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Doc Code: PA..
Document Description: Power of Attorney

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Application Number	Unknown
Filing Date	Herewith
First Named Inventor	Feng LIU
Title	INFLATABLE BED
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	09548.1303US01

SIGNATURE of Applicant or Patent Practitioner

Signature	/Rong Yang/	Date (Optional)	2016-09-29
Name	Rong Yang	Registration Number	71641
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

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☐ *Total of 1 forms are submitted.

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Document Description: Power of Attorney

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申请人委托书
POWER OF ATTORNEY BY APPLICANT

本人兹此撤消此前在随附传送表或下列方框中所述之申请中提交的所有委托书。

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

申请号码 **Application Number**	申请日期 **Filing Date**

（注意：若信息在表格 PTO/AIA/82A 中提供，上面的方框可留空。）
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☑ 本人兹此指定与下述客户号码相关联的专利师作为我/我们的委托人或代理人，负责处理在美国专利与商标局所进行的、与随附传送书（表格 PTO/AIA/82A）中所提及之申请或上述申请相关的所有事务：

I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

或者
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52835

☐ 本人兹此指定随附清单（表格 PTO/AIA/82C）中指明的专利师作为我/我们的委托人或代理人，负责处理在美国专利与商标局所进行的、与随附传送书（表格 PTO/AIA/82A）中所提及之专利申请或上述专利申请相关的所有事务。（注意：请填写表格 PTO/AIA/82C。）

I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

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Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

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电话 Telephone		电子邮箱 Email			

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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申请人委托书
POWER OF ATTORNEY BY APPLICANT

本人是申请人（若申请人为法律实体，则在方框中列出申请人名称）：
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

BESTWAY INFLATABLES & MATERIAL CORP.

- ☐ 发明人或联合发明人（不需要在下面填写职务）
  Inventor or Joint Inventor (title not required below)
- ☐ 已故或依法丧失行为能力之发明人的法定代理人（不需要在下面填写职务）
  Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☑ 受让人或发明人有义务指定的人（若申请人为法律实体，则提供签署者的职务）
  Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ 表明有足够专利权益的人（例如，根据 37 CFR 1.46(b)(2) 提出的呈请已于申请过程中得到批准或与本文件同时提交）（若申请人为法律实体，则提供签署者的职务）
  Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

专利申请人签名
SIGNATURE of Applicant for Patent

以下签署者（其职务已在下面提供）经申请人授权代表申请人（例如申请人为法律实体的情况）。
The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

签名 Signature		日期（选填） Date (Optional)	27th Jan, 2016
姓名 Name	Feng LIU		
职务 Title	Legal Representative.		

注意：签名 – 本表格必须由申请人根据 37 CFR 1.33 签署。关于签名要求和认证，请参见 37 CFR 1.4。若申请人超过一人，请分别填写表格。

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ 共提交 1 份表格。
Total of 1 forms are submitted.

说　明　书　摘　要

本发明提供了一种充气床，其包括：顶片和底片上下间隔布置；至少一侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；至少一第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。本发明充气床具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题，而且还可以防止用户在使用过程中滚落。

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权 利 要 求 书

1、一种充气床，其特征在于，所述充气床包括：

顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

2、如权利要求 1 所述的充气床，其特征在于，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

3、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

4、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

5、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

6、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少

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两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

7、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

8、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

9、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

10、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

11、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

12、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

13、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

14、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉

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带相互间隔地排布于所述底片的上表面。

15、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

16、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

17、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

18、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

19、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

20、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

21、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

22、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

23、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

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24、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

25、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

26、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

27、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带整体为一个间断的环形结构。

28、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带整体为一个间断的环形结构。

29、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

30、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

31、如权利要求 1 所述的充气床，其特征在于，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

32、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

33、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

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34、如权利要求 33 所述的充气床，其特征在于，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

35、如权利要求 33 所述的充气床，其特征在于，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

36、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

37、如权利要求 2 所述的充气床，其特征在于，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

38、如权利要求 2 所述的充气床，其特征在于，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

39、如权利要求 2 所述的充气床，其特征在于，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

40、如权利要求 1 所述的充气床，其特征在于，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

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说　　明　　书

充气床

技术领域

本发明涉及充气床或充气床垫领域，特别涉及一种充气床，其结构设置为可限制侧壁向外膨胀或变形。

背景技术

目前，充气床和充气床垫已经非常流行。充气床和充气床垫具有重量轻、便于携带和收藏等优点，因而被广泛应用于各种不同的场合。例如，在家庭充气床和充气床垫通常可以作为临时的床，供来访的客人使用。另外还非常适合在户外野营时使用。

在现有技术中，充气床和充气床垫一般由 PVC 胶布、PU 胶布等制成，且具有许多不同的结构，其中比较典型的机构是由顶片、底片，以及与顶片和底片相连接的侧壁构成可充气的气室。在气室内部设有连接顶片和底片且间隔排列的拉带，以构成具有一定高度且上表面大致平坦的可供人躺在上面的形状。

在现有的充气床和充气床垫中，有的具有较高的高度，充气床和充气床垫充气后的侧壁容易膨胀和变形，影响到充气床和充气床垫外观的美观，充气床和充气床垫的膨胀和变形也会造成气室内的气压衰减，使得充气床和充气床垫偏软降低了充气床和充气床垫的舒适性。

因此，为了解决上述侧壁膨胀的问题，有的充气床和充气床垫在顶片和底片之间设置了中层片，并将中层片与侧壁连接。这种结构的充气床和充气床垫虽然使侧壁膨胀和变形的问题略有改善，但仍然没有达到理想的效果。而且由于顶片与中层片之间，以及中层片与底片之间都需要设置连接拉带，使得充气床和充气床垫的制造过程更加复杂，即所需胶布也更多。

另外，在现有技术中，高度较高的充气床和充气床垫存在稳定性方面的缺陷。当用户躺在或者坐在靠近充气床和充气床垫的边缘处时，充气床和充气床垫容易发生侧翻。为了改善其稳定性，美国专利 US 6671910 在充气床底片的外围设置了充气的稳定管。然而，这种结构不仅会影响充气床的外观美观，也给用户带来了使用的不便。

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发明内容

本发明要解决的技术问题是为了克服现有技术中充气床和充气床垫的侧壁容易膨胀、变形以及充气床和充气床垫稳定性差，容易侧翻的缺陷，提供一种充气床。

本发明是通过下述技术方案来解决上述技术问题的：一种充气床，其特点在于，所述充气床包括：顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

较佳地，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

较佳地，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

较佳地，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

较佳地，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

较佳地，所述第三拉带结构包括至少两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

较佳地，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片

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连接。

较佳地，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

较佳地，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

较佳地，所述至少两个第二 I 型拉带相互间隔地排布于所述底片的上表面。

较佳地，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面

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上沿垂直方向间隔排布。

较佳地，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第二管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

较佳地，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

较佳地，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

较佳地，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

较佳地，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所

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述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

较佳地，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

较佳地，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

较佳地，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

本发明的积极进步效果在于：

本发明充气床克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本发明充气床还可以防止用户在使用过程中滚落。

附图说明

本发明上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显，在附图中相同的附图标记始终表示相同的特征，其中：

图 1 为本发明充气床的立体图。

图 2 为本发明充气床的主视图。

图 3 为本发明充气床的右视图。

图 4 为本发明充气床的俯视图。

图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。

图 6 为本发明充气床的实施例一的局部解剖结构示意图。

图 7 为本发明充气床的实施例一的爆炸图一。

图 8 为本发明充气床的实施例一的爆炸图二。

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。

图 10 为本发明充气床的实施例二的爆炸图一。

图 11 为本发明充气床的实施例二的爆炸图二。

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。

图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。

图 14 为本发明充气床的实施例三的爆炸图一。

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图 15 为本发明充气床的实施例三的爆炸图二。

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。

图 17 为本发明充气床的实施例四的爆炸图一。

图 18 为本发明充气床的实施例四的爆炸图二。

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。

图 20 为本发明充气床的实施例五的局部解剖结构示意图。

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。

图 23 为本发明充气床的实施例七的局部解剖结构示意图。

图 24 为本发明充气床的实施例七的内部结构示意图。

具体实施方式

为让本发明的上述目的、特征和优点能更明显易懂，以下结合附图对本发明的具体实施方式作详细说明。

在下面的描述中阐述了很多具体细节以便于充分理解本发明，但是本发明还可以采用其它不同于在此描述的其它方式来实施，因此本发明不受下面公开的具体实施例的限制。

实施例一：

图 1 为本发明充气床的立体图。图 2 为本发明充气床的主视图。图 3 为本发明充气床的右视图。图 4 为本发明充气床的俯视图。图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。图 6 为本发明充气床的实施例一的局部解剖结构示意图。图 7 为本发明充气床的实施例一的爆炸图。

如图 1 至图 7 所示，本发明的实施例一中公开了一种充气床 10，其包括顶片 11、底片 12、至少一侧壁 13、至少一第一拉带结构 14 及至少一支撑结构。其中，底片 12 与顶片 11 上下间隔布置，侧壁 13 的上边缘与顶片 11 的外边缘连接，侧壁 13 的下边缘与底片 12 的外边缘连接，顶片 11、底片 12 和侧壁 13 之间形成一个气室。同时将第一拉带结构 14 设置在所述气室内，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。其作用在于，当所述气室充气后，通过第一拉带结构 14 来限制顶片 11 和底片 12 分别向上和向下膨胀。特别地，顶片 11 和底片 12 均可以设置为双层结构，所述双层结构可以通过至少两个两片相互焊接以形成不同的图案。或者进一步地，在所述双层结构中还

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夹设有海绵的结构。

此处的所述支撑结构设置在所述气室内，所述支撑结构沿至少一侧壁 13 的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的侧壁 13 连接，所述支撑结构中至少一个内侧边缘与相邻的顶片 11 或底片 12 连接。

优选地，所述支撑结构包括第二拉带结构 15 和第三拉带结构 16。其中，第二拉带结构 15 中至少两个外侧边缘与相邻的侧壁 13 连接，第二拉带结构中至少一个内侧边缘与相邻的顶片 11 连接。第二拉带结构 15 设置为当所述气室充气后限制顶片 11 和侧壁 13 向上和侧向膨胀。

同时，第三拉带结构 16 中至少两个外侧边缘与相邻的侧壁 13 连接，第三拉带结构 16 中至少一个内侧边缘与相邻的底片 12 连接。第三拉带结构 16 设置为当所述气室充气后分别限制底片 12 和侧壁 13 向下和侧向膨胀。

在本实施例中，第二拉带结构 15 包括至少两个第一 I 型拉带 151，每一第一 I 型拉带 151 的一个外侧边缘 152 与相邻的侧壁 13 连接，另一个内侧边缘 153 与相邻的顶片 11 连接，且至少两个第一 I 型拉带 151 间隔布置。第三拉带结构 16 包括至少两个第二 I 型拉带 161，每一第二 I 型拉带 161 的一个外侧边缘 162 与相邻的侧壁 13 连接，另一个内侧边缘 163 与相邻的底片 12 连接，且至少两个第二 I 型拉带 151 间隔布置。本实施例中第一 I 型拉带 151 和第二 I 型拉带 161 均以两个为例，但其数量并不受本实施例限制，其可以采用多于两个的数量，均属于本发明的保护范围内。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。例如本实施例中第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而使第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，使第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

进一步地，至少两个第一 I 型拉带 151 相互间隔地排布于顶片 11 的下表面，且至少两个第二 I 型拉带 161 相互间隔地排布于底片 12 的上表面。至少两个第一 I 型拉带 151 在侧壁 13 的内表面上沿垂直方向间隔排布。至少两个第二 I 型拉带 161 在侧壁 13 的内表面上沿垂直方向间隔排布。

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此处，至少两个第一 I 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少两个第二 I 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，在至少两个第一 I 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少两个第二 I 型拉带 161 设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 7 和图 8 所示）。

本发明中的第一拉带结构 14 可以采用直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。同时，第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 均可以采用热塑性塑胶布制成，且第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 中的一个或多个至少部分地包括网布、夹网布或者线体。

其结构形式可以采用多种方式。例如，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

再例如，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。这些连接结构都可以有效地制成本发明充气床所需的拉带，这里仅为举例，但不局限于本实施例中的方案，其他可实现拉带形式的结构均在本发明的保护范围内。

在上述拉带的结构基础上，为了保证各个部件之间的牢固连接，第一拉带结构 14 通过高频焊接的方式连接在顶片 11 和底片 12 之间。同理，第二拉带结构 15 也通过高频焊接的方式连接在顶片 11 和侧壁 13 之间。第三拉带结构 16 通过高频焊接的方式连接在底片 12 和侧壁 13 之间。

通过上述结构形成的本发明充气床，其顶片 11 位于第二拉带结构 15 的上边缘内侧部分的高度低于顶片 11 位于第二拉带结构 15 的上边缘外侧部分的高度。底片 12 位于第三拉带结构 16 的下边缘内侧部分的高度低于底片 12 位于第三拉带结构 16 的下边缘外侧部分的高度。

此外，在充气床 10 上还包括内置气泵 20，将内置气泵 20 设置在侧壁 13 上，且位于第二拉带结构 15 的下边缘和第三拉带结构 16 的上边缘之间，用以供所述气室充气。同时，在充气床 10 上还设置有气阀 30，将气阀 30 设置在侧壁 13 上，用以供充气床 10 的充气或放气。

实施例二：

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图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。图 10 为本发明充气床的实施例二的爆炸图一。图 11 为本发明充气床的实施例二的爆炸图二。

如图 9 至图 11 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 Y 型拉带 151，其中第一 Y 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，另一个内侧边缘 153 与顶片 11 连接。同理，第三拉带结构 16 包括至少一个第二 Y 型拉带 161，其中第二 Y 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，另一个内侧边缘 163 与底片 12 连接。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

进一步地，至少一个第一 Y 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 Y 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 Y 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 Y 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 Y 型拉带 151 上还设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 Y 型拉带 161 上还设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 10 和图 11 所示）。

实施例三：

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。图 14 为本发明充气床的实施例三的爆炸图一。图 15 为本发明充气床的实施例三的爆炸图二。

如图 12 至图 15 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一管型拉带 151，其中第一管型拉带

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151 上具有至少两个外侧边缘 152 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二管型拉带 161，第二管型拉带 161 上具有至少两个外侧边缘 162 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 163 与底片 12 连接。此处的第一管型拉带 151 和第二管型拉带 161 可以采用多种管型结构，例如呈三角形的管型结构，呈四边形的管型结构（如图 13 和图 14 所示）。

进一步地，至少一个第一管型拉带 151 与相邻的侧壁 13 连接的至少两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二管型拉带 161 与相邻的侧壁 13 连接的至少两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一管型拉带 151 整体为一个间断的环形结构。至少一个第二管型拉带 161 整体为一个间断的环形结构（如图 13 和图 14 所示）。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

实施例四：

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。图 17 为本发明充气床的实施例四的爆炸图一。图 18 为本发明充气床的实施例四的爆炸图二。

如图 16 至图 18 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 V 型拉带 151，其中第一 V 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，且另一内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二 V 型拉带 161，其中第二 V 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，且另一内侧边缘 163 与顶片 11 连接。

进一步地，至少一个第一 V 型拉带 151 的两个外侧边缘 152 在侧壁 13 的

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内表面上沿垂直方向间隔排布。至少一个第二 V 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 V 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 V 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 V 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 V 型拉带 161 上设有气孔 164，使所述气室通过气孔 164 形成空气流通。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

实施例五：

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。图 20 为本发明充气床的实施例五的局部解剖结构示意图。

如图 19 和图 20 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 采用 Y 型拉带，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，连接支撑顶片 11，下端为直拉带型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

实施例六：

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

如图 21 所示，本实施例的结构与实施例五基本相同，其不同之处在于：第一拉带结构 14 采用上下两端都呈 X 型的拉带，并且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔

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排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，向上连接顶片 11，下端同样也呈分叉型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

实施例七：

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。图 23 为本发明充气床的实施例七的局部解剖结构示意图。图 24 为本发明充气床的实施例七的内部结构示意图。

如图 22 至图 24 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 中的若干拉带均采用圆孔拉带，且第一拉带结构 14 中每一个拉带的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。当所述气室充气后，其可以有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

根据上述结构描述，上述各实施例之间的结构变化可以任意组合，并不受上述具体实施例的限制，即有关第二拉带结构 15 包含拉带的数量和第三拉带结构 16 包含拉带的数量不受限制，根据实际需求进行调整。

同理，第二拉带结构 15 中若干拉带之间的连接方式，以及第三拉条结构 16 中若干拉带之间的连接方式也不受上述实施例的局限，只要将侧壁 13 分隔成至少五段式（或大于等于四段）的形式即可，例如可以通过改变第二拉带结构 15 和第三拉条结构 16 中包含拉带的数量及连接方式将侧壁 13 分隔成六段、七段等多段形式。

当然，有关第一拉带结构 14 的结构形式可以在各种情况下通用，同样起到支撑顶片 11 和底片 12 的作用，有效限制顶片 11 和底片 12 分别向上和向下膨胀。

综上所述，本发明充气床通过采用各种类型的拉带结构，可以限制充气床的侧壁向外膨胀或变形。本发明充气床的结构有效地克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本发明充气床还可以防止用户在使用过程中滚落。

虽然以上描述了本发明的具体实施方式，但是本领域的技术人员应当理解，这些仅是举例说明，本发明的保护范围是由所附权利要求书限定的。本领域的

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技术人员在不背离本发明的原理和实质的前提下，可以对这些实施方式作出多种变更或修改，但这些变更和修改均落入本发明的保护范围。

INTEX EX. 1003, Pg. 23
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说　明　书　附　图

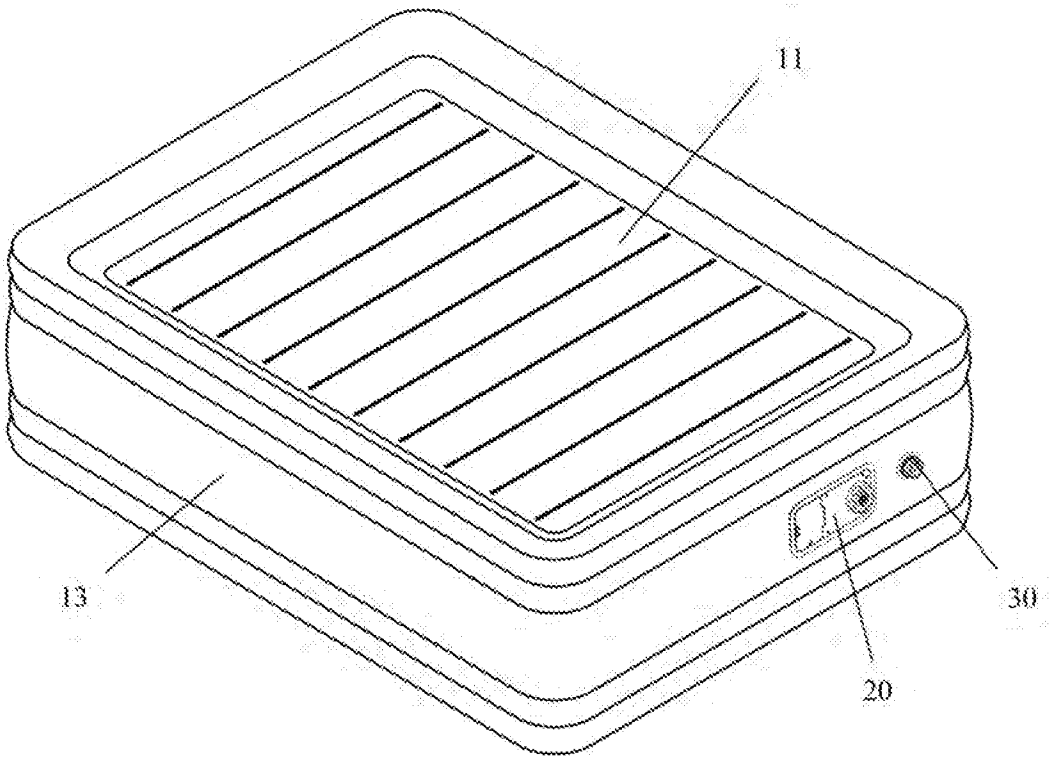


图 1

INTEX EX. 1003, Pg. 24
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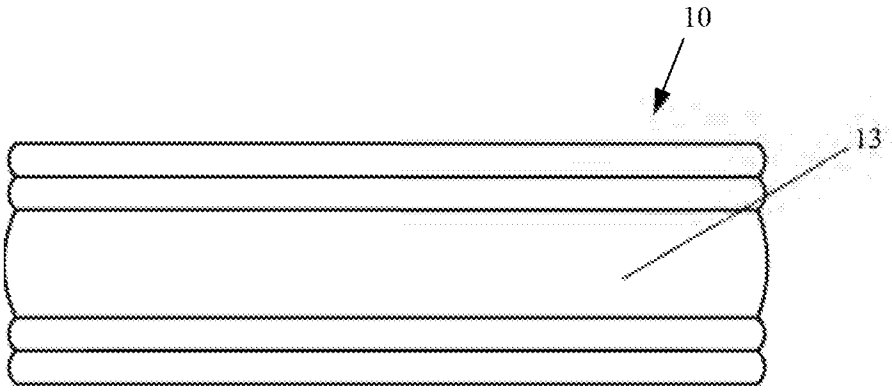


图 2

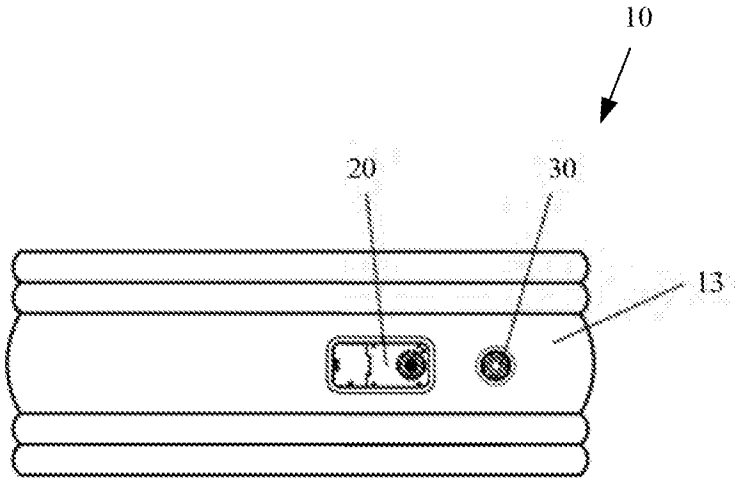


图 3

INTEX EX. 1003, Pg. 25
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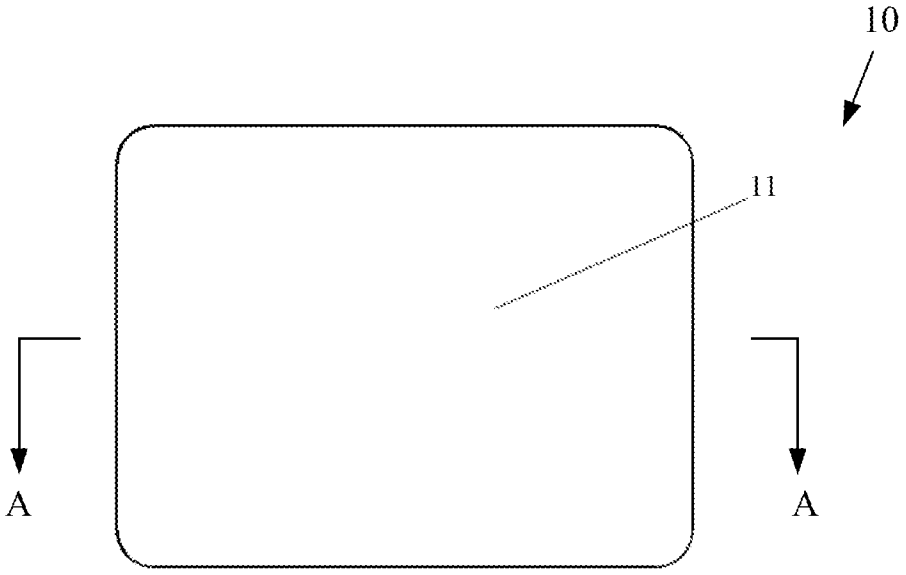


图 4

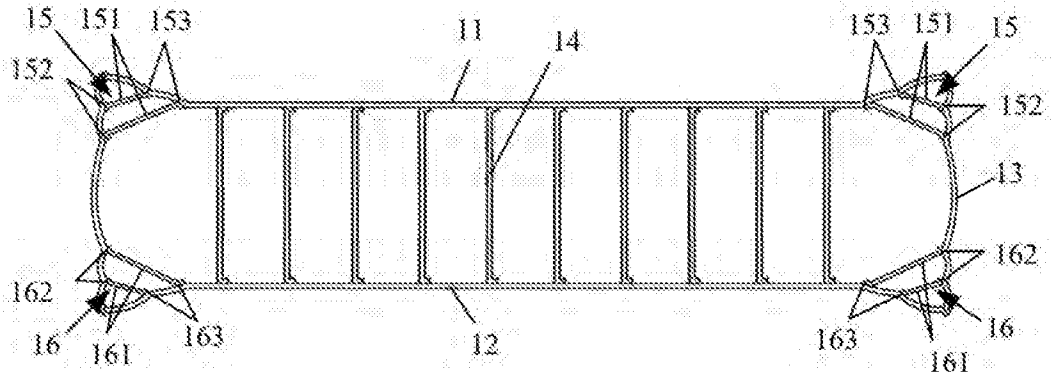


图 5

INTEX EX. 1003, Pg. 26
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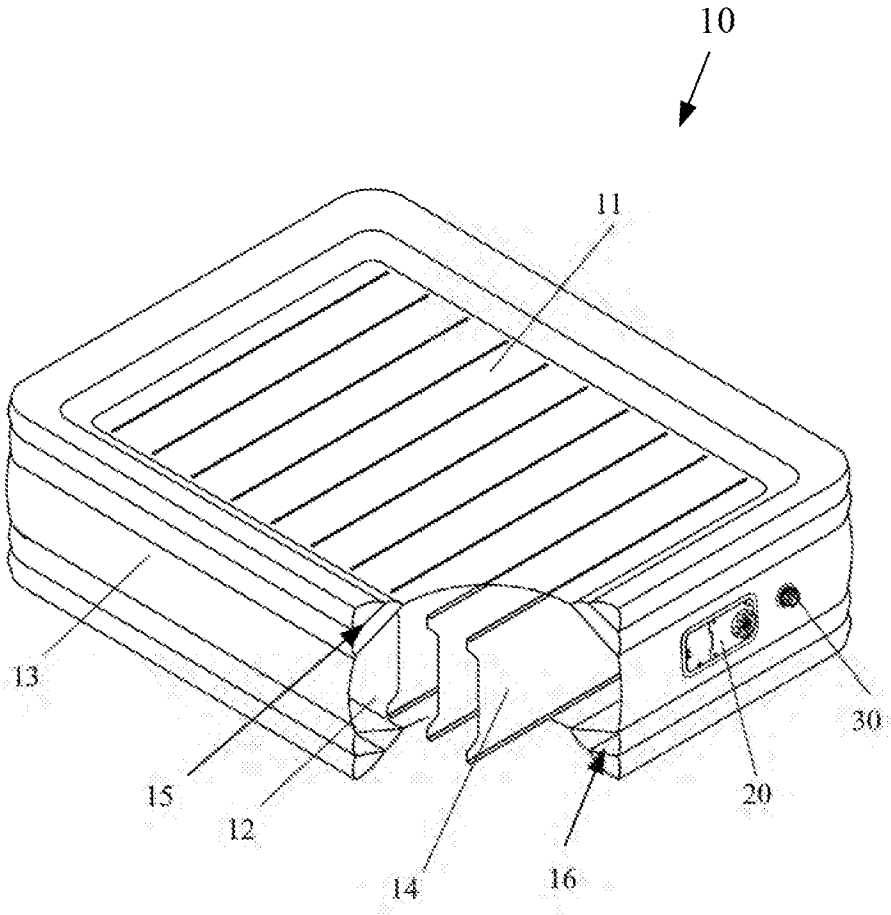


图 6

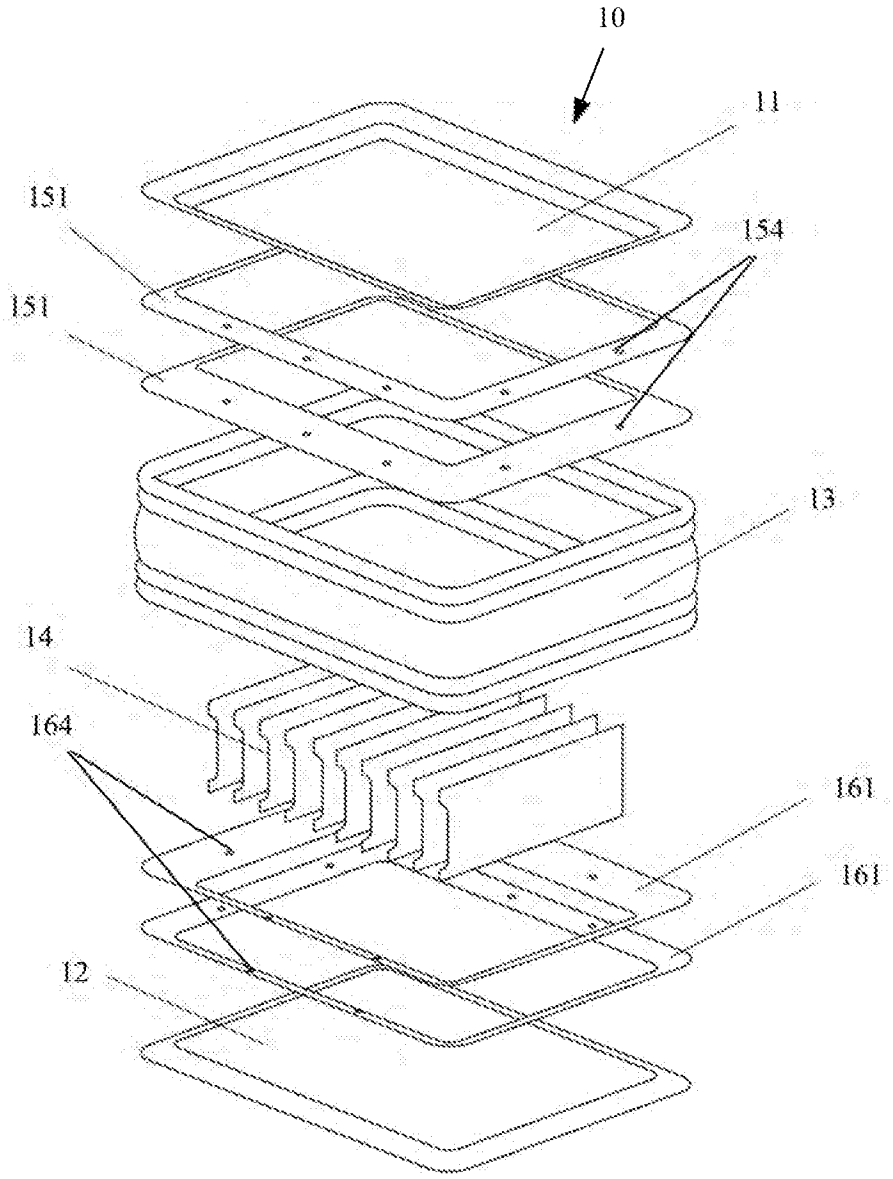


图 7

INTEX EX. 1003, Pg. 28
Intex Recreation v. Bestway Inflatables

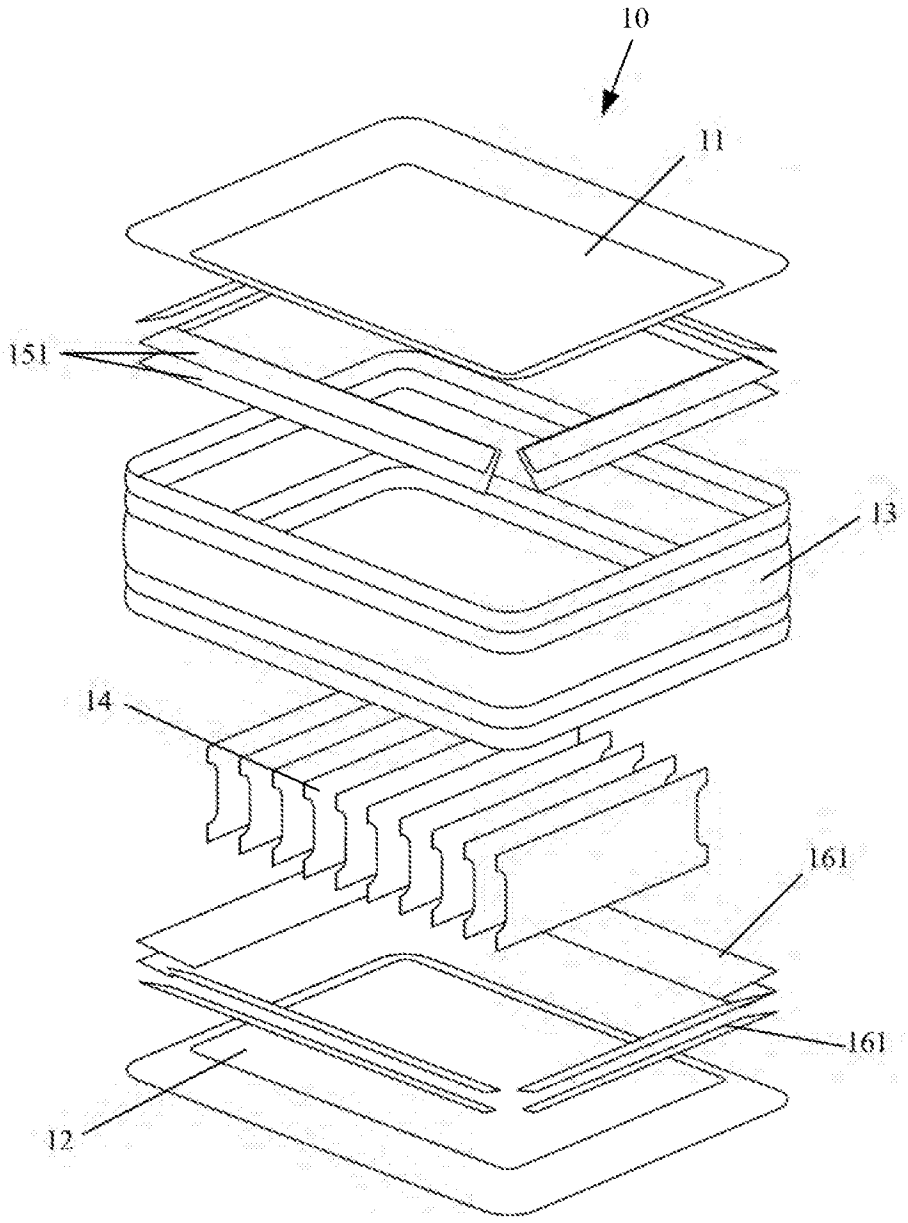


图 8

INTEX EX. 1003, Pg. 29
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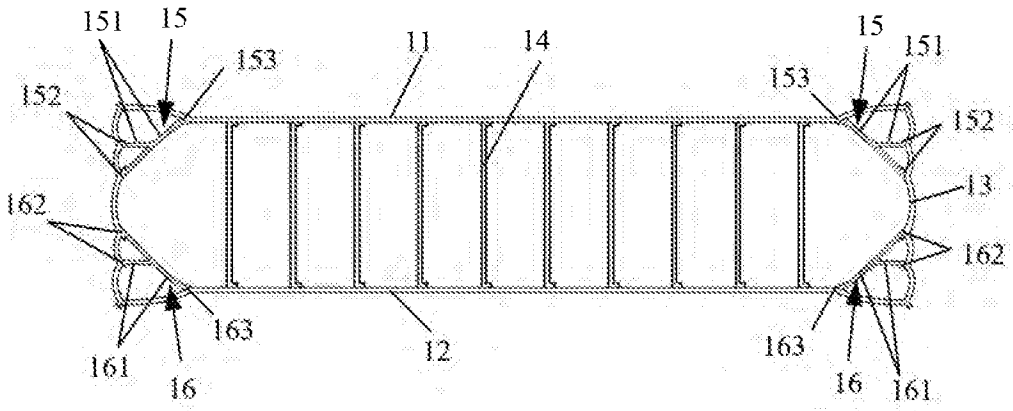


图 9

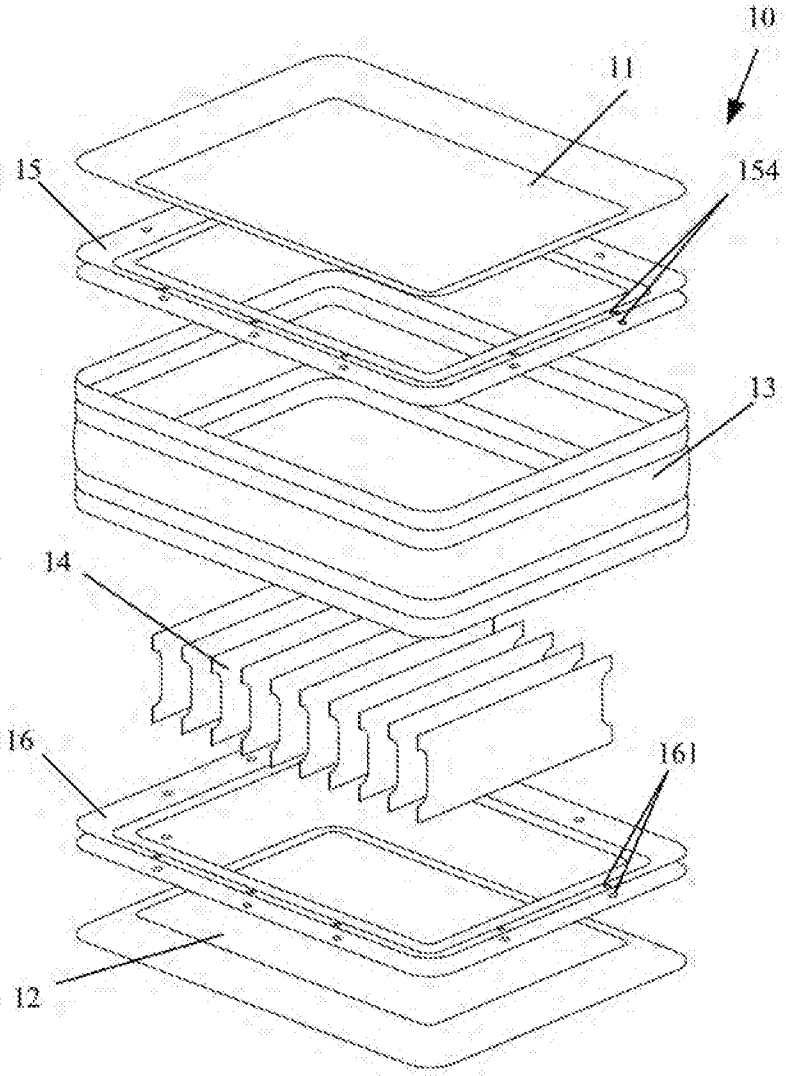


图 10

INTEX EX. 1003, Pg. 30
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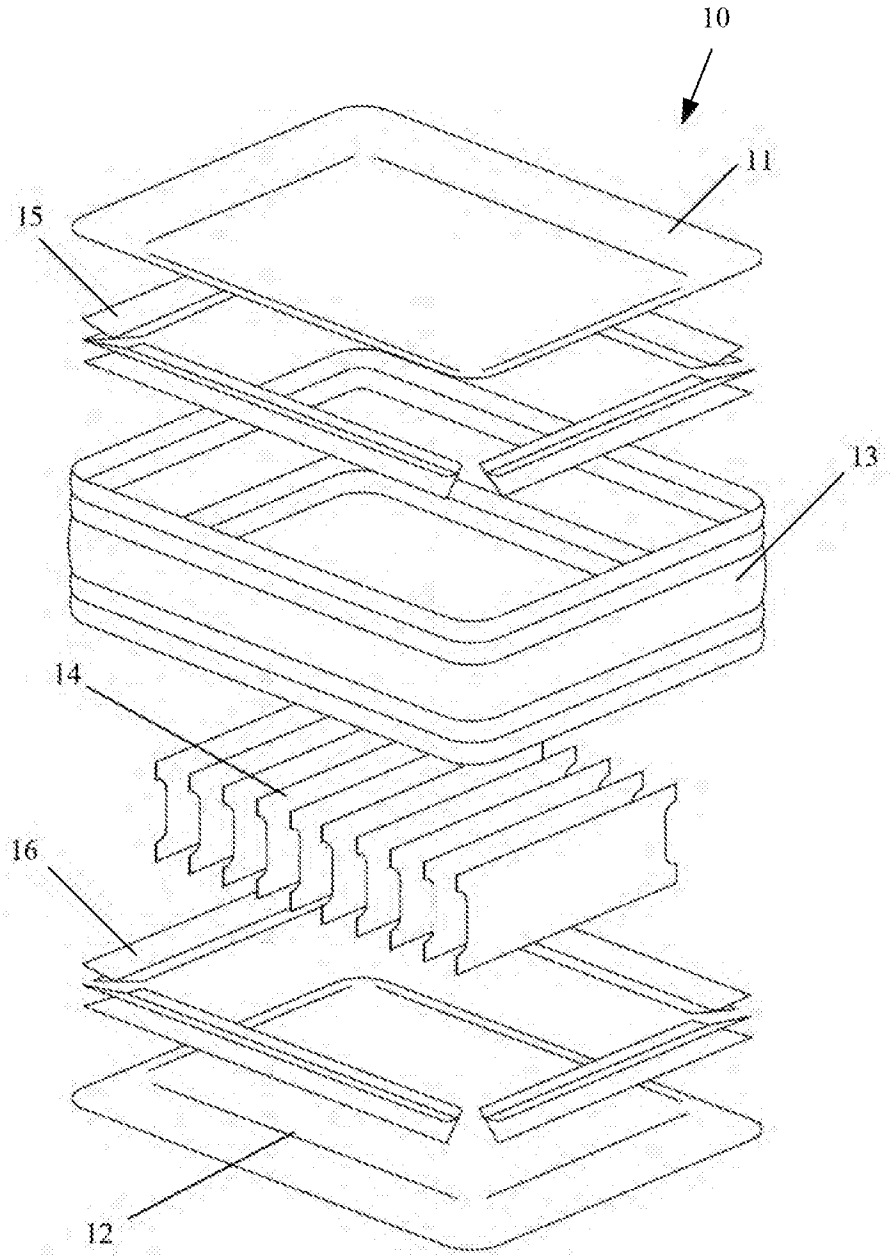


