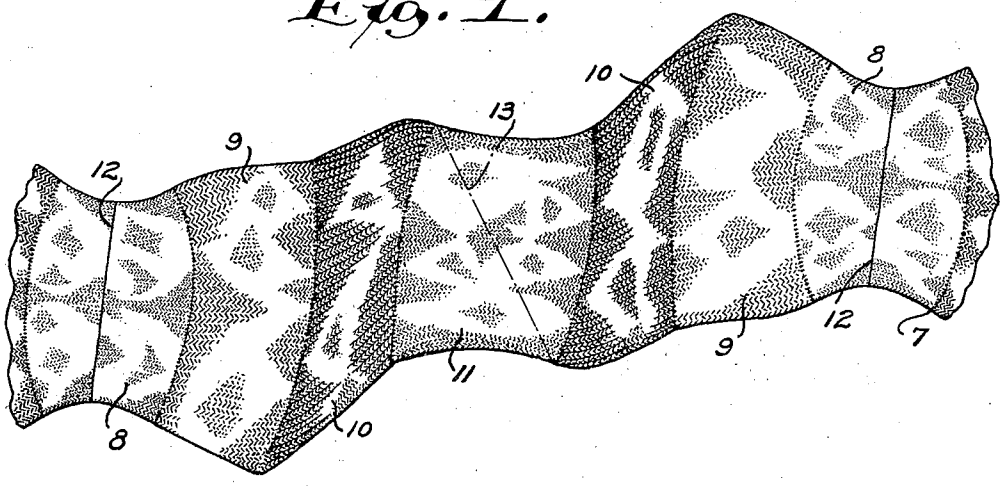
Oct. 21, 1941. F. J. WENGEN 2,259,537

KNITTED CAP

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Fig. 1.



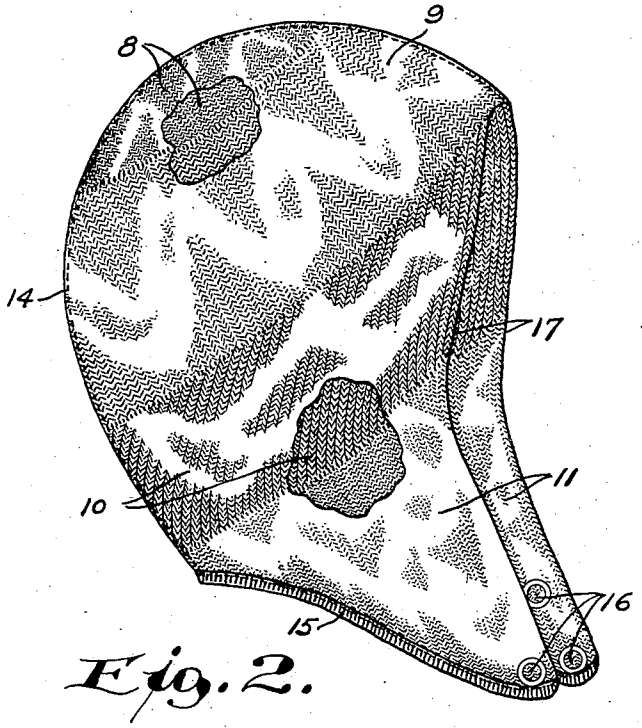


Fig. 2.

