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(56) Documents Cited
GB 2241434 A **GB 2130880 A**

(58) Field of Search
UK CL (Edition L) **A4V**
INT CL[5] **A45D 1/04 1/16 2/36**

(54) **"Hair curling apparatus"**

(57) Hair curling apparatus comprises a curling iron that can be inserted in a curling roller. The curling iron has a shaft 4 (for insertion in the roller) which is formed by a number of elongate plate-like members 5 and the interior surface of the roller is formed with slots 8 corresponding to the edges of the shaft 4 defined by the edges of the plate-like members 5. Thus the curling iron may be easily located in the roller by inserting the edges of the shaft in the corresponding slots in the roller.

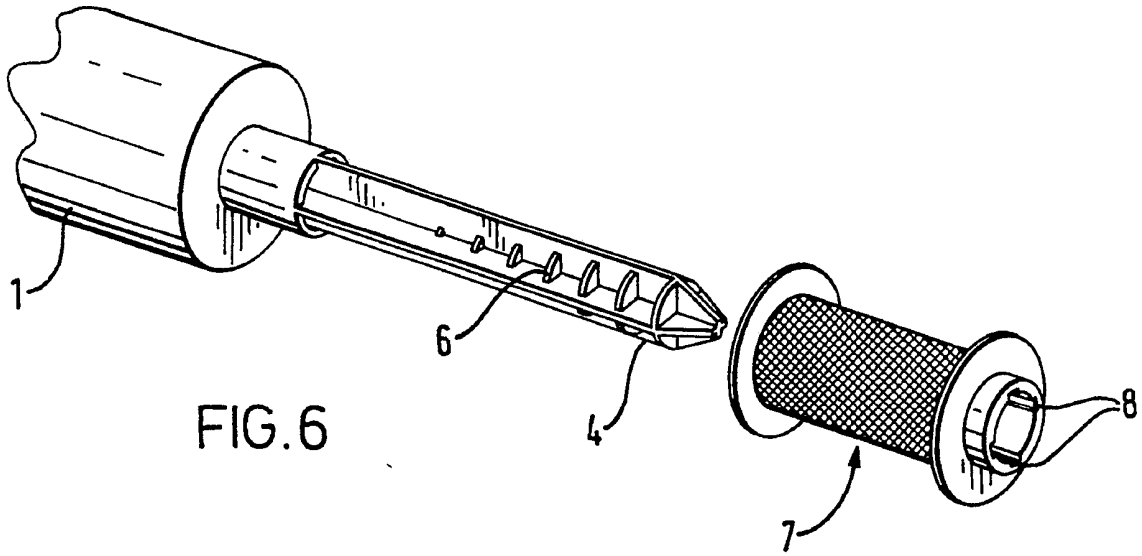

FIG.6

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.

