

[54] SLEEPING BAG AND METHOD OF
FABRICATING SAME

[75] Inventor: Mark E. Erickson, Oakland, Calif.
[73] Assignee: The North Face, Berkeley, Calif.
[22] Filed: Sept. 24, 1973
[21] Appl. No.: 399,689

[52] U.S. Cl. 5/343; 5/355; 2/69.5
[51] Int. Cl. A47c 23/00; A47c 27/00
[58] Field of Search 5/343, 355; 2/69.5

[56] References Cited

UNITED STATES PATENTS			
2,379,416	7/1945	Clark	5/343 X
2,555,051	5/1951	Miller	5/343
2,725,927	12/1955	Feinerman	5/355
FOREIGN PATENTS OR APPLICATIONS			
486,108	8/1952	Canada	5/343
100,973	10/1962	Norway	5/343

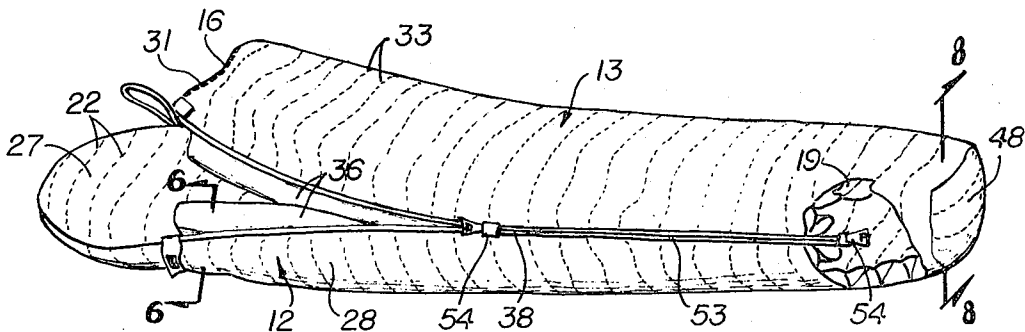
Primary Examiner—Paul R. Gilliam
Assistant Examiner—Andrew M. Calvert
Attorney, Agent, or Firm—Julian Caplan

[57] ABSTRACT

A sleeping bag has an outside cover formed of two longitudinal halves seamed together along a longitudinal seam which is preferably overlapped and "clean finished". One edge of each of a plurality of "block baffle" short parallelogram meshes is sewn into the longitudinal seam. Sewn transversely at spaced inter-

vals to the inside surface of the outside cover are the edges of each of a plurality of transverse baffles which are also sewn to the side edges of the block baffles. The inside cover is seamed also in a preferably overlapped longitudinal stitch and hence does not irritate the wearer. The free edge of each transverse baffle is sewn to the inside cover and the free edge of each block baffle is stitched to the longitudinal stitch of the inside cover. This forms a plurality of transverse filler chambers, each chamber blocked at its center by a block baffle. In a modified form of the invention, the block baffle is a single piece of material seamed to the longitudinal seams of the inside and outside covers and the transverse baffles each consist of two halves having their inner ends joined to the block baffle. In a preferred form of the invention, a first draft flap is sewn to the inside surface of the inside cover and to one edge of one slide fastener fabric; and optionally, a second draft flap is sewn to the inside cover and one edge of the other slide fastener fabric. The filler chambers are then pneumatically filled with down or other insulation. The slide fastener fabric edges are sewn closed to the outside cover edges, also closing off the filler chambers. A foot section may be added. A net baffle is sewn to the circumference of the foot section assembly. The outside cover of the foot section is sewn circumferentially to both halves of the outside cover and the inside cover is likewise sewn circumferentially to both joined halves of the inside cover. In each instance, the seam allowances are turned in so as not to be visible to the user and the seams do not irritate the feet.

