Jan. 26, 1943. L. J. F. MORINS 2,309,135

HAIR NET

Filed Nov. 14, 1942 2 Sheets-Sheet 1

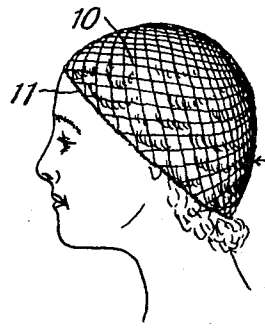


Fig. 1.

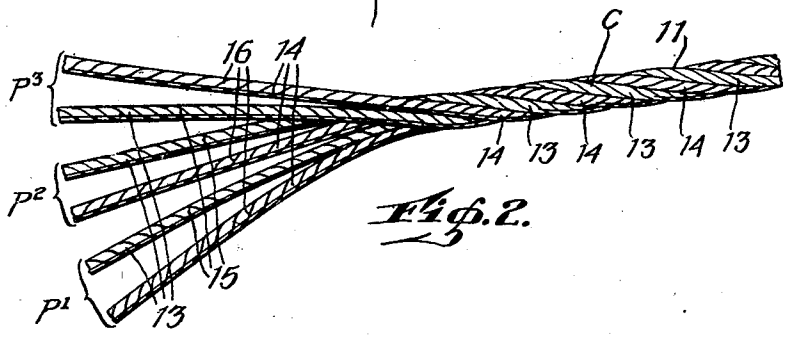


Fig. 2.

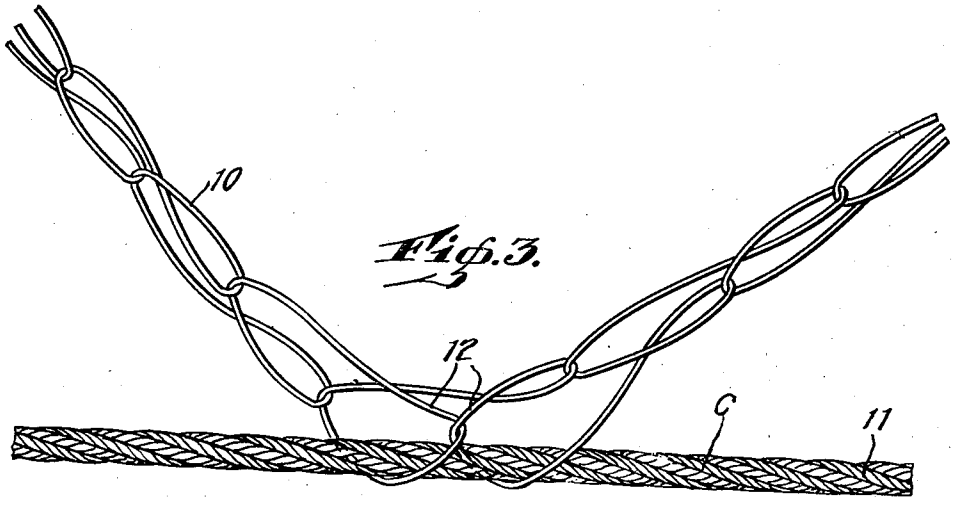


Fig. 3.

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Filed Nov. 14, 1942 2 Sheets-Sheet 2

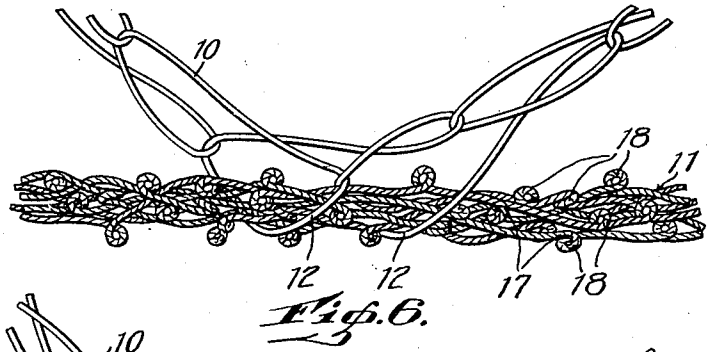


Fig. 6.