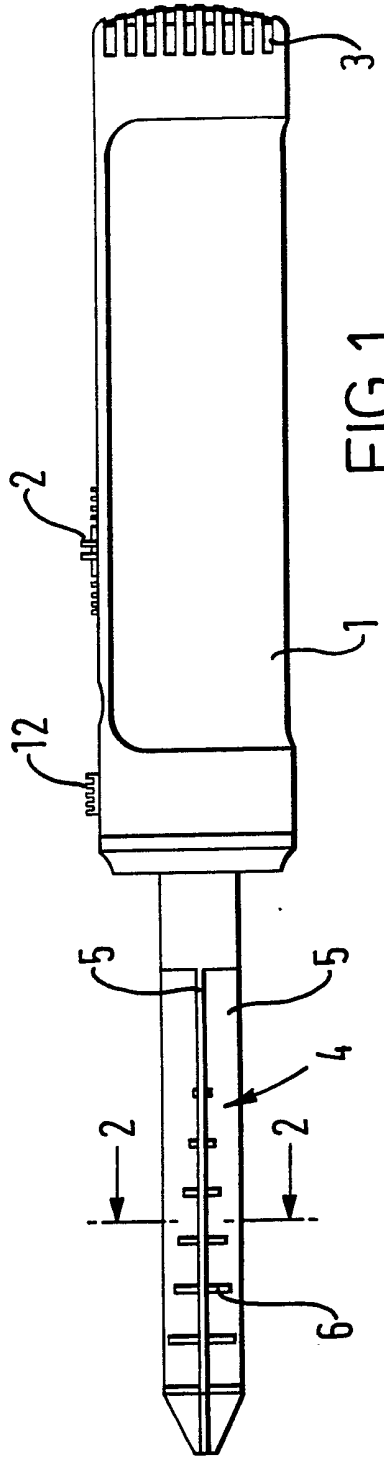

FIG.1

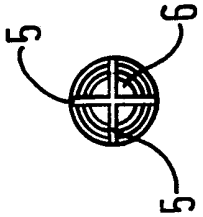

FIG.2

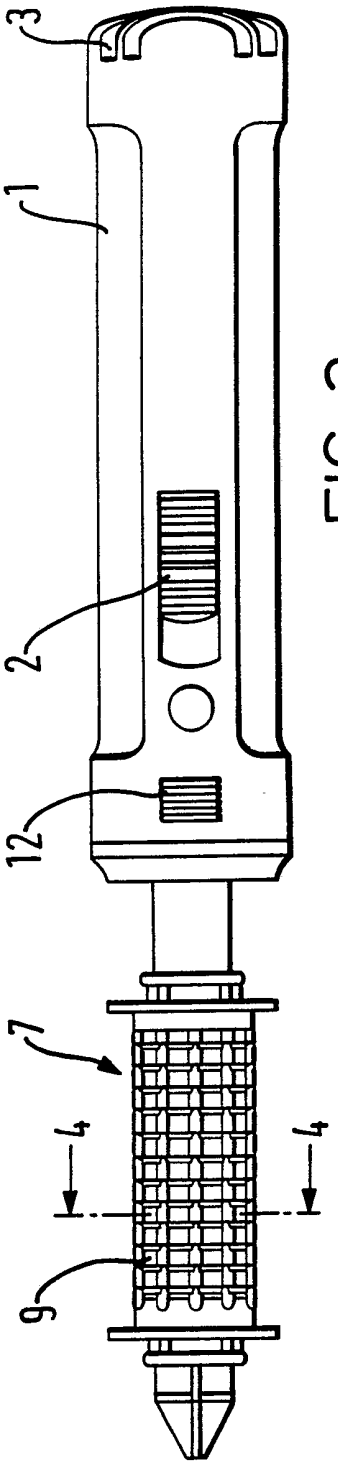

FIG.3

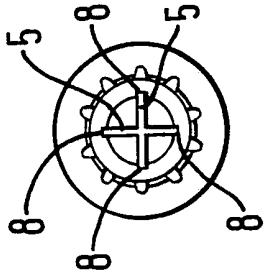

FIG.4

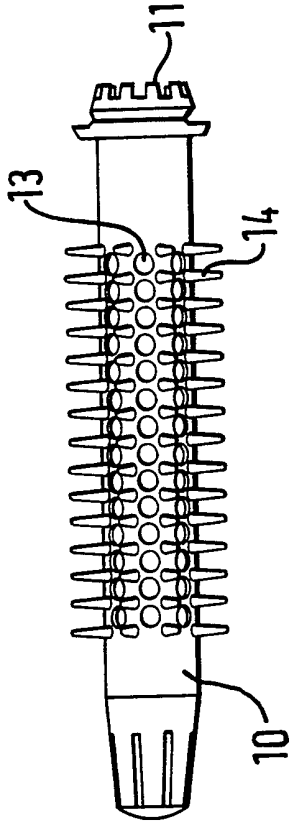

FIG.5

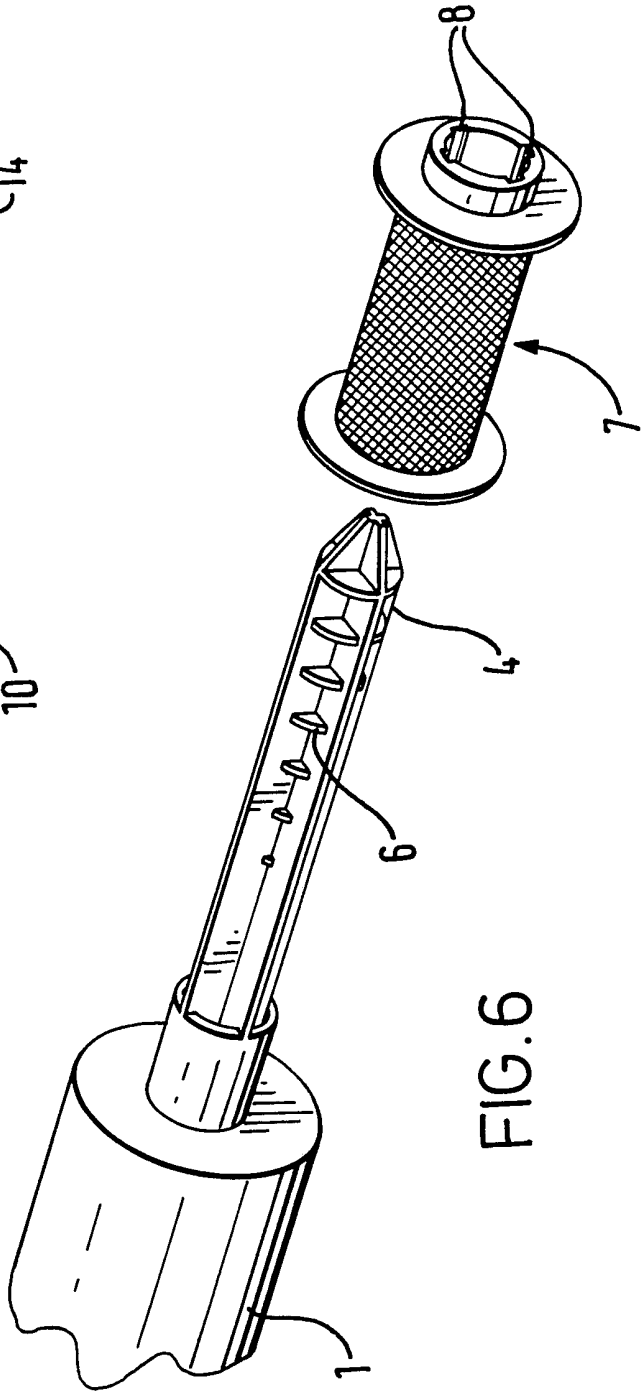

FIG.6

HAIR CURLING APPARATUS

The present invention relates to hair curling apparatus.

One well known device for use in curling hair is a curling drum. The device comprises a cylindrical drum, and a cover or sleeve which is snap fit on the drum. In use the drum and sleeve are heated in a heating apparatus. When they have been heated, they are brought to the hair, the hair is curled about the drum, and the sleeve is fitted over the drum to retain the hair in the curled configuration. As the drum and sleeve gradually cool down, they warm the hair which then retains the curled configuration upon subsequent removal of the drum and sleeve.

There are a number of disadvantages with hair curling drums. The principal disadvantage is that the operation of curling the hair is laborious for the hairdresser, and lengthy for the person whose hair is being curled. Additionally the results may not always be as desired. These disadvantages arise because the drum and sleeve cannot usually store sufficient heat to effect complete curling. Thus the hairdresser must remove the cooled drum and replace it with a heated drum, and this cycle of removal and replacement must be carried out repeatedly, which is very laborious for all parties concerned. Furthermore, during removal and replacement, some of the hairs which were curled around the drum being removed may escape being curled around the replacement drum, and vice versa. Additionally, in the final cycle of operation, the hair may become overcurled.

A second well known device for use in curling hair is a curling iron. This device comprises a perforated barrel, a housing at one end of the barrel which serves firstly as a handle for the device, and secondly contains an electrically powered mechanism for generating a stream of hot air which is blown axially through the barrel, and a retaining finger extending from the housing along the length of the barrel. In operation, the curling iron is connected to a power supply by means of an electrical lead, is brought to the hair, the retaining finger is withdrawn from the barrel, the hair is curled around the barrel, the retaining finger is returned to its operational position to retain the hair curled around the barrel, and the device is activated to blow hot air through the barrel and its perforations so as to curl the hair. Hair curling irons however suffer from their own disadvantages. If a large number of curls are required, either a large number of curling irons must be used, which is expensive and would require the person whose hair is being curled to bear the weight of all

these irons, or alternatively a single iron must be moved sequentially from place to place in the persons hair, which is time consuming.

