(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 059 881**
A1

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: 82101381.0

(51) Int. Cl.³: A 47 G 9/02

(22) Date of filing: 24.02.82

(30) Priority: 27.02.81 DK 914/81

(43) Date of publication of application:
15.09.82 Bulletin 82/37

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

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(54) **Ribbed tick and bedding article comprising such ribbed tick and at least two insulating fillers.**

(57) A ribbed tick comprising a top sheet (1) and a bottom sheet (2) interconnected at their edges (3, 4) and partition walls (5, 6) connected to the inner sides of the top sheet and bottom sheet in a manner so as to divide the interior of the ribbed tick into at least two types of longitudinally extending ducts (9, 10), one type being ducts (9) located adjacent to the surfaces of the top or the bottom sheet of the ribbed tick and the second type being ducts (10) located substantially at the middle of the tick.

A bedding article comprising two types of longitudinally extending ducts (9, 10), one type of ducts (9) being located adjacent to the surfaces of the article and being filled with one type of insulating filler and another type of ducts (10) being located substantially at the middle of the article and being filled with another type of insulating filler.

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This invention relates to a ribbed tick comprising a top sheet and a bottom sheet interconnected at their edges and each consisting of a gas-permeable textile material, and partition walls connected to the inner sides of the top and bottom sheets in linear zones so as to form separate ducts extending from one end of the tick to the other.

Eiderdowns, featherbeds and pillows are typically made from ribbed ticks and an insulating filler, such as duck-down, feathers, mixtures of down and feathers, and mixtures of feathers and synthetic foam, which fills the ducts extending over the length of the ribbed tick.

The insulating filler serves to make the bedding article soft, voluminous and light but it should also impart to the bedding article and, particularly when used in pillows, a certain resistance to compression. Thus, the insulating filler contained in a pillow should be sufficiently resistant to compression to maintain a head resting thereon raised from the surface at which the pillow is placed.

Ordinary pillows contain duck-down fillers and such pillows have a fully satisfactory softness, volume and insulating properties. However, unless relatively high amounts of the rather expensive duck-down filler are utilized, such pillows are not sufficiently resistant to compression.

Feathers which often are used in cheaper bedding articles are resistant to compression but do not exhibit a sufficient softness to make pillows containing such a filler fully comfortable.

An attempt to solve the problems discussed by using a mixture of the soft voluminous down and the hard non-compressible feathers has not been successful.

US patent specification No. 4.230.756 discloses a ribbed tick in which a sheet of a textile material is placed between the top and bottom sheets and is connected to the inner sides of these sheets by means of longitudinally extending seams which are laterally offset so as to form ducts which alternately are facing the top sheet and the bottom sheet. If these ducts are filled with two different insulating fillers, a satisfactory combination of properties cannot be obtained.

The object of the invention is to provide a ribbed tick which exhibits an improved combination of properties when filled with

two different insulating fillers having properties which would be unsatisfactory if each filler was used as a sole filler or if the fillers were used in admixture.

This object and other objects, which will appear from the following description, are attained by the ribbed tick of the invention. Thus, in the ribbed tick of the invention the partition walls are arranged in a manner so as to divide the interior of the ribbed tick into at least two types of ducts, one type being ducts located adjacent to the surfaces of the ribbed top or the bottom sheet of the tick and the second type being ducts located substantially at the middle of the tick.

The invention is based on the discovery that by dividing the interior of the ribbed tick into the above mentioned two types of ducts it is possible to mask one filler having unsatisfactory properties in one respect with another insulating filler which does not exhibit these unsatisfactory properties, namely by filling the ducts located at the middle of the tick with the first insulating filler and the remaining ducts with the second filler.

Thus, by filling the ducts at the middle of the ribbed tick with a relative hard and incompressible filler consisting of feathers and introducing relatively soft duck-down in the remaining ducts, a bedding article having an improved combination of properties is obtained.