13 Claims, 10 Drawing Figures



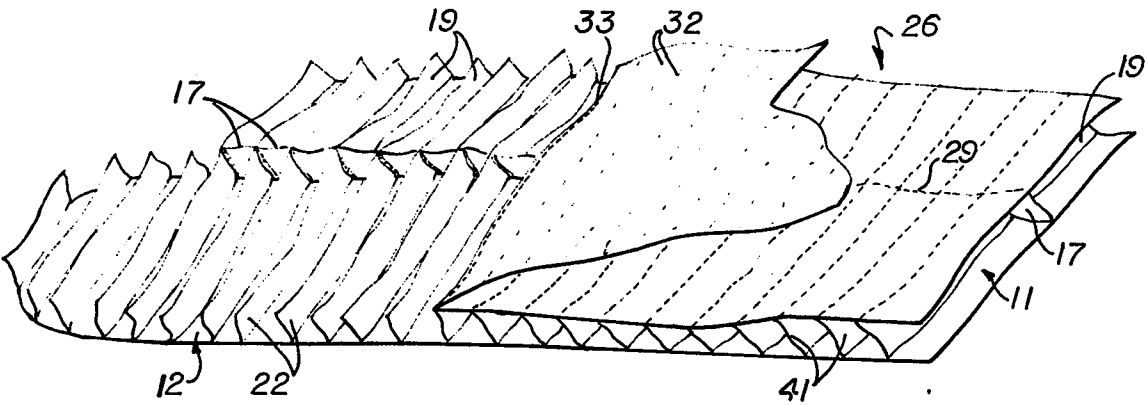


Fig. 5

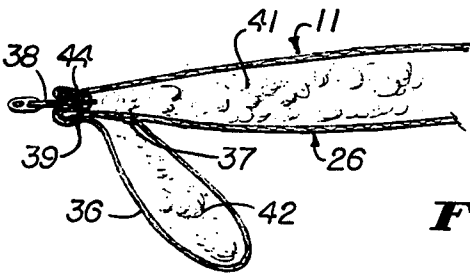


Fig. 6

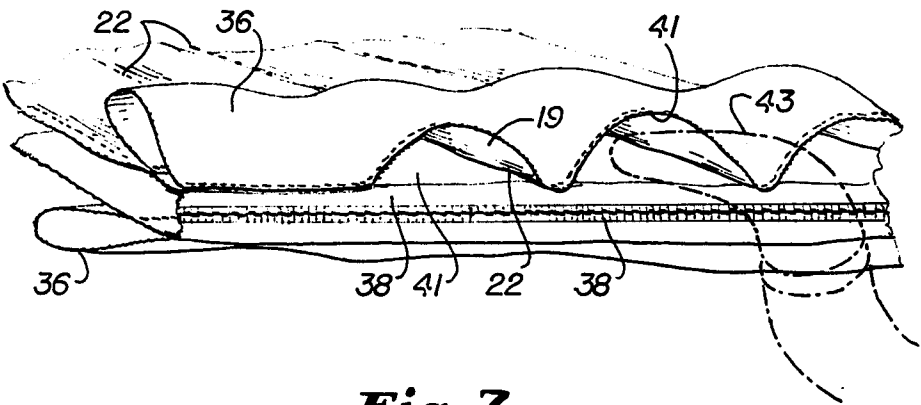


Fig. 7

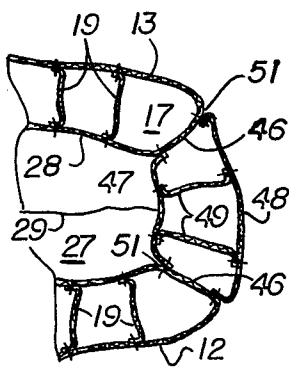


Fig. 8

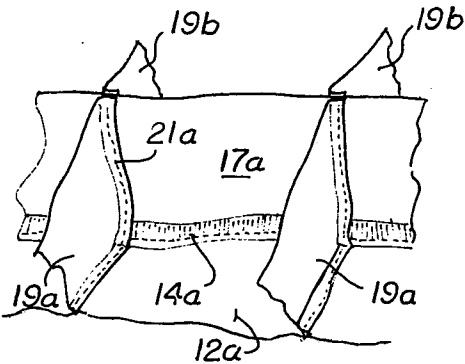


Fig. 10

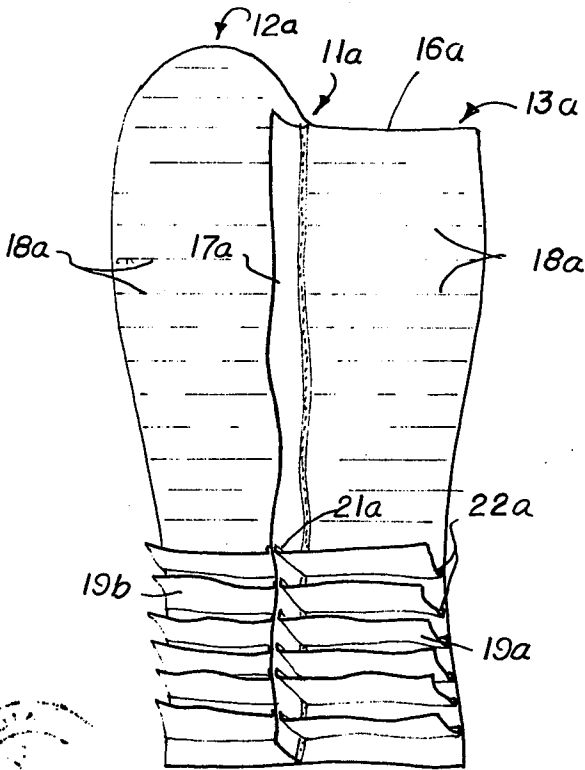


Fig. 9

SLEEPING BAG AND METHOD OF FABRICATING SAME

This invention relates to a new and improved sleeping bag and method of fabricating same. More particularly, the bag is provided with a plurality of transversely extending chambers for filling material, such as down. The baffles of the chambers prevent the filling material from moving toward either end. Further, each chamber is provided with a blocking baffle along the side edge of the bag opposite the slide fastener which prevents the filling material in one half of the bag from moving to the other. The bag is provided with a separate baffled foot section, the filler material in the foot section being separated by baffles in the same manner as the main body of the bag.

Another feature of the invention is the use of a draft strip along the side edge of the top or bottom of the inner cover, or both, adjacent the slide fastener. This deters cold air from entering through the uninsulated slide fastener.

A particular feature and advantage of the present invention is that there is no exposed stitch on the inside of the bag either on the side edge or at the foot section. In this respect, the present invention is a distinct improvement over prior bags. The absence of such an exposed stitch in the present invention is important in that there is no rough seam to cause irritation. Additionally, no bias tape is required at the seams, which is another source of irritation in conventional bags.

Another important feature of the invention is the fact that only a single block baffle is employed in the various filler chambers, this block baffle being on the side of the bag opposite the slide fastener. Conventional construction of high quality sleeping bags has heretofore employed two block baffles at the seam. The use of the single baffle not only saves labor, material and weight, but also insures that there is no filler material void at the side of the bag and hence no loss of heat insulation. It will be understood that where two block baffles are employed, there is a tendency for a V-shaped void to occur on the side opposite the slide fastener with an accompanying decrease in heat insulation.

In the fabrication of the bag, one of the features of the invention is the fact that the seam at the sides of the inside and outside cover are formed first and the block baffles are installed at this time, whereas the seams at the slide fastener side of the bag are formed last and one edge of the draft strip is closed at the time that the slide fastener seam is made.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

FIG. 1 is a perspective view of a bag made in accordance with the present invention, partly broken away at the foot section to reveal internal construction.

FIG. 2 is a plan view of the outside cover of the bag, viewed from the side which ultimately becomes the inner side thereof, at an intermediate stage in its fabrication.

FIG. 3 is a view similar to FIG. 2 of the inside of the inside cover.