To overcome these problems apparatus has been proposed (UK Patent Application 9003785.4) comprising a handle, including a heater-blower assembly for producing a stream of heated air, an elongate barrel for insertion into a hair curling roller located in a persons hair and being hollow with apertures defined along its length for delivering a stream of heated air to the roller and to hair wound thereon. Such apparatus can be moved sequentially from roller to roller located in the user's hair to deliver a charge of heat to the individual curling rollers. One disadvantage of this proposed apparatus, however, is that retention means are required to secure the barrel in place when inserted in the roller. In UK application 9003785.4 this retention means takes the form of a clip provided on the housing which engages an aperture formed on a collar of the roller. This arrangement is not ideal since it requires actuation to engage and disengage the clip from the aperture, and in use this can be awkward and time consuming when moving from one roller to another.

According to the present invention there is provided hair curling apparatus comprising, a hair curling iron comprising a handle including therein a heater-blower assembly for producing a stream of heated air, an elongate shaft member extending from said housing,and a hair curling roller, and said roller is provided with means for engaging said shaft member.

By means of this arrangement the requirement for a seperate retention means ia avoided and the shaft member may be located in place in a roller by means of the engaging means provided in the roller itself.

In a preferred arrangement the shaft member comprises a plurality of elongate plate-like members extending in the direction of the axis of the shaft member, and said engaging means comprises a plurality of slots formed on the inner surface of the roller parallel to the axis thereof for engaging the edges of said plate-like members. For example the shaft member may be formed of three such plate-like members arranged to define a shaft member having a triangular cross-section, and the interior of the roller may be provided with three corresponding slots. In a preferred embodiment, however, the shaft member may comprise four such plate-like members arranged to define a cruciform cross-section, and the inner surface of the roller may be provided with four corresponding slots for engaging the shaft member.

In a preferred embodiment the shaft member extends from the handle along the central longitudinal axis thereof along which the stream of air is directed. Preferably therefore means are provided to deflect the stream of air radially of the shaft member whereby the air may pass through apertures provided in the cylindrical surface of the roller to contact hair wound thereon in use.

Preferably such deflecting means may comprise a series of baffles provided along the axis of the shaft member, preferably at right angles to the axis. It is particularly preferred that the baffles become progressively larger the further away from the handle they are disposed along the axis of the shaft member.

Viewed from a further aspect the invention extends to a hair curling iron comprising a handle including therein a heater/blower assembly for producing a stream of heated air, and an elongate shaft member formed from at least one plate-like member extending in the direction of the axis of the shaft member.

Viewed from a still further aspect the invention extends to a hair curling roller comprising a cylindrical inner surface having at least one slot therein extending parallel to the central axis of the roller for receiving a shaft member of a hair curling iron.

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

Fig.1 is a side view of a hair curling iron,

Fig.2 is a sectional view along line 2-2 of Fig.1,

Fig.3 is a top view of a hair curling iron inserted in a roller,

Fig.4 is a sectional view along line 4-4 of Fig.3,

Fig.5 is a side view of an alternative construction, and

Fig.6 is a perspective view illustrating the shape of the shaft member.

Referring firstly to Fig.1 there is shown a hair curling iron comprising a handle 1. Housed within the handle 1 is a conventional electrically powered heater/blower assembly operated by a slide switch 2. In use the heater/blower assembly draws air in to the handle through rear air inlet 3 and generates a stream of heated air that is directed out of the handle along the axis thereof to the left as viewed in the Figures.

A shaft member 4 is connected to the handle 1 and extends along the axis thereof in the direction of the stream of heated air. The shaft member 4 has a cruciform cross-section and may be considered to be defined by two intersecting elongate plates 5, though it could

equally be considered to be defined by four elongate plates that meet along their respective edges. However they are viewed, at their extreme left-hand ends (as viewed in the Figures), the ends remote from the handle, the plates come together to form a point.

Along the length of the shaft member 4 is provided a series of baffles 6, Each baffle 6 is disposed such that its centre lies along the axis of the shaft member 4, with the shaft axis being normal to the plane of the baffles. The surface area of the respective baffles 6 becomes progressively larger from baffle to baffle as one moves along the shaft member towards the end remote from the handle 1.

