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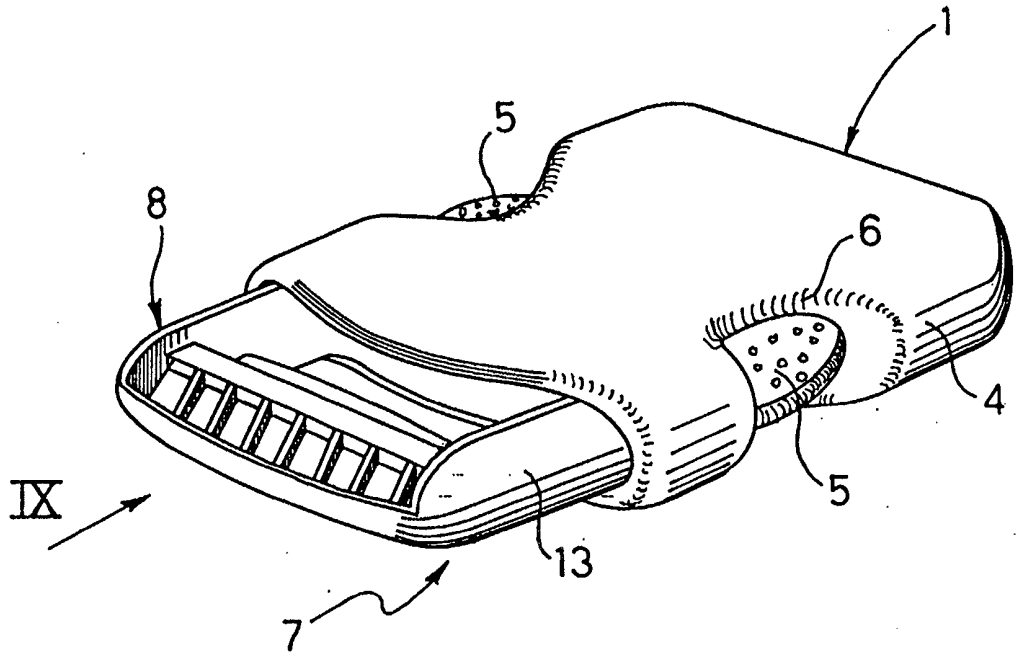
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(54) Title: QUICK COUPLING BUCKLE PROVIDED WITH A DEFORMABLE COVER AND COVER FOR USE WITH THIS BUCKLE



(57) Abstract

A quick–fitting buckle of the type used for example in closures for rucksacks, bags or the like, comprises a female part and a male part that snap–lock together and a deformable tubular sleeve (1) which fits over the female part.

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Quick coupling buckle provided with a deformable cover and cover for use with this buckle

The present invention relates to quick-fitting buckles of the type comprising a female part and a male part that snap-lock together. Typically, the female part and the male part are each made of moulded plastic. In what is by now a conventional form, the male part has a pair of elastically deformable arms with end noses for engaging past corresponding shoulders on the body of the female part when the buckle is closed. To open the buckle, pressure is applied from either side on the abovementioned end noses in order to disengage them from the shoulders of the female part and allow the male part to be withdrawn. This kind of buckle is widely used in a great variety of applications, such as closures for sports bags, rucksacks or the like.

One disadvantage which is met with in buckles of the type described above is that operating them is not always a simple matter and the user can sometimes run the risk of pinching his fingers. Another disadvantage, which is met with for example when using the buckle on rucksacks, is the fact that when the buckle is open, its parts swing freely on the ends of the straps or belts to which they are attached and can accidentally be knocked against other objects (such as the bodywork of a car as the user climbs in). Another drawback is the fact that the plastic parts of the buckle can become scratched or damaged, or even accidentally opened, e.g. in the event of a knock.

The object of the present invention is to solve all the abovementioned drawbacks.

In order to achieve this object, the subject of the invention is a quick-fitting buckle of the type

specified above, that is to say a buckle comprising a female part and a male part that snap-lock together, characterized in that the female part is covered with a deformable tubular sleeve shaped to adapt to the body of the said female part.

The abovementioned sleeve is preferably made of elastomeric material, e.g. rubber, silicone resin or PVC.

