

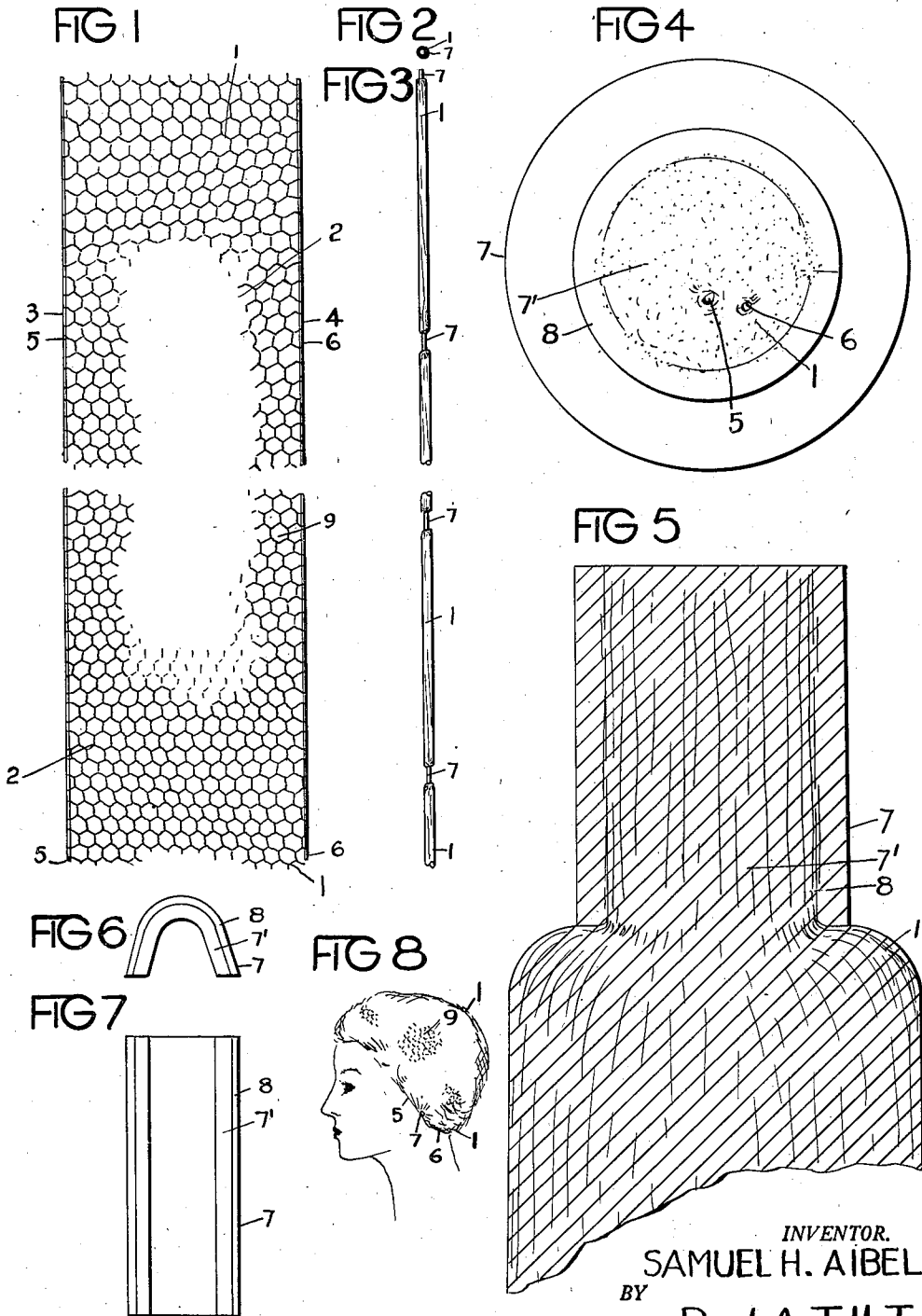
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HAIR NET

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HAIR NET

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My invention relates to an improvement in hair nets and in their manufacture and more particularly in the fastening of the gathered ends of the fine threads of the net and has among its purposes and objects to provide:

A means of securing the ends of hair nets permanently.

A new fastener for hair net ends.

A hair net which has no rough ends.

A hair net with ends secured without metal or knots.

A means for producing a better hair net at a lower cost.

I accomplish these and other objects by the construction herein described and set forth in the accompanying drawing forming a part hereof which illustrates the application of the principles underlying my invention.

In the drawing:

Fig. 1 is a plan of the material of the net before fastening and cutting.

Fig. 2 is an end view of Fig. 3.

Fig. 3 is a view of the net material formed into a continuous string with fasteners in place before cutting into individual nets.

Fig. 4 is an enlarged end view of one of the fasteners after being cut off to fasten one of the ends of the net as shown in Fig. 5.

Fig. 5 is an enlarged sectional detail of one of the fastened ends of the net.

Fig. 6 is an end view of Fig. 7 showing one of the fasteners open before applying to the net.

Fig. 7 is an elevation of one of the fasteners before applying to the net.

Fig. 8 is a perspective view showing the application of my device.

Similar reference characters refer to similar parts throughout the several views of the drawing and in the specifications to follow.

Hair nets have been manufactured in continuous lengths and cut off to the desired size for individual hair nets and the cut off ends are usually gathered and fastened by rivets, clips and knots by hand and by hand machines to complete each individual hair net. Such methods of fastening the ends of the individual hair nets are undesirable because the threads of which the net is made become disengaged from the fasteners which hold them together by clamping the thread by pressure only. The metal fasteners used have rough ends or edges scratching the wearer. And when knots are used clumsy ends result. These various methods of fastening hair net ends are slow and the labor entailed is expensive as well as resulting in an inferior product.