In a preferred and very simple embodiment of the invention the interior of the ribbed tick is divided into four ducts by two partition walls connected at their edges to the top sheet and/or bottom sheets and being interconnected in a longitudinally extending zone located at the middle of the ribbed tick. Thus, in this embodiment the partition walls have the shape of an X in cross-sectional view.

The embodiment described above is particularly suitable for the manufacture of pillows.

In another preferred embodiment of the invention the partition walls comprise two sheets which are connected to the top sheet and bottom sheet, respectively, in longitudinally extending, laterally spaced, substantially parallel zones and which are interconnected in intervening longitudinally extending zones. Schematically, the ducts thus formed are (1) ducts which are located at the surfaces of the top or the bottom sheet of the ribbed tick and which are of triangular

cross-sectional shape and (2) ducts which are located at the middle of the ribbed tick and which have the shape of a diamond in cross-sectional view.

The partition wall material is preferably a textile material and both woven and non-woven textile materials are suitable. The partition wall material should be sufficiently dense to prevent that substantial amounts of insulating material pass from one duct to another. Furthermore, it should be sufficiently soft to prevent that it detracts from the overall softness of the ribbed tick.

The connections between the partition wall material and the inside of the top sheet and bottom sheet may be provided in a manner which is well known per se. Thus, it is possible to provide these connections by sewing or by using a binder, such as a thermoplastic binder as described in US patent specification No. 4.137.111.

The top and bottom sheets are preferably made from soft woven textile materials made from natural and/or synthetic fibres. The woven textile sheets should be so closely woven that the insulating fillers are unable to penetrate the sheets.

The invention also relates to a bedding article comprising a ribbed tick of the above mentioned type and at least two types of insulating fillers, the ducts located at the middle of said article containing one type of insulating filler and the ducts located adjacent to the surfaces thereof containing the other type of filler.

In a preferred embodiment of the invention the bedding article is a pillow and the ducts located at the middle of the pillow contain an insulating filler which is resistant to compression and the remaining ducts contain a soft compressible filler. The filler which is resistant to compression is preferably feathers, synthetic foam or a mixture thereof, and the soft compressible filler is preferably duck-down.

The invention will now be described in further detail with reference to the drawing in which

Fig. 1 shows a top view of a preferred embodiment of the ribbed tick of the invention,

Fig. 2 shows a cross-sectional view of the ribbed tick illustrated in Fig. 1 and along the line II-II, and

Fig. 3 shows a cross-sectional view of another embodiment of the invention filled with two types of insulating fillers.

The ribbed tick illustrated in Fig. 1 and Fig. 2 comprises a top sheet 1 and a bottom sheet 2 which are interconnected at their lateral edges 3 and at the end edges 4. The ribbed tick also comprises two partition walls 5,6. Each partition wall is connected to the inside of both the top sheet 1 and the bottom sheet 2 in zones 7 extending longitudinally of the ribbed tick. The two partition walls 5,6 are also interconnected in a longitudinally extending linear zone 8 by means of a seam, e.g. provided by sewing or by means of a binder.

Thus the illustrated ribbed tick comprises ducts 9 located at the surfaces of the tick and ducts 10 to be located within said tick.

Fig. 3 illustrates a ribbed tick comprising a top sheet 1 and a bottom sheet 2 which are interconnected at their lateral edges 3 and at the end edges (not shown). The ribbed tick also comprises two sheets 11 and 12 located between the top sheet 1 and the bottom sheet 2. The sheet 11 is connected to the inside of the top sheet 1 in laterally offset linear zones 13 and the sheet 12 is connected to the bottom sheet 2 in similar laterally offset linear zones 14. The sheets 11 and 12 are interconnected in linear zones 15 located at the middle of the tick. Thus the illustrated ribbed tick is divided into two types of ducts, viz. ducts 16 located adjacent to the surfaces of the article and having a generally triangular cross-sectional shape and ducts 17 located in the central part of the article and having diamond shape seen in cross-sectional view.

As illustrated in Fig. 3 the ducts 16 are filled with one type of insulating filler, such as duck-down, and the ducts 17 are filled with another type of filler, such as feathers, foamed plastic, or a mixture of feathers and foamed plastic.