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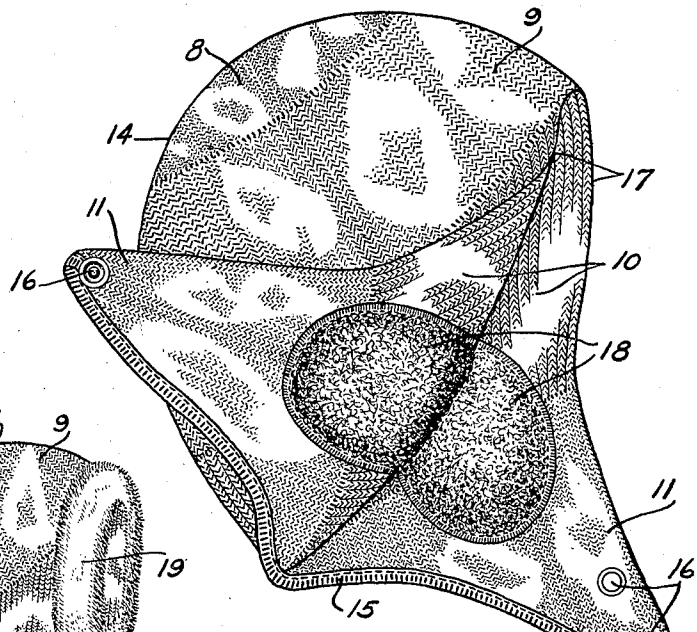
ATTORNEYS.

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KNITTED CAP

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Fig. 3.



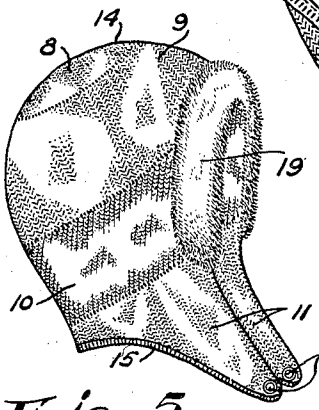


Fig. 5.

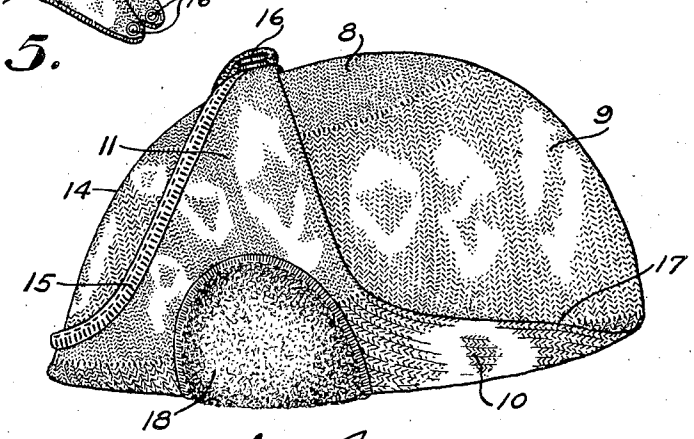


Fig. 4.

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UNITED STATES PATENT OFFICE

2,259,537

KNITTED CAP

Frank J. Wengen, Milwaukee, Wis., assignor to Eagle Knitting Mills, Inc., Milwaukee, Wis., a corporation of Wisconsin

Application June 15, 1940, Serial No. 340,715

9 Claims. (Cl. 2—201)

The present invention relates in general to improvements in the art of producing wearing apparel such as headwear, and relates more specifically to improvements in the construction of knitted caps and to an improved mode of producing the same.

Generally defined, an object of the invention is to provide an improved knitted cap assemblage which is simple in construction and efficient in use.

Some of the more important specific objects of the present invention may be enumerated as follows:

To provide an improved method of producing caps from a continuous ribbon or strip of knitted fabric or the like, having successive sections thereof knotted in a manner which will insure most effective conforming of the finished caps to the wearers' heads.

To provide an improved knitted cap assemblage which can be quickly produced without waste of stock, and which will snugly conform to the wearer's head and may be worn in different modes.

To provide a new and useful knitted cap wherein the texture of the knitting causes the various portions of the completed assemblage to properly conform with a wearer's head, and which is especially adapted to be worn in cold weather.

To provide an improved snug fitting cap structure which can be manufactured and sold at moderate cost, and which may be readily provided with local accessories for providing additional warmth and trim in order to enhance the comfort and improve the esthetic appearance.

To provide a new knitted cap assemblage which may be rapidly constructed in quantity, and which is durable and highly effective in use.

These and other specific objects and advantages of the invention will be apparent from the following detailed description.