FIG. 4 is an enlarged perspective view of a portion of the structure of FIG. 2 showing the joining of the block baffles to the side seam of the outside cover and the joining thereof to the transverse baffle.

FIG. 5 is a perspective view showing an intermediate stage in the fabrication of the bag wherein the inside and outside covers are in the course of being joined together.

FIG. 6 is an enlarged, fragmentary sectional view taken substantially along the line 6—6 of FIG. 1.

FIG. 7 is a perspective view showing a stage in the fabrication of the bag wherein filler is being blown into the transverse filler chambers.

FIG. 8 is a sectional view taken substantially along the line 8—8 of FIG. 1.

FIG. 9 is a view similar to FIG. 2 of a modified construction.

FIG. 10 is a view similar to FIG. 4 of the modified construction of FIG. 9.

The present invention is a very high quality sleeping bag wherein a plurality of baffles 17, 19 are used between the outside cover 11 and inside cover 26 to provide chambers for a filler such as down. The baffles hold the filler in position so that it does not tend to pack down toward one end or side of the bag, and thus the heat insulation qualities are improved. In previous sleeping bag constructions of this general type, the edge opposite the slide fastener has been sewn last and this has required the presence of a seam on said side edge which is exposed and hence is a source of irritation to the user. In accordance with the present invention, this seam is made first, which makes it possible to make a "clean finished" seam which is not exposed where it will irritate the wearer, makes use of bias tape unnecessary, and also makes it possible to use a single block baffle in each transverse chamber.

Directing attention to FIG. 2, the outside cover 11 comprises a bottom half 12 and a top half 13. These halves are illustrated in a "mummy" shape, which is one of the popular styles of sleeping bags wherein the bag is wider at the shoulders and narrower at the foot and generally is of a contour approximating the human body. However, it will be understood that the present invention may be used with straight-sided bags. As is apparent from FIG. 2, where a mummy shape is used, there is a cut-out 16 formed in half 13 which enables the face to be exposed when the bag is worn. A longitudinal seam 14 is formed between the two halves 12 and 13, and it is one of the features of the invention that seam 24, termed "clean finished" is on the side of cover 11 which does not contact the wearer and hence the seam does not irritate the skin. At the time that the seam 14 is made, a plurality of block baffles 17 is sewn into the seam 14 (see FIG. 4). In the form shown in FIGS. 2-5, each block baffle 17 is of parallelogram shape, made of light weight mesh, net, cambric or other suitable material. Seam 14 is an overlocked stitch and this stitch not only includes the edges of halves 12 and 13 but also one edge of each baffle 17. The baffles 17 are thus spaced longitudinally along seam 14. Preliminary to fabrication of the seams, transverse lines 18 are marked on the surface of halves 12 and 13, and lines 18 are the location lines for the sewing of the transverse baffles 19 of material similar to baffles 17 which extend across cover 11 from side edge to side edge thereof and cross seam 14 along the transverse edges of block baffles 17. Reference numeral 22 indicates the line of

stitching of each transverse baffle 19 to cover 11 and reference numeral 21 indicates the stitching where the transverse baffles 19 are stitched to the block baffles 17.

Directing attention to FIG. 3, the inside cover of the bag (which may be made of a lighter weight and softer material than the outside cover 11) comprises bottom half 27 and top half 18, which are congruent to halves 12 and 13 and these are connected together by a longitudinal over stitch seam 29 similar to seam 14. Again, a cut-out 31 is formed in half 28 similar to cut-out 16. Transverse lines 32 similar in spacing to lines 18 are formed on half 26. As is best shown in FIG. 5, the exposed edges of baffles 19 are sewn to cover 26 along lines 32 and at the same time the exposed edges of block baffle 17 are sewn to seam 29. Thus, transverse filler chambers 41 are formed in the bag between covers 11 and 26 separated by baffles 19 and blocked at the side edge of the bag opposite the slide fastener by block baffles 17.