By my invention each end is positively and neatly fastened by a machine which not only secures each thread or fiber of which it is made but requires so little of the length of the thread end of the hair net that it is neat and attractive in appearance with no sharp edges of metal to scratch the wearer and is applied to the hair net automatically and at high speed by the machine, the operation of which is hereinafter more fully described.

The net 1 is preferably manufactured in a continuous strip 2 of the desired width and along its marginal edges 3 and 4 are provided the elastic threads 5 and 6 which may be latex or a similar elastic yarn or other elastic edging secured under tension to the other parts of the net as shown in Fig. 1 of the drawing.

While the net is preferably knitted into a continuous strip, other methods, such as weaving, may be employed. It is important, however, that the elastic edges be kept under tension until the individual hair nets are united by the fasteners 7. The elastic edges are secured to all of the other threads across the width of the continuous strip and later, after the tension is released, the elastic edges, by contracting, cause the net to assume the desired bag like shape. To accomplish securing the threads and elastic marginal yarns together, the flat net is gathered together.

It is not important whether changing the flat net into a string is by folding repeatedly or by gathering the parts as they will naturally be drawn when the feed of the machine forming the net no longer holds the continuous strip in its flat shape. The elastic threads 5 and 6 may assume any relationship to each other and to all of the other threads of the net held in the fastener with them in closing the net in what would be the ends if the individual nets were severed at a great distance apart. They are severed so that the web best suits its purpose in holding the hair of the wearer and the elastic edges become a circle of the desired tension to hold my hair net in place. After weaving, knitting, or otherwise forming the net in its flat shape, and so that the fasteners may be applied, the shape of the continuous flat net is changed to a continuous string.

The flat net is then drawn together into a string as shown in Figs. 2 and 3 and fed into the fastener machine in somewhat the same manner as are shoe strings to which tips are secured.

I have not shown the machine as in most respects it is similar to shoe string tipping ma-

chines and forms no part of my invention herein disclosed. While the machine is fast in its operation of applying the fasteners 7 to my hair net, such fasteners can be applied by other machines or by hand tools.

The fasteners may be of Celluloid or a similar material and may have their interior softened or temporarily liquefied by alcohol ethyl acetate while being formed by pressure around the net string thereby impregnating each thread and fiber of the hair net and uniting them into a single homogeneous mass in which each thread end is held within and forms a part of the fastener. The softened interior of the fastener is later solidified.

Because the threads are united with the fastener material instead of being held together by pressure and friction as is the case when metal fasteners are used much shorter ends of the threads are required in the fastener and the fastener thus may be much shorter. The fasteners can not be removed from the net and because they are relatively small as compared with the various other types of fasteners my fasteners are nearly invisible.

Referring to Figs. 6 and 7 I have illustrated the interior zone 7' as a lining to the harder exterior zone 8 and some materials may be of a character so that zone 7' readily softens or liquefies by chemicals or heat or both without making the exterior zone too soft to be handled while being clinched and compressed around the threads of the hair net and while being severed to form individual hair nets.

The hair net with its elastic margins pulls into a string without rolling. This is made possible because of the open nature of the construction of the hair net and the hexagonally or other spaces 9 formed by the threads. The marginal elastic when stretched and secured with the net in the fasteners contracts after securement and when severed into individual hair nets and the tension is released causes the individual hair net to be baggy and the desired shape to go over the head of the wearer as shown in Fig. 8.

The material of the hair net and the fasteners may vary both as to quality and texture and the size of the parts of both the net and fastener may be made to suit the type of hair net as desired without departing from the principles underlying my invention of which the above de-

tailed description is among the embodiments and serves to illustrate my invention set forth in the appended claims.

I claim:

1. In a hair net, an open net fabric, elastic marginal edges on the sides of said net fabric, and a soluble fastener at each end of said net fabric gathering within it the ends of said net fabric and the ends of said elastic marginal edges, said fastener compressed while plastic on and between said ends to secure them to each other and to said fastener, said soft plastic uniting said ends, said elastic and said fastener.

2. In a hair net comprising an open mesh of fine threads and an edge of elastic, a fastener of plastic united with each end of said threads and each end of said elastic, said fastener holding said ends by adhesion and impregnation whereby the length of said fastener is reduced and said threads and said elastic are prevented from pulling out of said fastener.

3. In a hair net comprising an open mesh of fine threads and an edge of elastic, a fastener of plastic united with each end of said threads and each end of said elastic, said fastener having a length not more than three times its thickness.

4. In a hair net comprising an open mesh of fine threads and an edge of elastic, a fastener of plastic united with each end of said threads and each end of said elastic, said fastener holding said ends by adhesion and impregnation whereby said fastener may be secured by heat and chemicals to each thread while said fastener is in a liquid state to form a homogeneous mass with said threads and elastics within said fastener.

5. In a fastener for hair nets, said hair net having threads and ends thereof all secured in said fastener, said fastener having a soluble interior permitting the ends of said threads to be impregnated and to adhere to said fastener when in a liquid state, thereby forming a homogeneous mass with said threads.

6. In a hair net, threads comprising said hair net, and means fastening said threads at their ends, said fastener being softened to unite around and between said thread ends and formed around all of said ends, said fastener uniting with said ends, thereby forming a homogeneous mass with said threads.

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