A bedding article as illustrated in Fig. 3 will exhibit an advantageous combination of pleasant softness which is due to the soft duck-down in the ducts 16 and good load carrying properties which are due to the non-compressible feathers, foamed plastic, or mixture of feathers and plastic foam present within the ducts 17.

Claims

1. A ribbed tick comprising a top sheet and a bottom sheet interconnected at their edges and each consisting of a gas-permeable textile material, and partition walls connected to the inner sides of the top and bottom sheets in linear zones so as to form separate ducts extending from one end of the tick to the other, characterized in that the partition walls are arranged in a manner so as to divide the interior of the ribbed tick into at least two types of ducts, one type of ducts being located adjacent to the surfaces of the top or the bottom sheet of the ribbed tick and the second type of ducts being located substantially at the middle of the tick.

2. A ribbed tick as in claim 1, characterized in that it comprises two partition walls being connected at their edges to the top sheet and/or bottom sheet and being interconnected in a longitudinally extending zone located at the middle of the ribbed tick.

3. A ribbed tick as in claim 1, characterized in that the partition walls comprise two sheets which are connected to the top sheet and the bottom sheet, respectively, in longitudinally extending laterally spaced, substantially parallel zones and which are interconnected in intervening longitudinally extending zones.

4. A bedding article comprising a ribbed tick as claimed in claim 1 and at least two types of insulating filler, characterized in that the ducts being located at the middle of said article containing one type of insulating filler and the ducts located adjacent to the surfaces thereof containing the other type of filler.

5. A bedding article as in claim 4 in the form of a pillow, characterized in that the first type of filler is a filler which is resistant to compression and that the second type of filler is a soft filler.

6. A bedding article as in claim 5, characterized in that the first type of filler is feathers, foamed plastic or a mixture of feathers and foamed plastic and the second type of filler is down.

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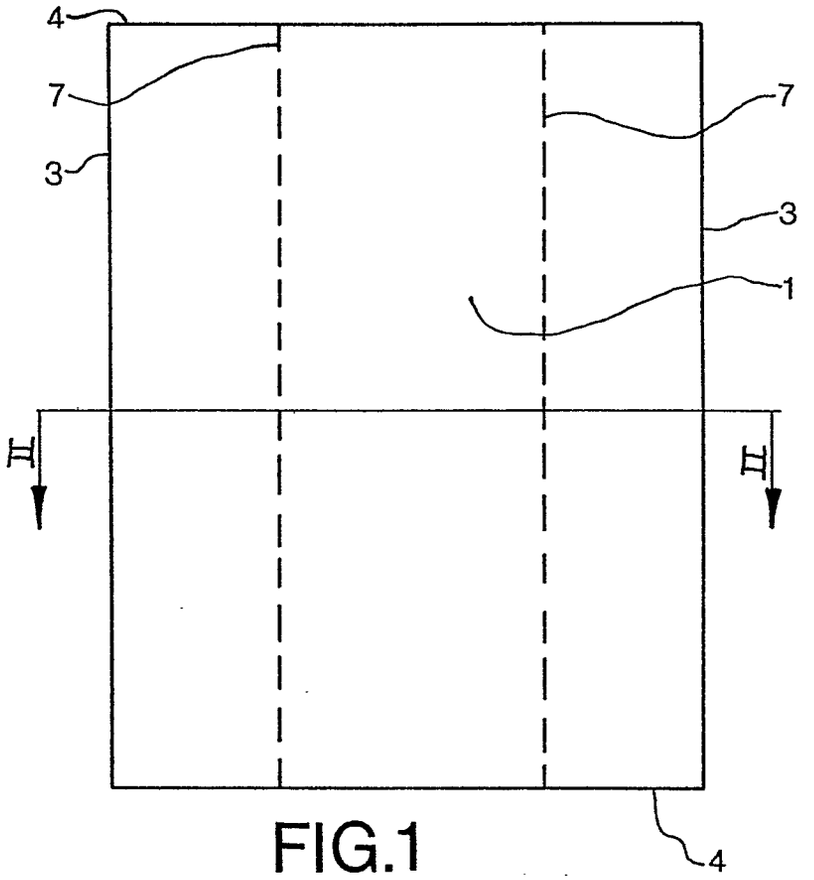