In the typical case mentioned above, in which the buckle is of the type in which the male part has two elastically deflectable arms having end noses for engaging past corresponding shoulders on the body of the female part when the buckle is closed, the buckle according to the invention is also characterized in that the abovementioned tubular sleeve has two opposing portions situated so as approximately to coincide with the said shoulders and is shaped so as to cover the said end noses of the spring arms of the male part when these are fitted to the female part.

In addition, the abovementioned opposing portions of the sleeve are preferably shaped so as to be distinguishable from the rest of the sleeve. Because of this feature, the user can immediately identify the areas where the pressure is to be applied in order to open the buckle.

In view of the above, it will immediately be obvious that the buckle according to the invention provides an excellent solution to the problems described above. In the first place, the area where the noses on the ends of the spring arms of the male part engage on the female part is protected by the abovementioned two opposing portions of the sleeve, so that in order to open the buckle the user applies pressure to the end noses of the two spring arms through the sleeve. Any risk of the fingers being

pinched is therefore eliminated. At the same time the sleeve provides an effective protection against knocks, against the risk of scratching of the parts of the buckle and against the risk of its being accidentally opened.

As already indicated, the sleeve is preferably made of an elastically deformable material and can therefore be easily and quickly pushed onto the female part of the buckle or removed from it. The buckle can therefore be enclosed in a sleeve which can also serve for aesthetic purposes by virtue of its shape and colour (any colour is of course possible). Moreover, in the preferred embodiment, the sleeve has a basically flat body with two main faces that are flat and parallel, and therefore suitable for the application of marks or inscriptions designed, for example, to identify the origin of the product.

Needless to say, the invention also covers the sleeve on its own, which can easily be fitted to a buckle not originally fitted with this sleeve.

Other features and advantages of the invention will become clear in the course of the following description which refers to the attached drawings (provided purely by way of non-restrictive example) in which:

Figure 1 is a perspective view of a sleeve made of elastically deformable material according to the present invention,

Figure 2 is an end view of the sleeve in the direction of arrow II in Figure 1,

Figure 3 is a view in the direction of arrow III in Figure 1,

Figure 4 is a section taken on IV-IV as marked in Figure 2,

Figure 5 is a section taken on V-V as marked in Figure 4,

Figure 6 is a perspective view that illustrates the sleeve according to the invention fitted to a buckle when the buckle is closed,

Figure 7 is a section through the buckle with the sleeve illustrated in Figure 6,

Figure 8 is another section through the assembly shown in Figure 6 on a plane perpendicular to that of Figure 7, and

Figure 9 is an end view in the direction of arrow IX of Figure 6.

In the drawings, the number 1 is a general reference for a flat tubular sleeve made of elastomeric material and designed to be fitted to the female part of a quick-fitting buckle. In the preferred embodiment which is illustrated, the tubular body of the sleeve 1 has two flat parallel main faces 2, 3 and two longitudinal lateral edges 4. Each edge 4 includes an approximately central portion 5 moulded integrally with the rest of the body of the sleeve 1. The two portions 5 are intended to be the areas to which pressure is to be applied, when the sleeve is mounted on the buckle, in order to open the buckle, as will be made clear in the course of the description. At each portion 5 the corresponding lateral edge 4 has a recess 6, the portion 5 representing a cup-like part projecting centrally from the recess 6. The outer surface of the portion 5 is preferably dimpled to assist grip.

Figures 6-9 illustrate the sleeve according to the invention mounted on a quick-fitting buckle. The drawings illustrate an example of a buckle identified as a whole by the reference numeral 7 and comprising a male part 8 and a female part 9 connected together. The drawings illustrate the buckle 7 in the closed, fitted-

together condition. It should be observed that the structure and shape of the buckle viewed on its own are of a type known per se and for this reason will only be described briefly here. It is obvious too that the invention is applicable to any type of buckle, even if different from that illustrated here. In the case of the example described here, the female part 9 of the buckle 7 has a rear portion 10 defining a throughway 11 for the attachment of a belt or strap to the part 9, and a front portion 12 designed to take the male part 8. This male part 8 similarly has a rear portion 14 defining two throughways 15 for the attachment of a belt or strap, and a front portion 16 designed to snap-engage in the tubular front portion 12 of the female part 9. Still following ordinary practice, the front portion 16 of the male part 8 comprises a rigid central arm 17 that fits between two pairs of lengthwise guide ribs 18 formed on opposing parallel inner surfaces of the tubular portion 12 of the female part 9. Also, as is normal practice, the front part 16 of the male part 8 has two elastically deformable arms 19, each ending in an end nose 20 whose function is to engage with a snap action past a corresponding shoulder 21 defined on the rear face of the front portion 12 of the female part 9. Both the male and female parts 8, 9 are made as one-piece plastic mouldings.