图 11

INTEX EX. 1003, Pg. 31
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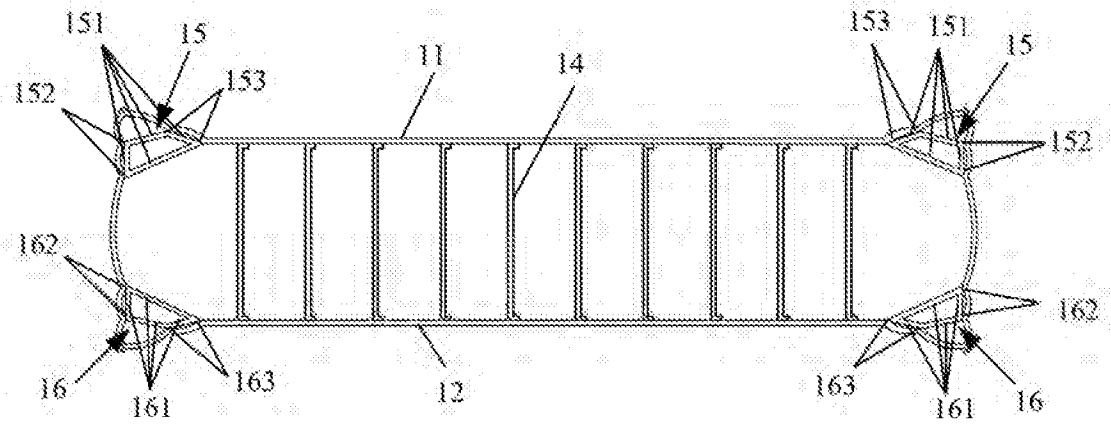


图 12

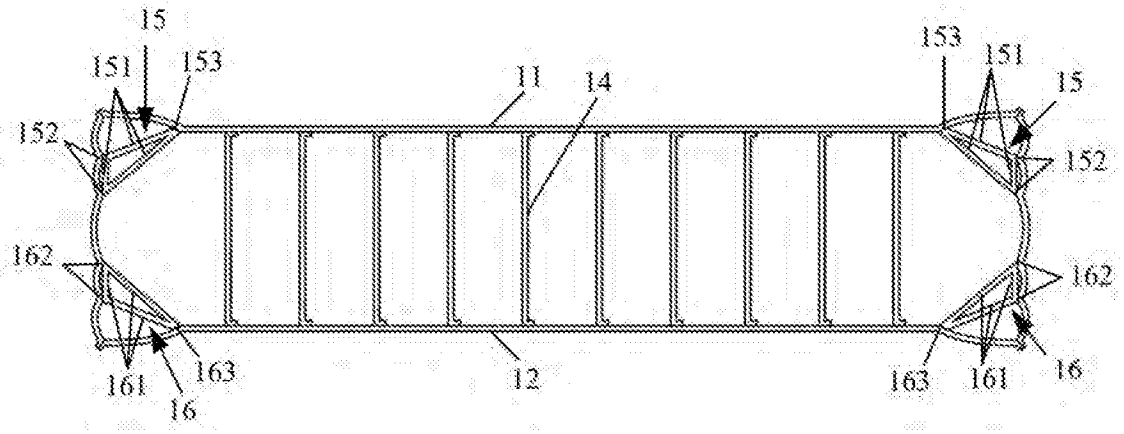


图 13

INTEX EX. 1003, Pg. 32
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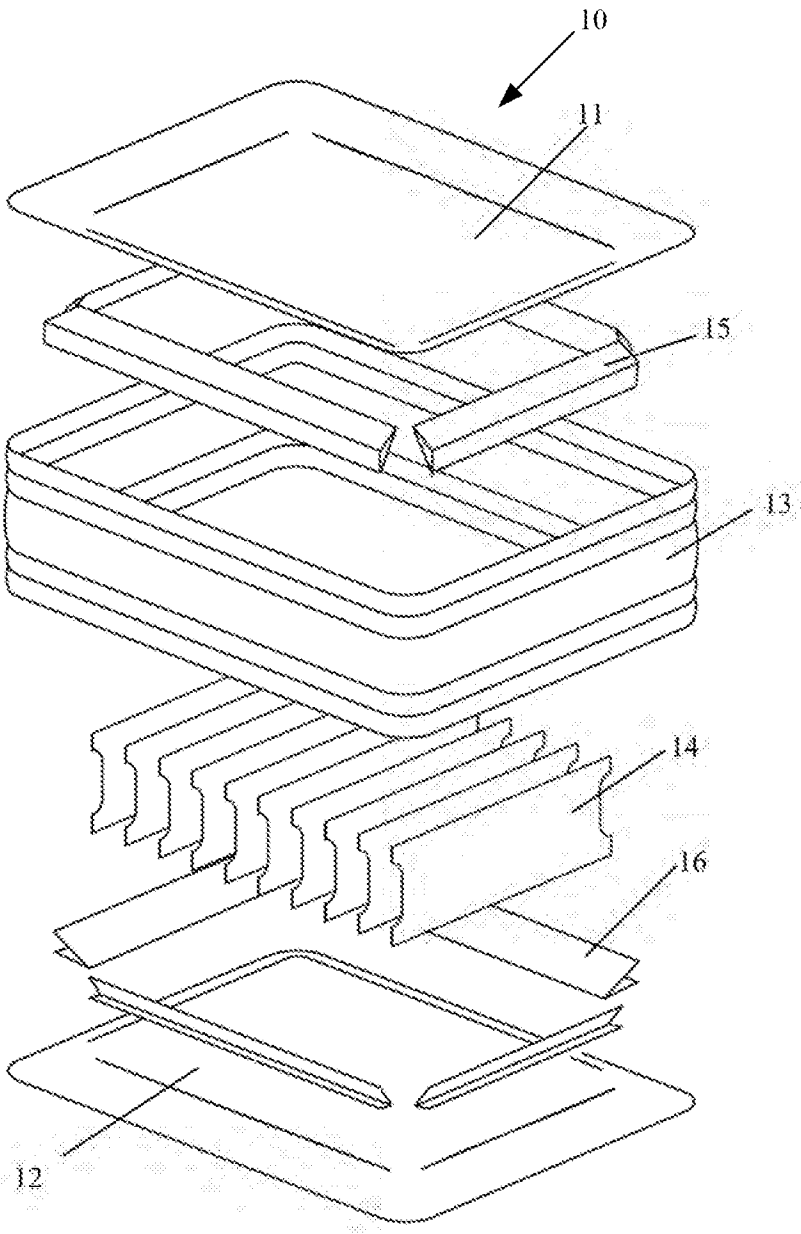


图 14

INTEX EX. 1003, Pg. 33
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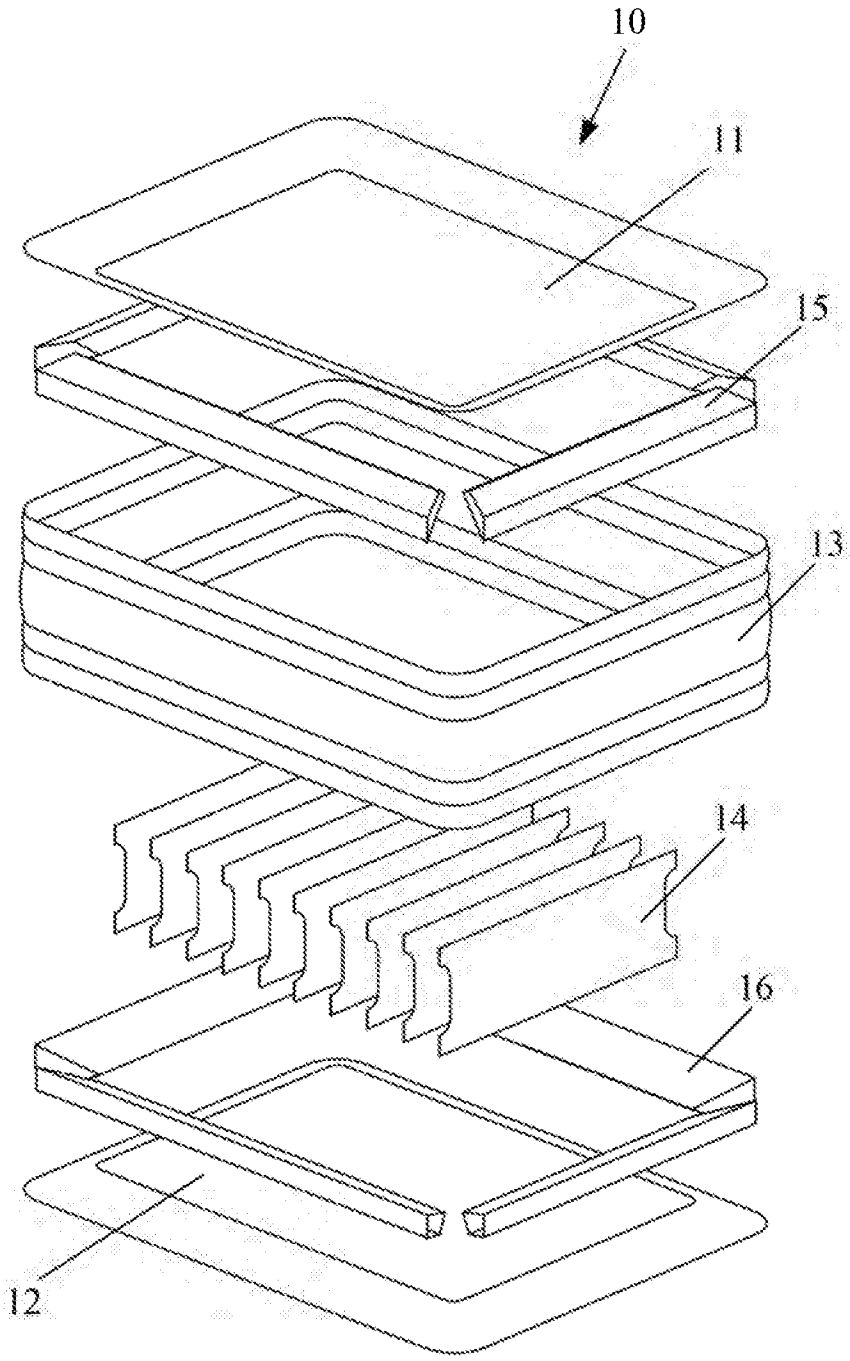


图 15

INTEX EX. 1003, Pg. 34
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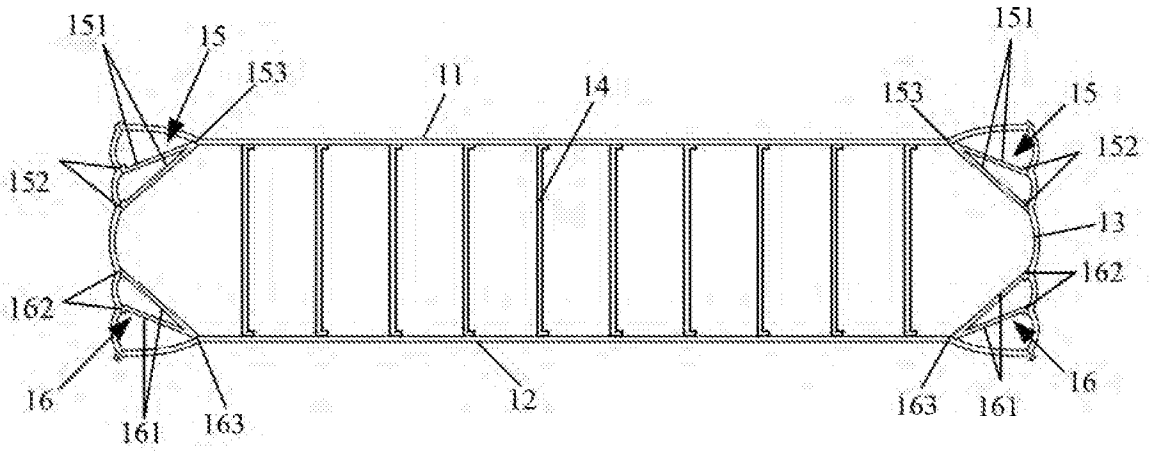

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图 16

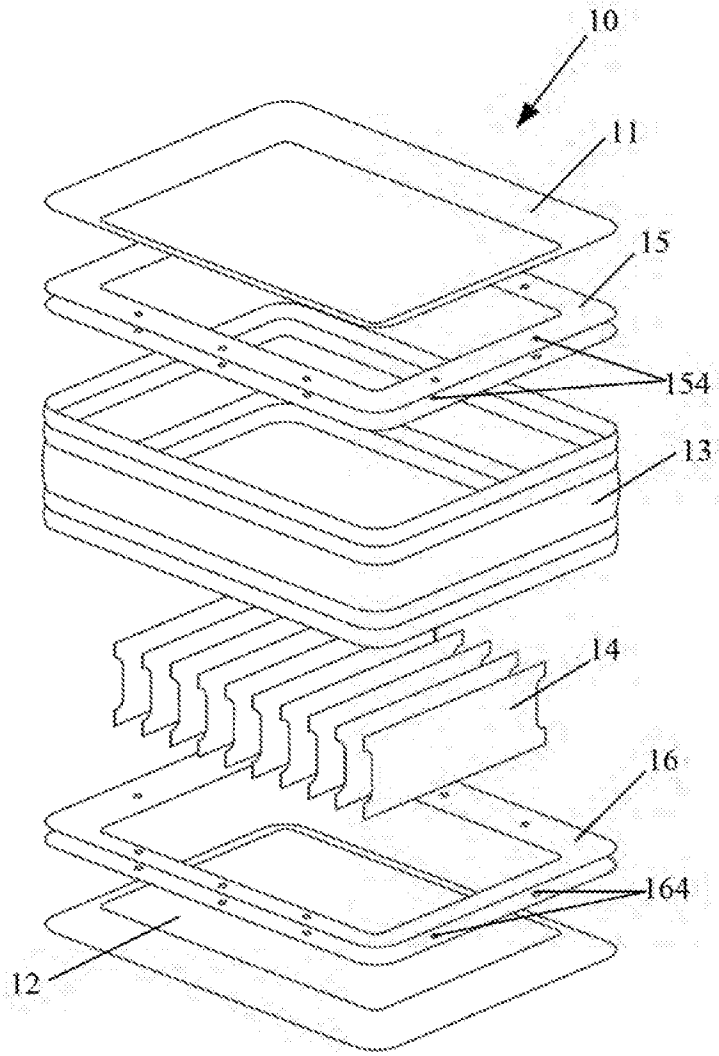

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图 17

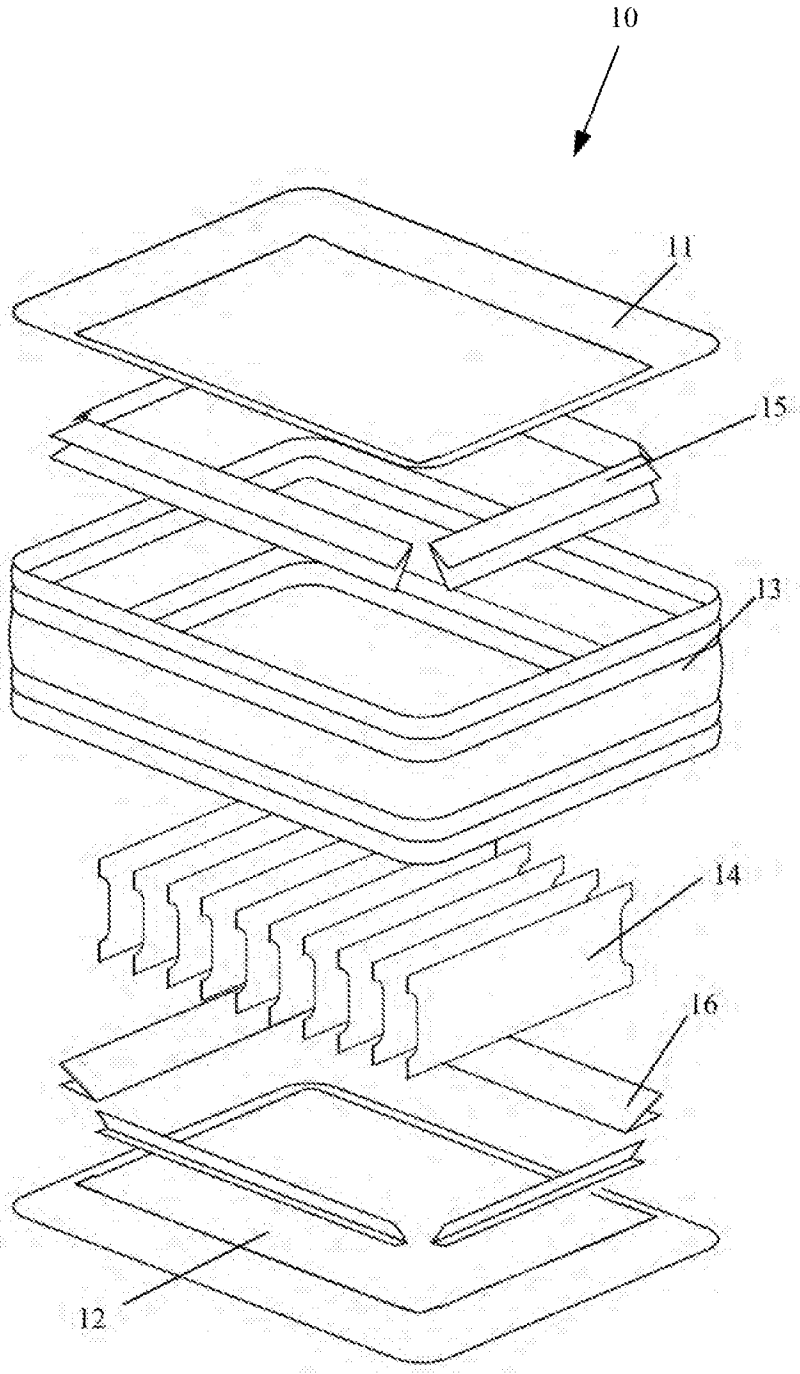


图 18

INTEX EX. 1003, Pg. 36
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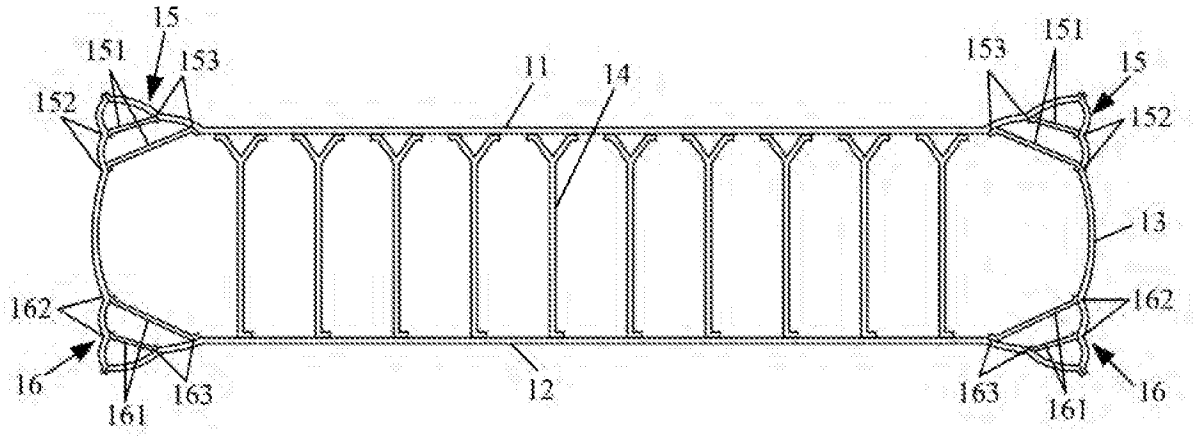


图 19

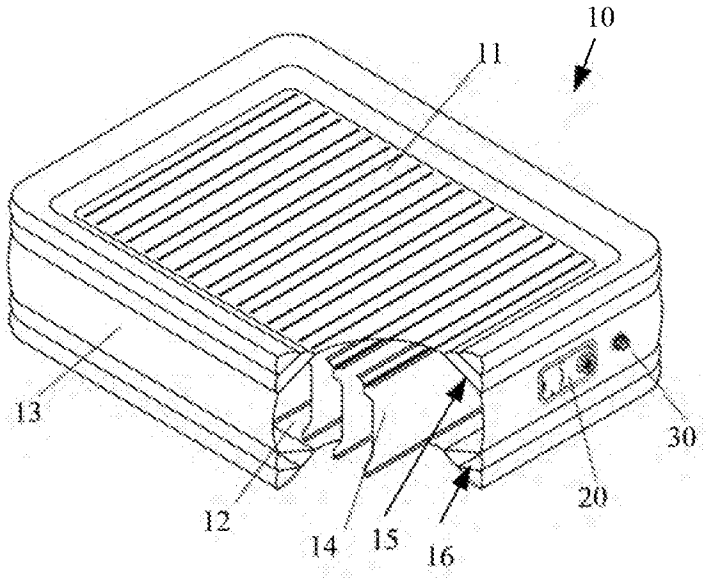


图 20

INTEX EX. 1003, Pg. 37
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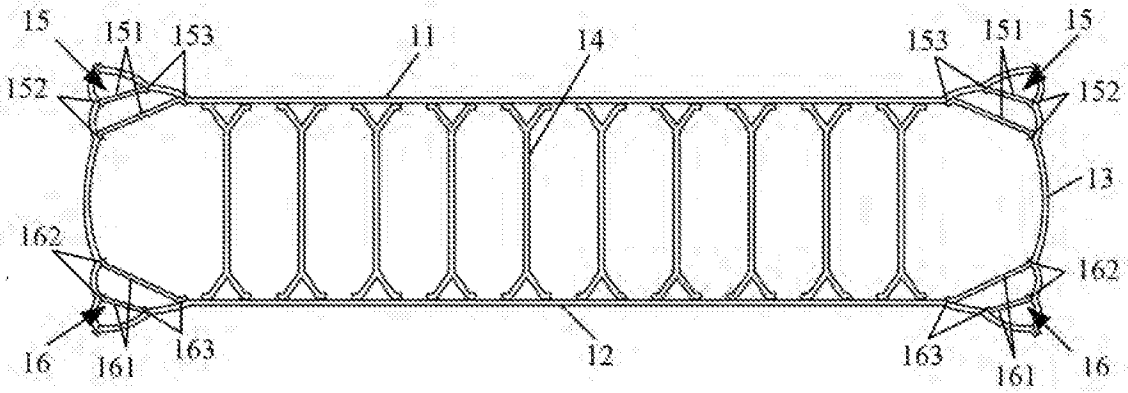


图 21

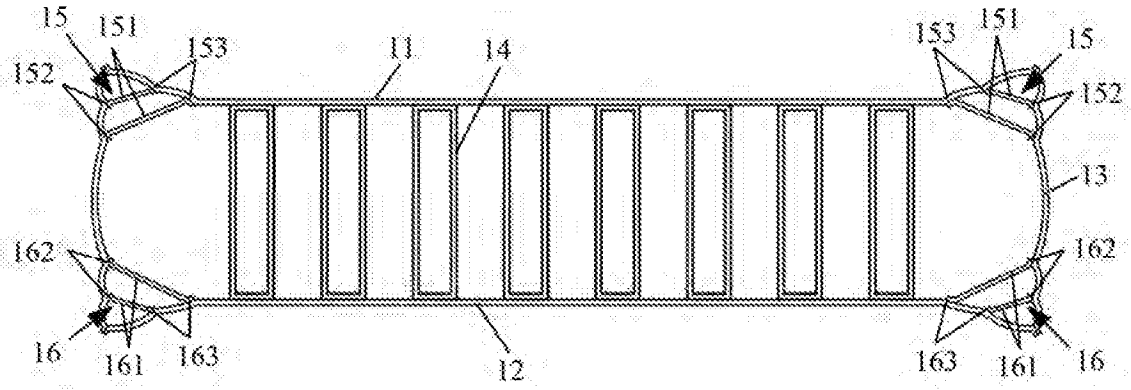


图 22

INTEX EX. 1003, Pg. 38
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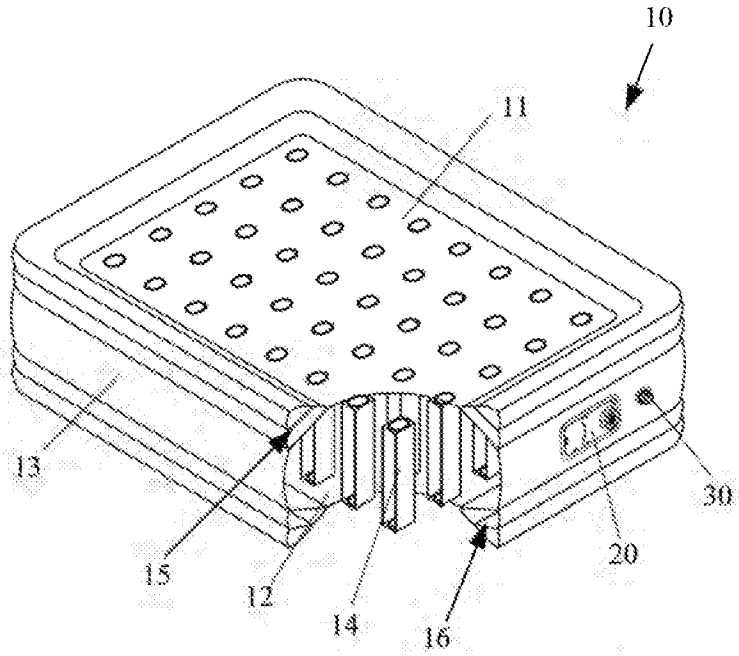


图 23

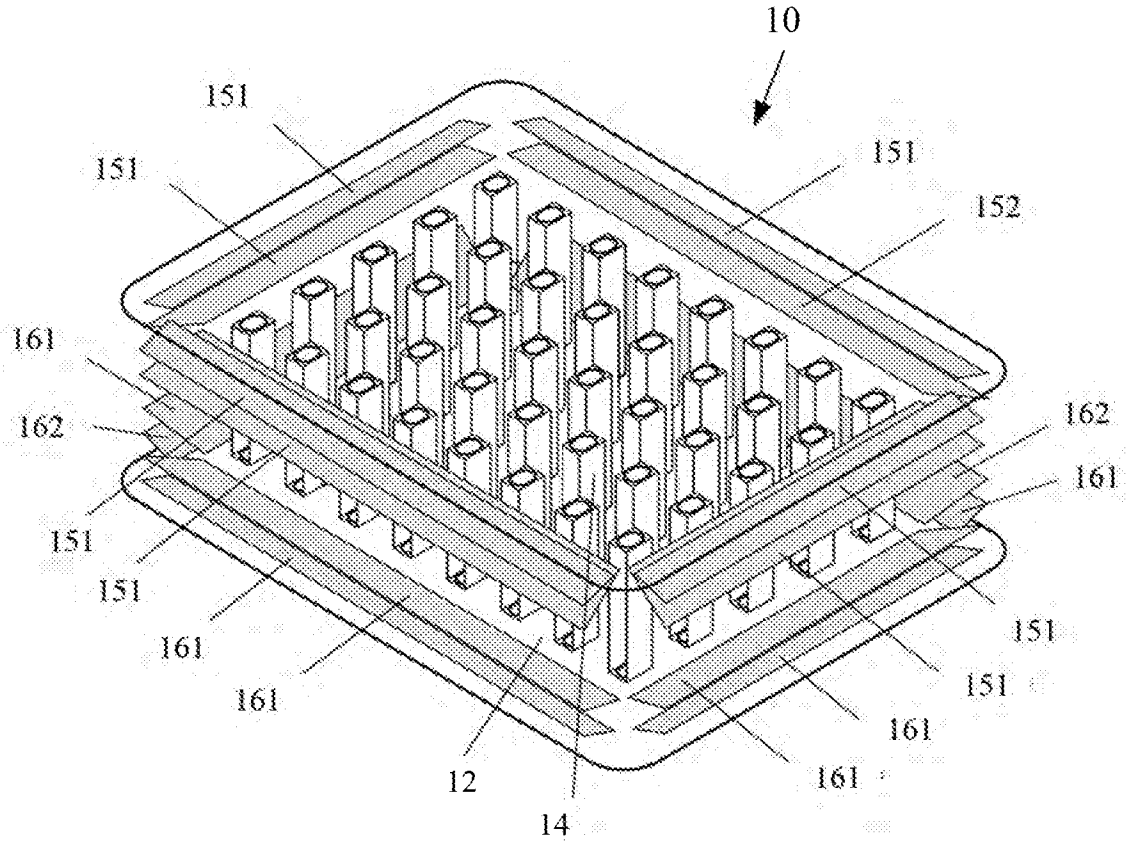
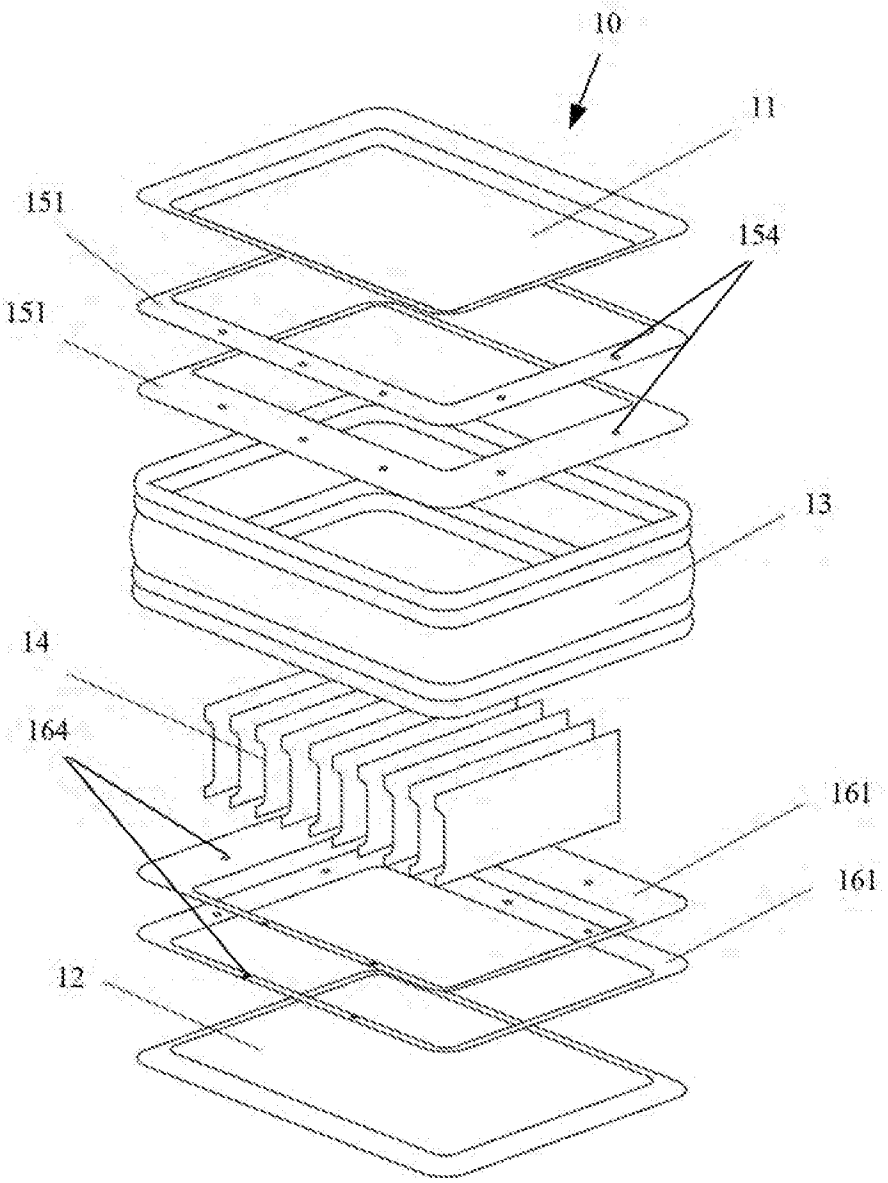


图 24

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摘　要　附　图



说　明　书　摘　要

本实用新型提供了一种充气床，其包括：顶片和底片上下间隔布置；至少一侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；至少一第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。本实用新型充气床具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题，而且还可以防止用户在使用过程中滚落。

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权 利 要 求 书

1、一种充气床，其特征在于，所述充气床包括：

顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

2、如权利要求 1 所述的充气床，其特征在于，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

3、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

4、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

5、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

6、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少

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两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

7、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

8、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

9、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

10、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

11、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

12、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

13、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

14、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉

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带相互间隔地排布于所述底片的上表面。

15、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

16、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

17、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

18、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

19、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

20、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

21、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

22、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

23、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

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24、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

25、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

26、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

27、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带整体为一个间断的环形结构。

28、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带整体为一个间断的环形结构。

29、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

30、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

31、如权利要求 1 所述的充气床，其特征在于，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

32、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

33、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

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34、如权利要求 33 所述的充气床，其特征在于，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

35、如权利要求 33 所述的充气床，其特征在于，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

36、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

37、如权利要求 2 所述的充气床，其特征在于，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

38、如权利要求 2 所述的充气床，其特征在于，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

39、如权利要求 2 所述的充气床，其特征在于，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

40、如权利要求 1 所述的充气床，其特征在于，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

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说　　明　　书

充气床

技术领域

本实用新型涉及充气床或充气床垫领域，特别涉及一种充气床，其结构设置为可限制侧壁向外膨胀或变形。

背景技术

目前，充气床和充气床垫已经非常流行。充气床和充气床垫具有重量轻、便于携带和收藏等优点，因而被广泛应用于各种不同的场合。例如，在家庭充气床和充气床垫通常可以作为临时的床，供来访的客人使用。另外还非常适合在户外野营时使用。

在现有技术中，充气床和充气床垫一般由 PVC 胶布、PU 胶布等制成，且具有许多不同的结构，其中比较典型的机构是由顶片、底片，以及与顶片和底片相连接的侧壁构成可充气的气室。在气室内部设有连接顶片和底片且间隔排列的拉带，以构成具有一定高度且上表面大致平坦的可供人躺在上面的形状。

在现有的充气床和充气床垫中，有的具有较高的高度，充气床和充气床垫充气后的侧壁容易膨胀和变形，影响到充气床和充气床垫外观的美观，充气床和充气床垫的膨胀和变形也会造成气室内的气压衰减，使得充气床和充气床垫偏软降低了充气床和充气床垫的舒适性。

因此，为了解决上述侧壁膨胀的问题，有的充气床和充气床垫在顶片和底片之间设置了中层片，并将中层片与侧壁连接。这种结构的充气床和充气床垫虽然使侧壁膨胀和变形的问题略有改善，但仍然没有达到理想的效果。而且由于顶片与中层片之间，以及中层片与底片之间都需要设置连接拉带，使得充气床和充气床垫的制造过程更加复杂，即所需胶布也更多。

另外，在现有技术中，高度较高的充气床和充气床垫存在稳定性方面的缺陷。当用户躺在或者坐在靠近充气床和充气床垫的边缘处时，充气床和充气床垫容易发生侧翻。为了改善其稳定性，美国专利 US 6671910 在充气床底片的外围设置了充气的稳定管。然而，这种结构不仅会影响充气床的外观美观，也给用户带来了使用的不便。

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实用新型内容

本实用新型要解决的技术问题是为了克服现有技术中充气床和充气床垫的侧壁容易膨胀、变形以及充气床和充气床垫稳定性差，容易侧翻的缺陷，提供一种充气床。

本实用新型是通过下述技术方案来解决上述技术问题的：一种充气床，其特点在于，所述充气床包括：顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

较佳地，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

较佳地，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

较佳地，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

较佳地，所述第二拉带结构包括至少两个第一I型拉带，每一所述第一I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一I型拉带间隔布置。

较佳地，所述第三拉带结构包括至少两个第二I型拉带，每一所述第二I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二I型拉带间隔布置。

较佳地，所述第二拉带结构包括至少一个第一Y型拉带，其中，所述第一

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Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

较佳地，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

较佳地，所述至少两个第二 I 型拉带相互间隔地排布于所述底片的上表面。

较佳地，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

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较佳地，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第二管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

较佳地，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

较佳地，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

较佳地，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

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较佳地，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

较佳地，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

较佳地，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

较佳地，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

本实用新型的积极进步效果在于：

本实用新型充气床克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本实用新型充气床还可以防止用户在使用过程中滚落。

附图说明

本实用新型上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显，在附图中相同的附图标记始终表示相同的特征，其中：

图 1 为本实用新型充气床的立体图。

图 2 为本实用新型充气床的主视图。

图 3 为本实用新型充气床的右视图。

图 4 为本实用新型充气床的俯视图。

图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。

图 6 为本实用新型充气床的实施例一的局部解剖结构示意图。

图 7 为本实用新型充气床的实施例一的爆炸图一。

图 8 为本实用新型充气床的实施例一的爆炸图二。

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。

图 10 为本实用新型充气床的实施例二的爆炸图一。

图 11 为本实用新型充气床的实施例二的爆炸图二。

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图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。

图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。

图 14 为本实用新型充气床的实施例三的爆炸图一。

图 15 为本实用新型充气床的实施例三的爆炸图二。

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。

图 17 为本实用新型充气床的实施例四的爆炸图一。

图 18 为本实用新型充气床的实施例四的爆炸图二。

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。

图 20 为本实用新型充气床的实施例五的局部解剖结构示意图。

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。

图 23 为本实用新型充气床的实施例七的局部解剖结构示意图。

图 24 为本实用新型充气床的实施例七的内部结构示意图。

具体实施方式

为让本实用新型的上述目的、特征和优点能更明显易懂，以下结合附图对本实用新型的具体实施方式作详细说明。

在下面的描述中阐述了很多具体细节以便于充分理解本实用新型，但是本实用新型还可以采用其它不同于在此描述的其它方式来实施，因此本实用新型不受下面公开的具体实施例的限制。

实施例一：

图 1 为本实用新型充气床的立体图。图 2 为本实用新型充气床的主视图。图 3 为本实用新型充气床的右视图。图 4 为本实用新型充气床的俯视图。图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。图 6 为本实用新型充气床的实施例一的局部解剖结构示意图。图 7 为本实用新型充气床的实施例一的爆炸图。

如图 1 至图 7 所示，本实用新型的实施例一中公开了一种充气床 10，其包括顶片 11、底片 12、至少一侧壁 13、至少一第一拉带结构 14 及至少一支撑结构。其中，底片 12 与顶片 11 上下间隔布置，侧壁 13 的上边缘与顶片 11 的外边缘连接，侧壁 13 的下边缘与底片 12 的外边缘连接，顶片 11、底片 12 和侧壁 13 之间形成一个气室。同时将第一拉带结构 14 设置在所述气室内，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。其作用在于，当所述

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气室充气后，通过第一拉带结构 14 来限制顶片 11 和底片 12 分别向上和向下膨胀。特别地，顶片 11 和底片 12 均可以设置为双层结构，所述双层结构可以通过至少两个两片相互焊接以形成不同的图案。或者进一步地，在所述双层结构中还夹设有海绵的结构。

此处的所述支撑结构设置在所述气室内，所述支撑结构沿至少一侧壁 13 的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的侧壁 13 连接，所述支撑结构中至少一个内侧边缘与相邻的顶片 11 或底片 12 连接。