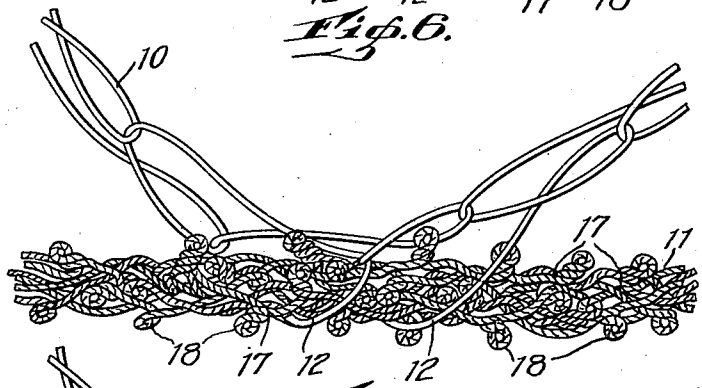


Fig. 5.

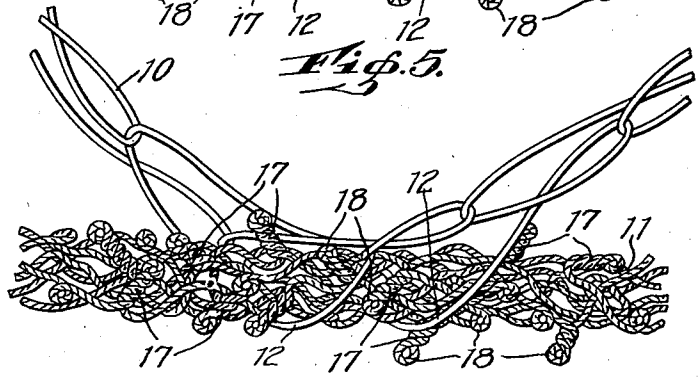


Fig. 4.

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UNITED STATES PATENT OFFICE

2,309,135

HAIR NET

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Application November 14, 1942, Serial No. 465,610

13 Claims. (Cl. 132—49)

This invention is a hair net characterized by a pouch in the form of a ground netting having a normally compressed resilient peripheral border or rim adapted initially to be stretched to be positioned over a head of hair and subsequently adapted to retract automatically to maintain the pouch in place against the head of hair of the wearer of the hair net. The primary object of the invention resides in providing a serviceable hair net of the type referred to wherein the ground netting is of relatively inelastic and untwisted strands of yarn and the border is of a multiplicity of pairs of strands of highly twisted yarn and with the strands of each pair biased in opposite directions to provide pursuant to processing of the hair net a peripherally closed and appreciably contracted or shrunken and consolidated rim or compressed band comprising a myriad of coalesced and normally closed or wound up nibs or resilient coiled portions appropriately counter balanced and extending in closely scattered and different directions but adapted to unravel upon manual stretching of the border or rim whereby the latter can be appreciably extended or enlarged for desirably fitting over the head of hair and adapted upon removal of the manual stretching thrust thereon to automatically retract to bear however yielding against the forehead of the wearer and the head of hair. An ancillary object is to provide a novel hair net having a resilient rim or border without employing a critical material such as rubber or the like nevertheless however providing an efficient resilient border of the type referred to susceptible for elongation as desired and automatically retractible to conform to the head of the wearer. Other important objects, features and functional and structural advantages of the invention will be better appreciated from the teachings of the following detailed disclosure taken in the light of the accompanying drawings wherein:

Fig. 1 is a perspective view of the hair net according to a preferred embodiment of my invention.

Fig. 2 is an appreciably enlarged perspective and partly frayed view of the resilient rim or border of the hair net shown prior to processing thereof, the border in part being unravelled to illustrate the multiplicity of pairs of oppositely biased and highly twisted strands of yarn.

Fig. 3 is an enlarged and fragmentary view of the hair net illustrating a portion of the ground mesh or netting and a portion of the rim prior to processing.

Fig. 4 illustrates on a larger scale a portion of the hair net after having been processed.

Fig. 5 is a view similar to Fig. 4 but illustrating the border slightly stretched, and

Fig. 6 is a view similar to Fig. 5 but with the border further elongated due to the almost complete unravelling of the normally closed but coiled scattered nibs.

Illustrative of the embodiment disclosed, the hair net generally designated H is characterized by a ground mesh netting 10 of relatively inelastic and untwisted yarn or thread appropriately formed into a cap or pouch to desirably and removably encompass the head of the wearer as is well understood.

For retaining the pouch in place against the head of hair, the ground mesh 10 is spatially interlaced by the terminal loops 12 to the peripherally closed relatively resilient and normally contracted rim or border 11 comprising a multiplicity of pairs of strands of highly twisted yarn. For example as shown in Fig. 2 the rim 11 includes three pairs of highly twisted strands of yarn P^1, P^2 and P^3 and corresponding strands of each pair being twisted or biased oppositely to respective companion strands 14, that is, the bias of strands 13 being schematically designated 15, that is, extending obliquely downwardly from left to right while the bias of the companion strands 14 of the several pairs being designated 16 and extends obliquely upwardly from left to right. The reason for oppositely biasing of the companion strands of the multiplicity of pairs of strands is to set up an inherent counter balancing action in the border or rim when processed in shrinking and dying for intensifying the contraction thereof after manual elongation.