The design of the sleeve 1 basically corresponds to the shape of the female part 9, as is clearly visible in Figures 7 and 8, where the lateral portions 5 remain separate from the lateral walls of the female part 9 in order to define two spaces which are filled by the end noses 20 of the spring arms 19 when the buckle is closed. In this condition, therefore, the two portions 5 of the sleeve 1 will be found to enclose the abovementioned end noses, so that

pressure applied to the two portions 5 is transmitted to the noses 20 and pushes them towards each other, causing the buckle to unfasten.

The dimensions of the sleeve 1 are such that it can be mounted with an interference fit over the part 9 in a quick and simple operation.

From the foregoing description it will be clear that the sleeve according to the invention provides an effective solution to the problem of the risk of the fingers of the operator being trapped when the buckle is unfastened. At the same time the buckle is protected against the risk of scratches or damage, and there is also less risk of damage to other objects by impact of the buckle against them. Furthermore, because of the presence of the sleeve 1 there is no risk of accidental opening of the buckle. The sleeve can add aesthetically to the buckle because it can be made in many different colours and, if required, with designs or decorations or inscriptions produced by any known method. The sleeve 1 of elastomeric material, e.g. of synthetic material or rubber, makes the product more attractive not only visually but also to the touch and/or to the sense of smell.

The sleeve 1 may of course be marketed as an accessory for fitting to buckles that initially have no such sleeve.

The sleeve according to the invention is of course of general application, but one particularly advantageous example is that of the buckles used on rucksacks, sports bags and the like.

Clearly, without prejudice to the principle of the invention, the details of construction and the embodiments can be considerably altered with respect to that described and illustrated purely by way of example.

For example, it is obvious that a sleeve of the type described above designed to be fitted to the male part of the buckle rather than to the female part would be a solution equivalent to the invention described here. It is also obvious that the particular configuration of the sleeve depends in turn on the configuration of the buckle to which it is to be fitted. Because this configuration can vary considerably from the example illustrated, it follows that the configuration of the sleeve according to the invention may also be quite different from that illustrated here purely by way of example.

CLAIMS

1. Quick-fitting buckle comprising a female part (9) and a male part (8) that snap-lock together, characterized in that the female part (9) is covered with a deformable tubular sleeve (1) shaped to adapt to the body of the said female part (9).

2. Buckle according to Claim 1, the said buckle being of the type in which the male part (8) has two elastically deflectable arms (19) having end noses (20) for engaging past corresponding shoulders (21) on the body of the female part (9) when the buckle (7) is closed, the buckle being characterized in that the said deformable tubular sleeve (1) has two opposing portions (5) situated so as approximately to coincide with the said shoulders (21) and is shaped so as to cover the said end noses (20) of the spring arms (19) of the male part (8) when these are fitted to the female part (9).

3. Buckle according to Claim 2, characterized in that the said opposing portions (5) of the sleeve (1) are shaped so as to be distinguishable from the rest of the sleeve (1).

4. Buckle according to Claim 2, characterized in that the tubular sleeve (1) has a basically flat body with two main opposing faces (2, 3) that are flat and parallel.

5. Buckle according to Claim 4, characterized in that the abovementioned opposing portions (5) of the sleeve (1) consist of two cup-like portions projecting centrally from two recessed areas (6) of the longitudinal lateral edges (4) of the sleeve (1).

6. Buckle according to any one of the preceding claims, characterized in that the abovementioned sleeve is made of elastomeric material, e.g. rubber or a synthetic material.

7. Buckle according to Claim 1, characterized in that the sleeve (1) is an interference fit on the female part (9) of the buckle.

8. Sleeve for a buckle according to any one of the preceding claims.

The whole substantially as described and illustrated and for the objects specified.

