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D. LENOBLE

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APPARATUS FOR MAKING SIMULATED CURLED HAIR

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Fig. 1.

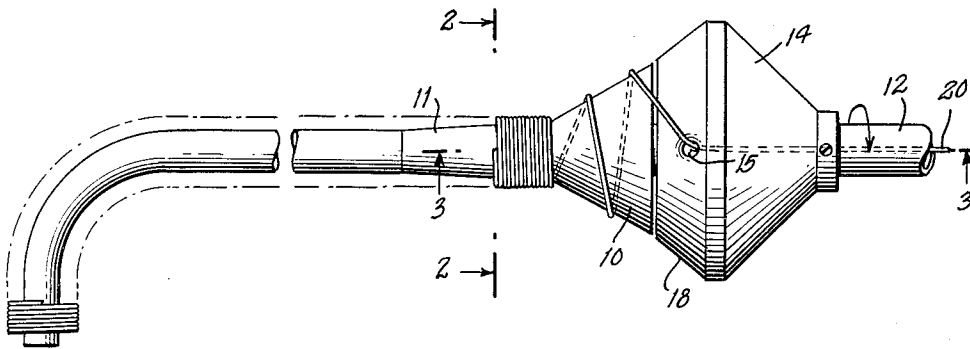


Fig. 2.

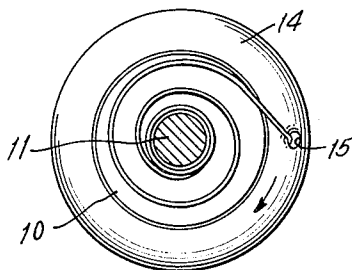


Fig. 3.

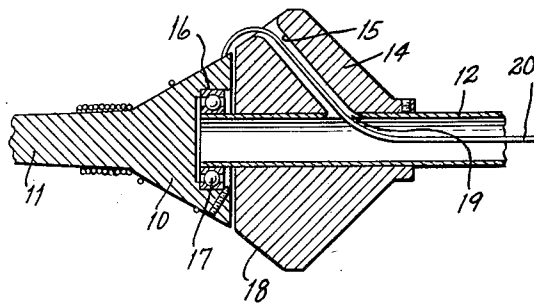
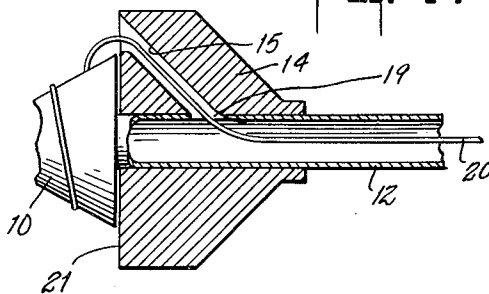


Fig. 4.



INVENTOR.  
DANIEL LENOBLE  
BY Krazinski & Nolan  
ATTORNEYS

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## 3,039,259 APPARATUS FOR MAKING SIMULATED CURLED HAIR

Daniel Lenoble, 3647 Lynn Lane, Wantagh, N.Y.  
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5 Claims. (Cl. 57—34)

The present invention relates to apparatus for making simulated curled hair from a continuous strand of yarn. Heretofore, it has been proposed to make simulated curled hair for use on a doll's head, for example, by means of apparatus generally comprising a tapered member and a spinning member mounted for rotation coaxially with the tapered member having a yarn delivering passageway terminating in a vertical plane intersecting an inclined surface of the tapered member, whereby the yarn is wrapped or wound about the tapered member. Such apparatus requires that the yarn supplied must be under uniform tension because otherwise the loops wound or wrapped about the tapered member will be too tight or too loose, whereby the yarn will break or the curls will be entangled.

Accordingly, an object of the present invention is to provide apparatus for making simulated curls, which apparatus is not subject to the foregoing difficulties and disadvantages, by casting the loops onto the tapered or frusto-conical member from a point outward thereof rather than winding or wrapping the same thereon in a plane intersecting the tapered member.

Another object is to provide such apparatus which can be operated at higher speeds because of the techniques involved.

Another object is to provide such apparatus which spins the yarn to put twist therein and thereby forms more springy curls.

A further object is to provide such apparatus which is simple and economical in construction and is reliable in operation.