The relatively inelastic and untwisted strands of yarn of the pouch is smaller than the highly twisted strands of the several pairs of strands of the elastic border or rim. Prior to processing, the strands of the rim or border are disposed in a closed fashion to form helical convolutions C (Fig. 3) but with the twist or bias of the convolutions fairly long compared to the fairly short bias of the highly twisted yarn of the several pairs. By reason of the aforesaid long bias of the convolutions along the entire length of the border, the highly twisted strands of the pairs thereof are precluded from unravelling prior to processing.

With the rim 11 connected or suspended from the pouch illustrated in Fig. 3, the hair net is now processed in immersing thereof for a moment or two in a suitable liquid, which may be boiling

water and which may contain a suitable dye, the original helical formation of multiplicity of pairs of strands of the rim has become lost upon removal of the hair net from the processing solution and dried. By this processing, the pairs of strands characterizing the rim have shrunk materially and appreciably densified whereby each of the highly twisted strands includes a multiplicity of closely scattered or twisted or coiled nibs 17 (Fig. 4) compactly arranged but extending in diversified directions due to their opposite bias and since the strands of all the pairs P^1, P^2 and P^3 have been foreshortened the rim is normally contracted or condensed as in the case where the hair net is free of a head of hair.

By reason of the normally contracted relation of the pairs of strands the rim may be readily expanded or stretched upon the application of outward finger thrust on spaced parts of the rim. In this way the rim may be conveniently elongated to go over the head of hair. If thereafter the finger thrust formerly applied be removed, the rim automatically retracts, that is, the nibs recoil to resiliently retract the rim and thus yieldingly bear against the hair and the head of the wearer of the hair net to hold the latter in place and against dislodgment.

Of interest in connection with the expanding relation of the rim is the matter of the unwinding of the opposite biased and densely associated counterbalanced nibs 17 which when the rim is initially stretched start to unravel or unwind as indicated in Fig. 5 and as the border is further stretched these coiled nibs or coiled projections are almost indistinct except for their heads or eye portions 18 and even these may disappear on further elongation of the rim.

Pursuant to the removal of the stretching thrust applied to the rim, the recoil action as heretofore stated inherent in the previously convoluted nibs comes into play, and hence automatically retract to wind up again into their helical or coiled form and in their densely closed relation shown in Fig. 4. Consequently the rim or band may be said to be resilient in the form of a consolidated cord for after it is stretched, it will automatically retract and densify. It is apparent therefore that due to such elasticity even though no critical material, such as rubber, be utilized, the border or rim herein is adequately elastic to yieldingly hold the hair net against the periphery of the head of the wearer and without causing discomfort even during slumber. Where after the massed and densed helical or coiled nibs have gone through appreciable use, their recoil tendency may be slightly impaired or weakened, but such nibs may be conveniently restored to their desired helical or coiled strength or intensity by subjecting the hair net to a bath of cold water for a moment or two and dried and this action again restores the highly twisted and oppositely biased strands to their closed coiled nib formation in which instant the rim is again in its unstretched relation having shrunk close to forty percent of its original length prior to processing. In U. S. Letters Patent 2,303,220, recently issued to applicant, the band or rim W includes a number of sections S each having the looped bridge portion B and the looped diverged arms A, and the latter only are secured to the ground mesh G, that is, the arms A extend in different directions and in a direction different from the bridge portions B. Thus the portions of the band or rim of the patented construction are not consolidated and thus extend in many directions and not in a consolidated unidirection and endlessly along the margin of the ground netting G as described by applicant herein and by reason of such unidirectional and compact relation the loop formations, such as L, and the diverged arms A of the aforementioned Letters Patent are eliminated, and consequently a consolidated and compact elastic cord as herein pointed out by applicant is provided, permitting this cord, defined by the helical convolutions C (Fig. 3) to be bodily retained by the terminal loops 12 spaced along the peripherally closed margin of the ground netting 10.

