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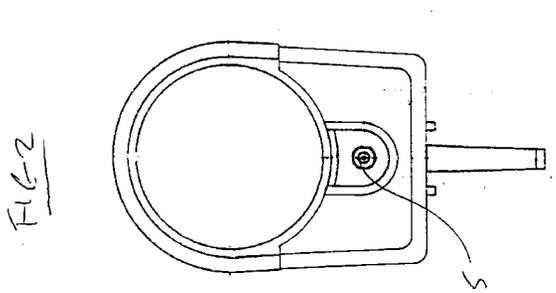
(54) **Spray attachment for hair dryers.**

(57) An attachment to be fitted onto the barrel of a hair dryer comprises a water tank (3), a spray nozzle (5) and a trigger-operated pump for drawing water from the tank to the spray outlet. In use, when the attachment is fitted to a hair dryer, it is possible (when desired) to provide a spray of water at the same time as hot air for drying the hair.



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This invention relates to an attachment for use with a hair dryer for providing a spray of water for use while drying hair.

In the final stages of a hair-dressing operation, a hair-dresser often finds it advantageous to slightly dampen the hair to achieve optimum results. Although it may seem paradoxical, it is sometimes desirable to slightly dampen the hair during the drying process.

Conventionally this spray is provided by using a bottle or similar container having a spray outlet. This is disadvantageous, however, in that one hand is needed for the spray bottle and one for the hair-dryer, leaving no hand free for simultaneously using a brush, comb, scissors or tongs etc as may be required.

There is known in the prior art US 3,745,306 which discloses a steam generating means integrally formed with a hairdryer. Steam is generated and is entrained in the steam of hot air produced by the hairdryer. However, in order to generate the steam an electric heating element is required, the power for which must be taken from the power source for the hairdryer. This complicates the structure of the hairdryer and means that the steam generating means cannot be used with a conventional hairdryer.

According to the invention there is provided an attachment for a hair dryer comprising means for receiving the barrel of a hair dryer, a water tank formed integrally with said receiving means, a spray outlet, and pump means for drawing water from said tank to said spray outlet.

By means of this arrangement a hair dryer may be provided with a water spray, thus leaving one hand free for using another tool.

The barrel receiving means may be of a generally cylindrical shape having open ends. Preferably the receiving means is formed with a taper so that the attachment may be "wedged" onto the barrel of the hairdryer. To help secure engagement of the barrel within the receiving means, a pad of rubber or similar elastomeric material may be provided on the interior of the cylindrical portion. The spray outlet is preferably provided adjacent the open end of the barrel receiving portion remote from the hair dryer where hot air exits the dryer and attachment.

The pump may comprise any simple configuration, and is preferably operable by means of a trigger. In preferred arrangements the trigger is located in use in such a position that it may easily be reached by the fingers of a hand already holding the handle of the hair dryer itself.

Preferably the pump may comprise a pump cylinder having a piston slidably received therein, an inlet communicating the cylinder to the tank via a one-way valve, and an outlet communicating to the spray outlet. Movement of the piston in the cylinder, which may be effected by the action of the trigger, causes water to be drawn into the cylinder through the inlet and subsequently expelled through the spray outlet. The piston may preferably be spring biassed. Conveniently, the pump may be received within the water tank.

The invention may be embodied in the form of a separate attachment which may be fitted to existing hair dryers. Alternatively, it will be appreciated that the attachment may be formed integrally with the hair dryer itself. Accordingly, the present invention also provides a hair dryer having an outlet for hot air, a water tank, a spray outlet located adjacent said hot air outlet, and pump means for drawing water from said tank to said spray outlet.

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings in which

Figure 1 is a side view,

Figure 2 is a front view, and

Figure 3 is an exploded cross-sectional side view.

Referring firstly to Figure 1 there is shown an attachment 1 having a barrel receiving portion 2, water tank 3 formed integrally therewith, and trigger 4 for operating a pump located within the tank 3. The pump acts, in a manner to be described below, to draw water from the tank to an outlet spray nozzle 5 (Figure 2). The water tank is provided with a filling inlet (not shown).

The barrel receiving portion 2 is generally cylindrical with open ends and tapers towards the front end, front being in the sense of the flow of hot air, so that the barrel of a hot air hair dryer may be firmly engaged therein. To help this engagement the interior of the barrel receiving portion is provided with a lining 6 (Figure 3) of rubber or a similar elastomeric material.

The exploded side view of Figure 3 illustrates that the pump mechanism located in the water tank 3 includes a pump cylinder 7 formed within a pump housing 8. A piston 9 formed at one end of a pump link 10 is located within cylinder 7. A spring 11 is provided between the closed end 12 of cylinder 7 and piston 9, engaging a shoulder portion 13 defined by a land 14 on the piston 9.

