-formed marginal strips including resilient tongue portions with inwardly directed projections to engage recesses in the sidewall of a connecting nozzle forming the outlet of the hot-air blower.
13. A hair dryer according to claim 2 or claim 3, in which a connecting nozzle forming the outlet of the hot-air blower has a circumferentially extending groove in its sidewall and the coupling members are each formed with a lower portion of U-shaped cross-section, the arms of the U-shaped cross-section having inwardly directed projections to engage in the groove in the

- sidewall of the nozzle, connection of the coupling members with the nozzle being effected by inward sliding movement from the side.
14. A hair dryer according to claim 1, in which the hot-air blower has a housing formed by two shell-like housing parts with a separately constructed outlet nozzle secured between the housing shells and supporting heating elements of the hot-air blower.
15. A hair dryer according to claim 14, in which the housing of the hot-air blower is of flat cylindrical shape and has a fan disposed on a radially extending shaft.
16. A hair dryer according to claim 14 or claim 15, in which the outlet nozzle which supports the heating elements of the hot-air blower has a marginal zone which is held securely between projecting portions on the housing shells.
17. A collapsible hair dryer hood formed of a double-walled flexible material, an intermediate space of which is in communication, by means of a plurality of apertures in an inner wall, with a head space and is connectable to an outlet or outlets of a hot-air blower by means of hose-like extension pieces on the hood, which hose-like extension pieces originate on the hood at positions corresponding to the sides of the head, can hang down below a head zone of the hood and have a coupling or couplings whereby they can singly or jointly be coupled to an outlet or outlets of a hot-air blower.
18. A hair dryer comprising a hot-air blower and a collapsible hood substantially as hereinbefore described and illustrated with reference to Figures 1 and 2, Figures 3 and 4 or Figure 5 of the accompanying drawings.

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