优选地，所述支撑结构包括第二拉带结构 15 和第三拉带结构 16。其中，第二拉带结构 15 中至少两个外侧边缘与相邻的侧壁 13 连接，第二拉带结构中至少一个内侧边缘与相邻的顶片 11 连接。第二拉带结构 15 设置为当所述气室充气后限制顶片 11 和侧壁 13 向上和侧向膨胀。

同时，第三拉带结构 16 中至少两个外侧边缘与相邻的侧壁 13 连接，第三拉带结构 16 中至少一个内侧边缘与相邻的底片 12 连接。第三拉带结构 16 设置为当所述气室充气后分别限制底片 12 和侧壁 13 向下和侧向膨胀。

在本实施例中，第二拉带结构 15 包括至少两个第一 I 型拉带 151，每一第一 I 型拉带 151 的一个外侧边缘 152 与相邻的侧壁 13 连接，另一个内侧边缘 153 与相邻的顶片 11 连接，且至少两个第一 I 型拉带 151 间隔布置。第三拉带结构 16 包括至少两个第二 I 型拉带 161，每一第二 I 型拉带 161 的一个外侧边缘 162 与相邻的侧壁 13 连接，另一个内侧边缘 163 与相邻的底片 12 连接，且至少两个第二 I 型拉带 151 间隔布置。本实施例中第一 I 型拉带 151 和第二 I 型拉带 161 均以两个为例，但其数量并不受本实施例限制，其可以采用多于两个的数量，均属于本实用新型的保护范围内。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。例如本实施例中第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而使第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，使第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

进一步地，至少两个第一 I 型拉带 151 相互间隔地排布于顶片 11 的下表面，

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且至少两个第二 I 型拉带 161 相互间隔地排布于底片 12 的上表面。至少两个第一 I 型拉带 151 在侧壁 13 的内表面上沿垂直方向间隔排布。至少两个第二 I 型拉带 161 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少两个第一 I 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少两个第二 I 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，在至少两个第一 I 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少两个第二 I 型拉带 161 设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 7 和图 8 所示）。

本实用新型中的第一拉带结构 14 可以采用直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。同时，第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 均可以采用热塑性塑胶布制成，且第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 中的一个或多个至少部分地包括网布、夹网布或者线体。

其结构形式可以采用多种方式。例如，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

再例如，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。这些连接结构都可以有效地制成本实用新型充气床所需的拉带，这里仅为举例，但不局限于本实施例中的方案，其他可实现拉带形式的结构均在本实用新型的保护范围内。

在上述拉带的结构基础上，为了保证各个部件之间的牢固连接，第一拉带结构 14 通过高频焊接的方式连接在顶片 11 和底片 12 之间。同理，第二拉带结构 15 也通过高频焊接的方式连接在顶片 11 和侧壁 13 之间。第三拉带结构 16 通过高频焊接的方式连接在底片 12 和侧壁 13 之间。

通过上述结构形成的本实用新型充气床，其顶片 11 位于第二拉带结构 15 的上边缘内侧部分的高度低于顶片 11 位于第二拉带结构 15 的上边缘外侧部分的高度。底片 12 位于第三拉带结构 16 的下边缘内侧部分的高度低于底片 12 位于第三拉带结构 16 的下边缘外侧部分的高度。

此外，在充气床 10 上还包括内置气泵 20，将内置气泵 20 设置在侧壁 13 上，且位于第二拉带结构 15 的下边缘和第三拉带结构 16 的上边缘之间，用以供所述气室充气。同时，在充气床 10 上还设置有气阀 30，将气阀 30 设置在侧

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壁 13 上，用以供充气床 10 的充气或放气。

实施例二：

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。图 10 为本实用新型充气床的实施例二的爆炸图一。图 11 为本实用新型充气床的实施例二的爆炸图二。

如图 9 至图 11 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 Y 型拉带 151，其中第一 Y 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，另一个内侧边缘 153 与顶片 11 连接。同理，第三拉带结构 16 包括至少一个第二 Y 型拉带 161，其中第二 Y 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，另一个内侧边缘 163 与底片 12 连接。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

进一步地，至少一个第一 Y 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 Y 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 Y 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 Y 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 Y 型拉带 151 上还设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 Y 型拉带 161 上还设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 10 和图 11 所示）。

实施例三：

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。图 13 为图 4 中沿

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A-A 线剖开的实施例三的剖视图二。图 14 为本实用新型充气床的实施例三的爆炸图一。图 15 为本实用新型充气床的实施例三的爆炸图二。

如图 12 至图 15 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一管型拉带 151，其中第一管型拉带 151 上具有至少两个外侧边缘 152 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二管型拉带 161，第二管型拉带 161 上具有至少两个外侧边缘 162 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 163 与底片 12 连接。此处的第一管型拉带 151 和第二管型拉带 161 可以采用多种管型结构，例如呈三角形的管型结构，呈四边形的管型结构（如图 13 和图 14 所示）。

进一步地，至少一个第一管型拉带 151 与相邻的侧壁 13 连接的至少两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二管型拉带 161 与相邻的侧壁 13 连接的至少两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一管型拉带 151 整体为一个间断的环形结构。至少一个第二管型拉带 161 整体为一个间断的环形结构（如图 13 和图 14 所示）。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

实施例四：

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。图 17 为本实用新型充气床的实施例四的爆炸图一。图 18 为本实用新型充气床的实施例四的爆炸图二。

如图 16 至图 18 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 V 型拉带 151，其中第一 V 型拉带

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151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，且另一内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二 V 型拉带 161，其中第二 V 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，且另一内侧边缘 163 与顶片 11 连接。

进一步地，至少一个第一 V 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 V 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 V 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 V 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 V 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 V 型拉带 161 上设有气孔 164，使所述气室通过气孔 164 形成空气流通。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

实施例五：

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。图 20 为本实用新型充气床的实施例五的局部解剖结构示意图。

如图 19 和图 20 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 采用 Y 型拉带，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，连接支撑顶片 11，下端为直拉带型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

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实施例六：

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

如图 21 所示，本实施例的结构与实施例五基本相同，其不同之处在于：第一拉带结构 14 采用上下两端都呈 X 型的拉带，并且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，向上连接顶片 11，下端同样也呈分叉型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

实施例七：

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。图 23 为本实用新型充气床的实施例七的局部解剖结构示意图。图 24 为本实用新型充气床的实施例七的内部结构示意图。

如图 22 至图 24 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 中的若干拉带均采用圆孔拉带，且第一拉带结构 14 中每一个拉带的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。当所述气室充气后，其可以有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

根据上述结构描述，上述各实施例之间的结构变化可以任意组合，并不受上述具体实施例的限制，即有关第二拉带结构 15 包含拉带的数量和第三拉带结构 16 包含拉带的数量不受限制，根据实际需求进行调整。

同理，第二拉带结构 15 中若干拉带之间的连接方式，以及第三拉条结构 16 中若干拉带之间的连接方式也不受上述实施例的局限，只要将侧壁 13 分隔成至少五段式（或大于等于四段）的形式即可，例如可以通过改变第二拉带结构 15 和第三拉条结构 16 中包含拉带的数量及连接方式将侧壁 13 分隔成六段、七段等多段形式。

当然，有关第一拉带结构 14 的结构形式可以在各种情况下通用，同样起到支撑顶片 11 和底片 12 的作用，有效限制顶片 11 和底片 12 分别向上和向下膨胀。

综上所述，本实用新型充气床通过采用各种类型的拉带结构，可以限制充气床的侧壁向外膨胀或变形。本实用新型充气床的结构有效地克服了现有技术

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中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本实用新型充气床还可以防止用户在使用过程中滚落。

虽然以上描述了本实用新型的具体实施方式，但是本领域的技术人员应当理解，这些仅是举例说明，本实用新型的保护范围是由所附权利要求书限定的。本领域的技术人员在不背离本实用新型的原理和实质的前提下，可以对这些实施方式作出多种变更或修改，但这些变更和修改均落入本实用新型的保护范围。

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说　明　书　附　图

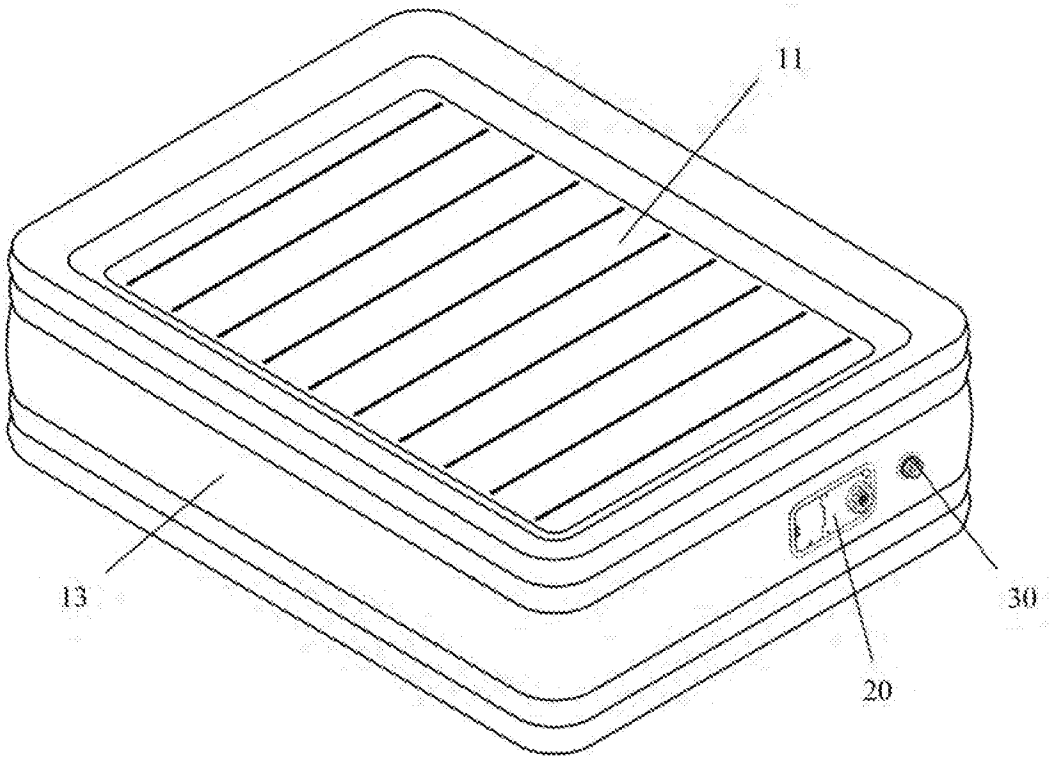


图 1

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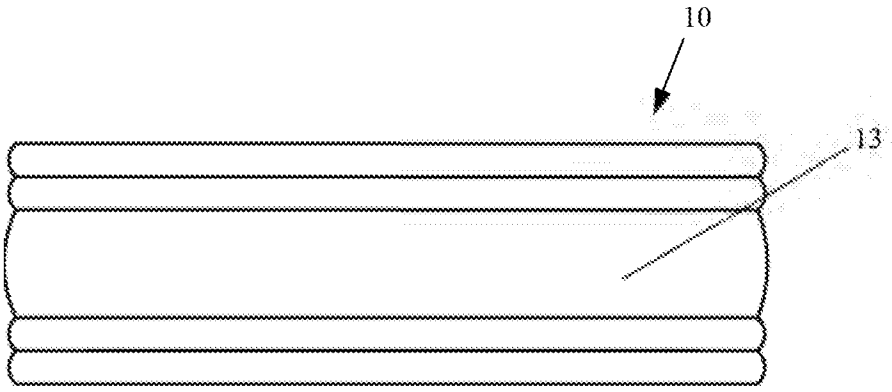


图 2

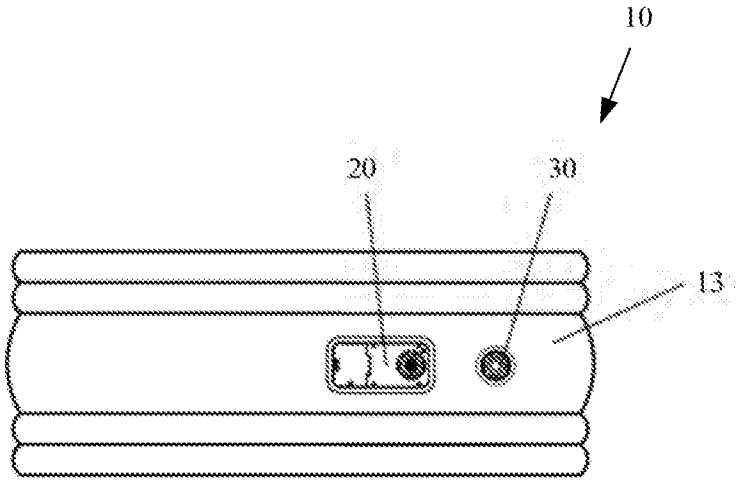


图 3

INTEX EX. 1003, Pg. 61
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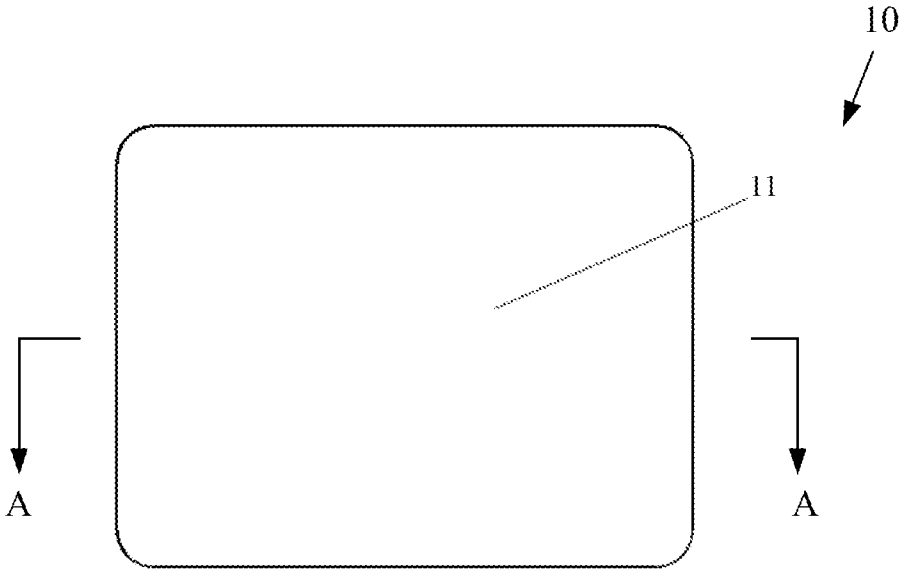


图 4

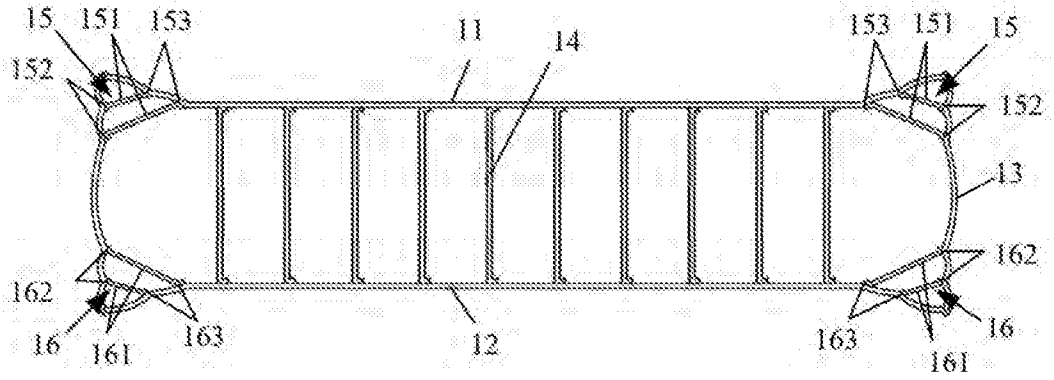


图 5

INTEX EX. 1003, Pg. 62
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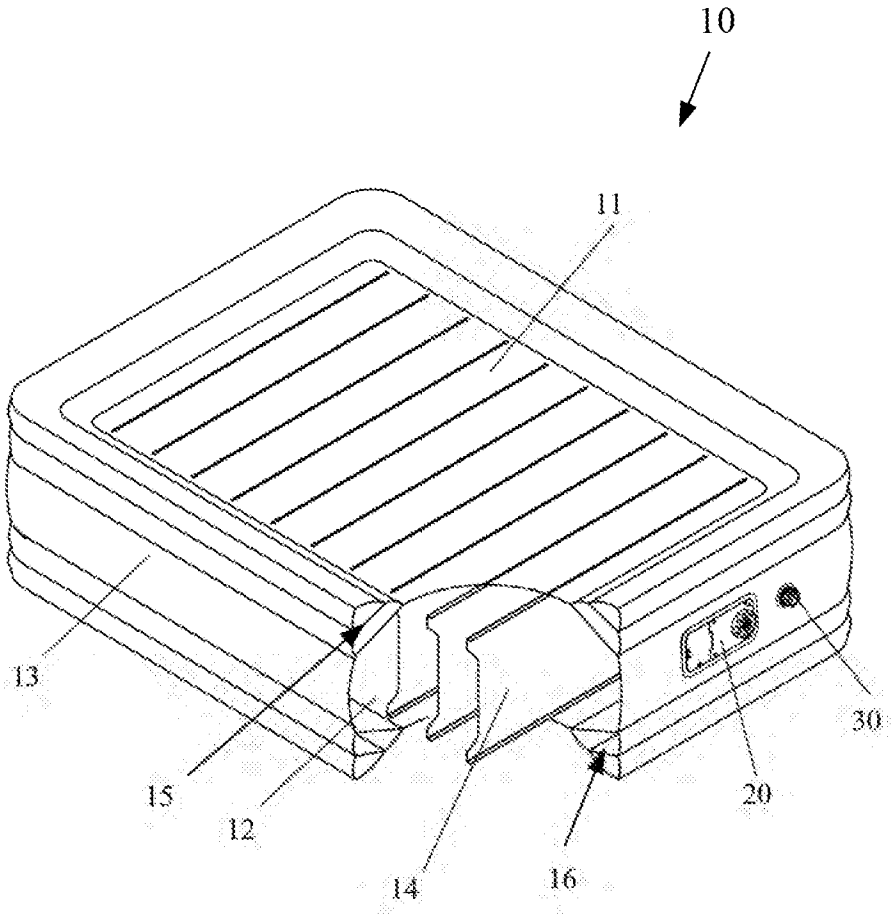


图 6

INTEX EX. 1003, Pg. 63
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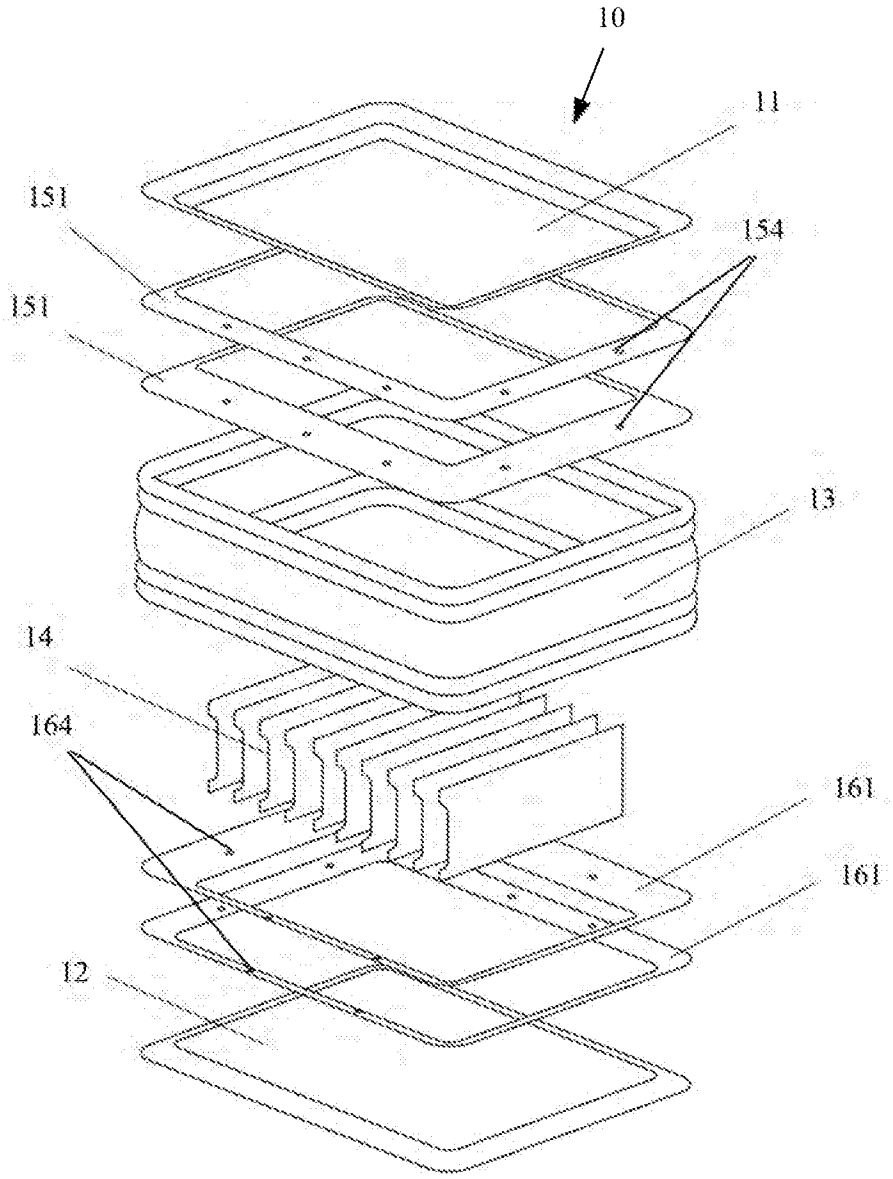


图 7

INTEX EX. 1003, Pg. 64
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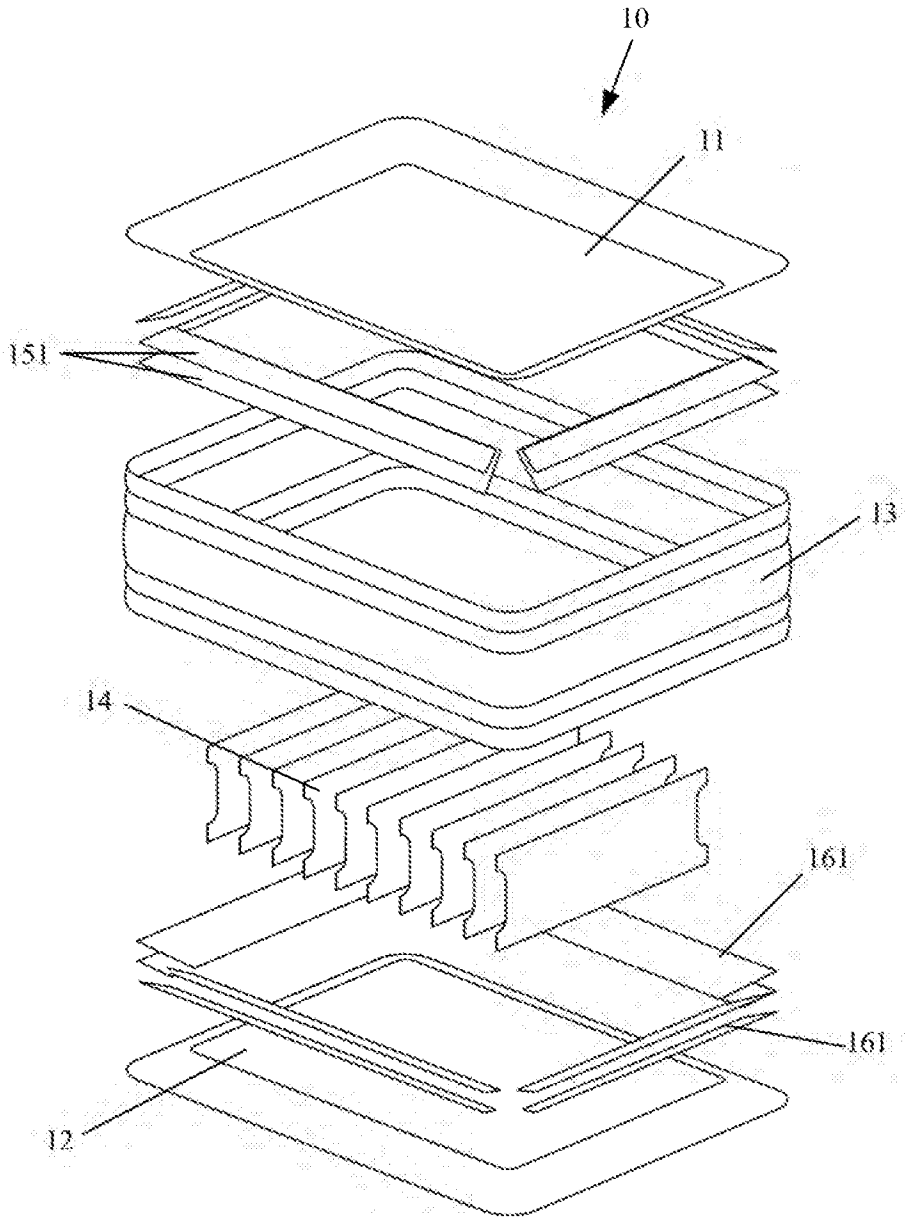


图 8

INTEX EX. 1003, Pg. 65
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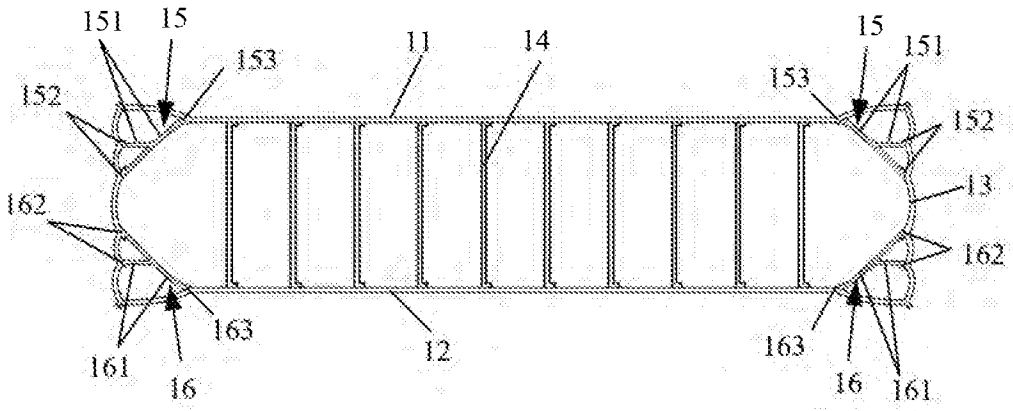


图 9

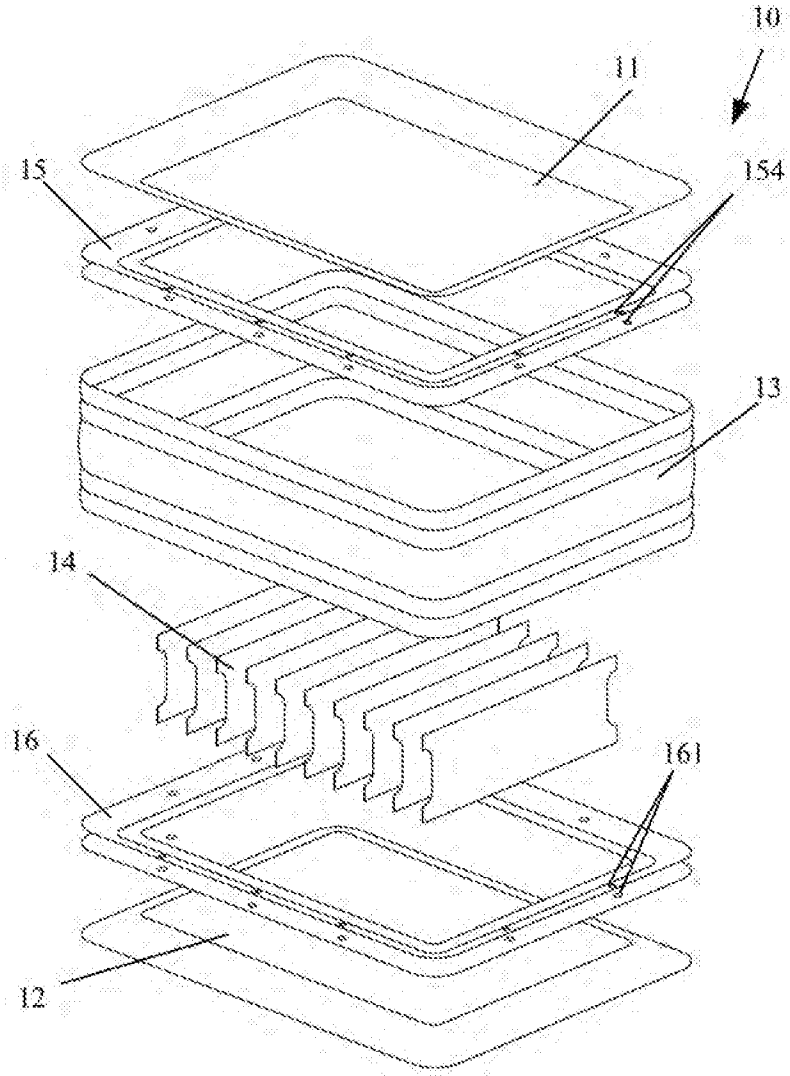


图 10

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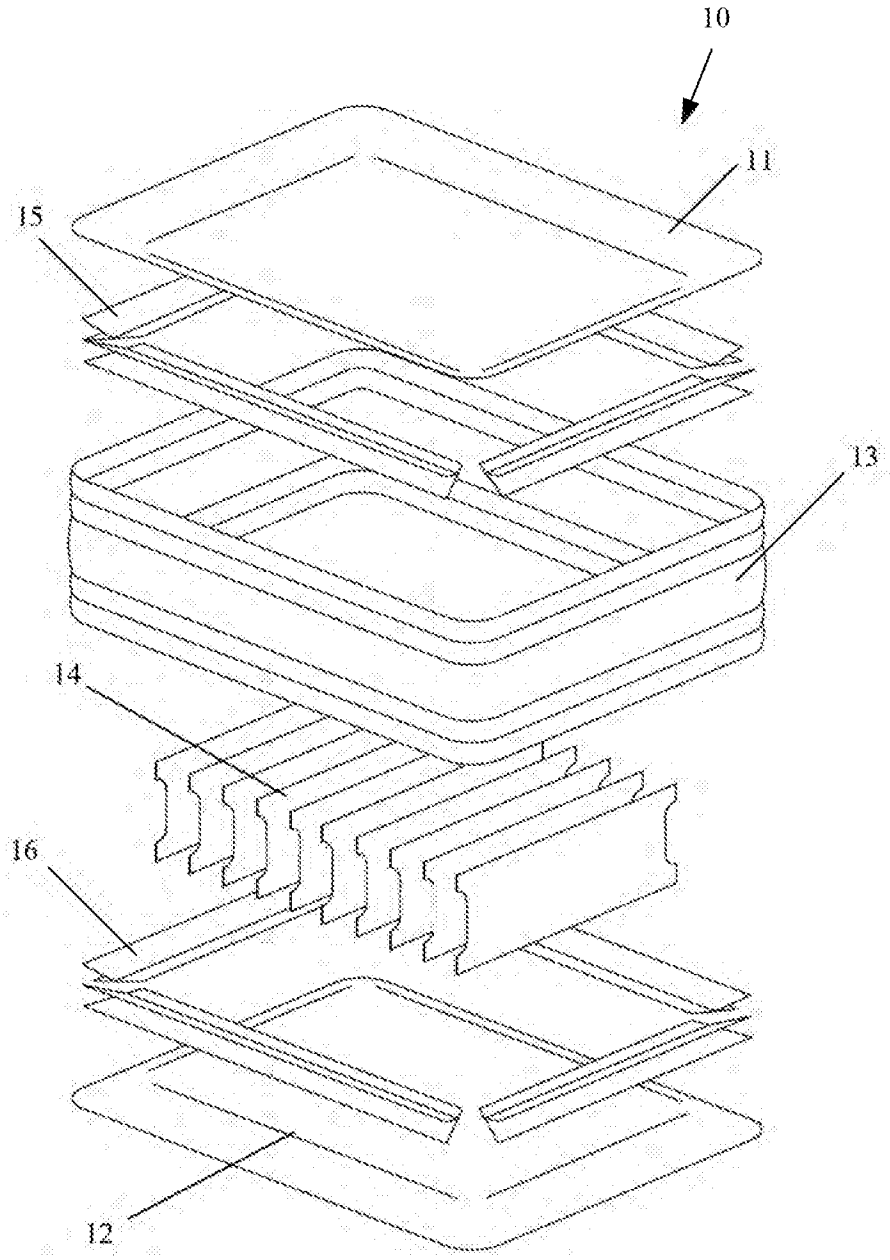


图 11

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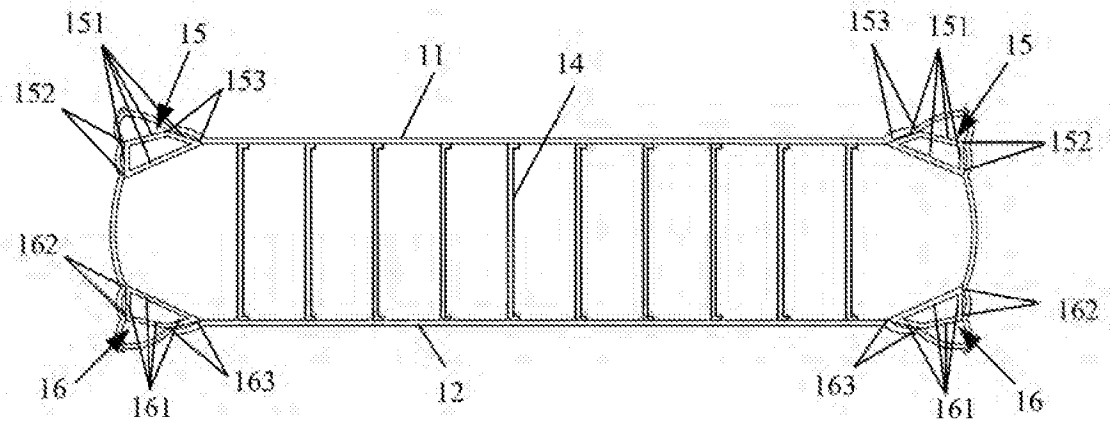


图 12

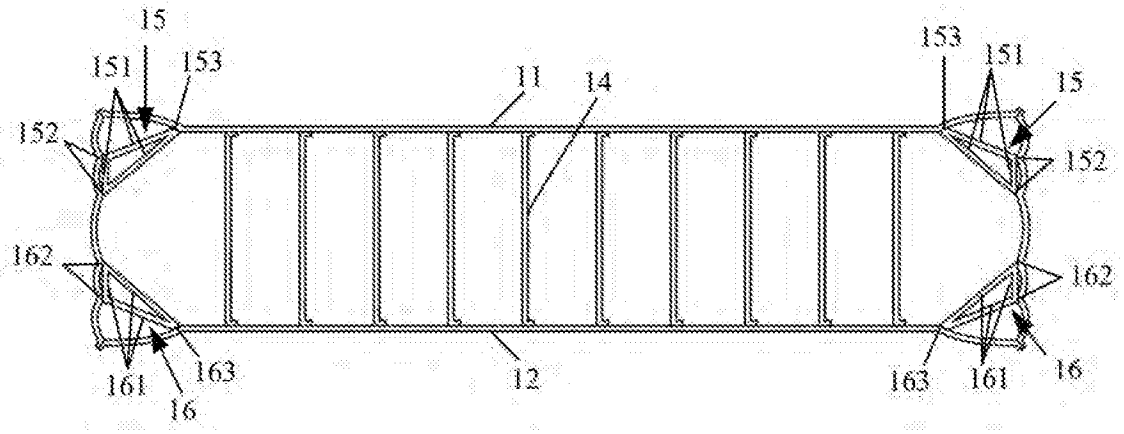


图 13

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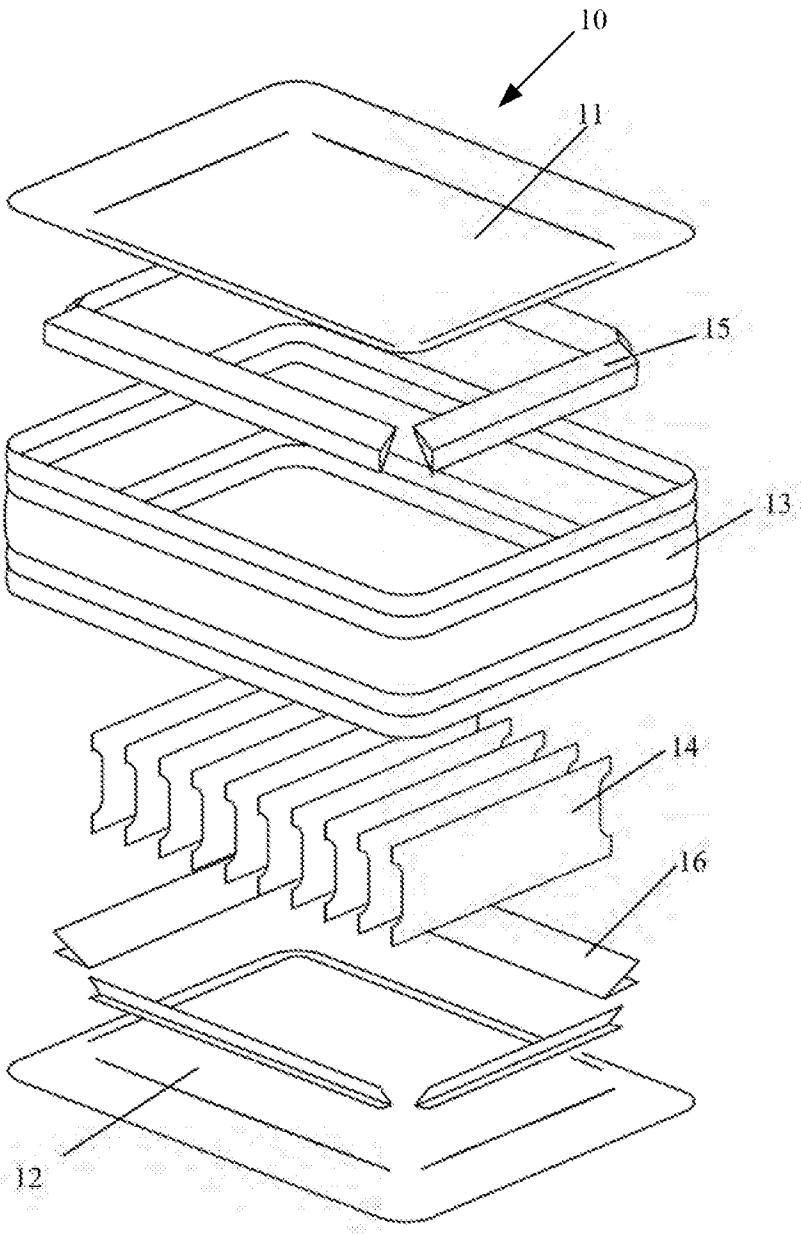