AMENDED CLAIMS

[received by the International Bureau on 21 August 2000 (21.08.00) ; original claims 1-8 replaced by new claims 1-4 (1 pages)]

1. Quick-fitting buckle comprising a female part (9) and a male part (8) that snap-lock together, characterized in that the female part (9) is covered with a deformable tubular sleeve (1) shaped to adapt to the body of the said female part (9), in that the said buckle is of the type in which the male part (8) has two elastically deflectable arms (19) having end noses (20) for engaging past corresponding shoulders (21) on the body of the female part (9) when the buckle (7) is closed, in that the said deformable tubular sleeve (1) has two opposing portions (5) situated so as approximately to coincide with the said shoulders (21) and is shaped so as to cover the said end noses (20) of the spring arms (19) of the male part (8) when these are fitted to the female part (9), in that the tubular sleeve (1) has a basically flat body with two main opposing faces (2, 3) that are flat and parallel, and in that the above-mentioned opposing portions (5) of the sleeve (1) consist of two cup-like portions projecting centrally from two recessed areas (6) of the longitudinal lateral edges (4) of the sleeve (1).

2. Buckle according to claim 1, characterized in that the abovementioned sleeve is made of elastomeric material, e.g. rubber or a synthetic material.

3. Buckle according to Claim 1, characterized in that the sleeve (1) is an interference fit on the female part (9) of the buckle.

4. Sleeve for a buckle according to any one of the preceding claims.

STATEMENT UNDER ARTICLE 19(1)

The subject matter of original claims 2, 4 and 5 has been introduced into claim 1 to clearly distinguish the latter from the prior art cited in the Search Report.