A clear conception of the mode of producing knitted caps in accordance with the present invention, and of the specific construction of these caps, may be had by referring to the drawings accompanying and forming a part of this specification wherein like reference characters designate the same or similar parts in the various views.

Fig. 1 is a plan view of a fragment of a continuous flat knitted strip of fabric showing a section sufficient to form one of the improved caps, and also showing the strip with the normal tension thereon released;

Fig. 2 is an enlarged view of one of the improved cap assemblages in flatly collapsed condition, several portions of one side having been broken away in order to reveal the opposite side;

Fig. 3 is a similar view of a modified cap having ear muffs attached to its opposite inner sides, showing one of the chin flaps folded back so as to reveal the ear muffs;

Fig. 4 is another view of the modified cap of Fig. 3, showing both chin flaps folded upwardly and interconnected at their ends above the top of the cap; and

Fig. 5 is a similar view to a reduced scale, of a further modified form of my improved knitted cap, having a fluffy forehead engaging member associated therewith.

While the invention has been shown and embodied in a particular type of knitted cap assemblage of the aviation helmet type, it is not my desire or intent to thereby unnecessarily restrict the scope or utility of the improvement which is more generally applicable to other types of cap assemblages.

In carrying on commercial exploitation of my present invention, I preferably produce the knitted fabric in the form of a continuous flat strip 7 a fragment of which is shown in Fig. 1. This strip 7 during the knitting operation has approximately parallel opposite side edges and is provided with a succession of sections 8, 9, 10, 11, which are periodically repeated throughout the length of the strip 7, and of which the sections 8 and 11 embody like knitting and have wales extending parallel to each other and to the longitudinal edges of the strip, while the sections 9, 10 are rather loosely knitted and have heavier wales, but the heavy wales of the sections 9 alone are parallel to each other and to the longitudinal strip edges whereas the wales of the sections 10 are formed to draw them into diagonal or inclined position with respect to the adjoining ends of the sections 9, 11. The smaller parallel wales of the strip sections 8, 11 are knitted closer or more tightly than the larger or heavier wales of the adjoining sections 9, 10, and the smaller wales therefore exert greater resistance to lateral spreading of the sections 8, 11 than is afforded by the heavier wales. The inclined wales of the sections 10 may be readily formed during the knitting operation, and the successive sections 10 are offset in opposite directions as shown in Fig. 1. The knitting machine may be set to automatically switch from one type of knitting to another required to form the continuous strip 7, so that no manual operations are required after the mechanism has been initially properly set,

After proper knitting of the strip 7 has been effected, it may be cut into complete cap blanks by severing the strip transversely along lines 12 midway between the opposite ends of the successive sections 8. Each cap blank may thereafter be divided into half sections by severing the same along a line 13 extending diagonally across its mid-section 11. The half blanks thus produced, are of like formation when superimposed upon each other, and may be quickly assembled and permanently united to produce a cap structure such as shown in Fig. 2, by sewing the edges of the half blanks together along a seam 14. The cut edges produced by severing the blank along the line 13 may then be provided with an elastic binding 15; and the triangular chin flaps formed by cutting the section 11 diagonally, may be provided with cooperating snap fasteners 16.

The completed knitted caps which may be thus quickly produced from successive sections of the strip 7, are practically form fitted to the head of a wearer by virtue of the fact that the closely knit half-sections 8 provide the extreme top of the dome, the cooperating sections 9 completely encircle the wearer's head beneath the cupped sections 8, the diagonally waled sections 10 are adapted to lap over the ears and rear neck portion of the wearer and force the edges 17 into intimate contact with the opposite sides of the face while resisting excessive transverse stretching, and the chin flaps 11 which are closely knit and are reenforced by the elastic edging or binding 15 have just sufficient elasticity to maintain snug coaction with the entire rear, sides and top portion of the head of the wearer. The specific formation and disposition of the wales of the successive sections during knitting of the continuous strip, and the subsequent assemblage of the complementary half-blanks, produces a final cap which fits the wearer's head perfectly, and in which the chin flaps formed by the sections 11 can either be secured beneath the wearer's chin, or folded upwardly and outwardly along the adjoining end portions of the sections 9, 10 and joined by the snap fasteners 16 above the top of the dome.