图 14

INTEX EX. 1003, Pg. 69
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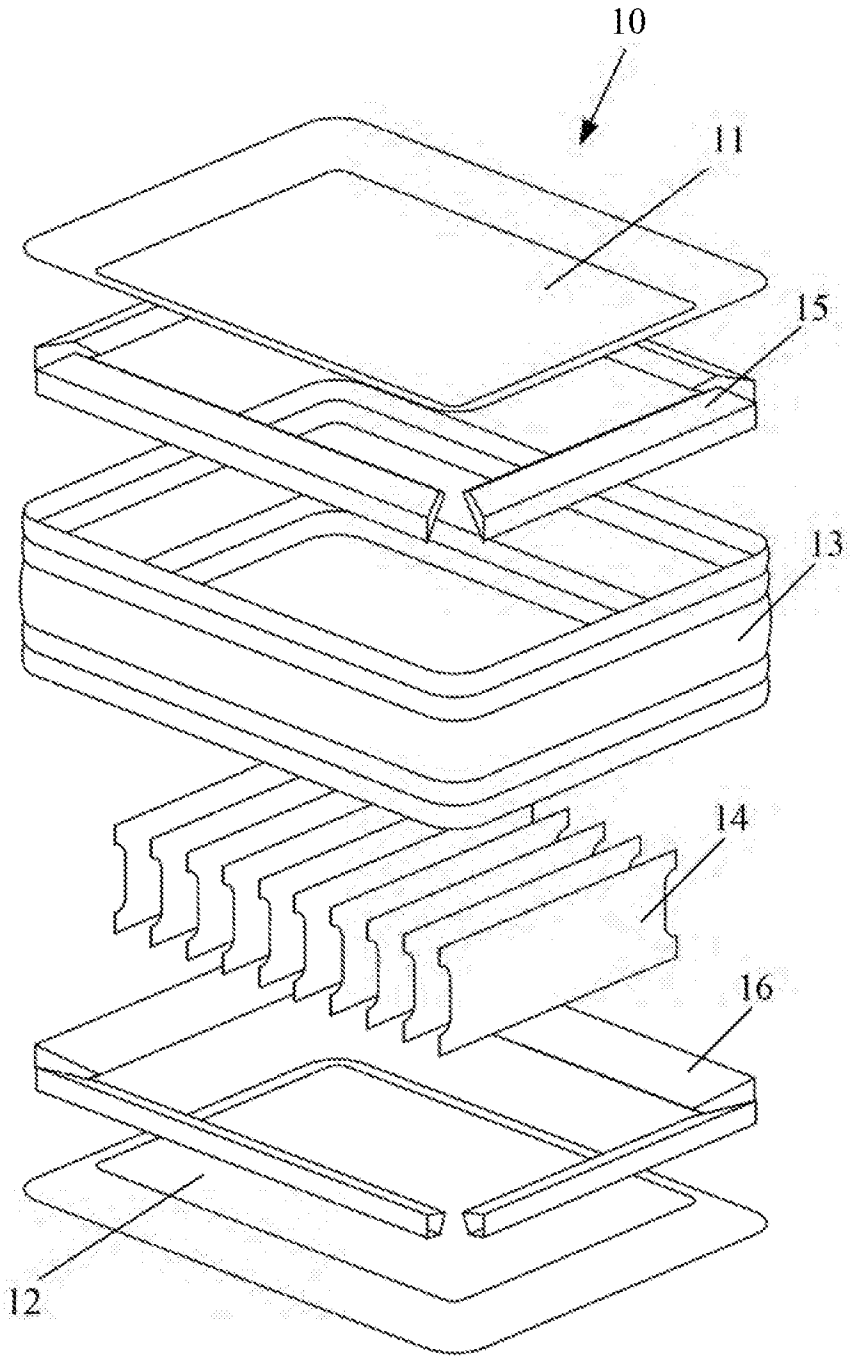


图 15

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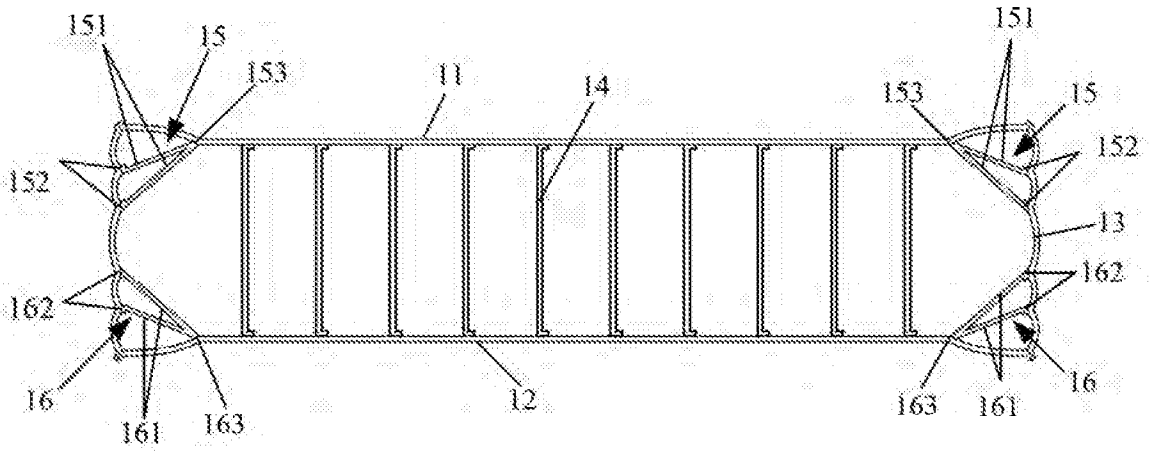

151
15
153
11
14
151
153
15
152
152
13
162
162
16
12
16
163
161
163
161

图 16

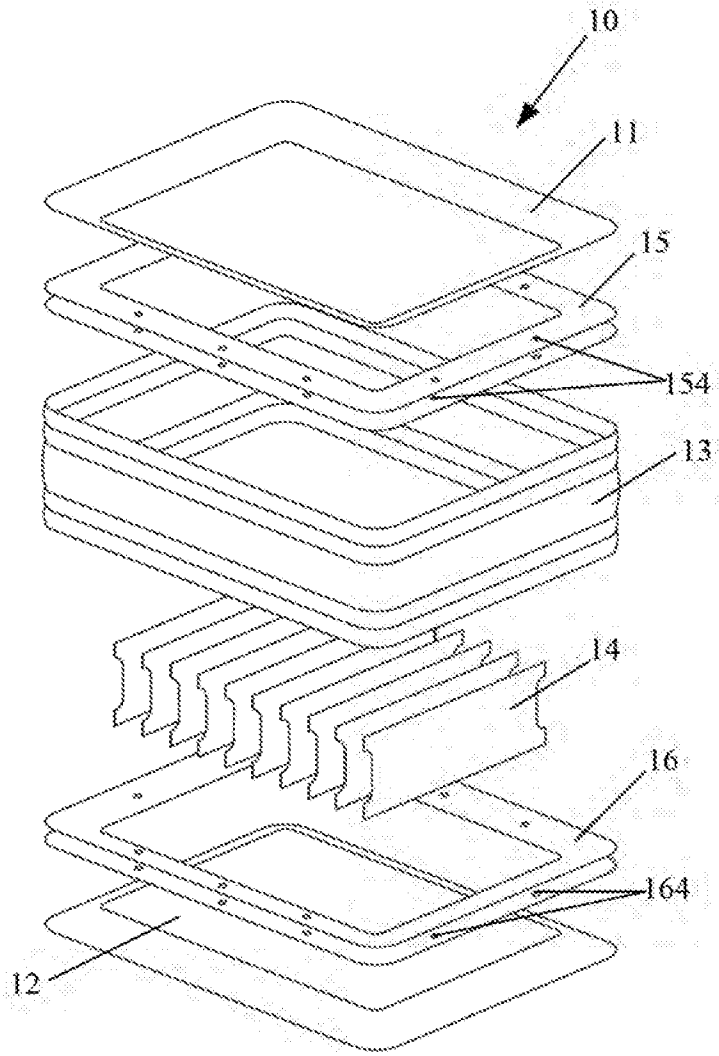

10
11
15
154
13
14
16
164
12

图 17

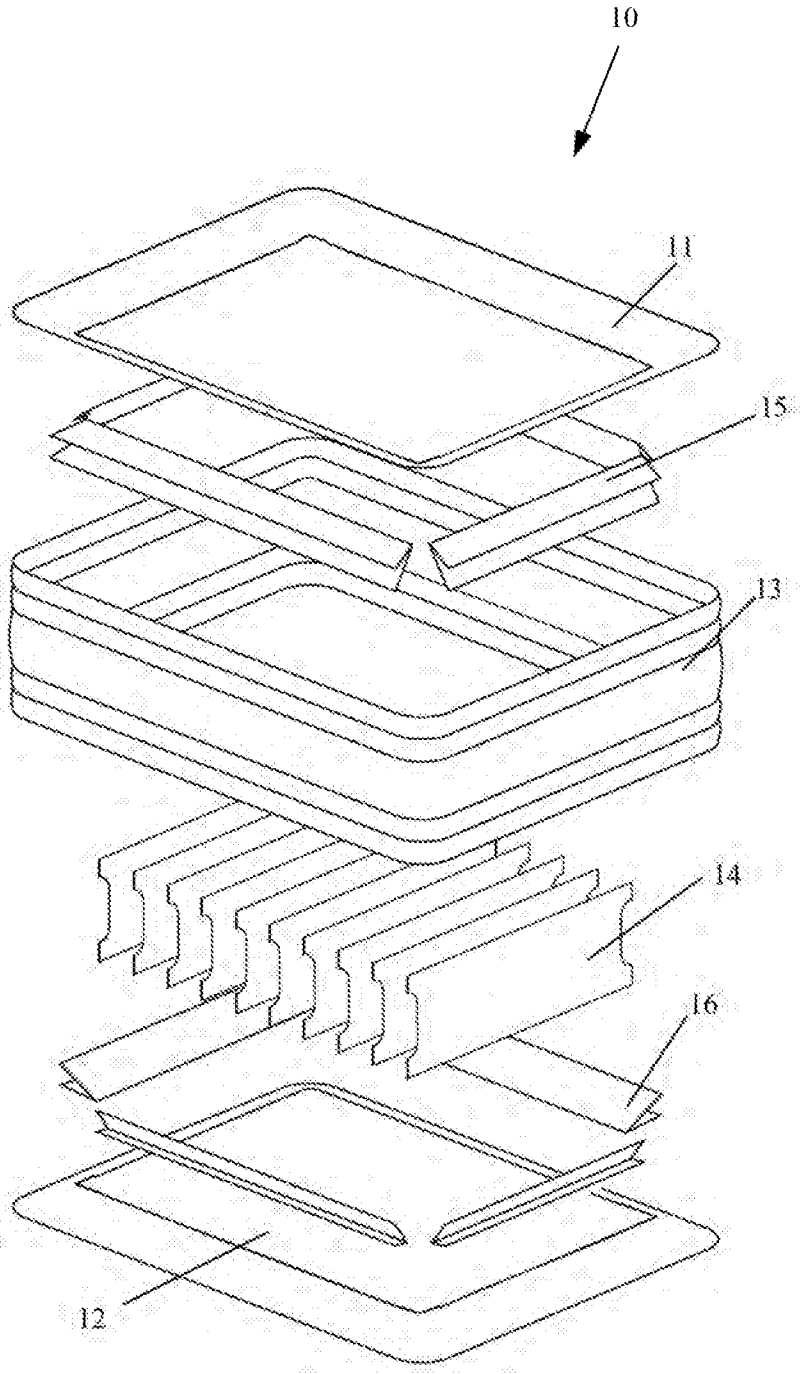


图 18

INTEX EX. 1003, Pg. 72
Intex Recreation v. Bestway Inflatables

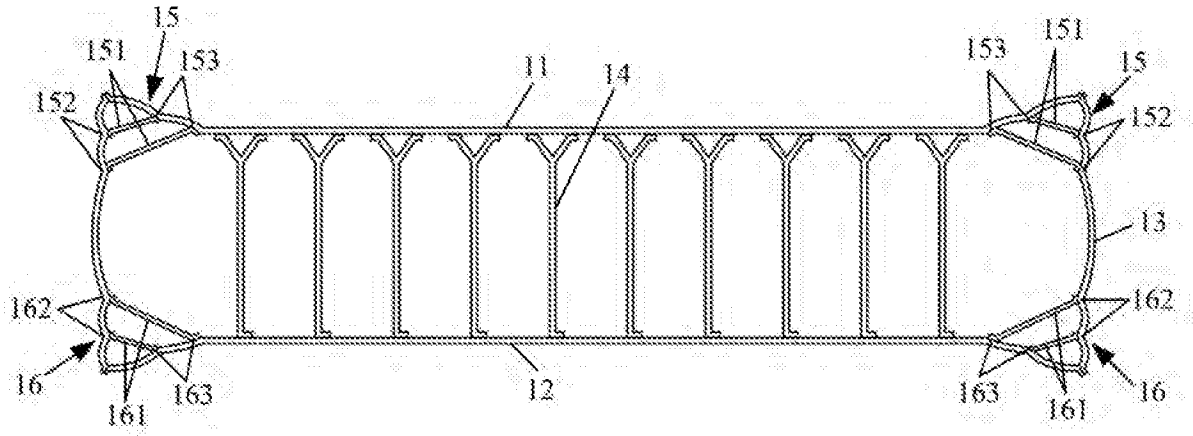


图 19

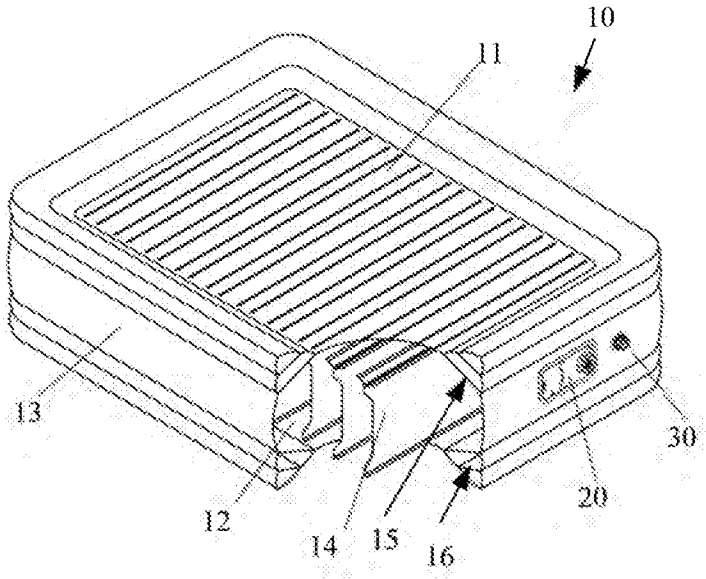


图 20

INTEX EX. 1003, Pg. 73
Intex Recreation v. Bestway Inflatables

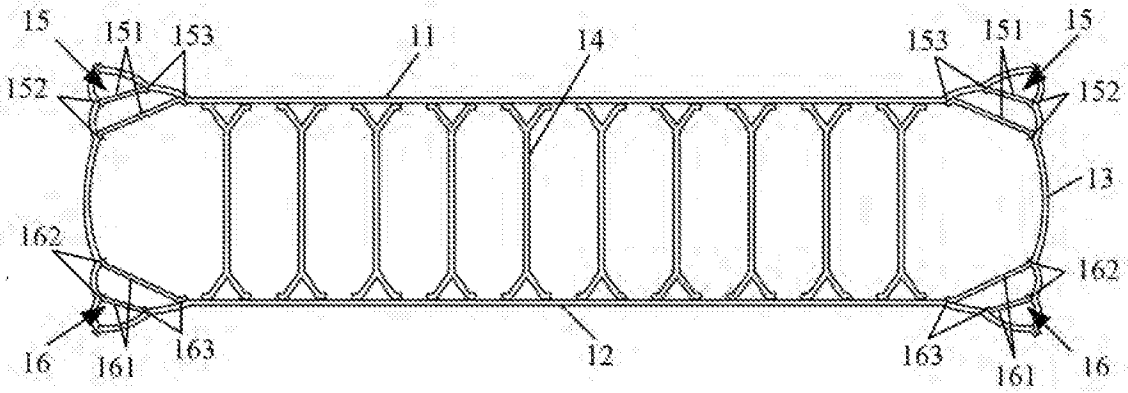


图 21

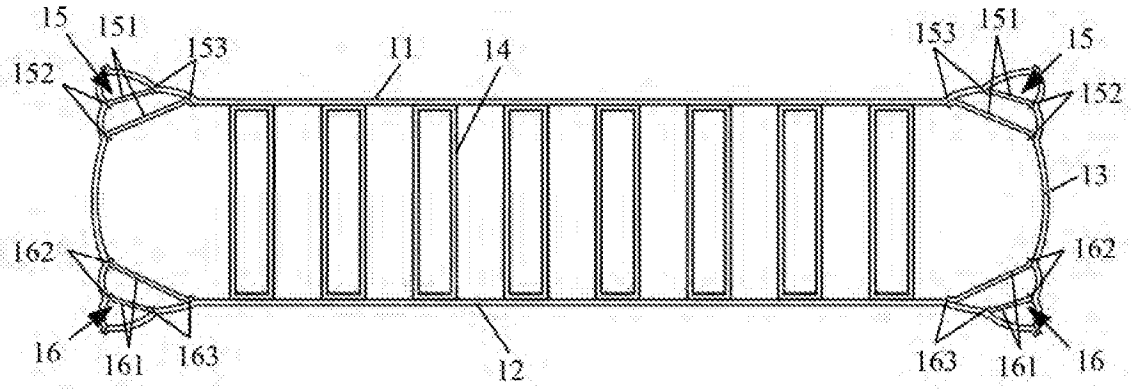


图 22

INTEX EX. 1003, Pg. 74
Intex Recreation v. Bestway Inflatables

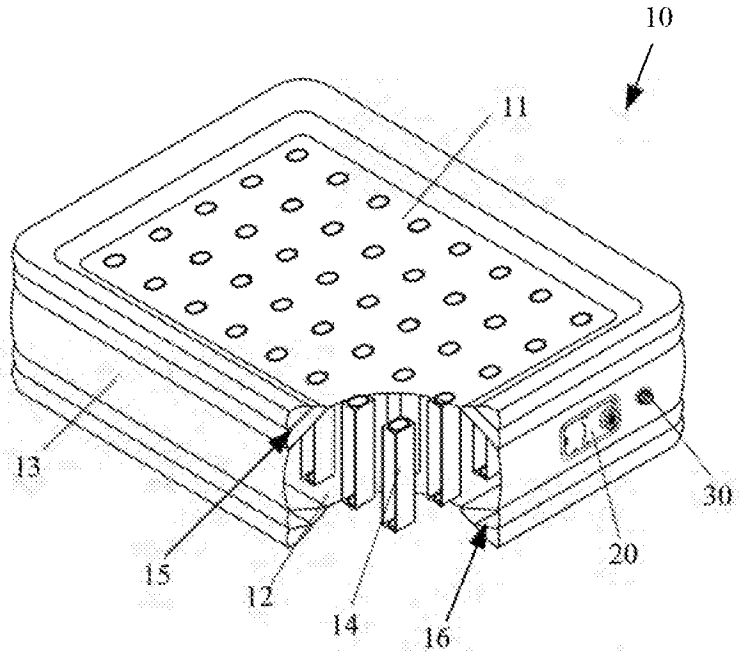


图 23

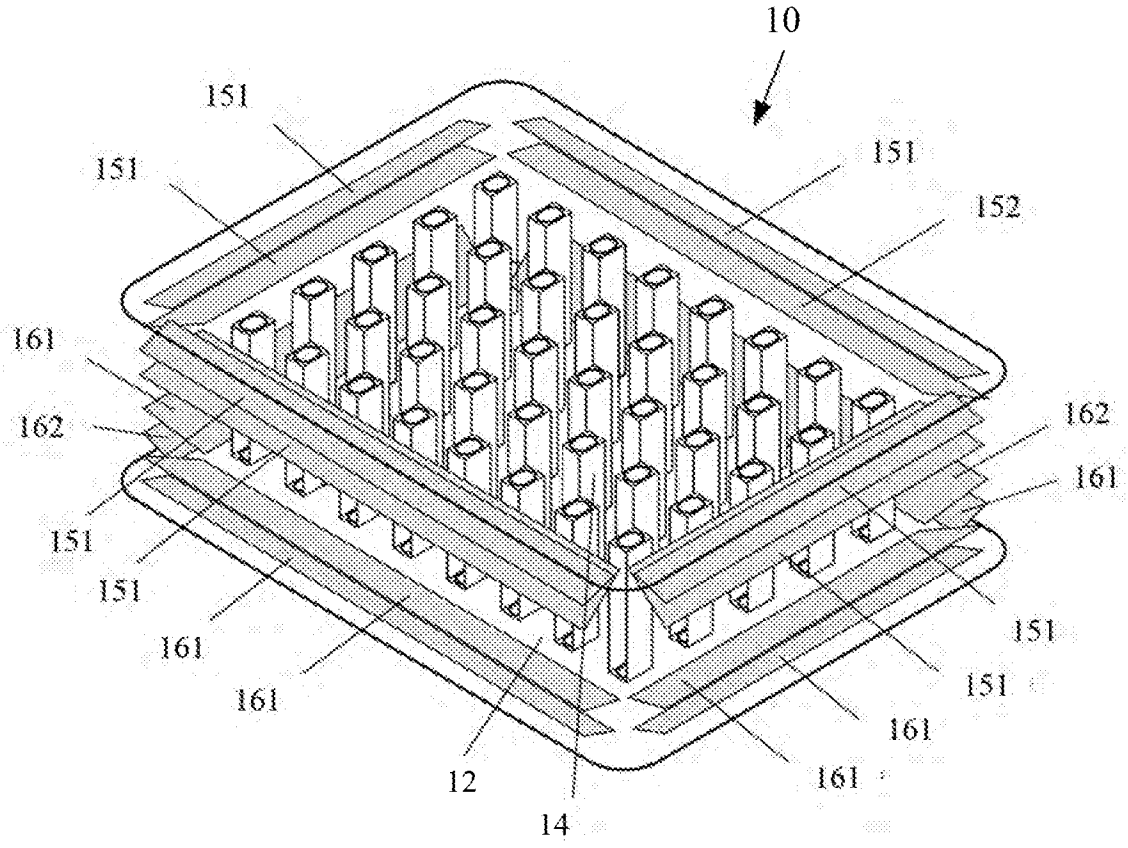
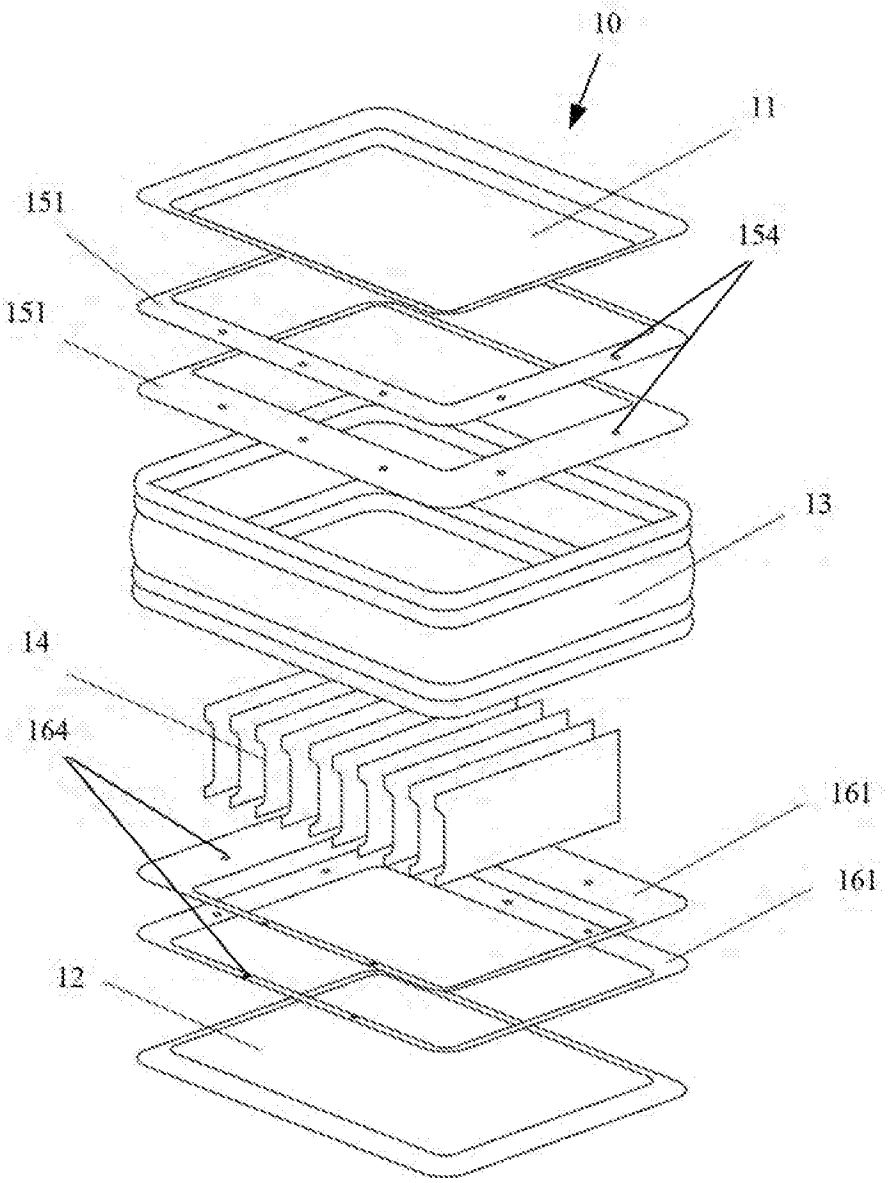


图 24

INTEX EX. 1003, Pg. 75
Intex Recreation v. Bestway Inflatables

摘　要　附　图



Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Filer:	Rong Yang/Margaux Denham
Attorney Docket Number:	09548.1303US01

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	280	280
UTILITY SEARCH FEE	1111	1	600	600
UTILITY EXAMINATION FEE	1311	1	720	720
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	20	80	1600
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	3200

Electronic Acknowledgement Receipt

EFS ID:	27077682
Application Number:	15280513
International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	52835
Filer:	Rong Yang/Margaux Denham
Filer Authorized By:	Rong Yang
Attorney Docket Number:	09548.1303US01
Receipt Date:	29-SEP-2016
Filing Date:	
Time Stamp:	17:00:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$3200
RAM confirmation Number	4445
Deposit Account	503478
Authorized User	Yang, Rong

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

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Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Application_1303US01.pdf	19204597 8a4bb89583a9b5d999d70570b14e4a2dd613e4a4	yes	41
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	17	
	Claims		18	23	
	Abstract		24	24	
	Drawings-other than black and white line drawings		25	41	
Warnings:					
Information:					
2	Application Data Sheet	ADS_1303US01-signed.pdf	1822787 f66fe88702675153294 2b56e96af4f1a2ebdcfb1	no	8
Warnings:					
Information:					
3	Oath or Declaration filed	Declaration_1303US01.pdf	149116 8fd8bd0d0db96012da570850067b18e23f550042	no	2
Warnings:					
Information:					
4	Power of Attorney	POA_1303US01.pdf	1399673 a37201c1ddb81f7bf84f3589eea88d842a2a7bcb	no	3
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Information:					

5	Interim Copy of the Foreign Priority Document	Priority_Application_CN201610020533.pdf	5034355 3bf6a5a17e8e9144bdb6f53b66252034ec9c87ce	no	36
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7	Fee Worksheet (SB06)	fee-info.pdf	36707 99934b00e236f51c3150119c0a754342ce1b9f21	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	32696500	

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	27077682
Application Number:	15280513
International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	52835
Filer:	Rong Yang/Margaux Denham
Filer Authorized By:	Rong Yang
Attorney Docket Number:	09548.1303US01
Receipt Date:	29-SEP-2016
Filing Date:	
Time Stamp:	17:00:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$3200
RAM confirmation Number	4445
Deposit Account	503478
Authorized User	Yang, Rong

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 CFR 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)

Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Application_1303US01.pdf	19204597 8a4bb89583a9b5d999d70570b14e4a2dd613e4a4	yes	41
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	17	
	Claims		18	23	
	Abstract		24	24	
	Drawings-other than black and white line drawings		25	41	
Warnings:					
Information:					
2	Application Data Sheet	ADS_1303US01-signed.pdf	1822787 f66fe88702675153294 2b56e96af4f1a2ebdcfb1	no	8
Warnings:					
Information:					
3	Oath or Declaration filed	Declaration_1303US01.pdf	149116 8fd8bd0d0db96012da570850067b18e23f550042	no	2
Warnings:					
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4	Power of Attorney	POA_1303US01.pdf	1399673 a37201c1ddb81f7bf84f3589eea88d842a2a7bcb	no	3
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5	Interim Copy of the Foreign Priority Document	Priority_Application_CN201610020533.pdf	5034355 3bf6a5a17e8e9144bdb6f53b66252034ec9c87ce	no	36
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6	Interim Copy of the Foreign Priority Document	Priority_Application_CN201620031074.pdf	5049265 cc770f42b5928d3c4db17a6b250bee0fb08c68cb	no	36
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7	Fee Worksheet (SB06)	fee-info.pdf	36707 99934b00e236f51c3150119c0a754342ce1b9f21	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	32696500	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFLATABLE BED

CROSS REFERENCE

[0001] This application claims the benefit and priority of Chinese Application No. 201610020533.5, filed January 13, 2016. The entire disclosures of each of the above applications are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to inflatable beds or inflatable mattresses, and more specifically, to an inflatable bed, the structure of which is configured to limit the outward bulging or deformation of a side wall.

BACKGROUND

[0003] Currently, inflatable beds and inflatable mattresses have been very popular. The inflatable beds and inflatable mattresses have the advantages of light weight, easy to carry and store, etc., and thus are widely used in various occasions. For example, household inflatable beds and inflatable mattresses can often be used as temporary beds for visiting guests. In addition, the inflatable beds and inflatable mattresses are very suitable for use in outdoor camping.

[0004] Conventionally, the inflatable beds and inflatable mattresses are generally made of PVC sheet, PU sheet, or the like, and have various different structures, in which a typical mechanism is that using a top sheet, a bottom sheet, and a side wall coupled to the top sheet and the bottom sheet to form an inflatable air chamber. Tensioning structures, which are coupled to the top sheet and the bottom sheet and are arranged at an interval, are disposed in the air chamber, so as to form a shape having a certain height and a substantially flat upper surface for people to lie on.

[0005] Among the existing inflatable beds and inflatable mattresses, some have a larger height, whereby the side walls of the inflatable beds and inflatable mattresses after being inflated are susceptible to bulge and deform, affecting the appearance of the inflatable beds and inflatable mattresses. And, the bulging and deformation of the inflatable beds and inflatable mattresses may also result in the decay of air pressure in the air chamber, such that the inflatable beds and inflatable mattresses are softened, reducing the comfort of the inflatable beds and inflatable mattresses.

[0006] Therefore, in order to solve the above-mentioned problem of bulging of the side walls, in some inflatable beds and inflatable mattresses, a middle sheet is arranged between the top sheet and the bottom sheet and is coupled to the side walls. In the inflatable beds and inflatable mattresses of such a structure, although the problem of bulging and deformation of the side walls is slightly improved, the desired result still cannot be achieved. Moreover, since tensioning structures have to be arranged between the middle sheet and the top sheet and between the middle sheet and the bottom sheet, the manufacturing process of the inflatable beds and inflatable mattresses becomes more complicated, that is to say, more plastic sheet is required.

[0007] Furthermore, in the prior art, the inflatable beds and inflatable mattresses with a relatively large height have a defect in its stability. When a user lies on or seats near the edge of the inflatable beds and inflatable mattresses, the inflatable beds and inflatable mattresses are susceptible to roll over. In order to improve the stability, an inflatable stabilization tube is arranged on the outer periphery of the bottom sheet of the inflatable bed in U.S. Patent US 6671910. However, such a structure will not only affect the aesthetic appearance of the inflatable bed, but also brings inconvenience to the user.

SUMMARY

[0008] The technical problem to be solved by the present invention is to provide an inflatable bed, in order to overcome the defects of easy occurrence of bulging and deformation of the side walls of the inflatable beds and inflatable mattresses, poor stability of the inflatable beds and inflatable mattresses, and susceptibility of roll-over in the prior art.

[0009] The above-mentioned technical problems are solved according to the present invention by providing an inflatable bed, comprising a top sheet and a bottom sheet, which are disposed vertically at an interval, at least one side wall, at least one first tensioning structure, and at least one support structure.

[0010] An upper edge of said side wall is coupled to an outer edge of said top sheet. A lower edge of said side wall is coupled to an outer edge of said bottom sheet, and an air chamber is formed between said top sheet, said bottom sheet and said side wall.

[0011] The at least one first tensioning structure is arranged in said air chamber. An upper end and a lower end of said first tensioning structure are respectively coupled to said top sheet and said bottom sheet.

[0012] The at least one support structure is arranged in said air chamber. Said support structure is arranged in a longitudinal direction of at least one of said side walls. At least two outside edges of said support structure are respectively coupled to the side wall adjacent thereto, and at least one inside edge of said support structure is coupled to the top sheet or bottom sheet adjacent thereto.

[0013] Preferably, said support structure comprises a second tensioning structure and a third tensioning structure, at least two outside edges of said second tensioning structure are respectively coupled to the side wall adjacent thereto, and at least one inside edge of said second tensioning structure is coupled to the top sheet adjacent thereto.

[0014] The at least two outside edges of said third tensioning structure are respectively coupled to the side wall adjacent thereto, and at least one inside edge of said third tensioning structure is coupled to the bottom sheet adjacent thereto.

[0015] Preferably, said second tensioning structure and said third tensioning structure are respectively provided with a plurality of air holes, through which an airflow passage is formed in said air chamber.

[0016] Preferably, said second tensioning structure and said third tensioning structure are disposed at an interval in a perpendicular direction.

[0017] Preferably, said second tensioning structure comprises at least two first I-beams, an outside edge and an inside edge of each of said first I-beams, are respectively coupled to the side wall adjacent thereto and said top sheet, and the at least two first I-beams, are disposed at an interval.

[0018] Preferably, said third tensioning structure comprises at least two second I-beams,, an outside edge and an inside edge of each of said second I-beams, are respectively coupled to the side wall adjacent thereto and said bottom sheet, and the at least two second I-beams, are disposed at an interval.

[0019] Preferably, said second tensioning structure comprises at least one first Y-beam,, wherein two outside edges of said first Y-beam are respectively coupled to the side wall adjacent thereto, and an inside edge is coupled to said top sheet.

[0020] Preferably, said third tensioning structure comprises at least one second Y-beam, wherein two outside edges of said second Y-beam are respectively coupled to the side wall adjacent thereto, and an inside edge is coupled to said bottom sheet.

[0021] Preferably, said second tensioning structure comprises at least one first tubular beam, which has at least two outside edges respectively coupled to the side wall adjacent thereto, and at least one inside edge is coupled to said top sheet.

[0022] Preferably, said third tensioning structure comprises at least one second tubular beam, which has at least two outside edges respectively coupled to the side wall adjacent thereto, and at least one inside edge is coupled to said bottom sheet.

[0023] Preferably, said second tensioning structure comprises at least one first V- beam, wherein two outside edges of said first V- beam are respectively coupled to the side wall adjacent thereto, and an inside edge is coupled to said top sheet.

[0024] Preferably, said third tensioning structure comprises at least one second V- beam, wherein two outside edges of said second V- beam are respectively coupled to the side wall adjacent thereto, and an inside edge is coupled to said bottom sheet.

[0025] Preferably, said at least two first I-beams are arranged spaced apart from each other at a lower surface of said top sheet.

[0026] Preferably, said at least two second I- beams are arranged spaced apart from each other at an upper surface of said bottom sheet.

[0027] Preferably, said at least two first I- beams are arranged at an interval on an inner surface of said side wall in a perpendicular direction.

[0028] Preferably, said at least two second I- beams are arranged at an interval on the inner surface of said side wall in a perpendicular direction.

[0029] Preferably, the two outside edges of said at least one first Y- beam is arranged at an interval on an inner surface of said side wall in a perpendicular direction.

[0030] Preferably, the two outside edges of said at least one second Y- beam are arranged at an interval on the inner surface of said side wall in a perpendicular direction.

[0031] Preferably, said at least two outside edges of said at least one first tubular beam, which are coupled to the side wall adjacent thereto, are arranged at an interval on an inner surface of said side wall in a perpendicular direction.

[0032] Preferably, said at least two outside edges of said at least one second tubular beam, which are coupled to the side wall adjacent thereto, are arranged at an interval on the inner surface of said side wall in a perpendicular direction.

[0033] Preferably, the two outside edges of said at least one first V-beam is arranged at an interval on an inner surface of said side wall in a perpendicular direction.

[0034] Preferably, the two outside edges of said at least one second V-beam is arranged at an interval on an inner surface of said side wall in a perpendicular direction.

[0035] Preferably, said at least two first I-beams as a whole are of a continuous annular structure or a segmental annular structure.

[0036] Preferably, said at least two second I-beams as a whole are of a continuous annular structure or a segmental annular structure.

[0037] Preferably, said at least one first Y-bam as a whole is of a continuous annular structure or a segmental annular structure.

[0038] Preferably, said at least one second Y-beam as a whole is of a continuous annular structure or a segmental annular structure.

[0039] Preferably, said at least one first tubular beam as a whole is of a segmental annular structure.

[0040] Preferably, said at least one second tubular beam as a whole is of a segmental annular structure.

[0041] Preferably, said at least one first V-bream as a whole is of a continuous annular structure or a segmental annular structure.

[0042] Preferably, said at least one second V-beam as a whole is of a continuous annular structure or a segmental annular structure.

[0043] Preferably, said first tensioning structure is one or more beams selected from I-beams, coil beams, Y-beams or X-beams.

[0044] Preferably, said first tensioning structure, said second tensioning structure and said third tensioning structure are all made of thermoplastic plastic sheet.

[0045] Preferably, one or more of said first tensioning structure, said second tensioning structure and said third tensioning structure at least partially comprise mesh, laminated plastic sheet or a threads.

[0046] Preferably, two side surfaces of said mesh or said threads are at least partially coupled integrally with two opposite plastic strips, and said mesh and said threads are sandwiched between the two opposite plastic strips.

[0047] Preferably, two side surfaces of said mesh or said threads are at least partially coupled integrally with an U-shaped plastic strip, and said mesh and said threads are sandwiched between the U-shaped plastic strip.

[0048] Preferably, said first tensioning structure is coupled to said top and bottom sheets by means of high-frequency welding; said second tensioning structure is coupled to said top

sheet and said side wall by means of high-frequency welding; and said third tensioning structure is coupled to said bottom sheet and said side wall by means of high-frequency welding.

[0049] Preferably, the height where said top sheet is located in the inside part of an upper edge of said second tensioning structure is lower than the height where said top sheet is located in the outside part of the upper edge of said second tensioning structure.

[0050] Preferably, the height where said bottom sheet is located in the inside part of a lower edge of said third tensioning structure is lower than the height where said bottom sheet is located in the outside part of the lower edge of said third tensioning structure.

[0051] Preferably, said inflatable bed further comprises a built-in air pump, which is arranged on said side wall and is located between a lower edge of said second tensioning structure and an upper edge of said third tensioning structure for inflating said air chamber.

[0052] Preferably, said inflatable bed further comprises an air valve, which is arranged on said side wall for the inflation and deflation of said inflatable bed.

[0053] The positive effects of the present invention lie in the following aspects.

[0054] The inflatable bed of the present invention overcomes the defect of outward bulging and deformation of the side walls of the inflatable beds and inflatable mattresses having a relatively large height in prior art, making their appearance more attractive. The inflatable beds and inflatable mattresses have a good stability, which overcomes the problem of susceptibility of roll-over in the prior art. Furthermore, the inflatable bed of the present invention can also prevent the user from rolling down during use.

BRIEF DESCRIPTION OF THE DRAWINGS

[0055] The above-mentioned and other features, properties and advantages of the present invention will become more apparent from the following description of embodiments with reference to the accompany drawings, in which:

[0056] Fig. 1 is a perspective view of an inflatable bed according to the present invention.

[0057] Fig. 2 is a front view of the inflatable bed according to the present invention.

[0058] Fig. 3 is a right view of the inflatable bed according to the present invention.

[0059] Fig. 4 is a top view of the inflatable bed according to the present invention.

[0060] Fig. 5 is a sectional view of a first embodiment taken along line A-A in Fig. 4.

[0061] Fig. 6 is a schematic structural partially sectional view of the first embodiment of the inflatable bed according to the present invention.

[0062] Fig. 7 is a first exploded view of the first embodiment of the inflatable bed according to the present invention.

[0063] Fig. 8 is a second exploded view of the first embodiment of the inflatable bed according to the present invention.

[0064] Fig. 9 is a sectional view of a second embodiment taken along line A-A in Fig. 4.

[0065] Fig. 10 is a first exploded view of the second embodiment of the inflatable bed according to the present invention.

[0066] Fig. 11 is a second exploded view of the second embodiment of the inflatable bed according to the present invention.

[0067] Fig. 12 is a first sectional view of a third embodiment taken along line A-A in Fig. 4.

[0068] Fig. 13 is a second sectional view of the third embodiment taken along line A-A in Fig. 4.

[0069] Fig. 14 is a first exploded view of the third embodiment of the inflatable bed according to the present invention.

[0070] Fig. 15 is a second exploded view of the third embodiment of the inflatable bed according to the present invention.

[0071] Fig. 16 is a sectional view of a fourth embodiment taken along line A-A in Fig. 4.

[0072] Fig. 17 is a first exploded view of the fourth embodiment of the inflatable bed according to the present invention.

[0073] Fig. 18 is a second exploded view of the fourth embodiment of the inflatable bed according to the present invention.

[0074] Fig. 19 is a sectional view of a fifth embodiment taken along line A-A in Fig. 4.

[0075] Fig. 20 is a schematic structural partially sectional view of the fifth embodiment of the inflatable bed according to the present invention.

[0076] Fig. 21 is a sectional view of a sixth embodiment taken along line A-A in Fig. 4.

[0077] Fig. 22 is a sectional view of a seventh embodiment taken along line A-A in Fig. 4.

[0078] Fig. 23 is a schematic structural partially sectional view of the seventh embodiment of the inflatable bed according to the present invention.

[0079] Fig. 24 is a schematic view of the interior structure of the seventh embodiment of the inflatable bed according to the present invention.