It is thus apparent that the peripheral marginal portion of the pouch embodies the spaced terminal loops 12 and the multiplicity of shrunken strands characterizing the rim 11 in fact constitute a unitary cord extending endlessly and unidirectionally along the margin of the pouch, the shrunken strands being consolidated into a unitary body all along the rim. Hence it is intended that the expression "consolidated" should mean that the shrunken strands of all portions of the cord or rim are concentrated in toto in a massed fashion and bodily carried by the loops 12 as shown in Figs. 4–6 herein as distinguished from the spreading aspect of the portions B relative to arms A of the respective sections S in Letters Patent 2,303,220 recently issued to applicant wherein the pouch is connected to the arms A only of the sections S, leaving the bridge portions B unsecured to the pouch except at the arms A adjacent the ends of the bridge portions, and hence the bridge portions B and arms A of the sections S are not consolidated or merged. Or in other words by the expression "consolidated" it is meant that all of the strands of the rim shown by applicant are brought together into one massed body forming in fact the unitary consolidated cord.

While the principles of the invention have been shown and described in connection with the preferred embodiment thereof and while the functional and structural features of which embodiment have also been disclosed in detail, it is to be understood that this has been done for purpose of illustration and disclosure only in that the invention is not limited thereby but is susceptible to various changes in form and details of its scope.

I claim:

1. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying closely arranged pairs of strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

2. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means and a unitary cord defining a peripherally closed resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying closely arranged shrunken pairs of strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

3. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means, and

a unitary cord defining a peripherally closed resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying helically arranged pairs of strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

4. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying closely arranged shrunken pairs of strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation and defining normally coiled nibs extending in diversified directions, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

5. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of contiguously disposed pairs of shrunken strands of highly twisted yarn and defining a multiplicity of coiled nibs extending from each strand of said pairs, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

6. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means of relatively inelastic yarn and a unitary cord defining a peripherally closed and consolidated rim disposed endlessly and unidirectionally along said marginal portion embodying contiguous pairs of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation and subjected to moisture and drying for shinking said strands and providing each of said strands with a multiplicity of coiled nibs for rendering said strands stretchable over a head of hair in the unravelling of said nibs and for rendering said rim automatically retractible in the automatic recoil of said nibs to yieldingly and removably bear against said head of hair, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

7. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means of relatively inelastic yarn and a unitary cord defining a peripherally closed and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying contiguous pairs of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation and subjected to moisture and drying for shrinking said strands and providing each of said strands with a multiplicity of scattered and normally closed coiled nibs for rendering said strands stretchable over a head of hair in the unravelling of said nibs and for rendering said rim automatically retractible in the automatic recoil of said nibs, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

8. A hair net comprising a ground netting characterizing a pouch having a peripheral marginal portion including spaced terminal loop means of relatively inelastic yarn and a unitary cord defining a peripherally closed and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying contiguous pairs of highly twisted yarn subjected to moisture and drying for shrinking said strands and providing thereon a multiplicity of normally closed and contiguously arranged coiled nibs for rendering said strands stretchable over a head of hair in the unravelling of said nibs and for rendering said rim automatically retractible in the automatic recoil of said nibs, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

9. A hair net comprising a netted pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of pairs of contiguous shrunken strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, each of said strands of said pairs including a plurality of normally closed coiled nibs characterizing projections extending in diversified directions, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

10. A hair net comprising a netted pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of pairs of contiguous shrunken strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, each of said strands of said pairs including a plurality of normally closed coiled nibs characterizing scattered projections extending in diversified directions and adapted to be unravelled upon the application of an outwardly directed thrust to said rim for elongating the latter, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

11. A hair net comprising a netted pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of pairs of contiguous shrunken strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, each of said strands of said pairs including a plurality of normally closed coiled nibs characterizing projections extending in diversified directions, each of said strands upon the application of an outwardly directed thrust on said rim elongating in the unravelling of said nibs and upon removal of said thrust said nibs automatically recoil to foreshorten said strands, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

12. A hair net comprising a netted pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of pairs of

contiguous shrunken strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, each of said strands of said pairs including a plurality of normally closed coiled nibs characterizing projections extending in diversified directions, the coiled nibs of said strands being closely arranged and characterizing means adapted to unravel for elongating said rim, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

13. A hair net comprising a netted pouch having a peripheral marginal portion including spaced terminal loop means, and a unitary cord defining a peripherally closed and normally contracted resilient and consolidated rim disposed endlessly and unidirectionally along said marginal portion and embodying a plurality of pairs of contiguous shrunken strands of highly twisted yarn with the strands of each of said pairs disposed in an opposite biased relation, each of said strands of said pairs including a plurality of normally closed coiled nibs characterizing projections extending in diversified directions, the coiled nibs of said strands being closely arranged and characterizing tensioned means adapted to unravel for elongating said rim and to automatically recoil, said loop means bodily sustaining said unitary cord at said marginal portion peripherally thereof.

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