While added protection for the ears of the wearer may not be necessary or desirable in most cases, such additional protection may be readily provided as shown in Figs. 3 and 4. The interior of the cap is provided with ear muffs or pads 18 which may be permanently sewed in position across the junctions between the chin flap sections 11 and the inclined waled sections 10. When the chin flaps are connected beneath the wearer's chin with the aid of the snap fasteners 16, the pads 18 will be concealed and will hug the wearer's ears. However, when the chin flaps are folded up and are connected above the top of the cap as in Fig. 4, the ear pads 18 will be visible and will serve as decorations for the cap assemblage.

It may also be desirable to provide additional trim for the cap along the front edges 17, in order to produce a bonnet effect, and this result may be accomplished by providing a fluffy member 19 along these edges 17, as clearly shown in Fig. 5. This pompon member 19 will be drawn into snug coaction with the face of the wearer by the inclined wales of the cooperating sections 10, so that the specific formation of these wales may in fact be utilized advantageously for various purposes.

From the foregoing detailed description, it will be apparent that my present invention provides an improved method for producing improved knitted caps of the helmet type, in an expeditious and efficient manner. By properly forming the strip 7 from which the successive caps are subsequently produced, the texture of the various sections of the cap will cause these sections to most effectively cooperate with the different portions of the wearer's head. The closely knit uppermost sections 8 which offer both longitudinal and transverse resistance to stretching, will cause the top portion of the cap to snugly coact with the extreme top of the wearer's head without annoyance. The relatively transversely stretchable section 9 will permit the cap to accommodate itself to heads of different sizes, without annoyance to the wearer. The sections 10 with their inclined wales, will likewise permit stretching transversely, but will also cause the adjacent portions of the cap to snugly cooperate with the wearer's ears and neck, and the chin flaps 11 which have less stretchability than the sections 10, and which are reenforced by the elastic binder 15, may be pulled downwardly and secured beneath the wearer's chin to cause snug coaction of the entire cap with the wearer's head, but will return to initial position whenever released. In this manner the specific formation of the wales in the successive adjoining sections, will cause the cap to most effectively cooperate with the wearer's head, and by knitting the blanks as shown in Fig. 1, successive caps can be quickly produced in rapid succession, and assembled into the completed structures. The downward and rearward inclination of the wales of the sections 10 and their cooperation with the approximately vertical wales of the adjoining sections 9, 11 is extremely important in causing the cap to hug the wearer's head, and the elastic edging or binder 15 cooperates with the inclined wales of the sections 10 to insure snug coaction of the rear portion of the cap with the neck of the wearer. Ear pads 18 and members 19 may be applied to these caps so as to improve their comfort and appearance and these ear pads and pompon members also cooperate with the diagonally waled sections 10 to enhance the comfort to the wearer. The present improvement has proven highly successful in actual use, and it has been found that caps of this type can be quickly produced at moderate cost and are extremely effective in actual use.

It is to be understood that it is not desired to limit the invention to the exact steps of the method or to the precise construction of the cap, herein described and shown, for various modifications within the scope of the claims may occur to persons skilled in the art.

I claim:

1. The method of producing a knitted cap, which comprises, knitting a strip having opposite ends and a medial inner section provided with close knitted wales extending approximately parallel to the direction of extent of the strip, having adjacent each end an outer section provided with likewise parallel wales of less transverse resistance to stretching, and also having between each of said outer sections and said medial section an intermediate section provided with inclined wales, severing said inner section diagonally, superimposing the severed strip portions to cause the corresponding sections thereof to register, and uniting all edges of both outer sections and one edge of the two intermediate sections to form the cap.