DETAILED DESCRIPTION

[0080] The present invention will be further described below in conjunction with detailed embodiments and the accompanying drawings. More details are provided in the following detailed description in order for the present invention to be fully understood. However, the present invention can be implemented in various ways other than those described herein. A person skilled in the art can make similar analogy and modification according to the practical applications without departing from the spirit of the present invention, and therefore the contents of the detailed embodiments herein should not be construed as limiting to the scope of the present invention.

[0081] Embodiment 1:

[0082] Fig. 1 is a perspective view of an inflatable bed according to the present invention. Fig. 2 is a front view of the inflatable bed according to the present invention. Fig. 3 is a right view of the inflatable bed according to the present invention. Fig. 4 is a top view of the inflatable bed according to the present invention. Fig. 5 is a sectional view of a first embodiment taken along line A-A in Fig. 4. Fig. 6 is a schematic structural partially sectional view of the first embodiment of the inflatable bed according to the present invention. Fig. 7 is an exploded view of the first embodiment of the inflatable bed according to the present invention.

[0083] As shown in Figs. 1-7, an inflatable bed 10 is disclosed in the first embodiment according to the present invention, which comprises a top sheet 11, a bottom sheet 12, at least one side wall 13, at least one first tensioning structure 14 and at least one support structure. The bottom sheet 12 and the top sheet 11 are disposed vertically at an interval, an upper edge of the side wall 13 is coupled to an outer edge of the top sheet 11, a lower edge of the side wall 13 is coupled to an outer edge of the bottom sheet 12, and an air chamber is formed between the top sheet 11, the bottom sheet 12 and the side wall 13. Moreover, the first tensioning structure 14 is arranged in the air chamber, and an upper end and a lower end of the first tensioning structure 14 are respectively coupled to the top sheet 11 and the bottom sheet 12. This has the effects of limiting the respective upward and downward bulging of the top sheet 11 and the bottom sheet 12 by means of the first tensioning structure 14 after said air chamber is inflated. In particular, both the top sheet 11 and the bottom sheet 12 may be configured as a two-layer structure, which can be formed with different patterns by mutually welding at least two sheets. Alternatively, a sponge structure is further sandwiched in the two-layer structure.

[0084] Said support structure is arranged in said air chamber herein, said support structure is arranged in the longitudinal direction of at least one of the side walls 13, at least two outside edges of said support structure are respectively coupled to the side wall 13 adjacent thereto, and at least one inside edge of said support structure is coupled to the top sheet 11 or bottom sheet 12 adjacent thereto.

[0085] Preferably, said support structure comprises a second tensioning structure 15 and a third tensioning structure 16. At least two outside edges of the second tensioning structure 15 are respectively coupled to the side wall 13 adjacent thereto, and at least one inside edge of the second tensioning structure is coupled to the top sheet 11 adjacent thereto. The second tensioning structure 15 is configured to limit the upward and lateral bulging of the top sheet 11 and the side wall 13 after said air chamber is inflated.

[0086] Moreover, at least two outside edges of the third tensioning structure 16 are respectively coupled to the side wall 13 adjacent thereto, and at least one inside edge of the third tensioning structure 16 is coupled to the adjacent bottom sheet 12. The third tensioning structure 16 is configured to limit the respective downward and lateral bulging of the bottom sheet 12 and the side wall 13 after said air chamber is inflated.

[0087] In this embodiment, the second tensioning structure 15 comprises at least two first I-beams 151, one outside edge 152 of each first I-beams 151 is coupled to the side wall 13 adjacent thereto, the other inside edge 153 is coupled to the top sheet 11 adjacent thereto, and the at least two first I-beams 151 are disposed at an interval. The third tensioning structure 16 comprises at least two second I-beams 161, one outside edge 162 of each second I-beam 161 is coupled to the side wall 13 adjacent thereto, the other inside edge 163 is coupled to the bottom sheet 12 adjacent thereto, and the at least two second I-beams 151 are disposed at an interval. In this embodiment, the numbers of first I-beams 151 and second I-beams 161 are both two by way of example, but their numbers are not limited by this embodiment, and may be more than two, which also fall within the scope of protection of the present invention.

[0088] The second tensioning structure 15 and the third tensioning structure 16 are preferably disposed at an interval in a perpendicular direction. In this embodiment, for example, the second tensioning structure 15 and the third tensioning structure 16 divide the respective side wall 13 into five sections, so that the second tensioning structure 15 is configured to limit the upward and lateral bulging of the top sheet 11 and the side wall 13 after said air chamber is inflated, and the third tensioning structure 16 is configured to limit

the respective downward and lateral bulging of the bottom sheet 12 and the side wall 13 after said air chamber is inflated.

[0089] Of course, the second tensioning structure 15 and the third tensioning structure 16 may also divide the respective side wall 13 into a multi-section structure, such as a four- or six-section structure; this embodiment is merely exemplary and the present invention is not limited thereto, and all the structures with four or more sections fall within the scope of protection of the present invention.

[0090] Further, the at least two first I-beams 151 are arranged spaced apart from each other at a lower surface of the top sheet 11, and the at least two second I-beams 161 are arranged spaced apart from each other at an upper surface of the bottom sheet 12. The at least two first I-beams 151 are arranged at an interval on an inner surface of the side wall 13 in a perpendicular direction. The at least two second I-beams 161 are arranged at an interval on the inner surface of the side wall 13 in a perpendicular direction.

[0091] Furthermore, the at least two first I-beams 151 as a whole are of a continuous annular structure or a segmental annular structure. The at least two second I-beams 161 as a whole are of a continuous annular structure or a segmental annular structure. Moreover, the at least two first I-beams 151 are provided with air holes 154, and an airflow passage is formed in said air chamber through the air holes 154. The at least two second I-beams 161 are provided with air holes 164, and an airflow passage is formed in said air chamber through the air holes 164 (as shown in Figs. 7 and 8).

[0092] The first tensioning structure 14 of the present invention may employ one or more beams selected from I-beams, coil beams, Y-beams or X-beams. Moreover, the first tensioning structure 14, the second tensioning structure 15 and the third tensioning structure 16 may be all made of thermoplastic plastic sheet, and one or more of the first tensioning structure 14, the second tensioning structure 15 and the third tensioning structure 16 at least partially comprise mesh, laminated plastic sheet or threads.

[0093] The structures thereof may take various forms. For example, two side surfaces of said mesh or said threads are at least partially coupled integrally with two opposite s plastic strips, and said mesh and said threads are sandwiched between the two opposite plastic strips.

[0094] As another example, two side surfaces of said mesh f or said threads are at least partially coupled integrally with an U-shaped plastic strip, and said mesh and said threads are sandwiched between the U-shaped plastic strip. These connecting structures can be used to effectively manufacture the beams required by the inflatable bed in the present invention; the

solution in this embodiment is merely exemplary and the present invention is not limited thereto, and any other structure, which can implement the beam, falls within the scope of protection of the present invention.

[0095] On the basis of the structure of the above beams, in order to ensure a firm connection between the components, the first tensioning structure 14 is coupled to the top sheet 11 and the bottom sheet 12 by means of high-frequency welding. Similarly, the second tensioning structure 15 is coupled to the top sheet 11 and the side wall 13 by means of high-frequency welding. The third tensioning structure 16 is coupled to the bottom sheet 12 and the side wall 13 by means of high-frequency welding.

[0096] In the inflatable bed of the present invention formed of the aforementioned structure, the height where the top sheet 11 thereof is located in the inside part of an upper edge of the second tensioning structure 15 is lower than the height where the top sheet 11 is located in the outside part of the upper edge of the second tensioning structure 15. The height where the bottom sheet 12 is located in the inside part of a lower edge of the third tensioning structure 16 is lower than the height where the bottom sheet 12 is located in the outside part of the lower edge of the third tensioning structure 16.

[0097] Furthermore, the inflatable bed 10 further comprises a built-in air pump 20, and the built-in air pump 20 is arranged on the side wall 13 and is located between a lower edge of the second tensioning structure 15 and an upper edge of the third tensioning structure 16 for inflating said air chamber. Moreover, the inflatable bed 10 further comprises an air valve 30, and the air valve 30 is arranged on the side wall 13 for the inflation and deflation of the inflatable bed 10.

[0098] Embodiment 2:

[0099] Fig. 9 is a sectional view of a second embodiment taken along line A-A in Fig. 4. Fig. 10 is a first exploded view of the second embodiment of the inflatable bed of the present invention. Fig. 11 is a second exploded view of the second embodiment of the inflatable bed of the present invention.

[00100] As shown in Figs. 9-11, the structure of this embodiment is substantially the same as that of the first embodiment, except that the second tensioning structure 15 comprises at least one first Y-beam 151, wherein two outside edges 152 of the first Y-beam 151 are respectively coupled to the side wall 13 adjacent thereto, and the other inside edge 153 is coupled to the top sheet 11. Similarly, the third tensioning structure 16 comprises at least one second Y-beam 161, wherein two outside edges 162 of the second Y-beam 161 are

respectively coupled to the side wall 13 adjacent thereto, and the other inside edge 163 is coupled to the bottom sheet 12.

[00101] The second tensioning structure 15 and the third tensioning structure 16 are preferably disposed at an interval in a perpendicular direction. In this embodiment, the second tensioning structure 15 and the third tensioning structure 16 divide the respective side wall 13 into five sections, so that the second tensioning structure 15 is configured to limit the upward and lateral bulging of the top sheet 11 and the side wall 13 after said air chamber is inflated, and the third tensioning structure 16 is configured to limit the respective downward and lateral bulging of the bottom sheet 12 and the side wall 13 after said air chamber is inflated.

[00102] Of course, the second tensioning structure 15 and the third tensioning structure 16 may also divide the respective side wall 13 into a multi-section structure, such as a four- or six-section structure; this embodiment is merely exemplary and the present invention is not limited thereto, and all the structures with four or more sections fall within the scope of protection of the present invention.

[00103] Further, the two outside edges 152 of the at least one first Y-beam 151 are arranged at an interval on an inner surface of the side wall 13 in a perpendicular direction. The two outside edges 162 of the at least one second Y-beam 161 are arranged at an interval on the inner surface of the side wall 13 in a perpendicular direction.

[00104] Furthermore, the at least one first Y-beam 151 as a whole is of a continuous annular structure or a segmental annular structure. The at least one second Y-beam 161 as a whole is of a continuous annular structure or a segmental annular structure. Moreover, the at least one first Y-beam 151 is further provided with air holes 154, and an airflow passage is formed in said air chamber through the air holes 154. The at least one second Y-beam 161 is further provided with air holes 164, and an airflow passage is formed in said air chamber through the air holes 164 (as shown in Figs. 10 and 11).

[00105] Embodiment 3:

[00106] Fig. 12 is a first sectional view of a third embodiment taken along line A-A in Fig. 4. Fig. 13 is a second sectional view of the third embodiment taken along line A-A in Fig. 4. Fig. 14 is a first exploded view of the third embodiment of the inflatable bed of the present invention. Fig. 15 is a second exploded view of the third embodiment of the inflatable bed of the present invention.

[00107] As shown in Figs. 12-15, the structure of this embodiment is substantially the same as that of the first embodiment, except that the second tensioning structure 15 comprises at least one first tubular beam 151, wherein the first tubular beam 151 has at least two outside edges 152 respectively coupled to the side wall 13 adjacent thereto, and at least one inside edge 153 is coupled to the top sheet 11. The third tensioning structure 16 comprises at least one second tubular beam 161, wherein the second tubular beam 161 has at least two outside edges 162 respectively coupled to the side wall 13 adjacent thereto, and at least one inside edge 163 is coupled to the bottom sheet 12. The first tubular beam 151 and the second tubular beam 161 herein may be of various tubular structures, such as a triangular tubular structure, or a quadrilateral tubular structure (as shown in Figs. 13 and 14).

[00108] Beam 151, which are coupled to the wall 13 adjacent thereto, are arranged at an interval on an inner surface of the side wall 13 in a perpendicular direction. The at least two outside edges 162 of the at least one second tubular beam 161, which are coupled to the wall 13 adjacent thereto, are arranged at an interval on an inner surface of the side wall 13 in a perpendicular direction.

[00109] The at least one first tubular beam 151 herein as a whole is of a segmental annular structure. The at least one second tubular beam 161 as a whole is of a segmental annular structure (as shown in Figs. 13 and 14).

[00110] The second tensioning structure 15 and the third tensioning structure 16 are preferably disposed at an interval in a perpendicular direction. In this embodiment, the second tensioning structure 15 and the third tensioning structure 16 divide the respective side wall 13 into five sections, so that the second tensioning structure 15 is configured to limit the upward and lateral bulging of the top sheet 11 and the side wall 13 after said air chamber is inflated, and the third tensioning structure 16 is configured to limit the respective downward and lateral bulging of the bottom sheet 12 and the side wall 13 after said air chamber is inflated.

[00111] Of course, the second tensioning structure 15 and the third tensioning structure 16 may also divide the respective side wall 13 into a multi-section structure, such as a four- or six-section structure; this embodiment is merely exemplary and the present invention is not limited thereto, and all the structures with four or more sections fall within the scope of protection of the present invention.

[00112] Embodiment 4:

[00113] Fig. 16 is a sectional view of a fourth embodiment taken along line A-A in Fig. 4. Fig. 17 is a first exploded view of the fourth embodiment of the inflatable bed of the present invention. Fig. 18 is a second exploded view of the fourth embodiment of the inflatable bed of the present invention.

[00114] As shown in Figs. 16-18, the structure of this embodiment is substantially the same as that of the first embodiment, except that the second tensioning structure 15 comprises at least one first V-beam 151, wherein two outside edges 152 of the first V-beam 151 are respectively coupled to the side wall 13 adjacent thereto, and the other inside edge 153 is coupled to the top sheet 11. The third tensioning structure 16 comprises at least one second V-beam 161, wherein two outside edges 162 of the second V-beam 161 are respectively coupled to the side wall 13 adjacent thereto, and the other inside edge 163 is coupled to the top sheet 11.

[00115] Further, the two outside edges 152 of the at least one first V-beam 151 are arranged at an interval on an inner surface of the side wall 13 in a perpendicular direction. The two outside edges 162 of the at least one second VV-beam 161 are arranged at an interval on the inner surface of the side wall 13 in a perpendicular direction.

[00116] Furthermore, the at least one first V-beam 151 as a whole is of a continuous annular structure or a segmental annular structure. The at least one second V-beam 161 as a whole is of a continuous annular structure or a segmental annular structure. Moreover, the at least one first V-beam 151 is provided with air holes 154, and an airflow passage is formed in said air chamber through the air holes 154. The at least one second V-shaped drawstring V-beam 161 is provided with air holes 164, and an airflow passage is formed in said air chamber through the air holes 164.

[00117] The second tensioning structure 15 and the third tensioning structure 16 are preferably disposed at an interval in a perpendicular direction. In this embodiment, the second tensioning structure 15 and the third tensioning structure 16 divide the respective side wall 13 into five sections, so that the second tensioning structure 15 is configured to limit the upward and lateral bulging of the top sheet 11 and the side wall 13 after said air chamber is inflated, and the third tensioning structure 16 is configured to limit the respective downward and lateral bulging of the bottom sheet 12 and the side wall 13 after said air chamber is inflated.

[00118] Of course, the second tensioning structure 15 and the third tensioning structure 16 may also divide the respective side wall 13 into a multi-section structure, such as a four- or

six-section structure; this embodiment is merely exemplary and the present invention is not limited thereto, and all the structures with four or more sections fall within the scope of protection of the present invention.

[00119] Embodiment 5:

[00120] Fig. 19 is a sectional view of a fifth embodiment taken along line A-A in Fig. 4. Fig. 20 is a schematic structural partially sectional view of the fifth embodiment of the inflatable bed of the present invention.

[00121] As shown in Figs. 19 and 20, the structure of this embodiment is substantially the same as that of the first embodiment, except that the first tensioning structure 14 employs a Y-beam, and the upper and lower ends of the first tensioning structure 14 are respectively coupled to the top sheet 11 and the bottom sheet 12. Several beams in the first tensioning structure 14 are arranged spaced apart from each other. The upper end of each beam of the first tensioning structure 14 takes the form of a fork and is coupled to and supports the top sheet 11, and the lower end takes the form of an I-beam and is downwardly coupled to the bottom sheet 12. After said air chamber is inflated, such a structure can effectively limit the respective upward and downward bulging of the top sheet 11 and the bottom sheet 12.

[00122] Embodiment 6:

[00123] Fig. 21 is a sectional view of a sixth embodiment taken along line A-A in Fig. 4.

[00124] As shown in Fig. 21, the structure of this embodiment is substantially the same as that of the fifth embodiment, except that the first tensioning structure 14 employs an X-shaped drawstring at the upper and lower ends, and the upper and lower ends of the first tensioning structure 14 are respectively coupled to the top sheet 11 and the bottom sheet 12. Several drawstrings in the first tensioning structure 14 are arranged spaced apart from each other. The upper end of each drawstring of the first tensioning structure 14 takes the form of a folk and is upwardly coupled to the top sheet 11, and the lower end also takes the form of a folk and is downwardly coupled to the bottom sheet 12. After said air chamber is inflated, such a structure can limit the respective upward and downward bulging of the top sheet 11 and the bottom sheet 12 more effectively.

[00125] Embodiment 7:

[00126] Fig. 22 is a sectional view of a seventh embodiment taken along line A-A in Fig. 4. Fig. 23 is a schematic structural partially sectional view of the seventh embodiment of the inflatable bed of the present invention. Fig. 24 is a schematic view of the interior structure of the seventh embodiment of the inflatable bed of the present invention.

[00127] As shown in Figs. 22-24, the structure of this embodiment is substantially the same as that of the first embodiment, except that all the drawstrings in the first tensioning structure 14 employ coil beams, and the upper and lower ends of each beam of the first tensioning structure 14 are respectively coupled to the top sheet 11 and the bottom sheet 12. Several beams in the first tensioning structure 14 are arranged spaced apart from each other. After said air chamber is inflated, this structure can effectively limit the respective upward and downward bulging of the top sheet 11 and the bottom sheet 12.

[00128] According to the description of the aforementioned structures, the structural variations in the embodiments may arbitrarily combined, and are not limited to the particular embodiments described above, i.e., the number of beams contained in the second tensioning structure 15 and the number of beams contained in the third tensioning structure 16 are unlimited, which can be adjusted according to actual requirements.

[00129] Similarly, the connection between the beams in the second tensioning structure 15 and the connection between the beams in the third tensioning structure 16 are also not limited to the aforementioned embodiments, as long as the side wall 13 is divided into at least five (or equal to or greater than four) sections, for example, the number of beams in the second tensioning structure 15 and that in the third tensioning structure 16 as well as the connection thereof can be changed so as to divide the side wall 13 into multiple sections such as six or seven sections.

[00130] Of course, the structures of the first tensioning structure 14 can be commonly used in each case, and likewise serve to support the top sheet 11 and the bottom sheet 12, effectively limiting the respective upward and downward bulging of the top sheet 11 and the bottom sheet 12.

[00131] In summary, the inflatable bed of the present invention can limit the outward bulging or deformation of the side wall of the inflatable bed by using various types of tensioning structures. The structure of the inflatable bed of the present invention effectively overcomes the defect of outward bulging and deformation of the side walls of the inflatable beds and inflatable mattresses having a relatively large height in prior art, making their appearance more attractive. The inflatable beds and inflatable mattresses have a good stability, which overcomes the problem of susceptibility of roll-over in the prior art. Furthermore, the inflatable bed of the present invention can also prevent the user from rolling down during use.

[00132] While the particular embodiments of the present invention have been described, a person skilled in the art should understand that these are merely illustrative, and that the scope of protection of the present invention is defined by the appended claims. Various alterations or modifications can be made by a person skilled in the art to these embodiments without departing from the principle and substance of the present invention; however, these alterations and modifications all fall within the scope of protection of the invention.

CLAIMS

What is claimed is:

1. An inflatable bed, comprising:

a top sheet and a bottom sheet disposed vertically at an interval;

at least one side wall, an upper edge of said side wall being coupled to an outer edge of said top sheet, a lower edge of said side wall being coupled to an outer edge of said bottom sheet, an air chamber formed between said top sheet, said bottom sheet and said side wall;

at least one first tensioning structure disposed in said air chamber, an upper end and a lower end of said first tensioning structure being respectively coupled to said top sheet and said bottom sheet; and

at least one support structure disposed in said air chamber, said support structure being disposed in a longitudinal direction of at least one of said side walls, at least two outside edges of said support structure being respectively coupled to the side wall adjacent, at least one inside edge of said support structure being coupled to the top sheet or bottom sheet adjacent.

2. The inflatable bed according to claim 1, wherein said support structure comprises a second tensioning structure and a third tensioning structure, at least two outside edges of said second tensioning structure are respectively coupled to the side wall adjacent, at least one inside edge of said second tensioning structure is coupled to the top sheet adjacent; and

at least two outside edges of said third tensioning structure are respectively coupled to the side wall adjacent, at least one inside edge of said third tensioning structure is coupled to the bottom sheet adjacent.

3. The inflatable bed according to claim 2, wherein said second tensioning structure and said third tensioning structure are respectively provided with a plurality of air holes, through which an airflow passage is formed in said air chamber.

4. The inflatable bed according to claim 2, wherein said second tensioning structure and said third tensioning structure are disposed at an interval in a perpendicular direction.

5. The inflatable bed according to claim 2, wherein said second tensioning structure comprises at least two first I-beams, an outside edge and an inside edge of each of said first I-beams are respectively coupled to said side wall and said top sheet adjacent, the at least two first I-beams are disposed at an interval.

6. The inflatable bed according to claim 2, wherein said third tensioning structure comprises at least two second I-beams, an outside edge and an inside edge of each of said second I-beams are respectively coupled to the side wall and said bottom sheet adjacent, the at least two second I-beams are disposed at an interval.

7. The inflatable bed according to claim 2, wherein said second tensioning structure comprises at least one first Y-beam, wherein two outside edges of said first Y-beam are respectively coupled to the side wall adjacent, an inside edge is coupled to said top sheet.

8. The inflatable bed according to claim 2, wherein said third tensioning structure comprises at least one second Y-beam, wherein two outside edges of said second Y-beam are respectively coupled to the side wall adjacent, an inside edge is coupled to said bottom sheet.

9. The inflatable bed according to claim 2, wherein said second tensioning structure comprises at least one first tubular beam, which has at least two outside edges respectively coupled to the side wall adjacent, at least one inside edge is coupled to said top sheet.

10. The inflatable bed according to claim 2, wherein said third tensioning structure comprises at least one second tubular beam, which has at least two outside edges respectively coupled to the side wall adjacent, at least one inside edge is coupled to said bottom sheet.

11. The inflatable bed according to claim 2, wherein said second tensioning structure comprises at least one first V-beam, wherein two outside edges of said first V-beam are respectively coupled to the side wall adjacent, an inside edge is coupled to said top sheet.

12. The inflatable bed according to claim 2, wherein said third tensioning structure comprises at least one second V-beam, wherein two outside edges of said second V-beam are respectively coupled to the side wall adjacent, an inside edge is coupled to said bottom sheet.

13. The inflatable bed according to claim 5, wherein said at least two first I-beams are spaced apart from each other at a lower surface of said top sheet.

14. The inflatable bed according to claim 6, wherein said at least two second I-beams are spaced apart from each other at an upper surface of said bottom sheet.

15. The inflatable bed according to claim 5, wherein said at least two first I-beams are disposed at an interval on an inner surface of said side wall in a perpendicular direction.

16. The inflatable bed according to claim 6, wherein said at least two second are disposed at an interval on the inner surface of said side wall in a perpendicular direction.

17. The inflatable bed according to claim 7, wherein the two outside edges of said at least one first Y-beam are disposed at an interval on an inner surface of said side wall in a perpendicular direction.

18. The inflatable bed according to claim 8, wherein the two outside edges of said at least one second Y-beam are disposed at an interval on the inner surface of said side wall in a perpendicular direction.

19. The inflatable bed according to claim 9, wherein said at least two outside edges of said at least one first tubular beam, which are coupled to the side wall adjacent, are disposed at an interval on an inner surface of said side wall in a perpendicular direction.

20. The inflatable bed according to claim 10, wherein said at least two outside edges of said at least one second tubular beam, which are coupled to the side wall adjacent, are disposed at an interval on the inner surface of said side wall in a perpendicular direction.

21. The inflatable bed according to claim 11, wherein the two outside edges of said at least one first V-beam are disposed at an interval on an inner surface of said side wall in a perpendicular direction.

22. The inflatable bed according to claim 12, wherein the two outside edges of said at least one second V-beam are disposed at an interval on the inner surface of said side wall in a perpendicular direction.

23. The inflatable bed according to claim 5, wherein said at least two first V-beams as a whole are of a continuous annular structure or a segmental annular structure.

24. The inflatable bed according to claim 6, wherein said at least two second I-beam as a whole are of a continuous annular structure or a segmental annular structure.

25. The inflatable bed according to claim 7, wherein said at least one first Y-beam as a whole is of a continuous annular structure or a segmental annular structure.

26. The inflatable bed according to claim 8, wherein said at least one second Y-beam as a whole is of a continuous annular structure or a segmental annular structure.

27. The inflatable bed according to claim 9, wherein said at least one first tubular beam as a whole is of a segmental annular structure.

28. The inflatable bed according to claim 10, wherein said at least one second tubular beam as a whole is of a segmental annular structure.

29. The inflatable bed according to claim 11, wherein said at least one first V-beam as a whole is of a continuous annular structure or a segmental annular structure.

30. The inflatable bed according to claim 12, wherein said at least one second V-beam as a whole is of a continuous annular structure or a segmental annular structure.

31. The inflatable bed according to claim 1, wherein said first tensioning structure is one or more beams selected from I-beams, coil beams, Y-beams or X-beams.

32. The inflatable bed according to claim 2, wherein said first tensioning structure, said second tensioning structure and said third tensioning structure are all made of thermoplastic plastic sheet.

33. The inflatable bed according to claim 2, wherein one or more of said first tensioning structure, said second tensioning structure and said third tensioning structure at least partially comprise mesh, laminated plastic sheet or a threads.

34. The inflatable bed according to claim 33, wherein two side surfaces of said mesh or said threads are at least partially coupled integrally with two opposite plastic strips, said mesh and said threads are sandwiched between the two opposite plastic strips.

35. The inflatable bed according to claim 33, wherein two side surfaces of said mesh or said threads are at least partially coupled integrally with an U-shaped plastic strip, said mesh and said threads are sandwiched between the U-shaped plastic strip.

36. The inflatable bed according to claim 2, wherein said first tensioning structure is coupled to said top and bottom sheets by means of high-frequency welding; said second tensioning structure is coupled to said top sheet and said side wall by means of high-frequency welding; and said third tensioning structure is coupled to said bottom sheet and said side wall by means of high-frequency welding.

37. The inflatable bed according to claim 2, wherein the location where said top sheet is located in the inside part of an upper edge of said second tensioning structure is lower than the location where said top sheet is located in the outside part of the upper edge of said second tensioning structure.

38. The inflatable bed according to claim 2, wherein the location where said bottom sheet is located in the inside part of a lower edge of said third tensioning structure is

lower than the location where said bottom sheet is located in the outside part of the lower edge of said third tensioning structure.

39. The inflatable bed according to claim 2, wherein said inflatable bed further comprises a built-in air pump, which is disposed on said side wall and is located between a lower edge of said second tensioning structure and an upper edge of said third tensioning structure for inflating said air chamber.

40. The inflatable bed according to claim 1, wherein said inflatable bed further comprises an air valve, which is disposed on said side wall for the inflation and deflation of said inflatable bed.

ABSTRACT

An inflatable bed is provided. The inflatable bed comprises a top sheet and a bottom sheet disposed vertically at an interval, at least one side wall, at least one first tensioning structure and at least one support structure. An upper edge of said side wall is coupled to an outer edge of said top sheet. A lower edge of said side wall is coupled to an outer edge of said bottom sheet. An upper end and a lower end of said first tensioning structure are respectively coupled to said top sheet and said bottom sheet. Said support structure is disposed in a longitudinal direction of at least one of said side walls. At least two outside edges of said support structure are respectively coupled to the side wall adjacent. At least one inside edge of said support structure is coupled to the top sheet or bottom sheet adjacent.