Other and further objects will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

In accordance with the present invention, the foregoing objects are accomplished by apparatus comprising a fixed, generally frusto-conical or tapered member, a shaft journaled for rotation with respect to the member having a longitudinal bore for receiving yarn and an aperture extending laterally of the bore, and a spinning member mounted on the shaft for rotation therewith and positioned adjacent a large end of the fixed member, the spinning member having a passageway terminating at its free end, in back of the fixed member, and positioned to cooperate with the lateral aperture to guide yarn in an inclined path towards the fixed member at an acute angle with respect to the axis of rotation of the shaft, whereby the yarn travelling in the inclined path is directed forwardly in loops or convolutions onto the fixed member to form the simulated curled hair thereon.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein:

FIG. 1 is an elevational view of one embodiment in accordance with the present invention.

FIG. 2 is a sectional view taken along the line 2—2 on FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 on FIG. 1.

FIG. 4 is a fragmentary view similar to FIG. 3 illustrating another embodiment of the invention.

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Referring now to FIGS. 1, 2 and 3 of the drawing in detail, one form of apparatus in accordance with the present invention is shown which comprises a generally frusto-conical, fixed member 10 having a tapered extension 11 on its smaller end, a hollow shaft 12 mounted for rotation with respect to the fixed member adjacent its large end, and a spinning member 14 mounted on the shaft 12 for rotation therewith having a passageway 15 terminating in back of the large end of the fixed member for directing, that is, casting loops of yarn forwardly onto the fixed member to form curled hair thereon in the manner described hereinafter.

The fixed member 10, as shown in FIG. 3, has a central recess 16 at the rear of its larger end in which a bearing 17 is mounted for receiving the shaft 12 to journal the same for coaxial rotation with respect to the fixed member.

In the illustrative embodiment shown in FIGS. 1 to 3 the spinning member 14 is a head having a frusto-conical surface 18 adjacent the large end of the fixed member 10 which surface is tapered at substantially the same angle as the frusto-conical portion of the fixed member. The shaft 12 has a lateral aperture 19 and the head has the passageway 15 formed therein which communicates at one end with the lateral aperture 19 and terminates at its other end in the large portion of the surface 18 and thus is spaced rearwardly of the large end of the fixed member 10. The yarn 20 to be curled passes through the bore of the hollow shaft, the aperture 19 and the passageway 15.

In this embodiment, when the shaft 12 is rotated, the yarn 20 is wound in loops on the surface 18 and these loops are directed forwardly onto the fixed member 10 and then onto the tapered extension 11. At higher speeds of rotation, the yarn is cast forwardly in loops onto the fixed member thereby putting twist therein which make the curls more springy to simulate natural hair.

In FIG. 4, another embodiment of the present invention is shown, which differs from the embodiment shown in FIGS. 1 to 3 in that the head of the spinning member 14 does not have the frusto-conical surface 18 but terminates in a surface 21 perpendicular to the axis of rotation of the shaft 12 with the outer or free end of the passageway 15 being more closely adjacent the fixed member 10 although to the rear thereof.

In this embodiment, the spinning head is adapted to direct and cast loops of yarn into the fixed member 10.

From the foregoing description, it will be seen that the present invention provides an improved apparatus for forming curls of the character indicated herein which is simple in construction and reliable in operation.

As various changes may be made in the form, construction, and arrangement of the parts herein, without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matters are to be interpreted as illustrative and not in any limiting sense.

What is claimed is:

1. Apparatus for curling yarn for the manufacture of simulated curled hair, said apparatus comprising a fixed, generally frusto-conical member, a shaft journaled for rotation with respect to said member having a longitudinal bore for receiving yarn and an aperture extending laterally and outwardly of said bore, and a spinning member mounted on said shaft for rotation therewith and positioned adjacent a large end of said fixed member, said spinning member having a passageway terminating at its free end, to the rear of the fixed member, and positioned to cooperate with said lateral aperture to guide yarn in an inclined path towards said fixed member at an acute angle with respect to the axis of rotation of said shaft, whereby yarn travelling in the inclined path is directed

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forwardly in loops onto said fixed member to form curled hair thereon.

2. Apparatus according to claim 1, wherein said spinning member is provided with a continuous passageway extending from said lateral aperture to its free end.

3. Apparatus according to claim 1, wherein the inclined path is at an angle of about forty-five degrees.

4. Apparatus according to claim 1, wherein said spinning member is a head having a frusto-conical portion extending beyond where said passageway terminates and being adjacent said fixed member and provided with an outer surface tapered at substantially the same angle as said fixed member for guiding the loops onto said fixed member.

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5. Apparatus according to claim 1, wherein said spinning member is a head having a surface adjacent said fixed member where said passageway terminates, which surface is perpendicular to the axis of rotation of said shaft and the loops are cast forwardly onto said fixed member.

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