In use the shaft member 4 is inserted in a roller 7 about which hair to be curled is wound. The interior surface of the roller 7 is generally cylindrical but includes four slots 8 disposed parallel to the central axis of the roller at positions corresponding to the edges of the plates 5, that is to say in this embodiment they are disposed equiangularly about the inner surface of the roller 7. The shaft member 4 is inserted in the roller 7 by locating the edges of the plates 5 in the four slots 8. This provides a sufficiently secure engagement between the shaft member 4 and the roller 7 and no further retention means is required.

In operation the heater/blower assembly is switched on to generate a stream of hot air along the axis of the shaft member 4. This stream of air is then progressively deflected by the baffle plates 5 radially of the shaft member 4 so that it may pass through apertures 9 provided in the roller and may then act upon the hair wound round the roller to produce a curl. A plurality of rollers may be placed in a user's hair and the curling iron may be moved from roller to roller sequentially supplying a charge of heat to each roller in turn, with the rollers remaining in place until the curls are formed. The act of inserting the shaft member in the roller is considerably facilitated by the simple yet effective manner of the engagement between the shaft member and the roller that does away with the need for seperate retention means.

As is shown in Fig.5, the apparatus is versatile and instead of the roller of Figs.3 and 4 the shaft member may be inserted within brush sleeve 10 the interior of which is provided with shaft engaging slots corresponding to those of the roller 7. Such a brush sleeve 10 may be fixed in place over the shaft member by engaging lugs 11 formed at one end of the sleeve 10 in corresponding portions of the handle 1. A release button 12 may be provided on the handle to subsequently release the sleeve 10. The sleeve is provided with a plurality of apertures 13 for the exit of the hot air, and a plurality of brush means 14.

CLAIMS

1. Hair curling apparatus comprising, a hair curling iron comprising a handle including therein a heater/blower assembly for producing a stream of heated air, an elongate shaft member extending from said housing, and a hair curling roller, wherein said roller is provided with means for engaging said shaft member.

2. Apparatus as claimed in claim 1 wherein said shaft member comprises a plurality of elongate plate-like members extending in the direction of the axis of the shaft member, and said engaging means comprises a series of slots formed on the inner surface of the roller parallel to the axis thereof for engaging the edges of the plate-like members.

3. Apparatus as claimed in claim 2 wherein the shaft member has a cruciform cross-section, and the inner surface of the roller is provided with four slots for engaging the edges of the shaft member.

4. Apparatus as claimed in any preceding claim wherein said shaft member extends along the central longitudinal axis of the handle along which the stream of air is directed in use, and wherein means are provided to direct the stream of air radially of the shaft member.

5. Apparatus as claimed in claim 4 wherein the deflecting means comprises a series of baffles disposed along the shaft member with the axis of the shaft member being disposed normal to the planes of the baffles.

6. Apparatus as claimed in claim 4 or 5 wherein said baffles become progressively larger toward the end of the shaft member remote from the handle.

7. A hair curling iron comprising a handle including therein a heater/blower assembly for producing a stream of heated air, and an elongate shaft member formed from at least one elongate plate-like member extending in the direction of the axis of the shaft member.

8. A hair curling roller comprising a cylindrical inner surface having at least one slot therein extending parallel to the central axis of the roller for receiving a shaft member of a hair curling iron.

9. Hair curling apparatus substantially as hereinbefore described with reference to the accompanying drawings.

10. A hair curling iron substantially as hereinbefore described with reference to the accompanying drawings.

11. A hair curling roller substantially as hereinbefore described with reference to the accompanying drawings.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report) -7-

Application number
GB 9311275.3

Relevant Technical fields

(i) UK Cl (Edition L) A4V

(ii) Int Cl (Edition 5) A45D 1/04 1/16 2/36

Search Examiner
M J PENNELL

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search
10 AUGUST 1993

Documents considered relevant following a search in respect of claims 1-6, 8, 9 & 11

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2241434 A (DICKSON) See Figures	1, 8
X	GB 2130880 A (ANDIS) See Figures	1, 8

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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