Drawings

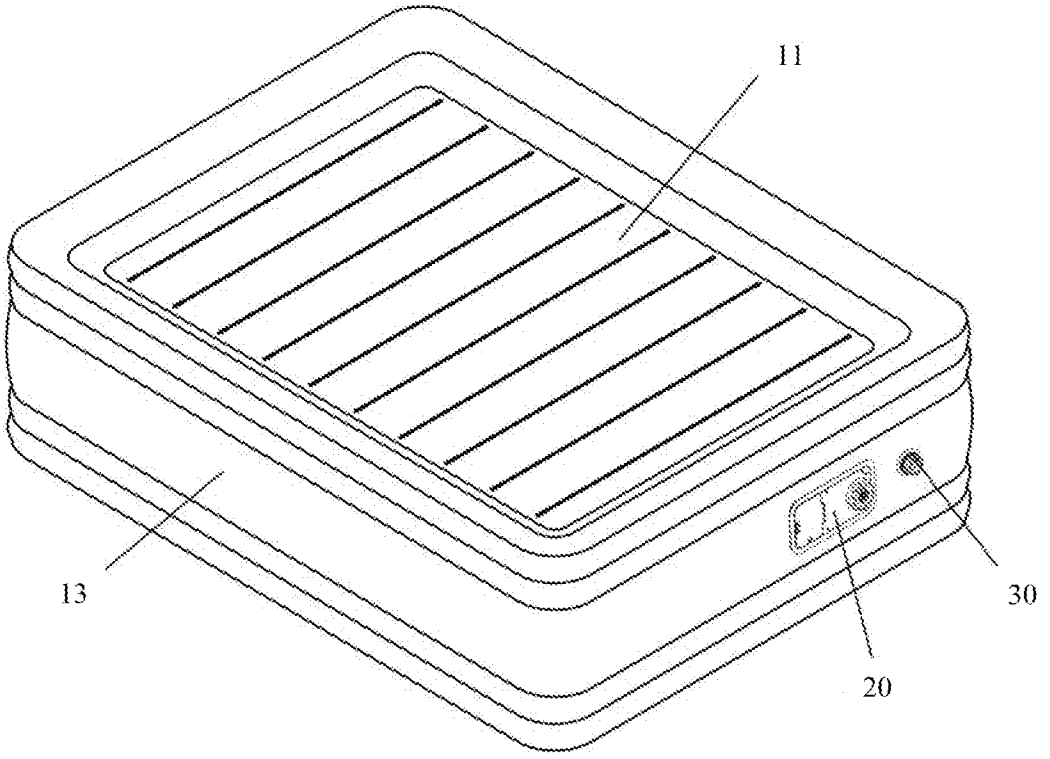


Fig. 1

INTEX EX. 1003, Pg. 109
Intex Recreation v. Bestway Inflatables

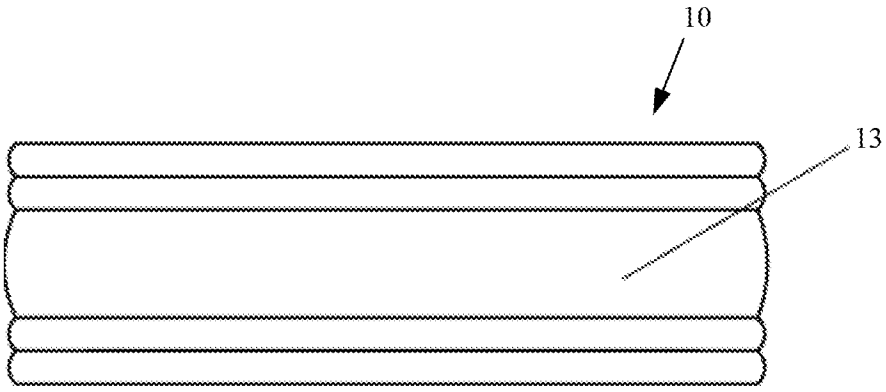


Fig. 2

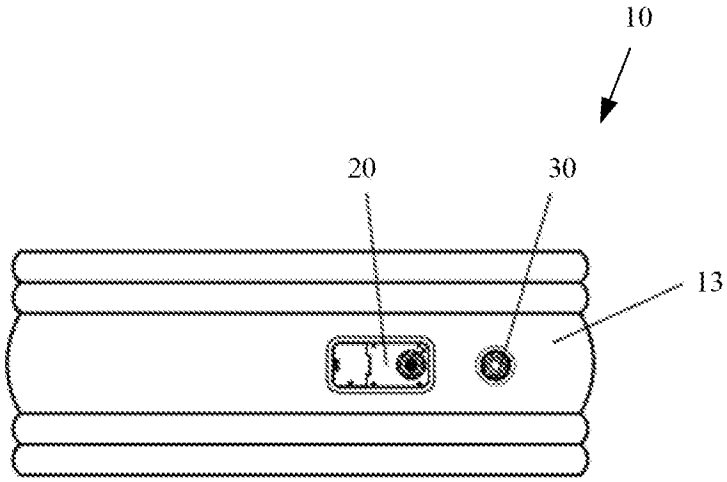


Fig. 3

INTEX EX. 1003, Pg. 110
Intex Recreation v. Bestway Inflatables

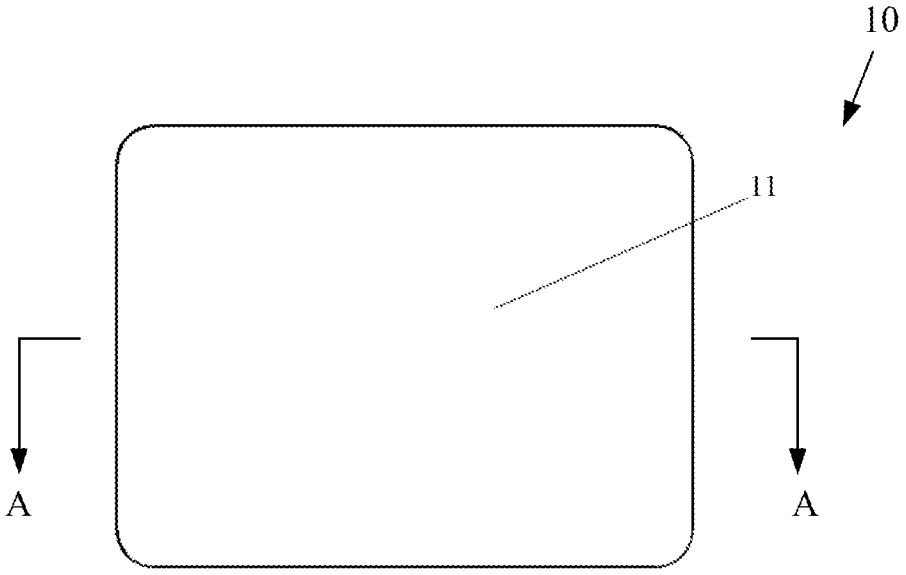


Fig. 4

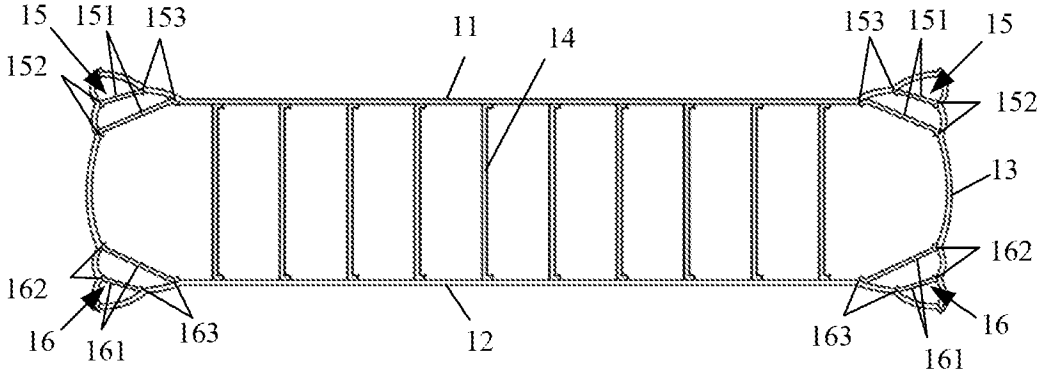


Fig. 5

INTEX EX. 1003, Pg. 111
Intex Recreation v. Bestway Inflatables

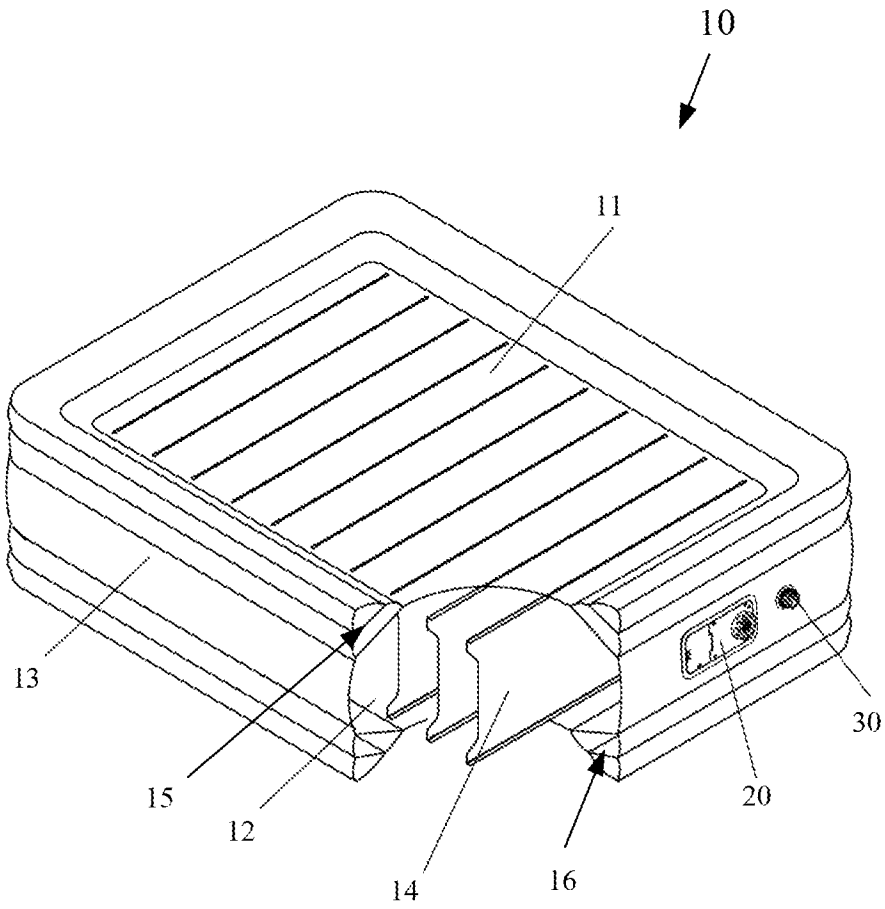


Fig. 6

INTEX EX. 1003, Pg. 112
Intex Recreation v. Bestway Inflatables

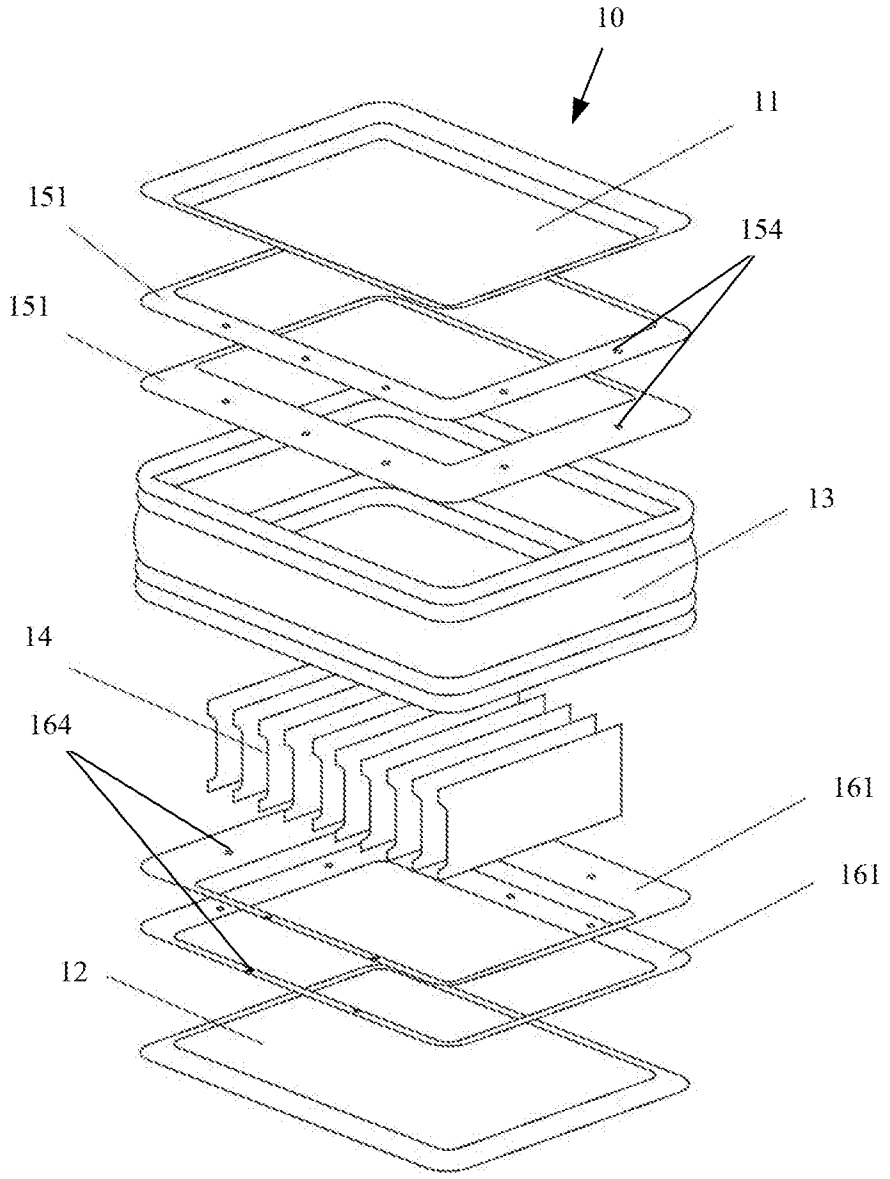


Fig. 7

INTEX EX. 1003, Pg. 113
Intex Recreation v. Bestway Inflatables

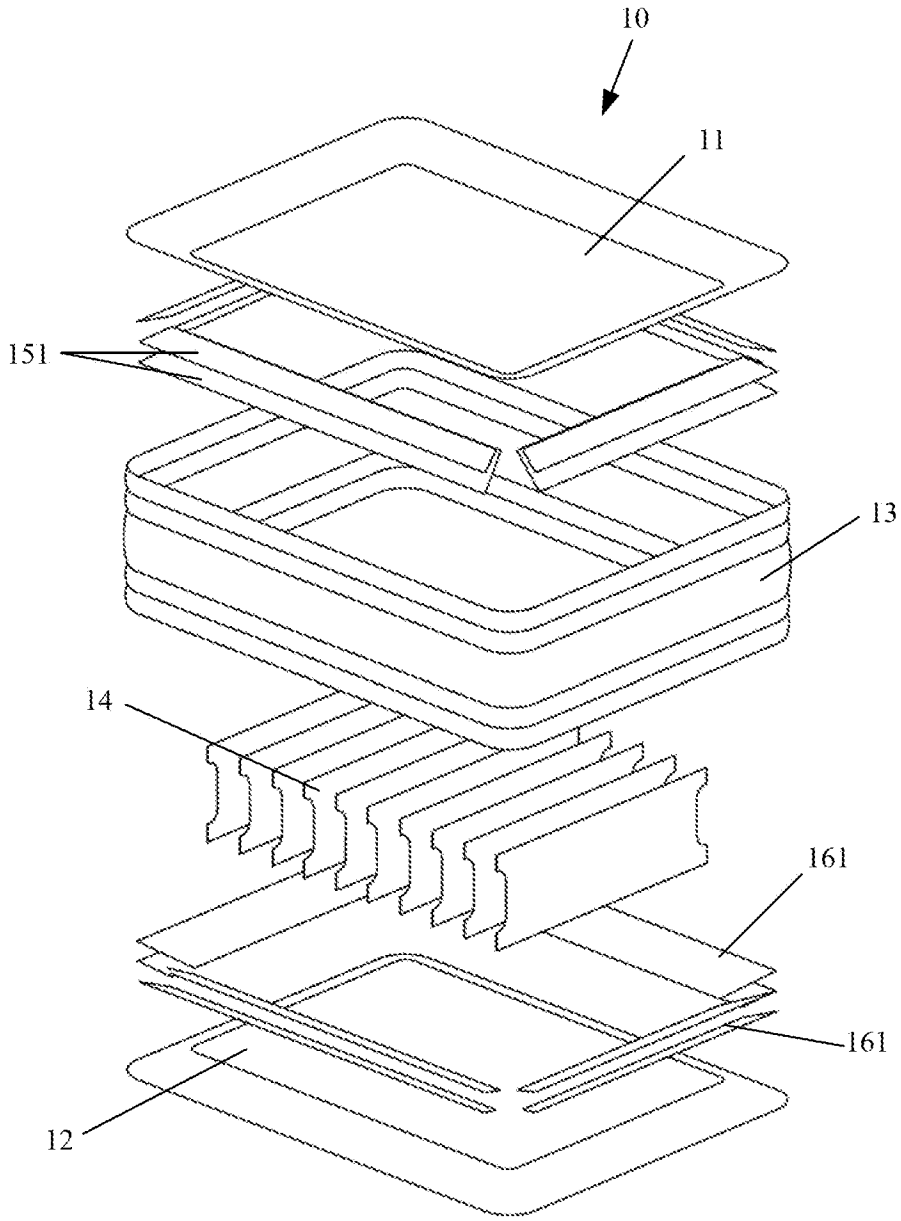


Fig. 8

INTEX EX. 1003, Pg. 114
Intex Recreation v. Bestway Inflatables

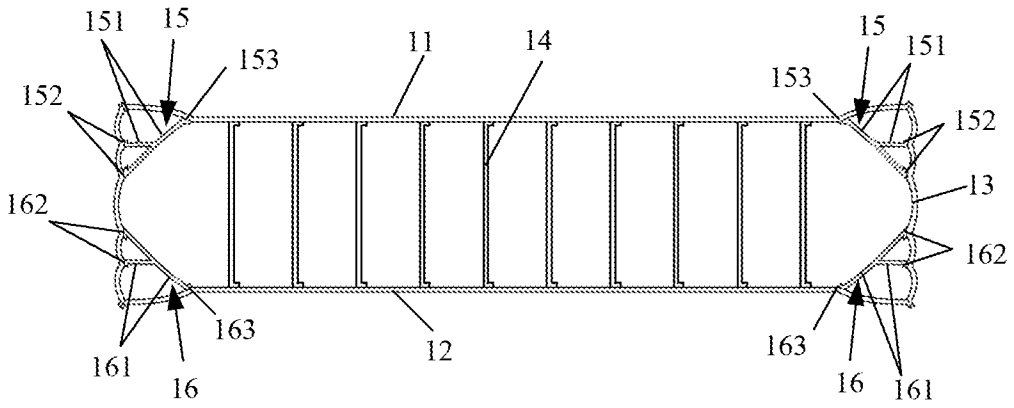


Fig. 9

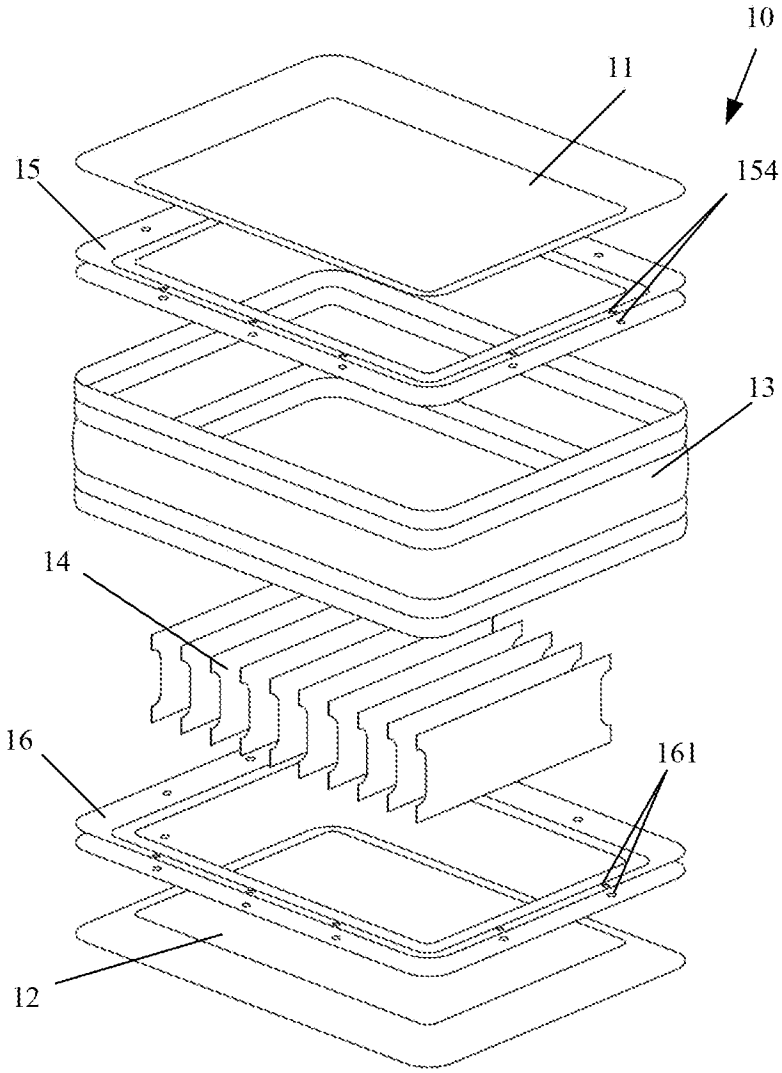


Fig. 10

INTEX EX. 1003, Pg. 115
Intex Recreation v. Bestway Inflatables

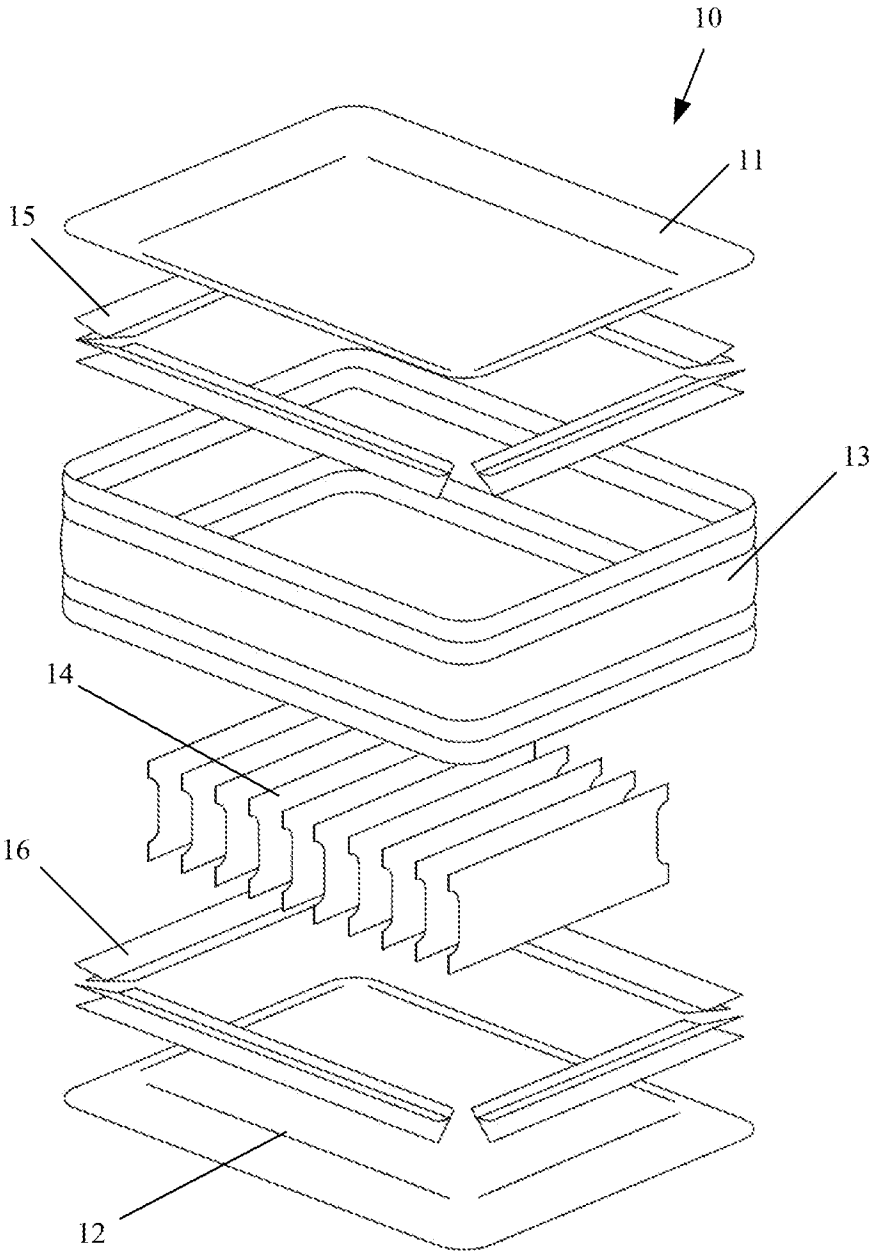


Fig. 11

INTEX EX. 1003, Pg. 116
Intex Recreation v. Bestway Inflatables

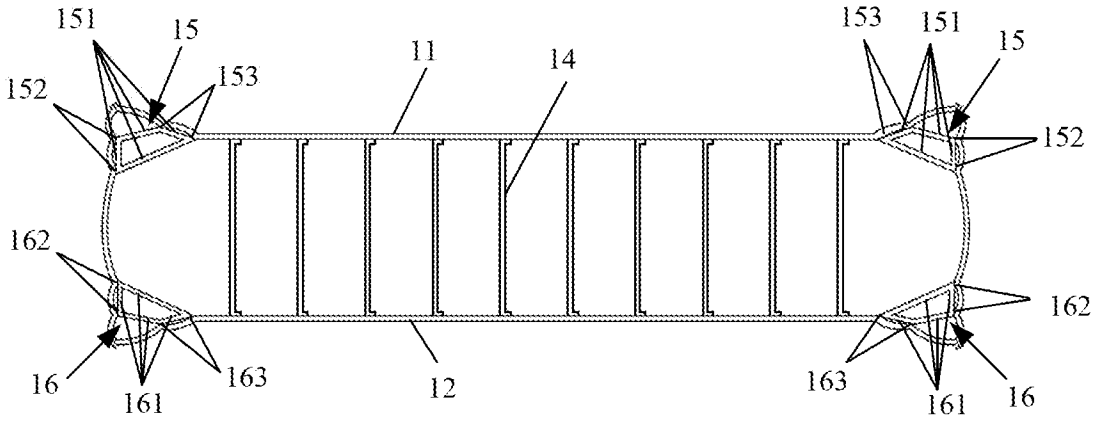


Fig. 12

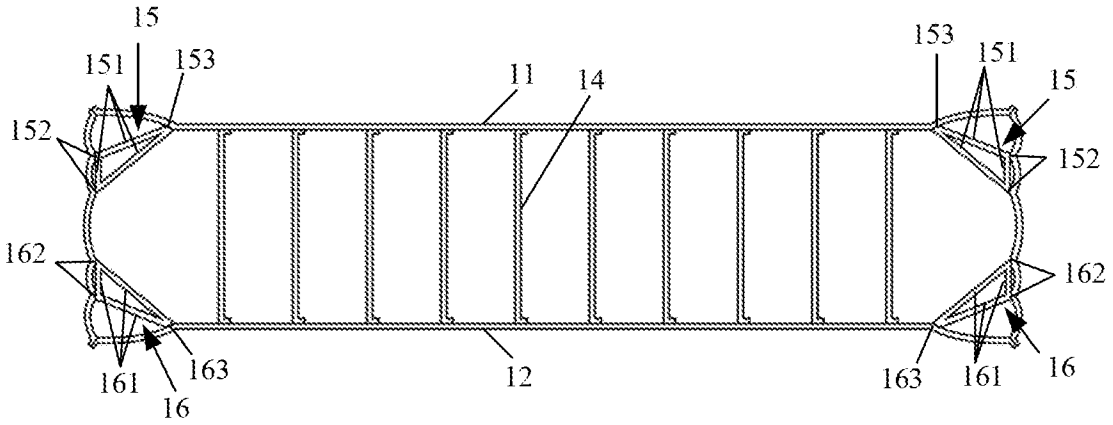


Fig. 13

INTEX EX. 1003, Pg. 117
Intex Recreation v. Bestway Inflatables

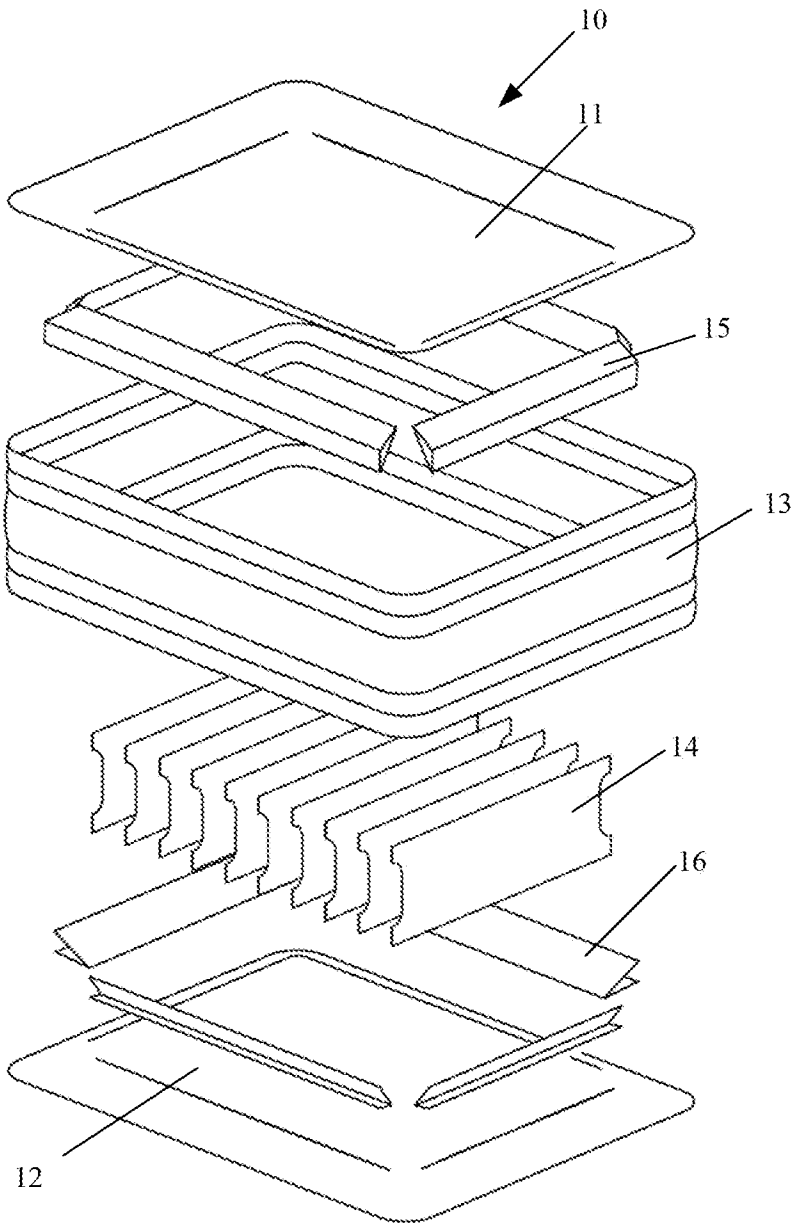


Fig. 14

INTEX EX. 1003, Pg. 118
Intex Recreation v. Bestway Inflatables

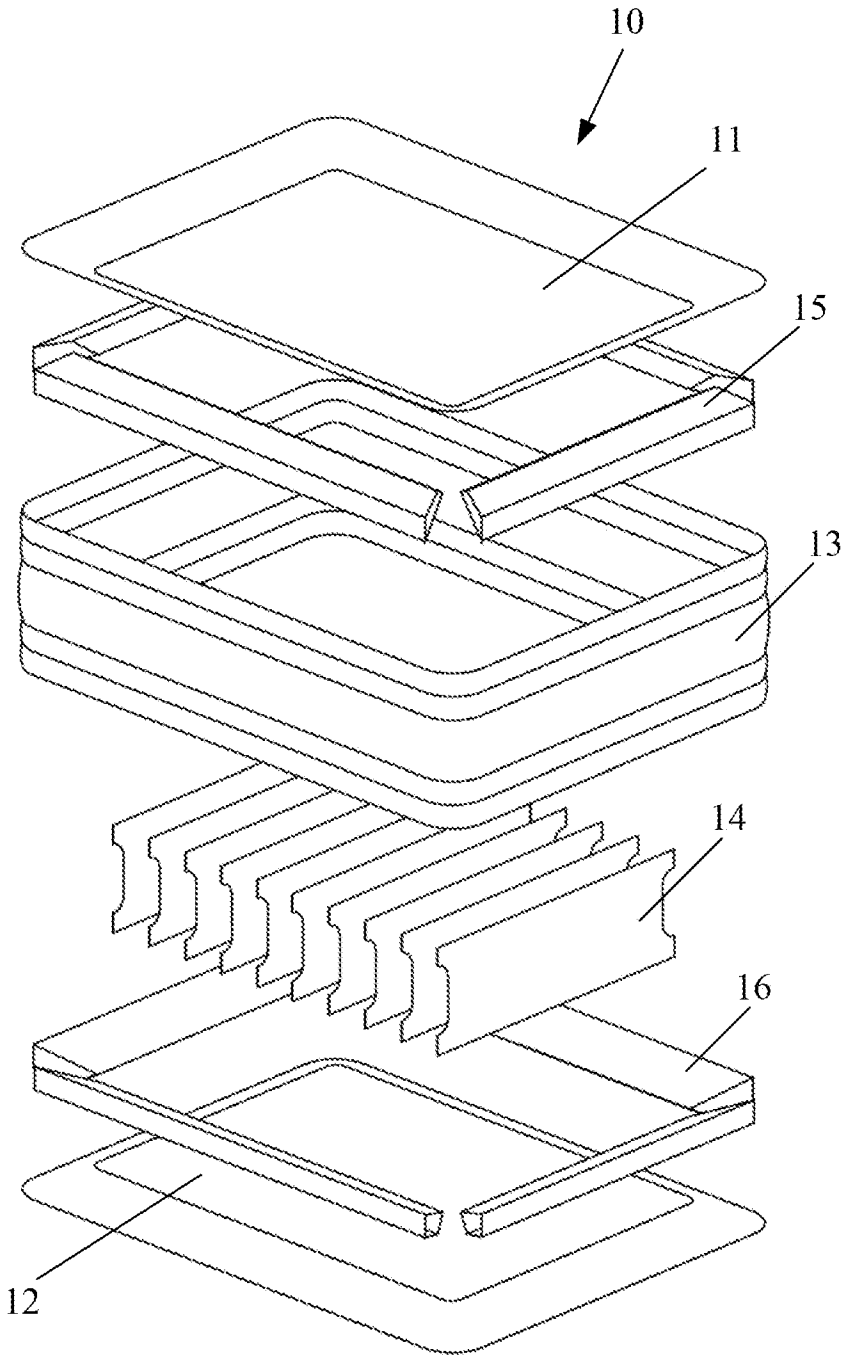


Fig. 15

INTEX EX. 1003, Pg. 119
Intex Recreation v. Bestway Inflatables

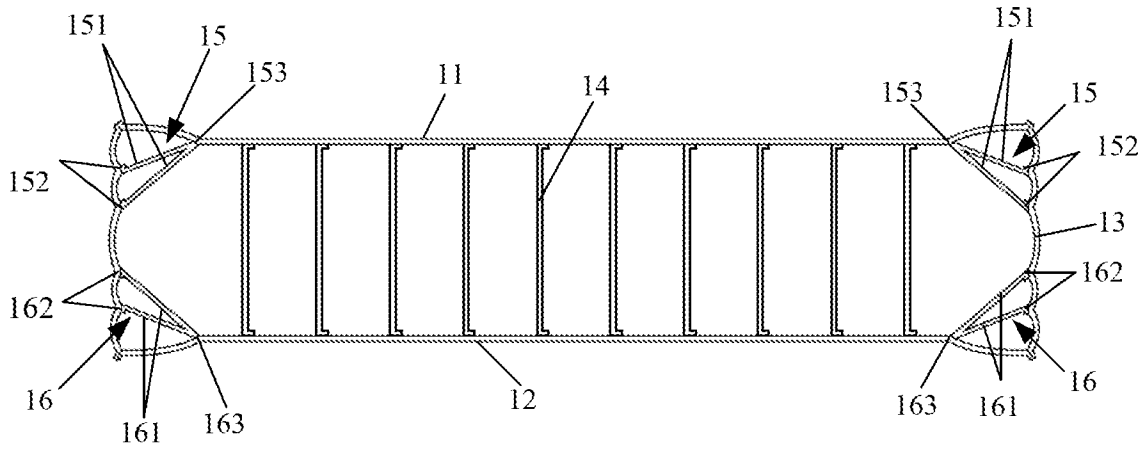


Fig. 16

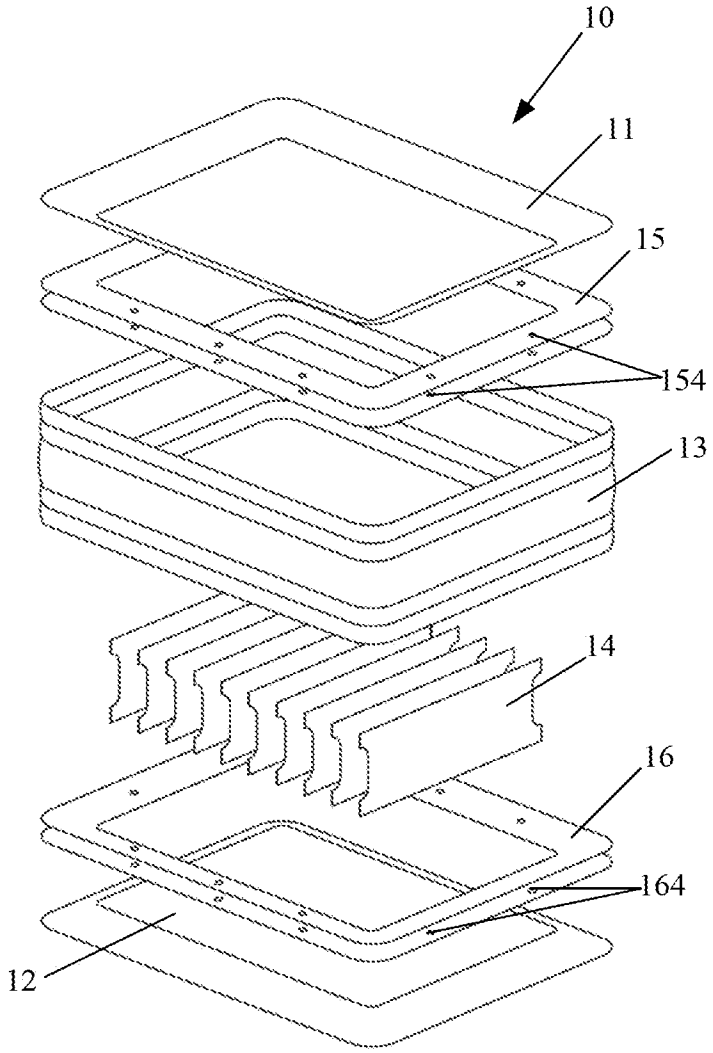


Fig. 17

INTEX EX. 1003, Pg. 120
Intex Recreation v. Bestway Inflatables

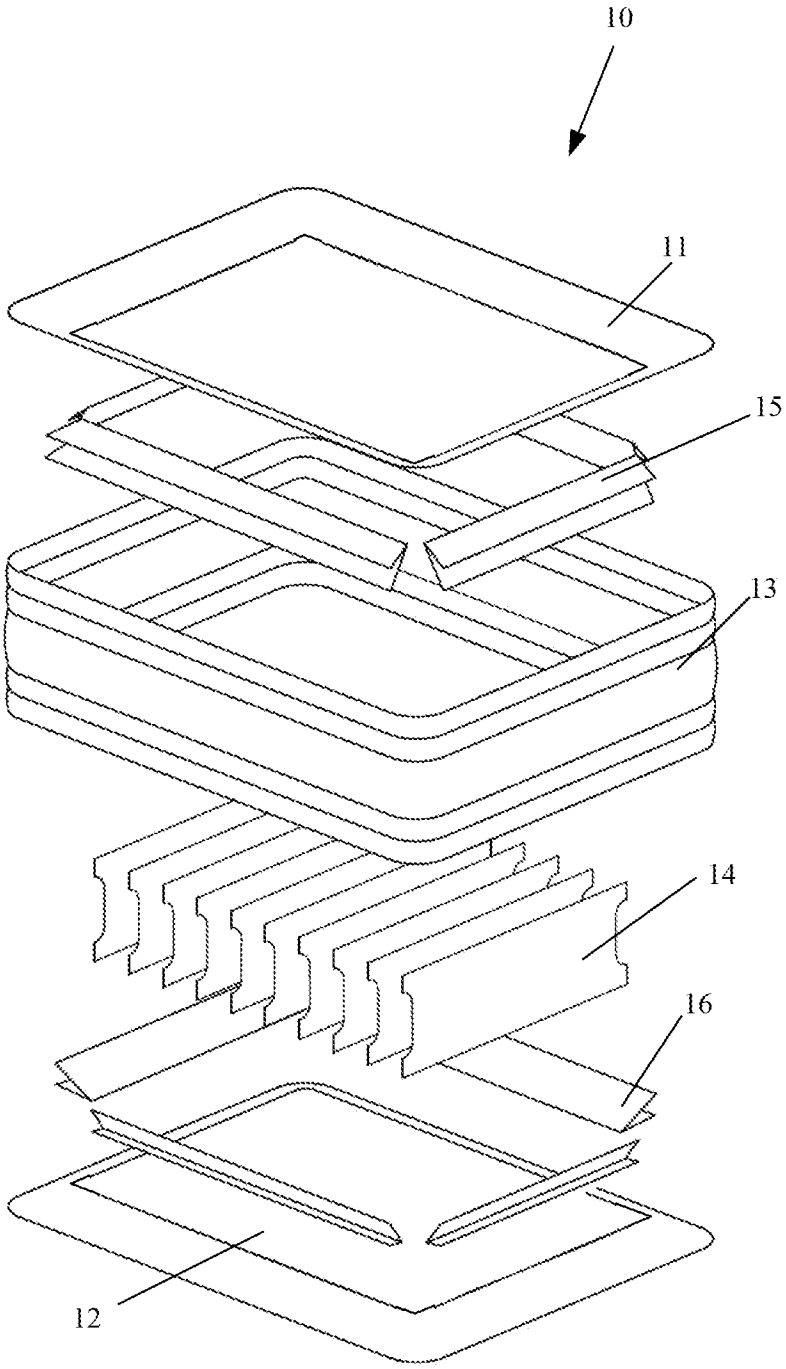


Fig. 18

INTEX EX. 1003, Pg. 121
Intex Recreation v. Bestway Inflatables

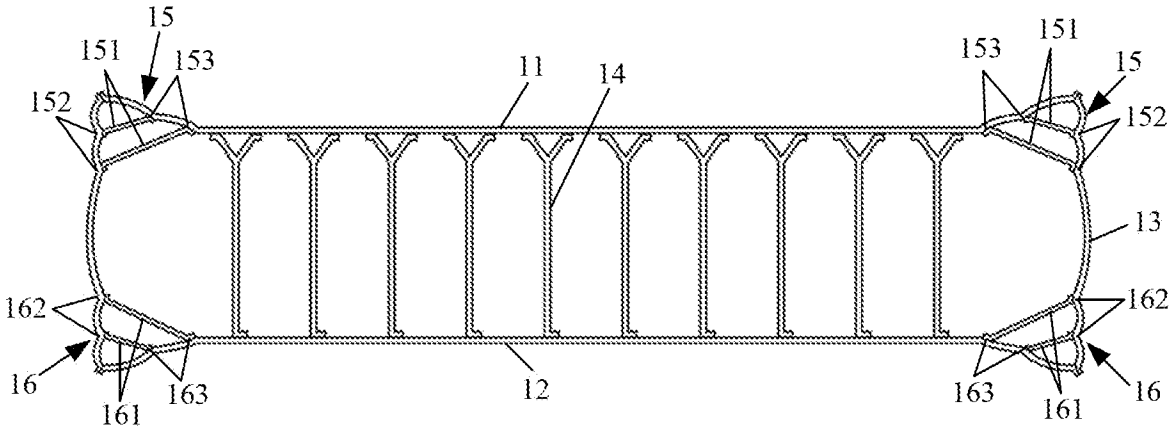


Fig. 19

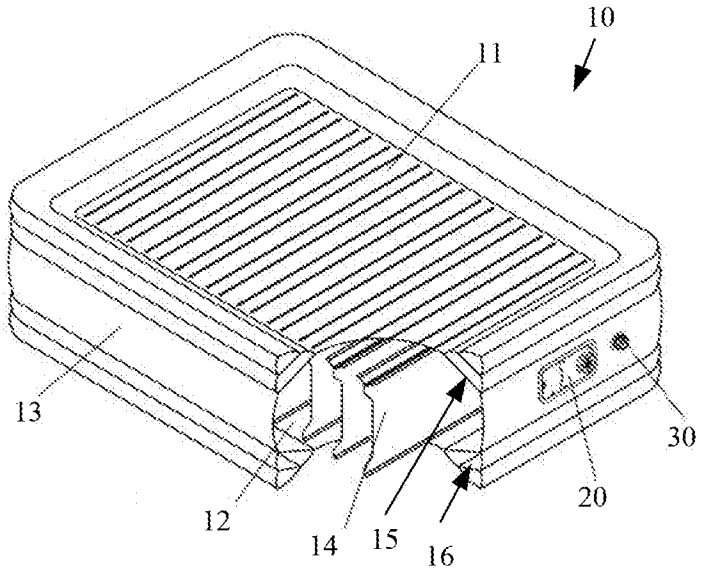


Fig. 20

INTEX EX. 1003, Pg. 122
Intex Recreation v. Bestway Inflatables

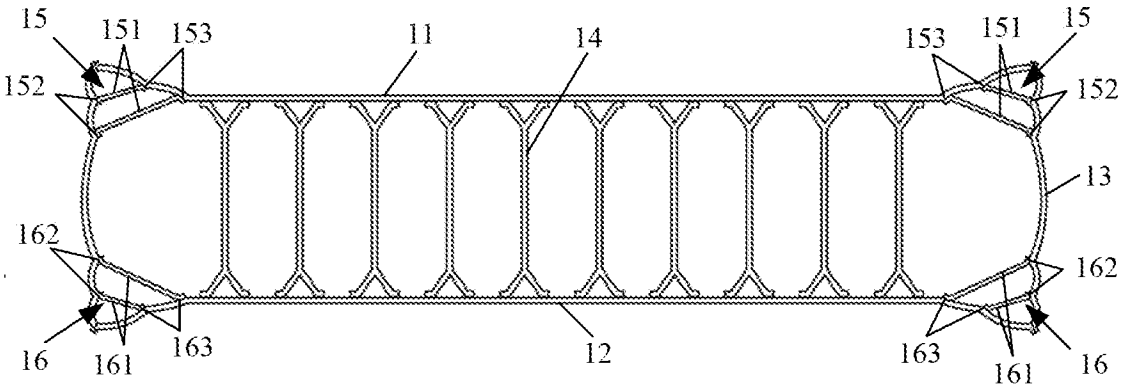


Fig. 21

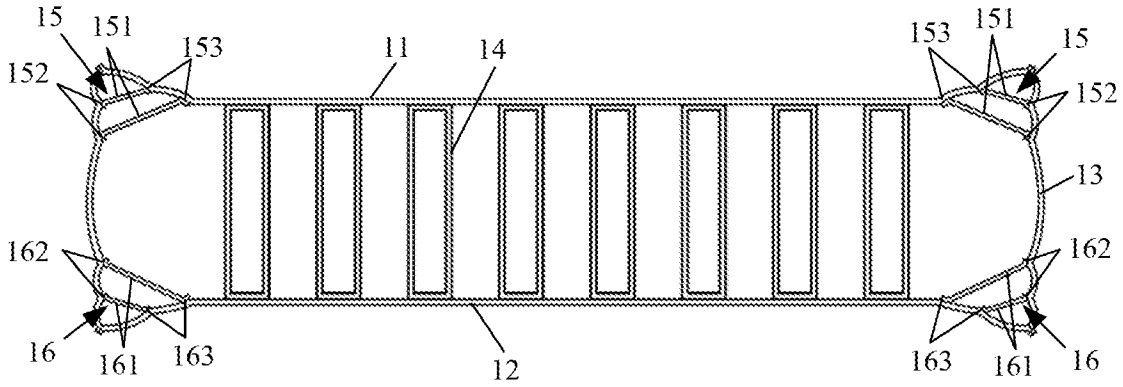


Fig. 22

INTEX EX. 1003, Pg. 123
Intex Recreation v. Bestway Inflatables

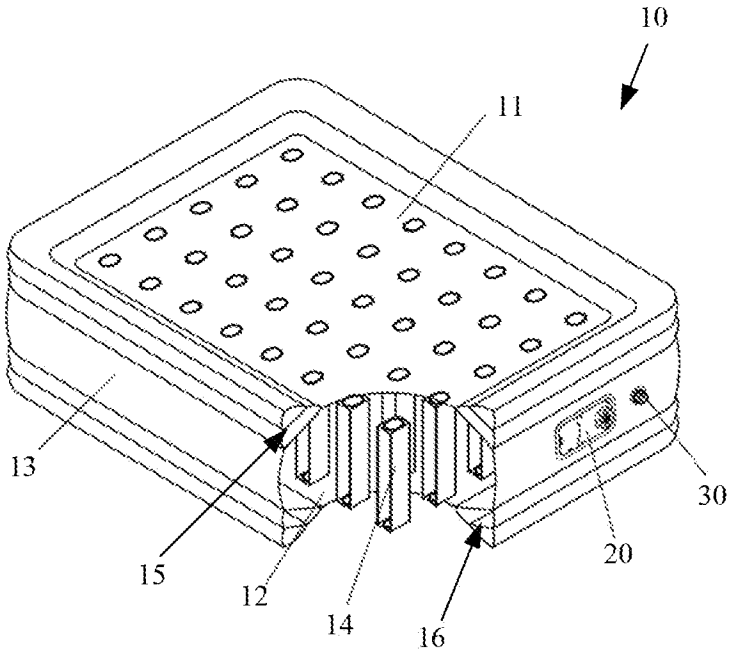


Fig. 23

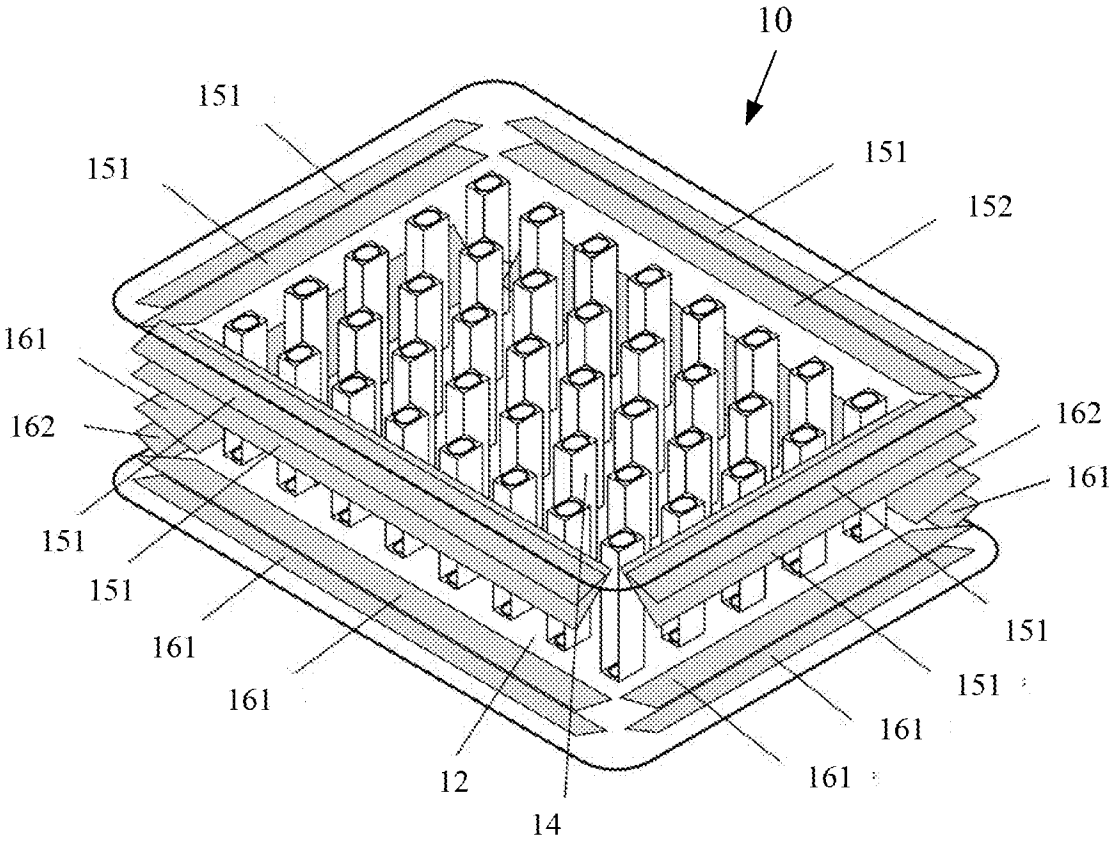
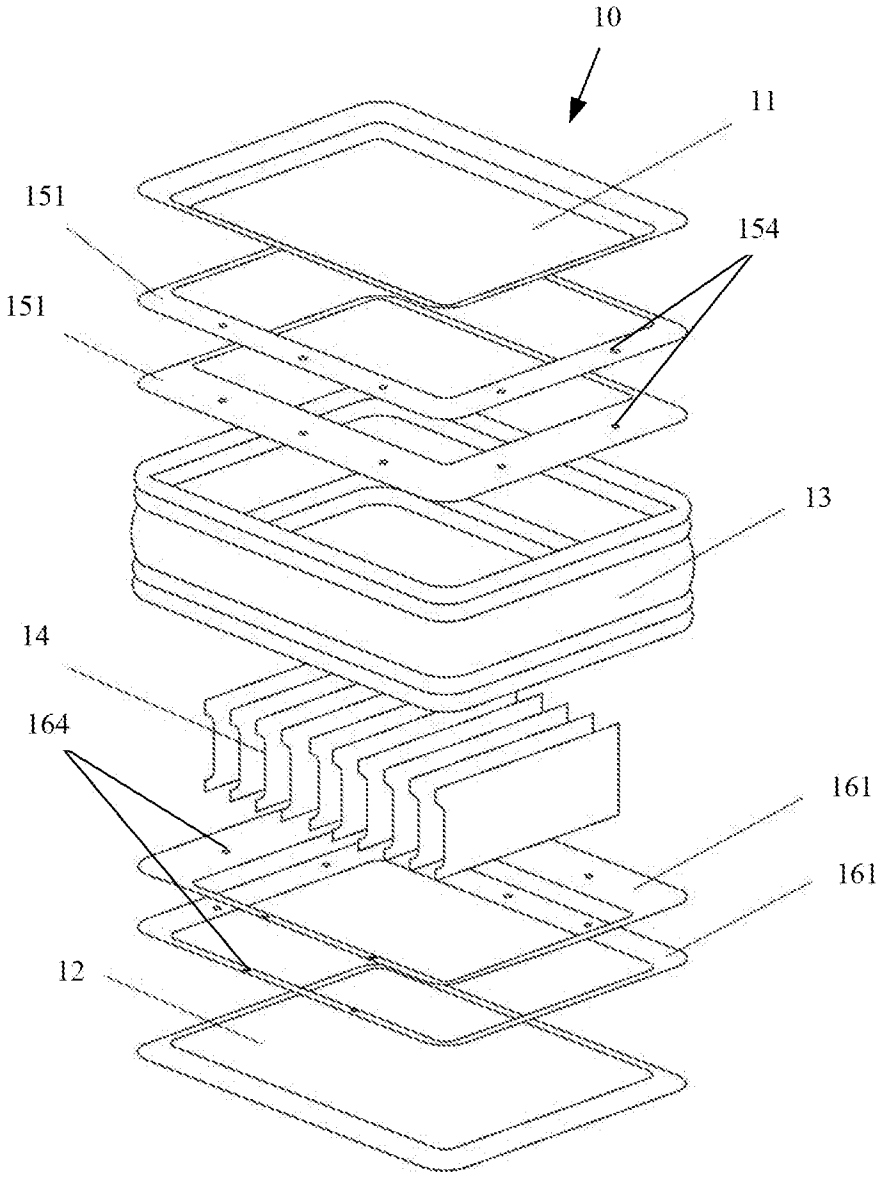