The closed end 12 of cylinder 7 is not completely closed, but includes in the centre thereof an outlet bore 15 within which is received a splitting core 16, and around which are located washer 17 and spray nozzle 18. Adjacent closed end 12 the wall of cylinder 7 is provided with an inlet 19 and a one-way valve comprising steel ball 20 and check valve housing 21 are provided in a recess formed in the pump housing so as to control flow of water into the cylinder.

Trigger 4 is pivotedly mounted on a rearwardly extending bracket 22 and has a link 23 connected to pump link 10. In operation, as the trigger is pulled to the right as viewed in Figure 3, the piston 9 is forced to the left against the bias of spring 11 toward the closed end 12 of cylinder 7 so as to expel water from the cylinder through the output bore 15 to the spray

nozzle 18 so as to produce a spray. On release of the trigger 4, the piston is urged to the right by the spring 11 and water is drawn into the cylinder through the one-way valve ready for the next operation.

Although the invention has been described in the context of an attachment to the fitted to a hair dryer directly, it will be appreciated that the attachment could also be fitted to the outlet of another accessory, such as for example an air diffuser, which in turn is fitted to the hair dryer.

Claims

1. An attachment for a hair dryer comprising, means for receiving the barrel of a hair dryer, a water tank formed integrally with said barrel receiving means, a spray outlet, and pump means for drawing water from said tank to said spray outlet.

2. An attachment as claimed in claim 1 wherein said barrel receiving means is of a generally cylindrical shape having open ends and at least partially tapers from one end to the other to facilitate securing of the barrel in the receiving means.

3. An attachment according to claim 1 or 2 wherein the interior of the barrel receiving means is provided with a layer of rubber or like elastomeric material.

4. An attachment as claimed in claim 1, 2 or 3 wherein the pump comprises a pump cylinder having a piston slidably received therein, an inlet communicating the cylinder to the tank via a one-way valve, and an outlet communicating to the spray outlet.

5. An attachment as claimed in claim 4 wherein the pump is operable by a trigger linked to the pump cylinder.

6. An attachment as claimed in claim 5 wherein the pump cylinder is spring-biassed.

7. A hair dryer comprising an outlet for hot air, a water tank, a spring outlet located adjacent said hot air outlet, and pump means for drawing water from said tank to said spray outlet.