A draft flap 36 may be installed on the slide fastener side edge of both the top and bottom of the bag (or only one half of the bag if desired). The first step in fabrication of the inside cover draft flap 36 is to sew the outer edge thereof to the inside cover 26 at a stitching 37 which is spaced inward from the edge of cover 26 by about two inches. The next step in the fabrication of the draft flap 36 is to sew the outer edge of the material forming the draft flap to the outer edge of inside cover 26 and also to the fabric 38 of the slide fastener in a stitch 39. Optionally, the draft flap for the opposite half is similarly fabricated.

The bag is optionally provided with a foot section which is full enough to accommodate the feet of the wearer without cramping. A foot baffle 46 of the same material as baffles 17 and 19 is sewn to the circumference of the foot section assembly which consists of an inside foot cover 47 and an outside foot cover 48. There may be one or more transverse foot section baffles 49 similar to baffles 19 in the foot section. Thereupon, the covers 47 and 48 are sewn to the bottom edges of covers 26 and 11, respectively, the seams 51 for the foot sections being concealed as are seams 14 and 29.

The next step in the fabrication of the bag is to fill the open ends of the transverse filler chambers 41 with filler material such as down. Preferably, such down is blown through a nozzle 43 into the various chambers pneumatically.

Thereupon, the finished seam 44 along the longitudinal edge of outside cover 11 is sewn to fabric 38 of the slide fastener 53 by stitch 44 which also goes through the inside cover 26 and the draft flap 36. The ends of the draft flap 36 are also closed off by seams (not shown).

As shown in FIG. 1, preferably the slide fastener 53 extends the entire length of one side edge of the bag and is provided with two sliders 54 so that the bag may be opened from either, or both, ends.

It will be seen that the bag comprises a bottom having outside cover bottom half 12 downmost and inside bottom half 27 separated therefrom by means of transverse filler chambers 41 filled with a filler material such as down, the individual chambers 41 being separated by transverse baffles 19. The top of the bag consists of outer top half 13 and inner top half 28 which are likewise separated by chambers 41 defined by baffles 19.

The ends of the chambers 41 in the bottom of the bag are separated from the chambers in the top of the bag on the side edge opposite slide fastener 53 by a single block baffle 17. Along the insides of the slide fastener 53 are one or two draft flaps 36, completing the insulation of the bag.

The modification of FIGS. 9 and 10 differs from the preceding modification in that a single block baffle 17a is stitched into the seam 14a rather than multiple baffles as in FIGS. 1-8. The transverse baffles comprise two halves 19a and 19b each of which extends from one marginal edge of the top half 13a toward the seam 14a and is connected at its inner end by stitching 21a to the unitary block baffle 17a. In other respects, this modification resembles that of the preceding modification, and the same reference numerals followed by the subscript *a* are used to designate corresponding parts.

What is claimed is:

1. A method of forming a multi-chambered sleeping bag comprising providing a first and a second half of a first cover, forming a first seam joining said first and second halves together along a longitudinal margin of each said first and second halves while attaching to said first seam a first edge of a block baffle positioned along said first seam; providing a third and fourth half of a second cover, congruent to said first and second half, respectively, forming a second seam joining said third and fourth halves together along a longitudinal margin of each of said third and fourth halves; providing a plurality of transverse baffles, attaching a first longitudinal edge of each said transverse baffle transversely across at least one half of said first cover, attaching second and third edge of ends of said block baffle to adjacent transverse baffles where said transverse baffles cross said first seam; attaching a second longitudinal edge of each said transverse baffles transversely across said second cover, attaching a fourth edge of said block baffle to said second seam; providing a fastener having first and second fastener strips, attaching a first edge of each said fastener strip to a second longitudinal edge of each of said first and second halves; inserting heat insulation material into the transverse filler chambers formed by said covers and said baffles through openings along the second longitudinal edges of said first and third halves and said second and fourth halves, and attaching a second edge of each said fastener strip to a second longitudinal edge of said third and fourth halves to close off said openings of said filler chambers.