Fig. 24

INTEX EX. 1003, Pg. 124
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Drawing of Abstract



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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Feng		LIU	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Shanghai	Country of Residence i	CN

Mailing Address of Inventor:

Address 1	No. 3065 Cao An Road
Address 2	

City	Shanghai	State/Province	
Postal Code	201812	**Country** i	CN

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	52835		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	INFLATABLE BED		
Attorney Docket Number	09548.1303US01	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	17	**Suggested Figure for Publication (if any)**	7

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	52835		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
201610020533.5	CN	2016-01-13	

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
201620031074.6	CN	2016-01-13	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	BESTWAY INFLATABLES & MATERIAL CORP.		
Mailing Address Information For Applicant:			
Address 1	No. 3065 Cao An Road		
Address 2			
City	Shanghai	**State/Province**	
Country	CN	Postal Code	201812
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
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Title of Invention	INFLATABLE BED	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Rong Yang/			Date (YYYY-MM-DD)	2016-09-29
First Name	Rong	Last Name	Yang	Registration Number	71641

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	09548.1303US01
	Application Number	
Title of Invention	INFLATABLE BED	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	INFLATABLE BED

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Feng LIU Date (Optional): June 23, 2016

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/280,513	Filing Date 09/29/2016	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	**280**
☒ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	**600**
☒ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	**720**
TOTAL CLAIMS (37 CFR 1.16(i))	40 minus 20 =	* 20	x $80 =	**1600**
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	* 0	x $420 =	**0**
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	**3200**

APPLICATION AS AMENDED – PART II

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LDRC
EVA GILLIS

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 15/280,513

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	600
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720
TOTAL CLAIMS (37 CFR 1.16(i))	40 minus 20 =	* 20			OR	x 80 =	1600
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*				x 420 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	3200

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/280,513	09/29/2016	3633	3200	09548.1303US01	40	1

CONFIRMATION NO. 1875

FILING RECEIPT

52835
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
MINNEAPOLIS, MN 55402-1683

OC000000088416691

Date Mailed: 10/13/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Feng LIU, Shanghai, CHINA;

Applicant(s)

BESTWAY INFLATABLES & MATERIAL CORP., Shanghai, CHINA;

Power of Attorney: The patent practitioners associated with Customer Number 52835

Domestic Applications for which benefit is claimed - None.
A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
CHINA 201610020533.5 01/13/2016
CHINA 201620031074.6 01/13/2016

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

Request to Retrieve - This application either claims priority to one or more applications filed in an intellectual property Office that participates in the Priority Document Exchange (PDX) program or contains a proper **Request to**

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Retrieve Electronic Priority Application(s) (PTO/SB/38 or its equivalent). Consequently, the USPTO will attempt to electronically retrieve these priority documents.

If Required, Foreign Filing License Granted: 10/12/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/280,513**

Projected Publication Date: 07/13/2017

Non-Publication Request: No

Early Publication Request: No

Title

INFLATABLE BED

Preliminary Class

052

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

中华人民共和国国家知识产权局
STATE INTELLECTUAL PROPERTY OFFICE
OF THE PEOPLE'S REPUBLIC OF CHINA

证　明

本证明之附件是向本局提交的下列专利申请文件副本。

申　　请　　号：201620031074.6

申　请　类　型：实用新型专利

发明 创造 名称：充气床

申　　请　　日：2016 年 01 月 13 日

申　　请　　人：上海荣威塑胶工业有限公司

发明人或设计人：刘峰

局长

申长雨

2016 年 11 月 08 日

2016200310746

157591 2CNCN

权 利 要 求 书

1、一种充气床，其特征在于，所述充气床包括：

顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

2、如权利要求 1 所述的充气床，其特征在于，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

3、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

4、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

5、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

6、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少

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两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

7、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

8、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

9、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

10、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

11、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

12、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

13、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

14、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉

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带相互间隔地排布于所述底片的上表面。

15、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

16、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

17、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

18、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

19、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

20、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

21、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

22、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

23、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

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24、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

25、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

26、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

27、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带整体为一个间断的环形结构。

28、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带整体为一个间断的环形结构。

29、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

30、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

31、如权利要求 1 所述的充气床，其特征在于，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

32、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

33、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

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34、如权利要求 33 所述的充气床，其特征在于，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

35、如权利要求 33 所述的充气床，其特征在于，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

36、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

37、如权利要求 2 所述的充气床，其特征在于，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

38、如权利要求 2 所述的充气床，其特征在于，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

39、如权利要求 2 所述的充气床，其特征在于，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

40、如权利要求 1 所述的充气床，其特征在于，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

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说　　明　　书

充气床

技术领域

本实用新型涉及充气床或充气床垫领域，特别涉及一种充气床，其结构设置为可限制侧壁向外膨胀或变形。

背景技术

目前，充气床和充气床垫已经非常流行。充气床和充气床垫具有重量轻、便于携带和收藏等优点，因而被广泛应用于各种不同的场合。例如，在家庭充气床和充气床垫通常可以作为临时的床，供来访的客人使用。另外还非常适合在户外野营时使用。

在现有技术中，充气床和充气床垫一般由 PVC 胶布、PU 胶布等制成，且具有许多不同的结构，其中比较典型的机构是由顶片、底片，以及与顶片和底片相连接的侧壁构成可充气的气室。在气室内部设有连接顶片和底片且间隔排列的拉带，以构成具有一定高度且上表面大致平坦的可供人躺在上面的形状。

在现有的充气床和充气床垫中，有的具有较高的高度，充气床和充气床垫充气后的侧壁容易膨胀和变形，影响到充气床和充气床垫外观的美观，充气床和充气床垫的膨胀和变形也会造成气室内的气压衰减，使得充气床和充气床垫偏软降低了充气床和充气床垫的舒适性。

因此，为了解决上述侧壁膨胀的问题，有的充气床和充气床垫在顶片和底片之间设置了中层片，并将中层片与侧壁连接。这种结构的充气床和充气床垫虽然使侧壁膨胀和变形的问题略有改善，但仍然没有达到理想的效果。而且由于顶片与中层片之间，以及中层片与底片之间都需要设置连接拉带，使得充气床和充气床垫的制造过程更加复杂，即所需胶布也更多。

另外，在现有技术中，高度较高的充气床和充气床垫存在稳定性方面的缺陷。当用户躺在或者坐在靠近充气床和充气床垫的边缘处时，充气床和充气床垫容易发生侧翻。为了改善其稳定性，美国专利 US 6671910 在充气床底片的外围设置了充气的稳定管。然而，这种结构不仅会影响充气床的外观美观，也给用户带来了使用的不便。

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实用新型内容

本实用新型要解决的技术问题是为了克服现有技术中充气床和充气床垫的侧壁容易膨胀、变形以及充气床和充气床垫稳定性差，容易侧翻的缺陷，提供一种充气床。

本实用新型是通过下述技术方案来解决上述技术问题的：一种充气床，其特点在于，所述充气床包括： 顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

较佳地，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

较佳地，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

较佳地，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

较佳地，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

较佳地，所述第三拉带结构包括至少两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

较佳地，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一

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Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

较佳地，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

较佳地，所述至少两个第二 I 型拉带相互间隔地排布于所述底片的上表面。

较佳地，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

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较佳地，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第二管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

较佳地，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

较佳地，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

较佳地，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

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较佳地，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

较佳地，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

较佳地，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

较佳地，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

本实用新型的积极进步效果在于：

本实用新型充气床克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本实用新型充气床还可以防止用户在使用过程中滚落。

附图说明

本实用新型上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显，在附图中相同的附图标记始终表示相同的特征，其中：

图 1 为本实用新型充气床的立体图。

图 2 为本实用新型充气床的主视图。

图 3 为本实用新型充气床的右视图。

图 4 为本实用新型充气床的俯视图。

图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。

图 6 为本实用新型充气床的实施例一的局部解剖结构示意图。

图 7 为本实用新型充气床的实施例一的爆炸图一。

图 8 为本实用新型充气床的实施例一的爆炸图二。

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。

图 10 为本实用新型充气床的实施例二的爆炸图一。

图 11 为本实用新型充气床的实施例二的爆炸图二。

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图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。

图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。

图 14 为本实用新型充气床的实施例三的爆炸图一。

图 15 为本实用新型充气床的实施例三的爆炸图二。

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。

图 17 为本实用新型充气床的实施例四的爆炸图一。

图 18 为本实用新型充气床的实施例四的爆炸图二。

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。

图 20 为本实用新型充气床的实施例五的局部解剖结构示意图。

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。

图 23 为本实用新型充气床的实施例七的局部解剖结构示意图。

图 24 为本实用新型充气床的实施例七的内部结构示意图。

具体实施方式

为让本实用新型的上述目的、特征和优点能更明显易懂，以下结合附图对本实用新型的具体实施方式作详细说明。

在下面的描述中阐述了很多具体细节以便于充分理解本实用新型，但是本实用新型还可以采用其它不同于在此描述的其它方式来实施，因此本实用新型不受下面公开的具体实施例的限制。

实施例一：

图 1 为本实用新型充气床的立体图。图 2 为本实用新型充气床的主视图。图 3 为本实用新型充气床的右视图。图 4 为本实用新型充气床的俯视图。图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。图 6 为本实用新型充气床的实施例一的局部解剖结构示意图。图 7 为本实用新型充气床的实施例一的爆炸图。

如图 1 至图 7 所示，本实用新型的实施例一中公开了一种充气床 10，其包括顶片 11、底片 12、至少一侧壁 13、至少一第一拉带结构 14 及至少一支撑结构。其中，底片 12 与顶片 11 上下间隔布置，侧壁 13 的上边缘与顶片 11 的外边缘连接，侧壁 13 的下边缘与底片 12 的外边缘连接，顶片 11、底片 12 和侧壁 13 之间形成一个气室。同时将第一拉带结构 14 设置在所述气室内，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。其作用在于，当所述

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气室充气后，通过第一拉带结构 14 来限制顶片 11 和底片 12 分别向上和向下膨胀。特别地，顶片 11 和底片 12 均可以设置为双层结构，所述双层结构可以通过至少两个两片相互焊接以形成不同的图案。或者进一步地，在所述双层结构中还夹设有海绵的结构。

此处的所述支撑结构设置在所述气室内，所述支撑结构沿至少一侧壁 13 的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的侧壁 13 连接，所述支撑结构中至少一个内侧边缘与相邻的顶片 11 或底片 12 连接。

优选地，所述支撑结构包括第二拉带结构 15 和第三拉带结构 16。其中，第二拉带结构 15 中至少两个外侧边缘与相邻的侧壁 13 连接，第二拉带结构中至少一个内侧边缘与相邻的顶片 11 连接。第二拉带结构 15 设置为当所述气室充气后限制顶片 11 和侧壁 13 向上和侧向膨胀。

同时，第三拉带结构 16 中至少两个外侧边缘与相邻的侧壁 13 连接，第三拉带结构 16 中至少一个内侧边缘与相邻的底片 12 连接。第三拉带结构 16 设置为当所述气室充气后分别限制底片 12 和侧壁 13 向下和侧向膨胀。

在本实施例中，第二拉带结构 15 包括至少两个第一 I 型拉带 151，每一第一 I 型拉带 151 的一个外侧边缘 152 与相邻的侧壁 13 连接，另一个内侧边缘 153 与相邻的顶片 11 连接，且至少两个第一 I 型拉带 151 间隔布置。第三拉带结构 16 包括至少两个第二 I 型拉带 161，每一第二 I 型拉带 161 的一个外侧边缘 162 与相邻的侧壁 13 连接，另一个内侧边缘 163 与相邻的底片 12 连接，且至少两个第二 I 型拉带 151 间隔布置。本实施例中第一 I 型拉带 151 和第二 I 型拉带 161 均以两个为例，但其数量并不受本实施例限制，其可以采用多于两个的数量，均属于本实用新型的保护范围内。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。例如本实施例中第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而使第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，使第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

进一步地，至少两个第一 I 型拉带 151 相互间隔地排布于顶片 11 的下表面，

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且至少两个第二 I 型拉带 161 相互间隔地排布于底片 12 的上表面。至少两个第一 I 型拉带 151 在侧壁 13 的内表面上沿垂直方向间隔排布。至少两个第二 I 型拉带 161 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少两个第一 I 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少两个第二 I 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，在至少两个第一 I 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少两个第二 I 型拉带 161 设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 7 和图 8 所示）。

本实用新型中的第一拉带结构 14 可以采用直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。同时，第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 均可以采用热塑性塑胶布制成，且第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 中的一个或多个至少部分地包括网布、夹网布或者线体。

其结构形式可以采用多种方式。例如，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

再例如，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。这些连接结构都可以有效地制成本实用新型充气床所需的拉带，这里仅为举例，但不局限于本实施例中的方案，其他可实现拉带形式的结构均在本实用新型的保护范围内。

在上述拉带的结构基础上，为了保证各个部件之间的牢固连接，第一拉带结构 14 通过高频焊接的方式连接在顶片 11 和底片 12 之间。同理，第二拉带结构 15 也通过高频焊接的方式连接在顶片 11 和侧壁 13 之间。第三拉带结构 16 通过高频焊接的方式连接在底片 12 和侧壁 13 之间。

通过上述结构形成的本实用新型充气床，其顶片 11 位于第二拉带结构 15 的上边缘内侧部分的高度低于顶片 11 位于第二拉带结构 15 的上边缘外侧部分的高度。底片 12 位于第三拉带结构 16 的下边缘内侧部分的高度低于底片 12 位于第三拉带结构 16 的下边缘外侧部分的高度。

此外，在充气床 10 上还包括内置气泵 20，将内置气泵 20 设置在侧壁 13 上，且位于第二拉带结构 15 的下边缘和第三拉带结构 16 的上边缘之间，用以供所述气室充气。同时，在充气床 10 上还设置有气阀 30，将气阀 30 设置在侧

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壁 13 上，用以供充气床 10 的充气或放气。

实施例二：

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。图 10 为本实用新型充气床的实施例二的爆炸图一。图 11 为本实用新型充气床的实施例二的爆炸图二。

如图 9 至图 11 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 Y 型拉带 151，其中第一 Y 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，另一个内侧边缘 153 与顶片 11 连接。同理，第三拉带结构 16 包括至少一个第二 Y 型拉带 161，其中第二 Y 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，另一个内侧边缘 163 与底片 12 连接。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

进一步地，至少一个第一 Y 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 Y 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 Y 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 Y 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 Y 型拉带 151 上还设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 Y 型拉带 161 上还设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 10 和图 11 所示）。

实施例三：

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。图 13 为图 4 中沿

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A-A 线剖开的实施例三的剖视图二。图 14 为本实用新型充气床的实施例三的爆炸图一。图 15 为本实用新型充气床的实施例三的爆炸图二。

如图 12 至图 15 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一管型拉带 151，其中第一管型拉带 151 上具有至少两个外侧边缘 152 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二管型拉带 161，第二管型拉带 161 上具有至少两个外侧边缘 162 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 163 与底片 12 连接。此处的第一管型拉带 151 和第二管型拉带 161 可以采用多种管型结构，例如呈三角形的管型结构，呈四边形的管型结构（如图 13 和图 14 所示）。

进一步地，至少一个第一管型拉带 151 与相邻的侧壁 13 连接的至少两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二管型拉带 161 与相邻的侧壁 13 连接的至少两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一管型拉带 151 整体为一个间断的环形结构。至少一个第二管型拉带 161 整体为一个间断的环形结构（如图 13 和图 14 所示）。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

实施例四：

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。图 17 为本实用新型充气床的实施例四的爆炸图一。图 18 为本实用新型充气床的实施例四的爆炸图二。

如图 16 至图 18 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 V 型拉带 151，其中第一 V 型拉带

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151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，且另一内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二 V 型拉带 161，其中第二 V 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，且另一内侧边缘 163 与顶片 11 连接。

进一步地，至少一个第一 V 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 V 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 V 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 V 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 V 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 V 型拉带 161 上设有气孔 164，使所述气室通过气孔 164 形成空气流通。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本实用新型的保护范围内。

实施例五：

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。图 20 为本实用新型充气床的实施例五的局部解剖结构示意图。

如图 19 和图 20 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 采用 Y 型拉带，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，连接支撑顶片 11，下端为直拉带型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

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实施例六：

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

如图 21 所示，本实施例的结构与实施例五基本相同，其不同之处在于：第一拉带结构 14 采用上下两端都呈 X 型的拉带，并且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，向上连接顶片 11，下端同样也呈分叉型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

实施例七：

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。图 23 为本实用新型充气床的实施例七的局部解剖结构示意图。图 24 为本实用新型充气床的实施例七的内部结构示意图。

如图 22 至图 24 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 中的若干拉带均采用圆孔拉带，且第一拉带结构 14 中每一个拉带的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。当所述气室充气后，其可以有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

根据上述结构描述，上述各实施例之间的结构变化可以任意组合，并不受上述具体实施例的限制，即有关第二拉带结构 15 包含拉带的数量和第三拉带结构 16 包含拉带的数量不受限制，根据实际需求进行调整。

同理，第二拉带结构 15 中若干拉带之间的连接方式，以及第三拉条结构 16 中若干拉带之间的连接方式也不受上述实施例的局限，只要将侧壁 13 分隔成至少五段式（或大于等于四段）的形式即可，例如可以通过改变第二拉带结构 15 和第三拉条结构 16 中包含拉带的数量及连接方式将侧壁 13 分隔成六段、七段等多段形式。

当然，有关第一拉带结构 14 的结构形式可以在各种情况下通用，同样起到支撑顶片 11 和底片 12 的作用，有效限制顶片 11 和底片 12 分别向上和向下膨胀。

综上所述，本实用新型充气床通过采用各种类型的拉带结构，可以限制充气床的侧壁向外膨胀或变形。本实用新型充气床的结构有效地克服了现有技术

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中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本实用新型充气床还可以防止用户在使用过程中滚落。

虽然以上描述了本实用新型的具体实施方式，但是本领域的技术人员应当理解，这些仅是举例说明，本实用新型的保护范围是由所附权利要求书限定的。本领域的技术人员在不背离本实用新型的原理和实质的前提下，可以对这些实施方式作出多种变更或修改，但这些变更和修改均落入本实用新型的保护范围。

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说 明 书 附 图

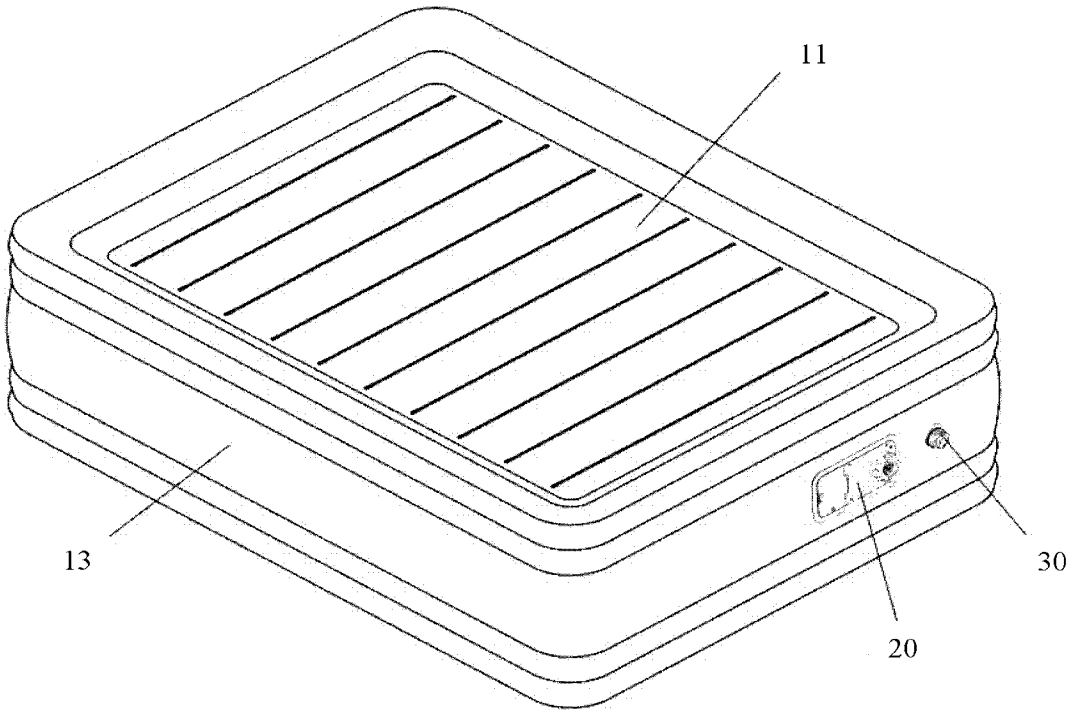


图 1

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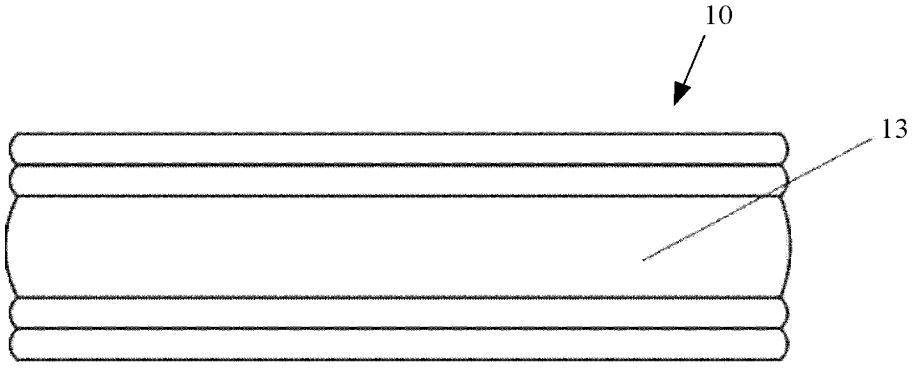


图 2

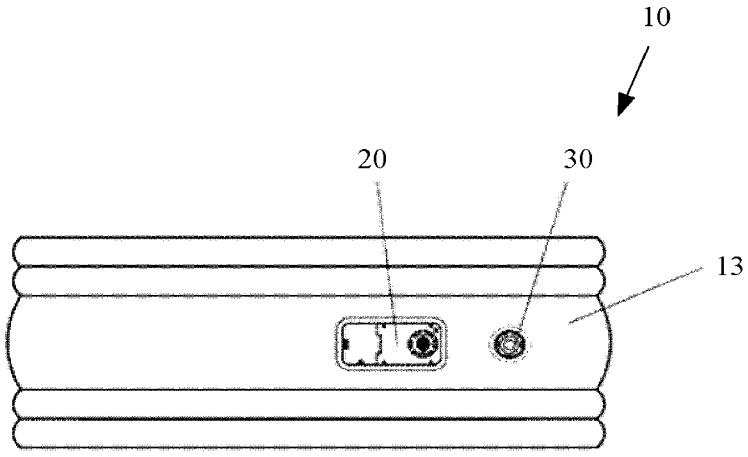


图 3

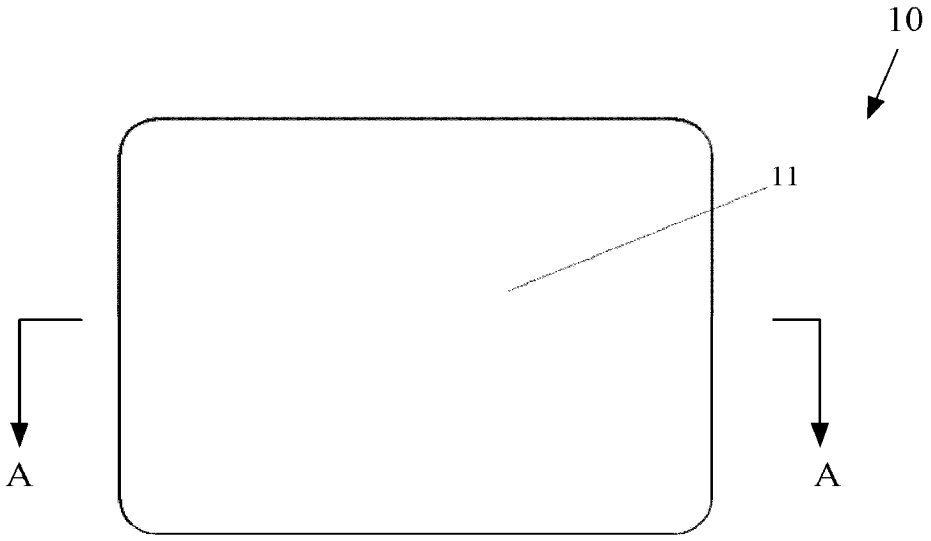

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图 4

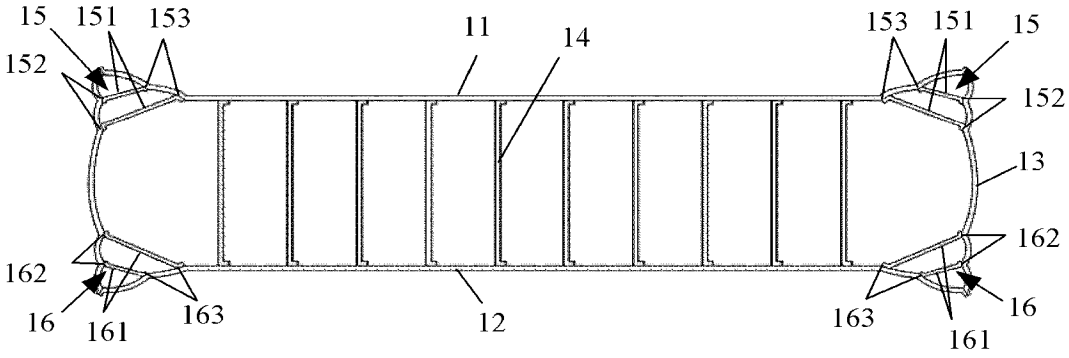

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图 5

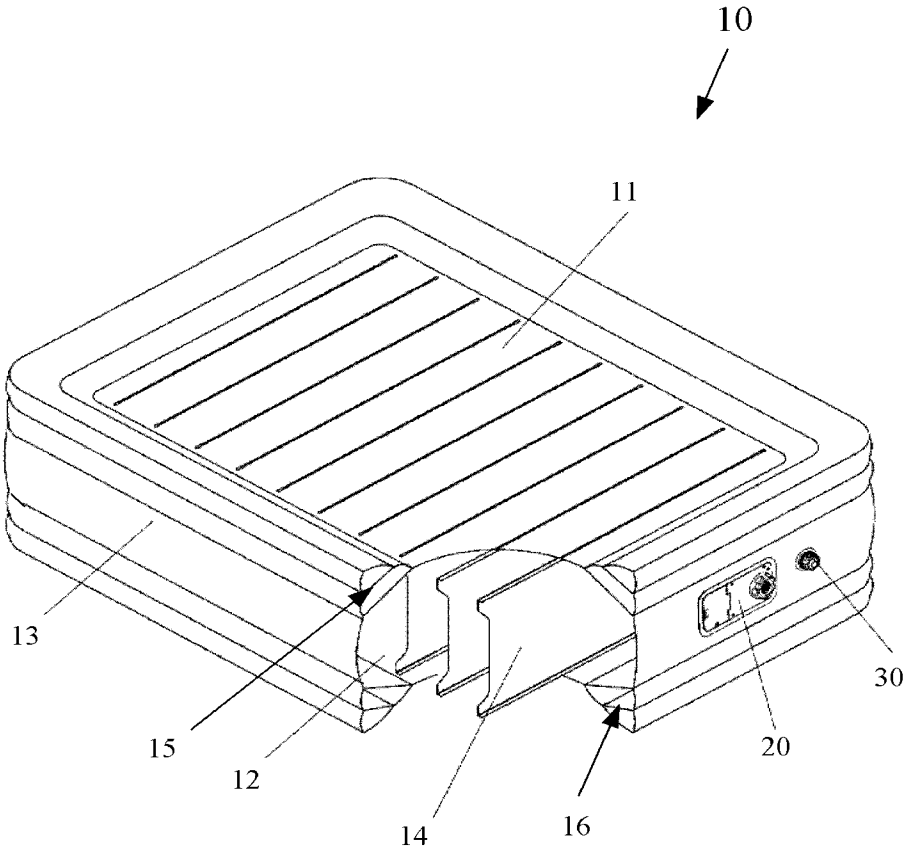


图 6

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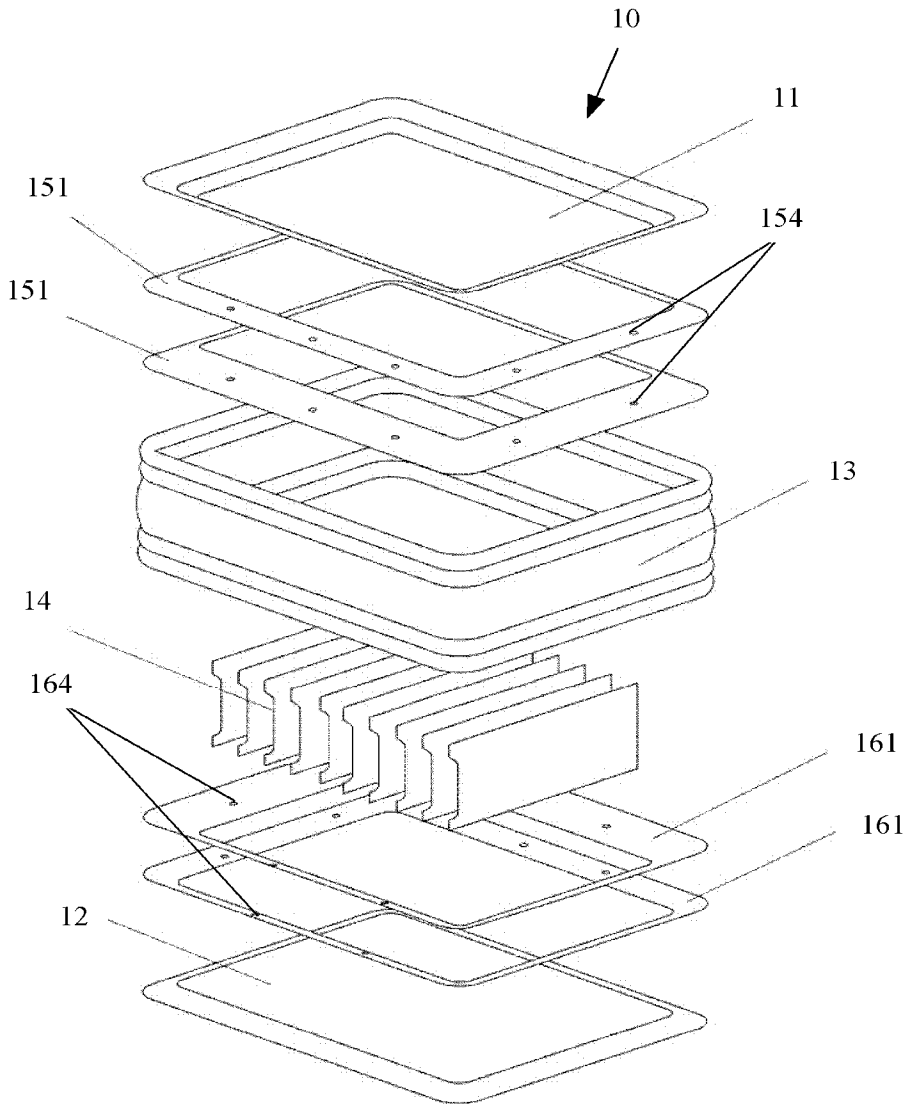


图 7

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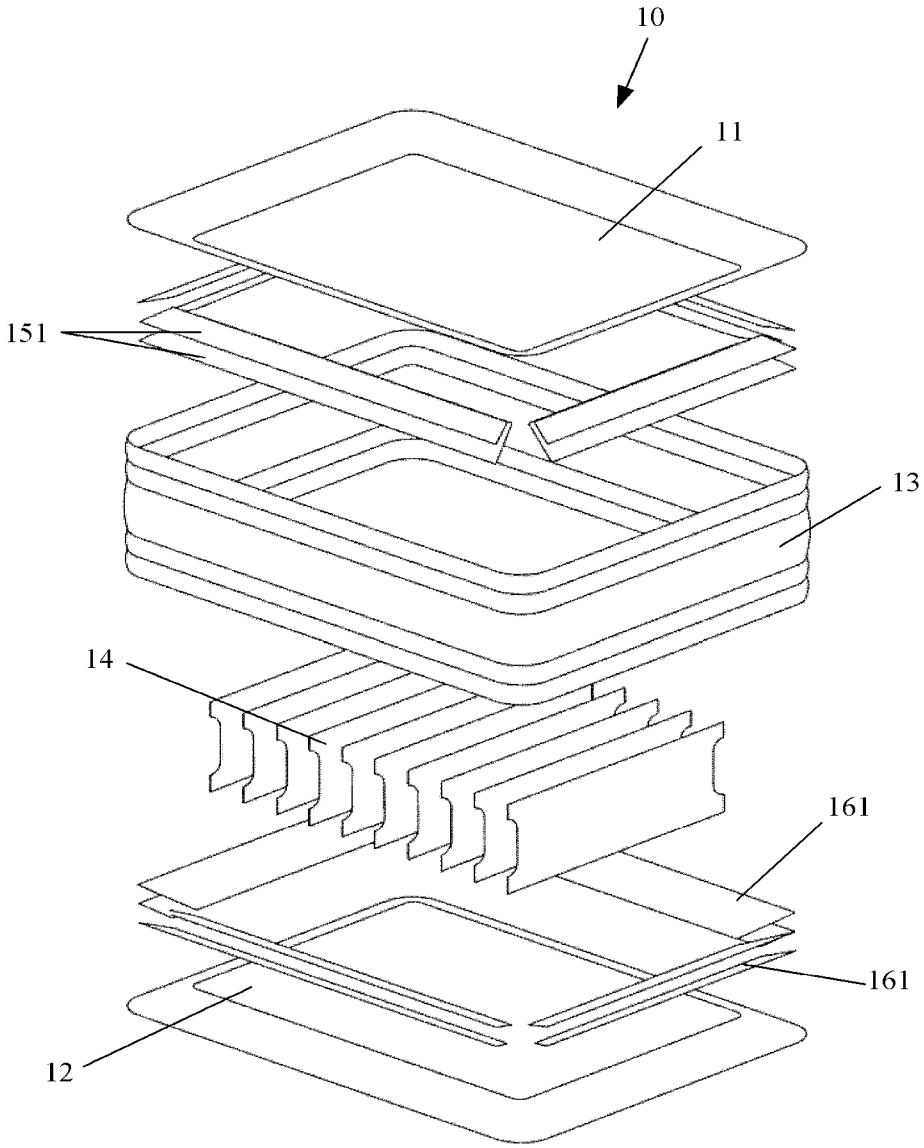


图 8

INTEX EX. 1003, Pg. 165
Intex Recreation v. Bestway Inflatables

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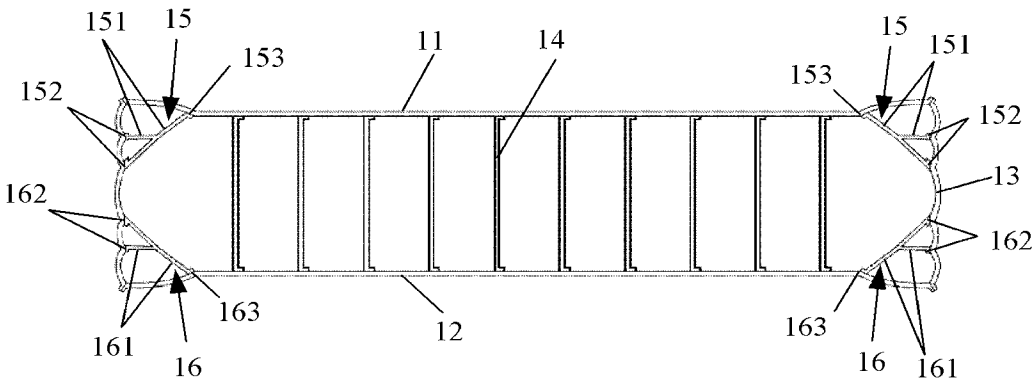