FIG. 1

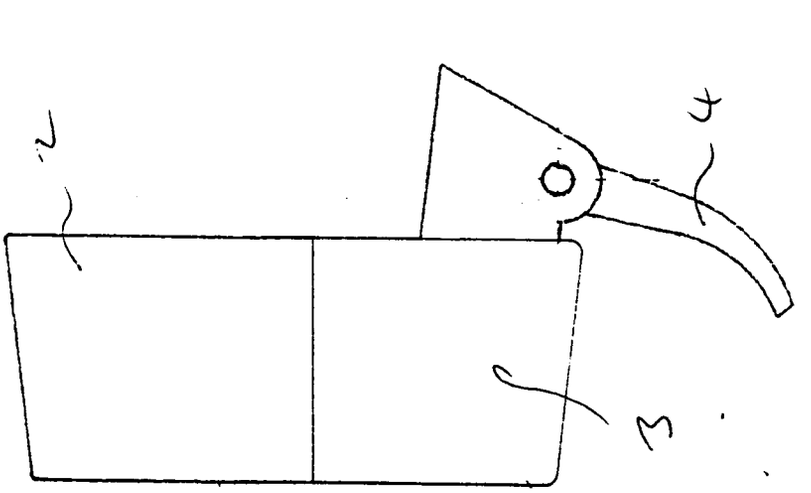


FIG. 2

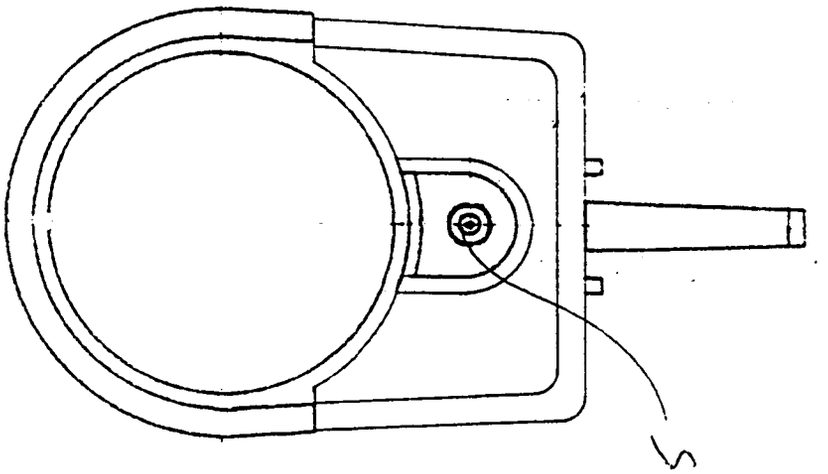
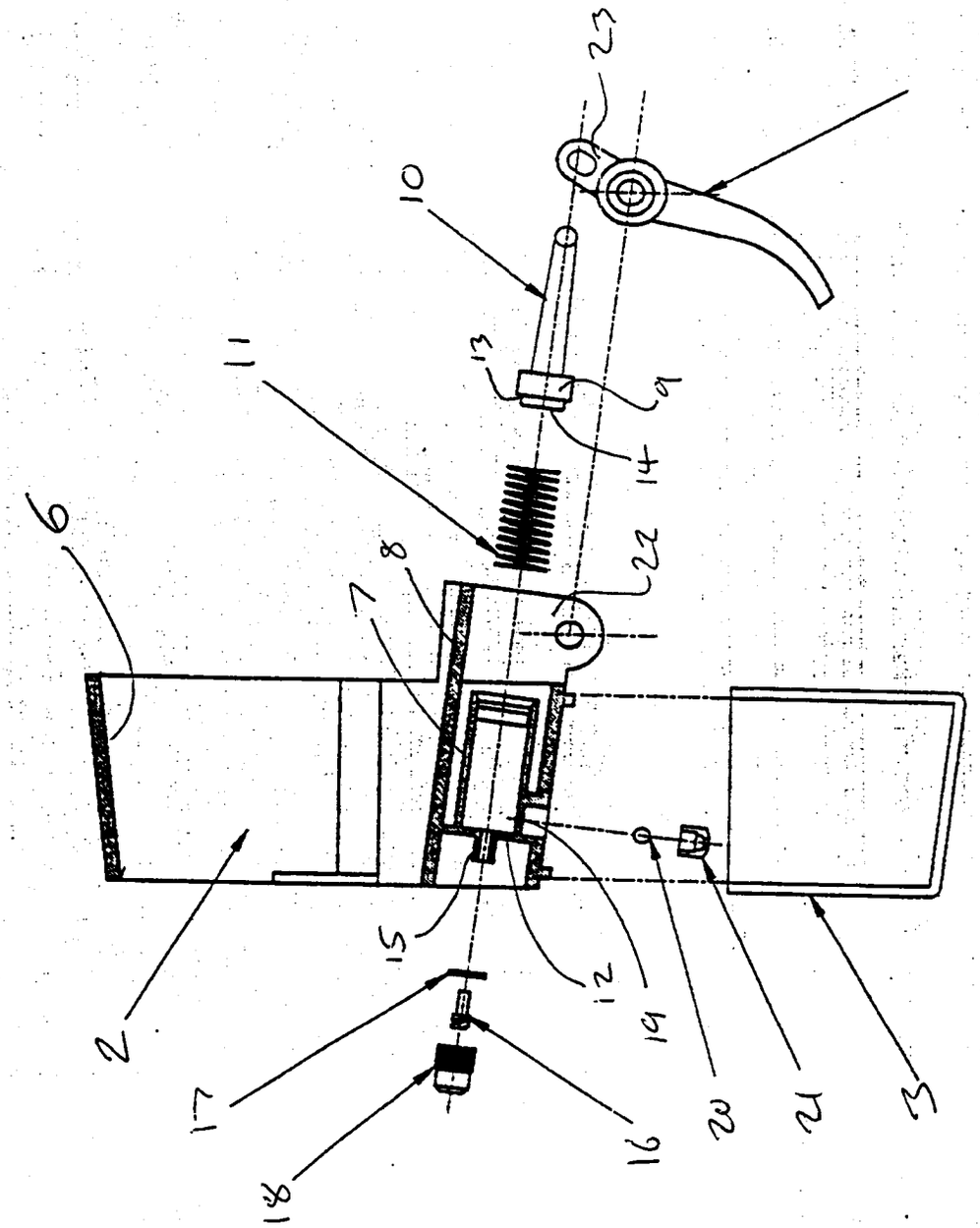


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 94 30 3074

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	EP-A-0 011 294 (RIETSCHE) * figures 1,4 *	1-7	A45D20/12
A	US-A-4 605 019 (REYNOLDS) * figures 1,2 *	1,2,7	
A	US-A-3 800 810 (MERCER) * column 8, line 36 - column 9, line 37; figures 16,17 *	1,2,5-7	
A	GB-A-270 491 (COOPER) * the whole document *	1,2	
A	US-A-3 889 693 (TANAKA) * the whole document *	1,4-7	
A	US-A-3 905 379 (CHURAS) * the whole document *	1,4-7	
A	DE-A-35 40 990 (KOLLER) * the whole document *	1,7	TECHNICAL FIELDS SEARCHED (Int.Cl.5)
A	DE-U-83 29 606 (POPP) * the whole document *	1,7	A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	2 August 1994	Sigwalt, C

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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