FIG.1

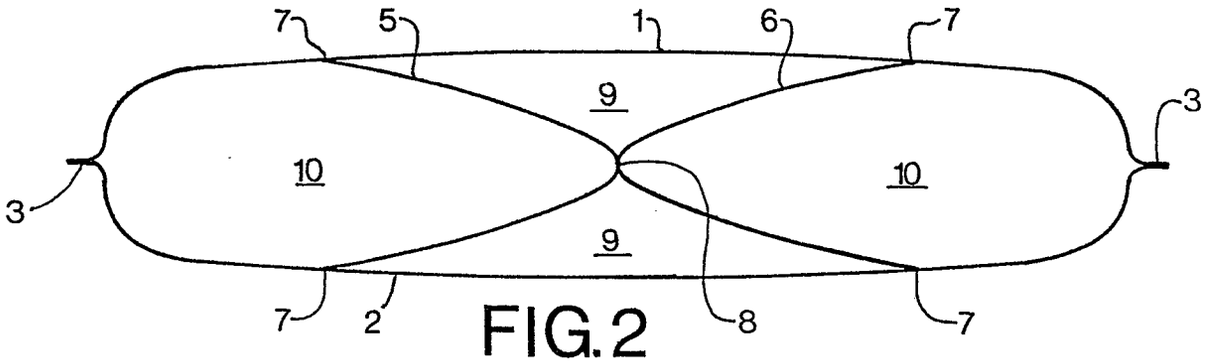

FIG.2

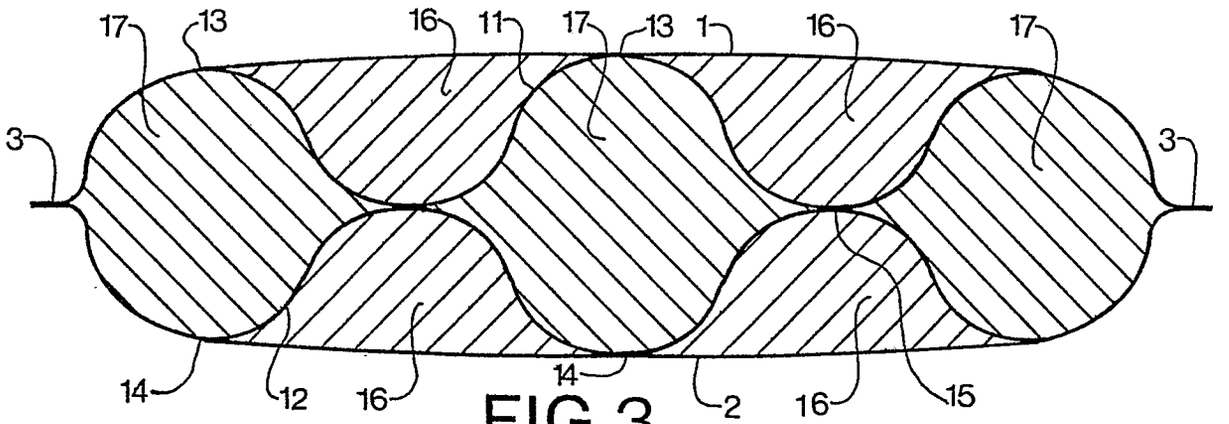

FIG.3

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EUROPEAN SEARCH REPORT

0059881
Application number

EP 82 10 1381

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
X	GB-A- 420 722 (SINCLAIR) *Page 1, lines 80-91; page 2, lines 1-88; claims; figures 1-4*	1-6	A 47 G 9/02
X	US-A-3 787 906 (HUNT) *Column 2, lines 65-67; column 3, lines 1-68; column 4, lines 1-25; claims 1,7; figure 4*	1-6	

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

A 47 G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	07-06-1982	BOURSEAU A.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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L : document cited for other reasons

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