2. The method of claim 1 in which each said step of forming a seam comprises forming an overlock "clean finish" seam whereby in the completed bag neither of said seams is exposed.

3. The method of claim 1 which further comprises providing a draft flap consisting of a substantially rectangular piece of fabric, stitching a first longitudinal edge of said fabric to said third half along a line spaced about 2 inches from said second longitudinal edge prior to said step of attaching said first edge of said fastener strip and attaching a second longitudinal edge of said fabric to said third half by the same stitching as that by which said second edge of said fastener strip is attached to said third half.

4. The method of claim 1 which further comprises providing an inner and outer foot cover and a foot baffle, attaching one edge of said foot baffle to the perimeter of said inner foot cover and a second edge of said foot baffle to the perimeter of said outer foot cover, at-

5

taching the perimeter of said inner foot cover to one transverse end of said first and second halves, and attaching the perimeter of said outer foot cover to one transverse end of said third and fourth halves.

5. The method of claim 1 in which said block baffle comprises a plurality of short block baffles arranged end-to-end along said first seam and in which each said transverse baffle is unitary, said first-mentioned attaching step comprising sewing said short block baffles end-to-end along said first seam, said second-mentioned attaching step comprising sewing a second and third edge of each said short block baffle to said adjacent transverse baffles where said transverse baffles cross said block baffles.

6. The method of claim 1 in which said block baffle is unitary and each said transverse baffle has two parts, one for each half of said bag, said first-mentioned attaching step comprising sewing one longitudinal edge of said block baffle to said first seam, said second-mentioned attaching step comprising sewing the inner end of each part of each said transverse baffle to said block baffle.

7. A sleeping bag comprising an outside cover having first and second halves, a first seam joining said first and second halves together along a longitudinal margin of said first and second halves, an inside cover having third and fourth halves congruent to said first and second halves, respectively, a second seam joining said third and fourth halves together along a longitudinal margin of said third and fourth halves, a plurality of parallel, elongated, rectangular transverse baffles, each said transverse baffle having one longitudinal edge attached to said outside cover and the opposite longitudinal edge attached to said inside cover, a block baffle, said block baffle having a first edge attached to said first seam, a second edge opposite said first edge attached to said second seam, said block baffle having third and fourth edges each attached to one said transverse baffle, said covers and baffles defining a plurality

6

of filler chambers, heat insulation material in said filler chambers, a rectangular fastener strip having one longitudinal edge attached to the edge of said first and third halves opposite said first seam and a second longitudinal edge of said fastener strip attached to the edges of said second and fourth halves opposite said first seam.

8. A bag according to claim 7 in which said first and second seams are overlapped "clean finish" seams whereby said seams are not exposed in the completed bag.

9. A bag according to claim 7 in which said fastener strip is a slide fastener.

10. A bag according to claim 7 in which said block baffle comprises a plurality of short quadrilateral sections each having second and third edges attached to adjacent transverse baffles.

11. A bag according to claim 7 in which said block baffle is unitary and each said transverse baffle has two parts, each part in one half of said bag, the inner edge of each part sewn to said block baffle.

12. A bag according to claim 7 which further comprises at least one draft flap formed of an elongated rectangular piece of fabric, one longitudinal edge of said fabric being attached to said third half along a line spaced about 2 inches from said fastener strip and the opposite longitudinal edge of said fabric being attached to said third half and to said fastener strip.

13. A bag according to claim 7 which further comprises a foot section comprising inner and outer foot covers, a foot baffle, one edge of said foot baffle being attached to the perimeter of said inner foot cover, the opposite edge of said foot baffle being attached to the perimeter of said outer foot cover, the perimeter of said outer foot cover being attached to one transverse end of said first and second halves and the perimeter of said inner foot cover being attached to one transverse end of said third and fourth halves.

* * * * *

40

45

50

55

60

65