Fig_1

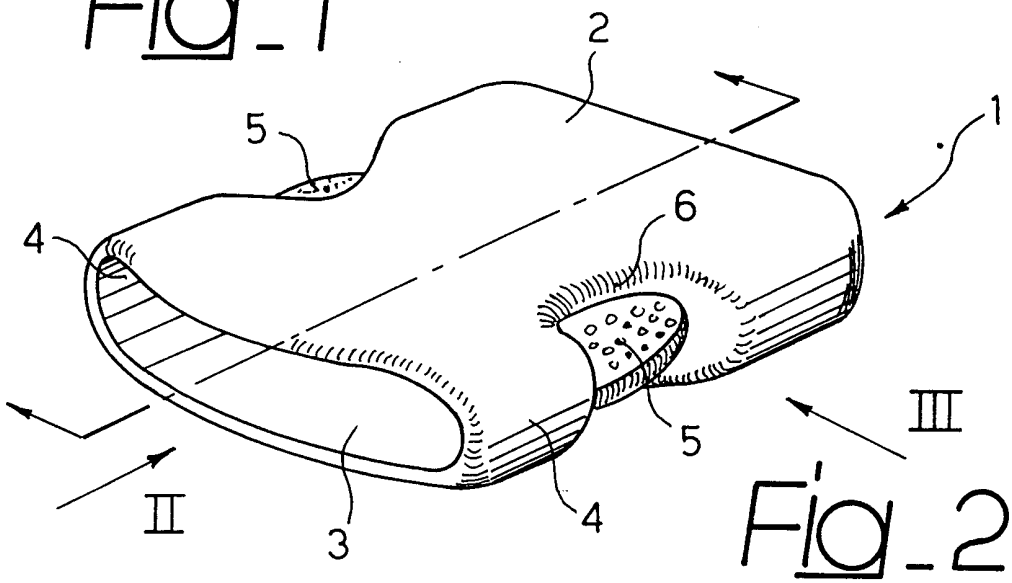


Fig_2

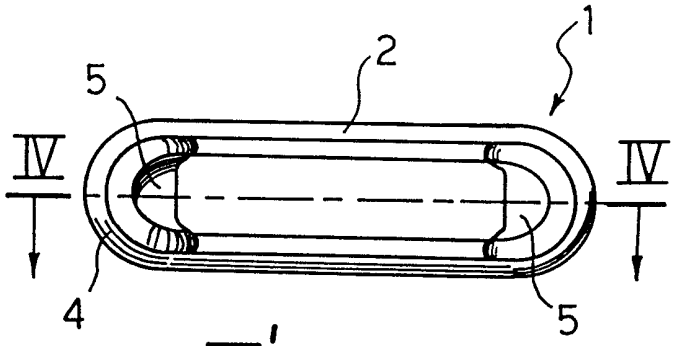


Fig_3

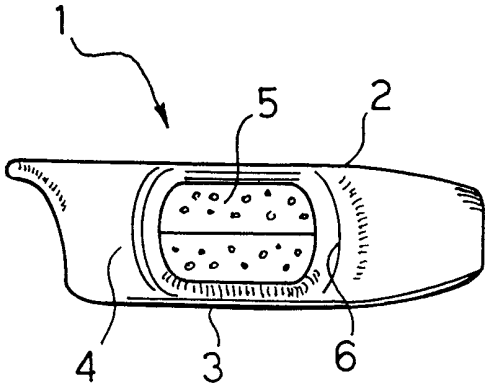
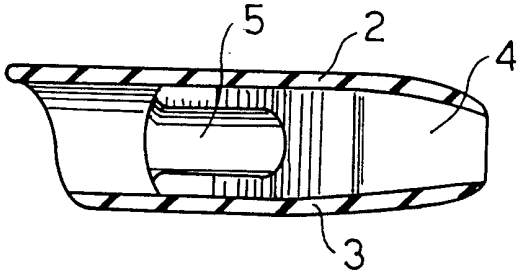