2. The method of producing a knitted cap, which comprises, knitting a fabric strip having a medial closely knit inner section resistant to stretching both transversely and longitudinally of the strip, having adjacent each end of said section an intermediate section provided with wales extending at an inclination to the direction of extent of the strip, and also having adjacent the end of each inclined wale section a ribbed outer section of less transverse resistance to stretching than said medial section, diagonally severing the medial section to produce two similar but reversely positioned portions, reversing and superimposing the severed strip portions to cause the corresponding sections thereof to register, and uniting all edges of both outer sections and one edge of the two intermediate sections to form a cap.

3. The method of producing a knitted cap, which comprises, knitting a fabric strip having a medial closely knit inner section resistant to stretching both transversely and longitudinally of the strip, having adjacent each end of said section an intermediate section provided with wales extending at an inclination to the direction of extent of the strip, and also having adjacent the end of each inclined wale section a ribbed outer section of less transverse resistance to stretching than said medial section, diagonally severing the medial section, superimposing and uniting the severed strip portions along all edges of both outer sections and along one edge only of the two intermediate sections to form a cap, and applying an elastic binding to the severed edges only of said inner section portions.

4. The method of producing a knitted cap, which comprises, knitting an elongated strip having a medial closely knit longitudinally parallel ribbed inner section highly resistant to transverse and longitudinal stretching, having adjoining each end of the medial section an inclined ribbed intermediate section of greater transverse stretchability than said inner section, and also having adjoining the end of each inclined ribbed section another parallel ribbed outer section of greater transverse stretchability than said medial section, severing the medial section diagonally, and superimposing and permanently uniting the severed strip portions along all edges of said outer sections and along one edge only of the two intermediate sections, the opposite corresponding edges of the two intermediate sections being joined at their upper ends and the lower portions of said edges being flush with the unsevered edges of the inner section.

5. The method of producing a knitted cap, which comprises, knitting an elongated strip having a medial closely knit longitudinally parallel ribbed inner section highly resistant to transverse and longitudinal stretching, having adjoining each end of the medial section an inclined ribbed intermediate section of greater transverse stretchability than said medial section, and also having adjoining the end of each inclined ribbed section another parallel ribbed outer section of greater transverse stretchability than said medial section, severing the medial section diagonally to produce reversely positioned similar portions, reversing and superimposing and permanently uniting the severed strip portions along the entire edges of said outer sections and along one edge only of the two intermediate sections, and applying an elastic binding to the diagonally severed edges of said inner section portions.

6. A knitted cap comprising, complementary side portions each having an approximately vertically ribbed upper section connected along both edges to the other upper section, a medial section adjoining the upper section and provided with downwardly and rearwardly inclined ribs, the two medial sections being connected only at their rear edges, and lower triangular vertically ribbed sections depending from the lower edges of said inclined ribbed sections.

7. A knitted cap comprising, complementary side portions each having an approximately vertically ribbed upper section connected along both edges to the other upper section, a medial section adjoining the upper section and provided with downwardly and rearwardly inclined ribs and forward edges, the two medial sections being connected only at their rear edges but meeting at the upper portions of their forward edges, and lower triangular vertically ribbed sections depending from the lower edges of said inclined ribbed sections, the upper portions of the front edges of said triangular sections being flush with the lower ends of the forward edges of said medial sections.

8. A knitted cap comprising, complementary side portions each having an approximately vertically ribbed upper section connected along both edges to the other upper section, a medial section adjoining the upper section and provided with downwardly and rearwardly inclined ribs, the two medial sections being connected only at their rear edges but meeting at the upper ends of their front edges, and lower triangular vertically ribbed sections depending from the lower edges of said inclined ribbed sections, said triangular sections being joined at the rear portions of their lower edges and having the upper ends of their forward edges flush with the lower ends of the front edges of said medial sections.

9. A knitted cap comprising, complementary side portions each having an approximately vertically ribbed upper section connected along both edges to the other upper section, a medial section adjoining the upper section and provided with downwardly and rearwardly inclined ribs, the two medial sections being connected only at their rear edges, lower triangular vertically ribbed sections depending from the lower edges of said inclined ribbed sections, and an inverted U-shaped pompon member secured to the free front edges of both of said inclined ribbed sections.

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