Fig_5



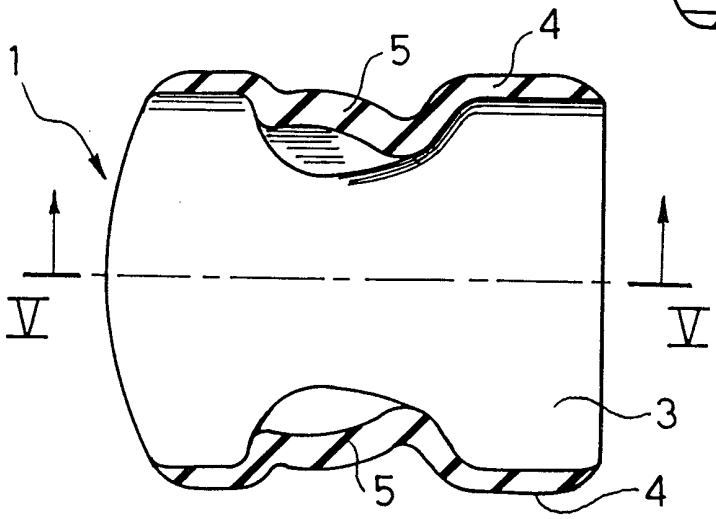


Fig_4

Fig_6

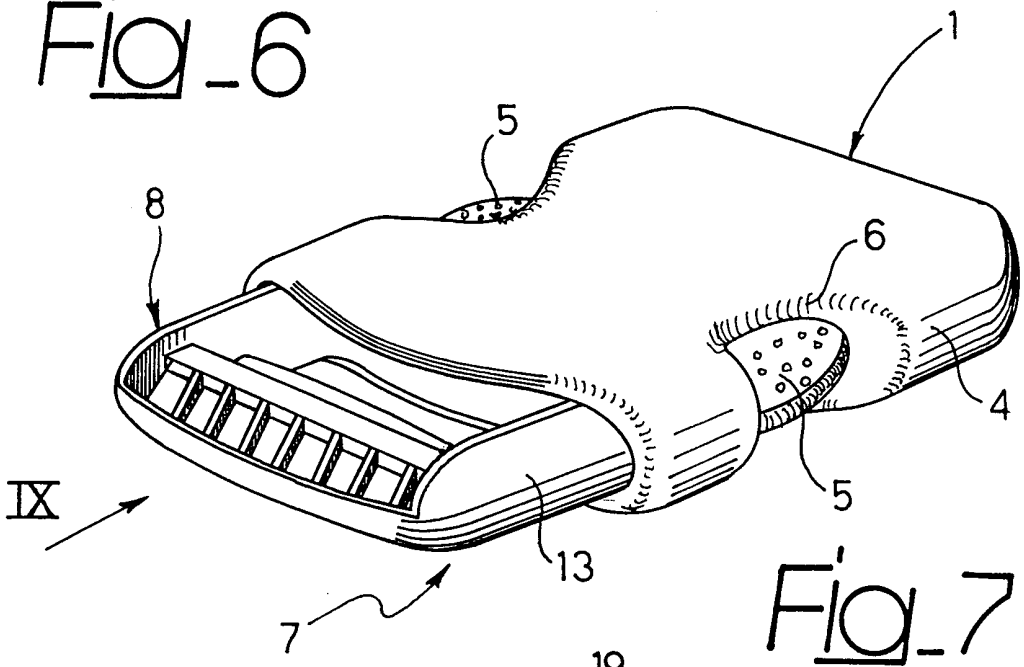


Fig_7

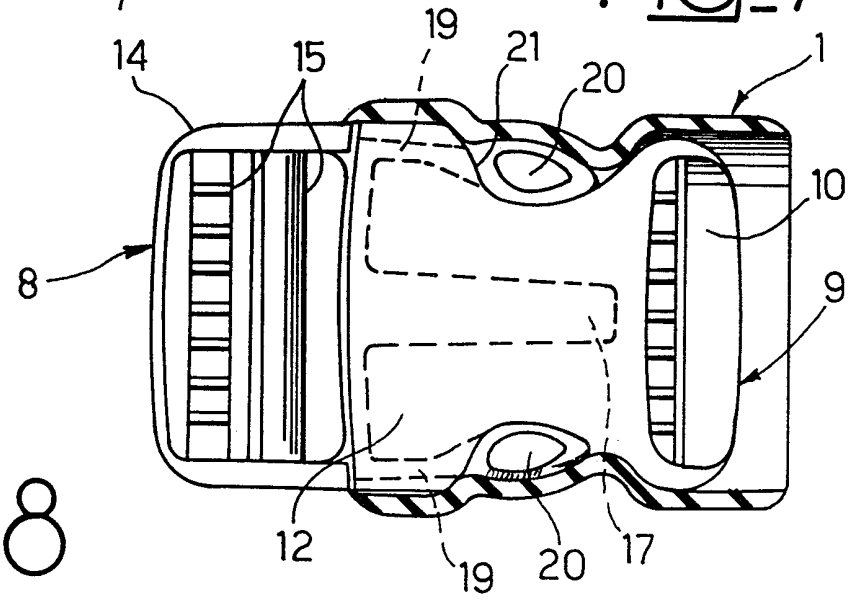


Fig_8

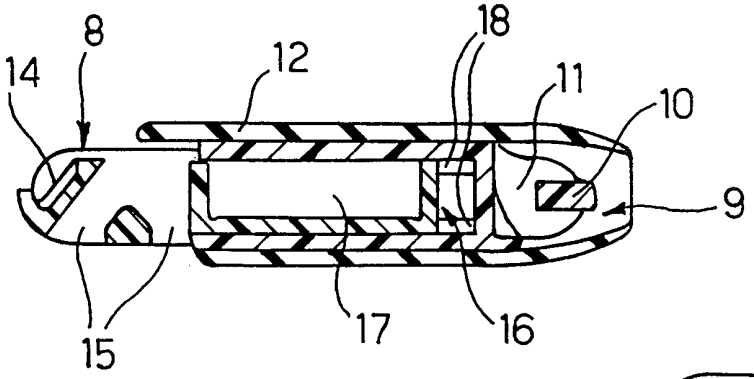
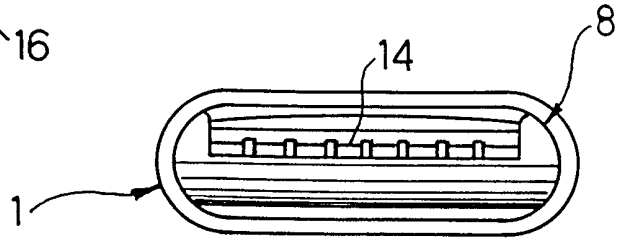


Fig_9



INTERNATIONAL SEARCH REPORT

Inter onal Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A44B11/26 A44B11/25

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A44B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 4 675 954 A (D. J. GULLICKSON) 30 June 1987 (1987-06-30) the whole document	1,4,6-8 2
Y A	US 5 383 257 A (AMERICAN CORD & WEBING CO.) 24 January 1995 (1995-01-24) column 3, paragraph 2; claim 5; figures 3,4	2 3
X	WO 98 52437 A (QUIGLEY D.) 26 November 1998 (1998-11-26) page 4, line 2 -page 6, line 1; claims 1-4; figures 1-6	1,4,6,8
X	US 5 442 840 A (C. B. EWALD) 22 August 1995 (1995-08-22) column 3, line 4 - line 46; figures 1-5	1,4,6-8

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
29 June 2000	06/07/2000

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

information on patent family members

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PCT/IT 00/00070

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4675954 A	30-06-1987	NONE	
US 5383257 A	24-01-1995	NONE	
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US 5442840 A	22-08-1995	NONE	