图 9

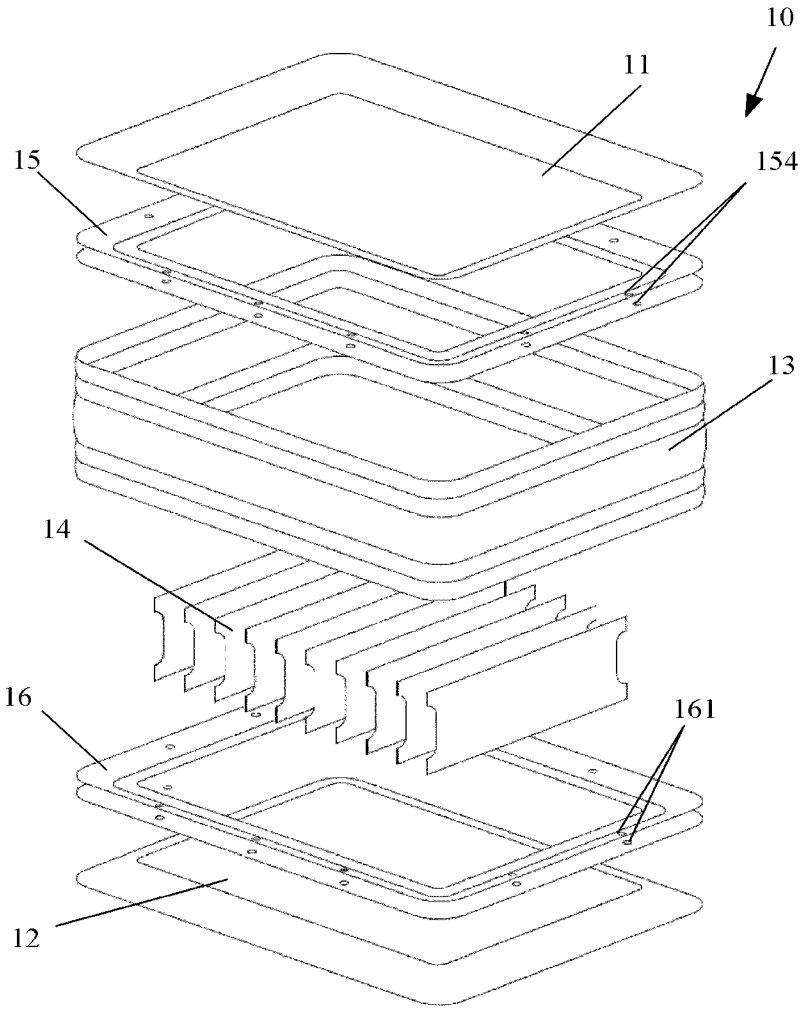


图 10

INTEX EX. 1003, Pg. 166
Intex Recreation v. Bestway Inflatables

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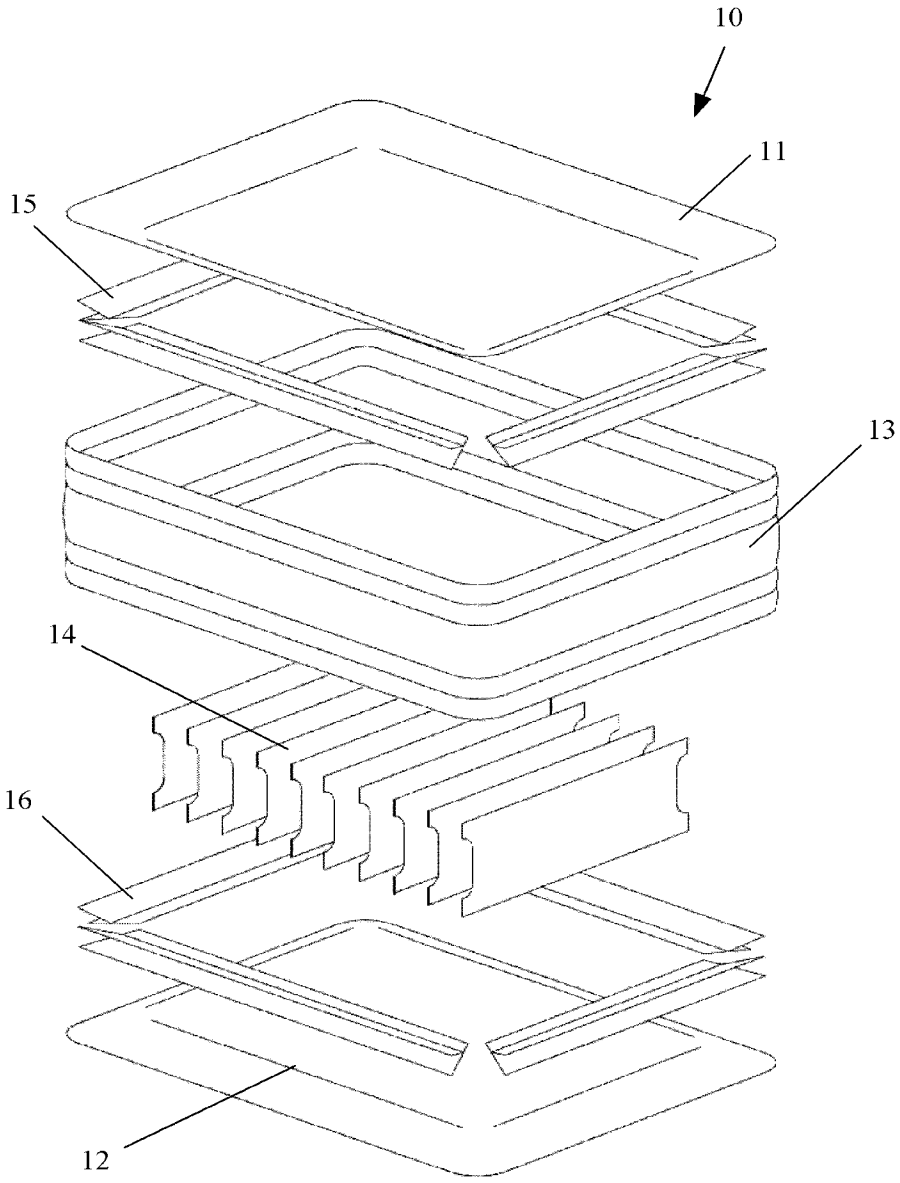


图 11

INTEX EX. 1003, Pg. 167
Intex Recreation v. Bestway Inflatables

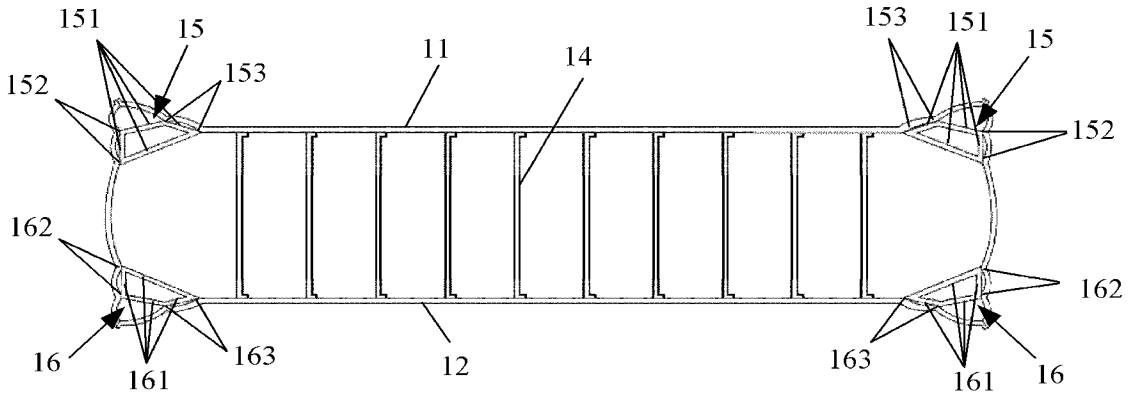


图 12

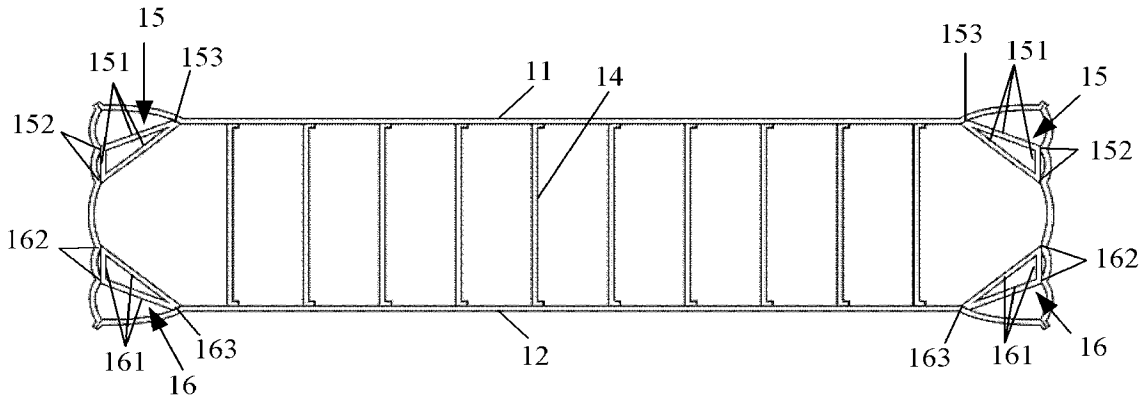


图 13

INTEX EX. 1003, Pg. 168
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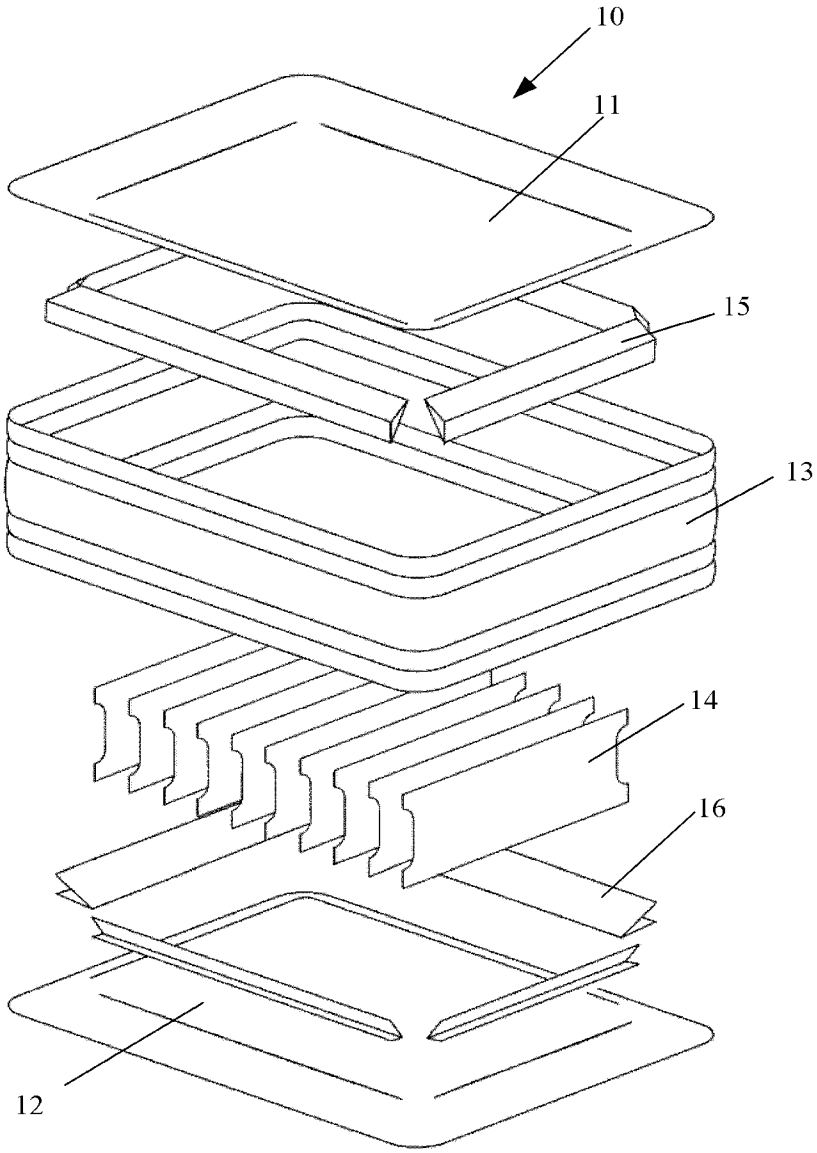


图 14

INTEX EX. 1003, Pg. 169
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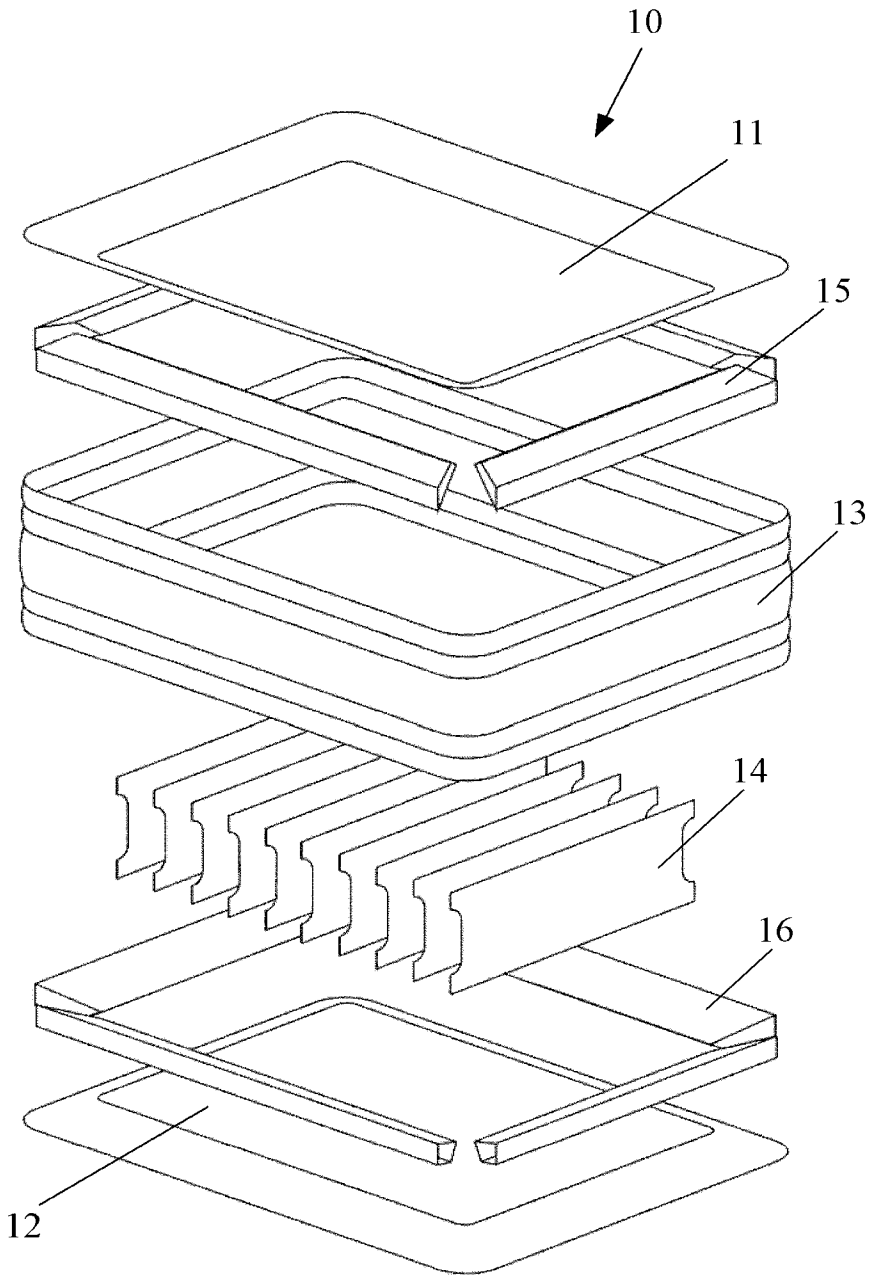


图 15

INTEX EX. 1003, Pg. 170
Intex Recreation v. Bestway Inflatables

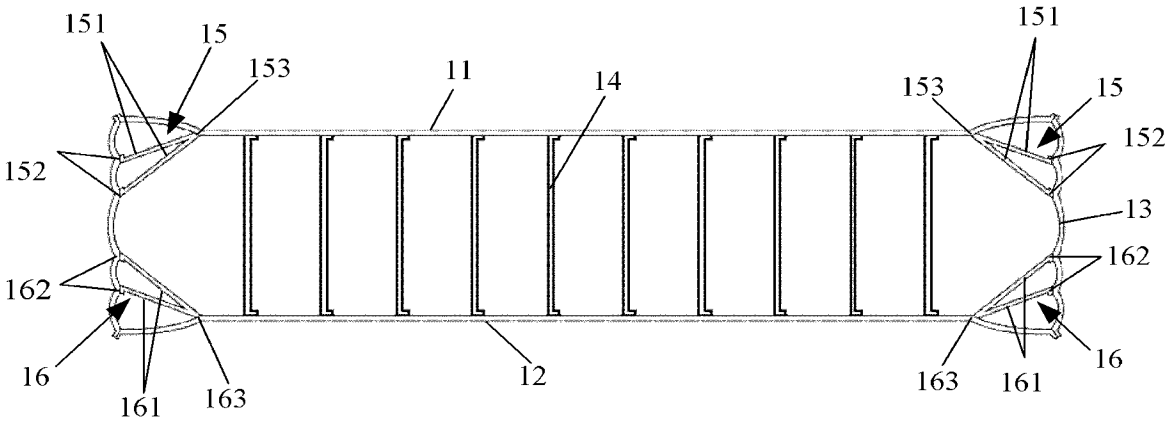

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图 16

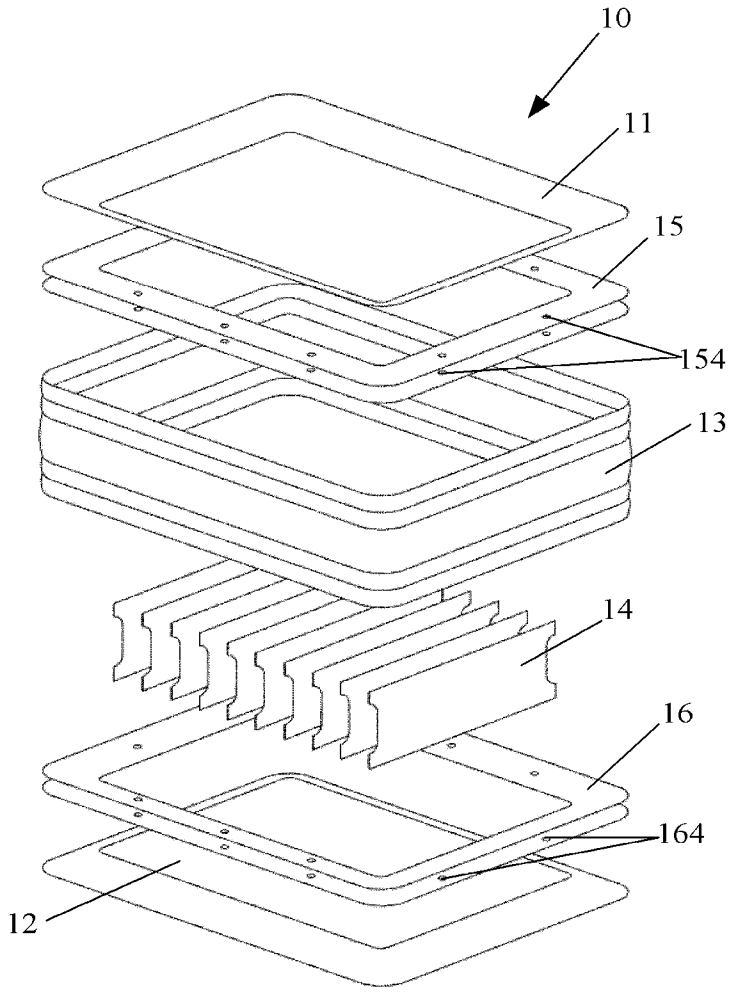

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图 17

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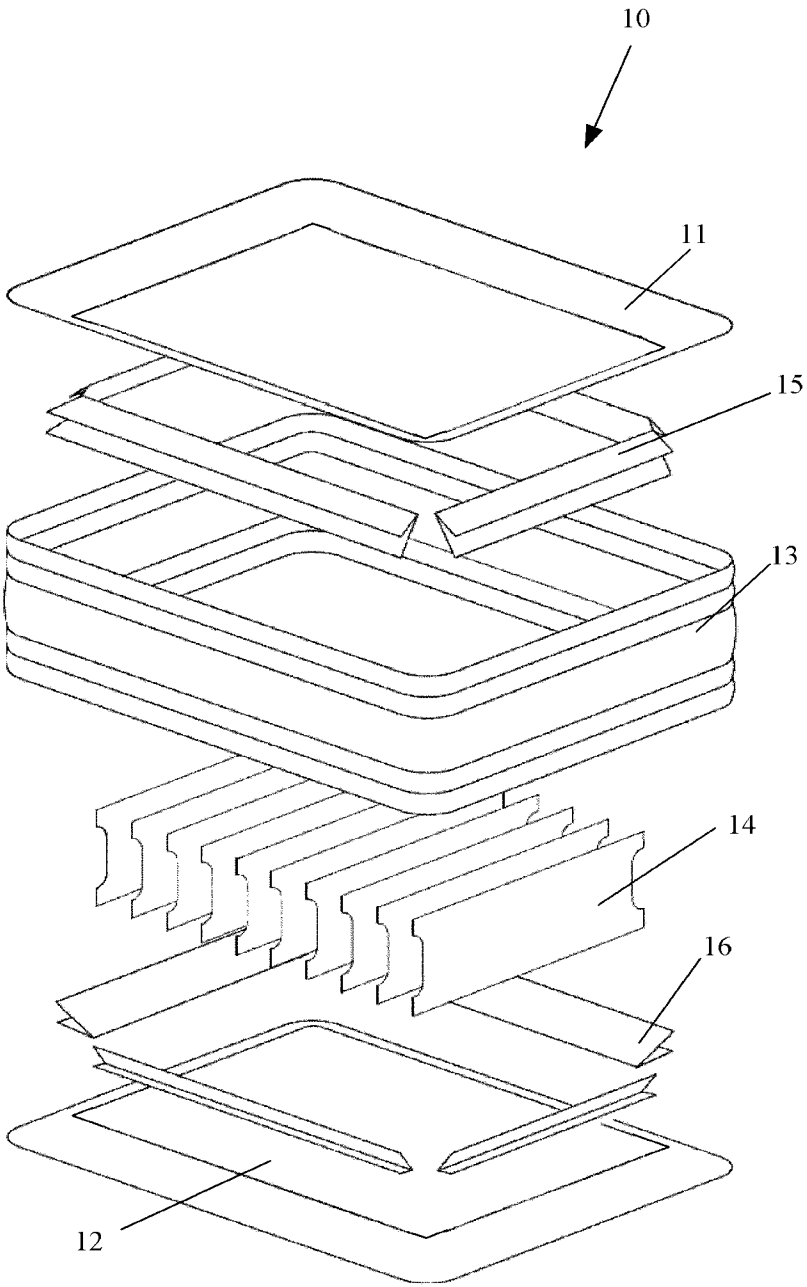


图 18

INTEX EX. 1003, Pg. 172
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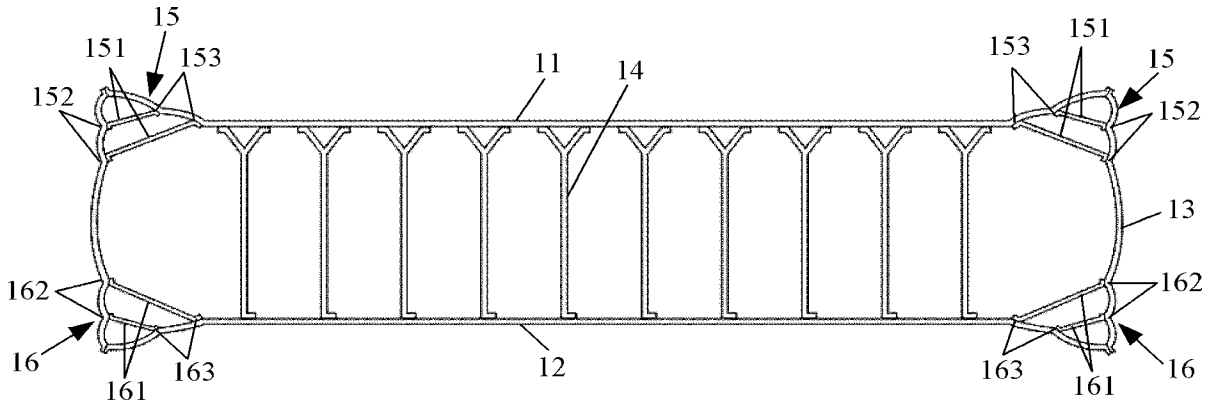


图 19

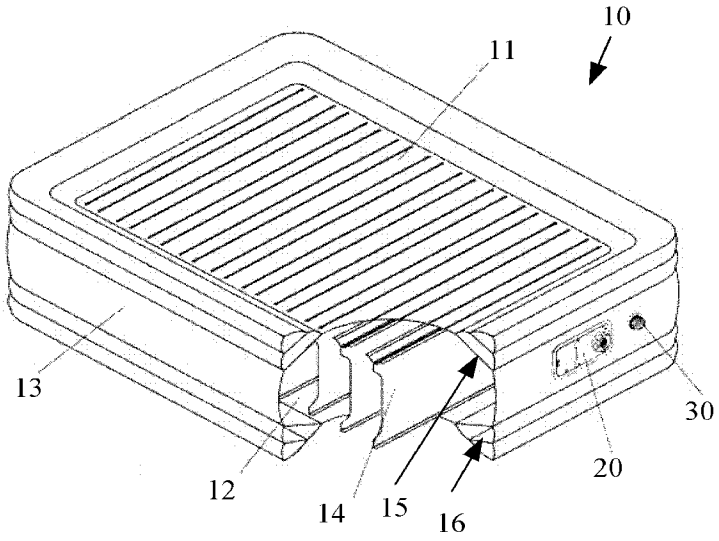


图 20

INTEX EX. 1003, Pg. 173
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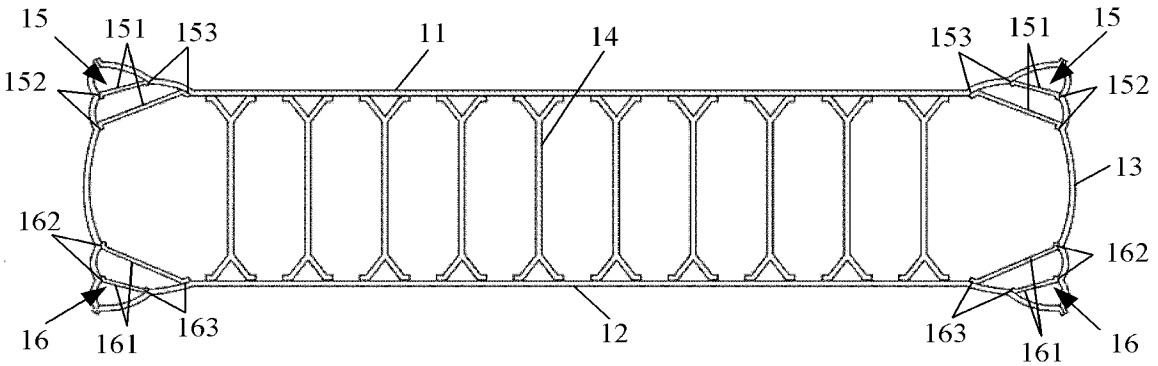


图 21

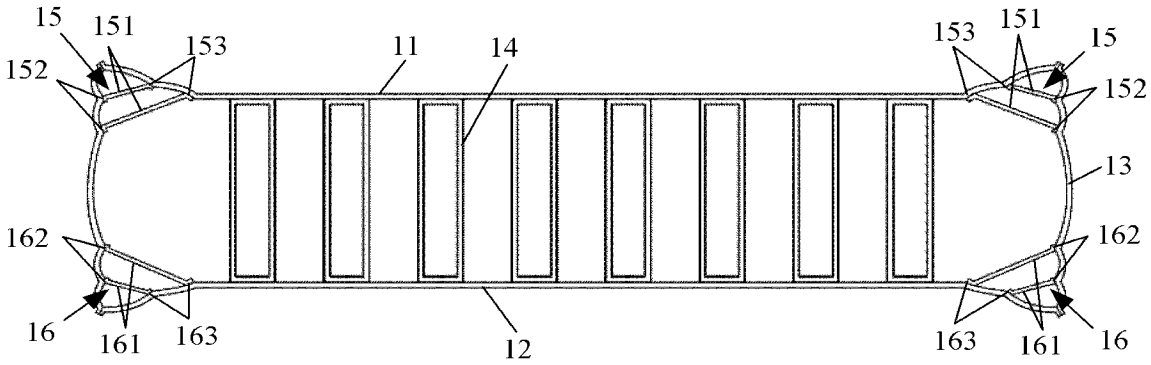


图 22

INTEX EX. 1003, Pg. 174
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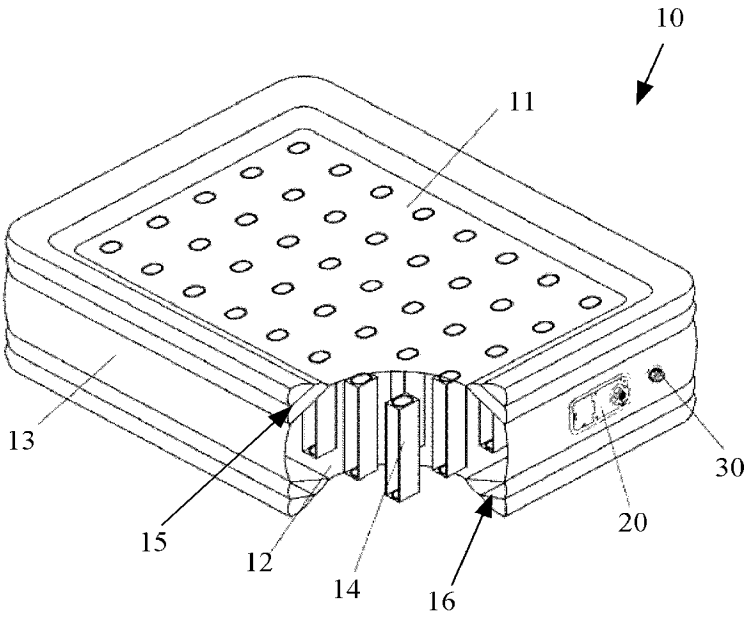

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图 23

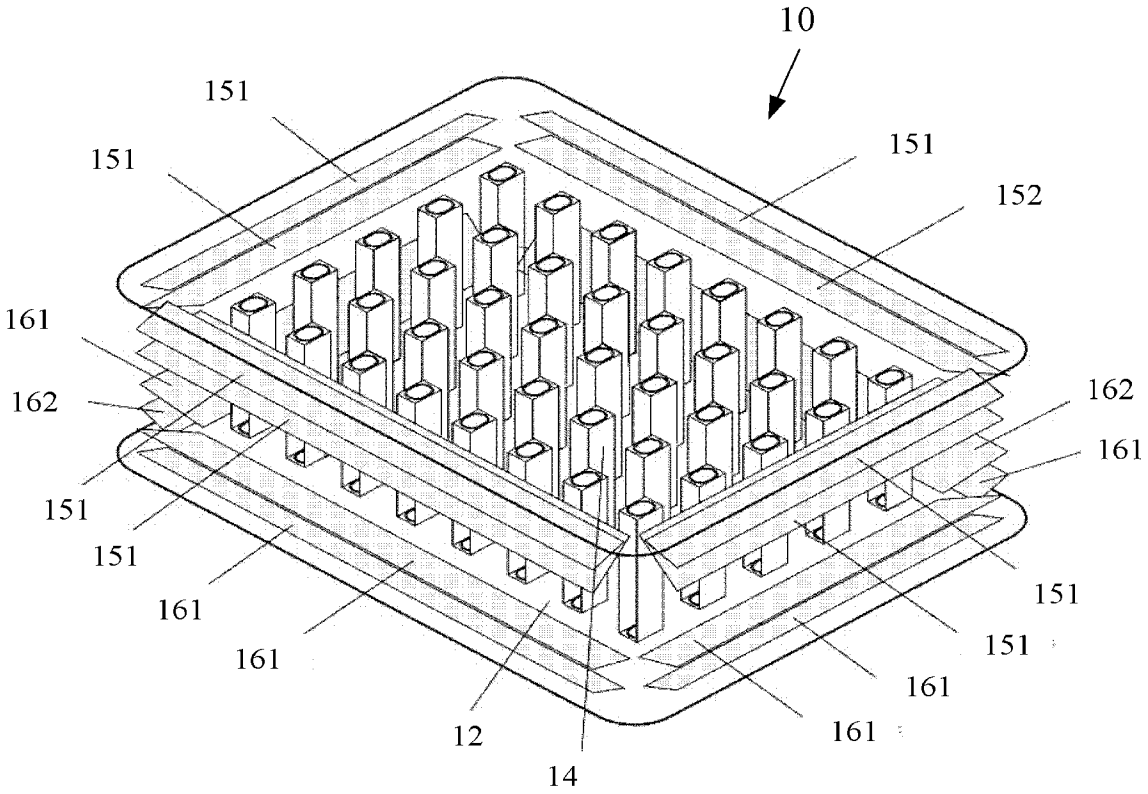

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图 24

中华人民共和国国家知识产权局
STATE INTELLECTUAL PROPERTY OFFICE
OF THE PEOPLE'S REPUBLIC OF CHINA

证　明

本证明之附件是向本局提交的下列专利申请文件副本。

申　　请　　号：201610020533.5

申　请　类　型：发明专利

发明 创造 名称：充气床

申　　请　　日：2016 年 01 月 13 日

申　　请　　人：上海荣威塑胶工业有限公司

发明人或设计人：刘峰

局长

申长雨

2016 年 11 月 08 日

2016100205335

157591 1CNCN

权 利 要 求 书

1、一种充气床，其特征在于，所述充气床包括：

顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

2、如权利要求 1 所述的充气床，其特征在于，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

3、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

4、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

5、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少两个第一 I 型拉带，每一所述第一 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一 I 型拉带间隔布置。

6、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少

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两个第二 I 型拉带，每一所述第二 I 型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二 I 型拉带间隔布置。

7、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 Y 型拉带，其中，所述第一 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

8、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

9、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

10、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

11、如权利要求 2 所述的充气床，其特征在于，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

12、如权利要求 2 所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

13、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

14、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉

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带相互间隔地排布于所述底片的上表面。

15、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

16、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

17、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

18、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

19、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

20、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

21、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

22、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

23、如权利要求 5 所述的充气床，其特征在于，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

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24、如权利要求 6 所述的充气床，其特征在于，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

25、如权利要求 7 所述的充气床，其特征在于，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

26、如权利要求 8 所述的充气床，其特征在于，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

27、如权利要求 9 所述的充气床，其特征在于，所述至少一个第一管型拉带整体为一个间断的环形结构。

28、如权利要求 10 所述的充气床，其特征在于，所述至少一个第二管型拉带整体为一个间断的环形结构。

29、如权利要求 11 所述的充气床，其特征在于，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

30、如权利要求 12 所述的充气床，其特征在于，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

31、如权利要求 1 所述的充气床，其特征在于，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

32、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

33、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

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34、如权利要求 33 所述的充气床，其特征在于，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

35、如权利要求 33 所述的充气床，其特征在于，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

36、如权利要求 2 所述的充气床，其特征在于，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

37、如权利要求 2 所述的充气床，其特征在于，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

38、如权利要求 2 所述的充气床，其特征在于，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

39、如权利要求 2 所述的充气床，其特征在于，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

40、如权利要求 1 所述的充气床，其特征在于，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

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说　　明　　书

充气床

技术领域

本发明涉及充气床或充气床垫领域，特别涉及一种充气床，其结构设置为可限制侧壁向外膨胀或变形。

背景技术

目前，充气床和充气床垫已经非常流行。充气床和充气床垫具有重量轻、便于携带和收藏等优点，因而被广泛应用于各种不同的场合。例如，在家庭充气床和充气床垫通常可以作为临时的床，供来访的客人使用。另外还非常适合在户外野营时使用。

在现有技术中，充气床和充气床垫一般由 PVC 胶布、PU 胶布等制成，且具有许多不同的结构，其中比较典型的机构是由顶片、底片，以及与顶片和底片相连接的侧壁构成可充气的气室。在气室内部设有连接顶片和底片且间隔排列的拉带，以构成具有一定高度且上表面大致平坦的可供人躺在上面的形状。

在现有的充气床和充气床垫中，有的具有较高的高度，充气床和充气床垫充气后的侧壁容易膨胀和变形，影响到充气床和充气床垫外观的美观，充气床和充气床垫的膨胀和变形也会造成气室内的气压衰减，使得充气床和充气床垫偏软降低了充气床和充气床垫的舒适性。

因此，为了解决上述侧壁膨胀的问题，有的充气床和充气床垫在顶片和底片之间设置了中层片，并将中层片与侧壁连接。这种结构的充气床和充气床垫虽然使侧壁膨胀和变形的问题略有改善，但仍然没有达到理想的效果。而且由于顶片与中层片之间，以及中层片与底片之间都需要设置连接拉带，使得充气床和充气床垫的制造过程更加复杂，即所需胶布也更多。

另外，在现有技术中，高度较高的充气床和充气床垫存在稳定性方面的缺陷。当用户躺在或者坐在靠近充气床和充气床垫的边缘处时，充气床和充气床垫容易发生侧翻。为了改善其稳定性，美国专利 US 6671910 在充气床底片的外围设置了充气的稳定管。然而，这种结构不仅会影响充气床的外观美观，也给用户带来了使用的不便。

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发明内容

本发明要解决的技术问题是为了克服现有技术中充气床和充气床垫的侧壁容易膨胀、变形以及充气床和充气床垫稳定性差，容易侧翻的缺陷，提供一种充气床。

本发明是通过下述技术方案来解决上述技术问题的：一种充气床，其特点在于，所述充气床包括：顶片和底片，所述底片与所述顶片上下间隔布置；

至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

较佳地，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

较佳地，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

较佳地，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

较佳地，所述第二拉带结构包括至少两个第一I型拉带，每一所述第一I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一I型拉带间隔布置。

较佳地，所述第三拉带结构包括至少两个第二I型拉带，每一所述第二I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二I型拉带间隔布置。

较佳地，所述第二拉带结构包括至少一个第一Y型拉带，其中，所述第一Y型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片

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连接。

较佳地，所述第三拉带结构包括至少一个第二 Y 型拉带，其中，所述第二 Y 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

较佳地，所述第二拉带结构包括至少一个第一 V 型拉带，其中，所述第一 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

较佳地，所述第三拉带结构包括至少一个第二 V 型拉带，其中，所述第二 V 型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

较佳地，所述至少两个第一 I 型拉带相互间隔地排布于所述顶片的下表面。

较佳地，所述至少两个第二 I 型拉带相互间隔地排布于所述底片的上表面。

较佳地，所述至少两个第一 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第二 I 型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二 Y 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少一个第一 V 型拉带的两个外侧边缘在所述侧壁的内表面

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上沿垂直方向间隔排布。

较佳地，所述至少一个第二 V 型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

较佳地，所述至少两个第一 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少两个第二 I 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 Y 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第一管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第二管型拉带整体为一个间断的环形结构。

较佳地，所述至少一个第一 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述至少一个第二 V 型拉带整体为一个闭合的环形结构或一个间断的环形结构。

较佳地，所述第一拉带结构为直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

较佳地，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

较佳地，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。

较佳地，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

较佳地，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所

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述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

较佳地，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

较佳地，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

较佳地，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

本发明的积极进步效果在于：

本发明充气床克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本发明充气床还可以防止用户在使用过程中滚落。

附图说明

本发明上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显，在附图中相同的附图标记始终表示相同的特征，其中：

图 1 为本发明充气床的立体图。

图 2 为本发明充气床的主视图。

图 3 为本发明充气床的右视图。

图 4 为本发明充气床的俯视图。

图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。

图 6 为本发明充气床的实施例一的局部解剖结构示意图。

图 7 为本发明充气床的实施例一的爆炸图一。

图 8 为本发明充气床的实施例一的爆炸图二。

图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。

图 10 为本发明充气床的实施例二的爆炸图一。

图 11 为本发明充气床的实施例二的爆炸图二。

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。

图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。

图 14 为本发明充气床的实施例三的爆炸图一。

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图 15 为本发明充气床的实施例三的爆炸图二。

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。

图 17 为本发明充气床的实施例四的爆炸图一。

图 18 为本发明充气床的实施例四的爆炸图二。

图 19 为图 4 中沿 A-A 线剖开的实施例五的剖视图。

图 20 为本发明充气床的实施例五的局部解剖结构示意图。

图 21 为图 4 中沿 A-A 线剖开的实施例六的剖视图。

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。

图 23 为本发明充气床的实施例七的局部解剖结构示意图。

图 24 为本发明充气床的实施例七的内部结构示意图。

具体实施方式

为让本发明的上述目的、特征和优点能更明显易懂，以下结合附图对本发明的具体实施方式作详细说明。

在下面的描述中阐述了很多具体细节以便于充分理解本发明，但是本发明还可以采用其它不同于在此描述的其它方式来实施，因此本发明不受下面公开的具体实施例的限制。

实施例一：

图 1 为本发明充气床的立体图。图 2 为本发明充气床的主视图。图 3 为本发明充气床的右视图。图 4 为本发明充气床的俯视图。图 5 为图 4 中沿 A-A 线剖开的实施例一的剖视图。图 6 为本发明充气床的实施例一的局部解剖结构示意图。图 7 为本发明充气床的实施例一的爆炸图。

如图 1 至图 7 所示，本发明的实施例一中公开了一种充气床 10，其包括顶片 11、底片 12、至少一侧壁 13、至少一第一拉带结构 14 及至少一支撑结构。其中，底片 12 与顶片 11 上下间隔布置，侧壁 13 的上边缘与顶片 11 的外边缘连接，侧壁 13 的下边缘与底片 12 的外边缘连接，顶片 11、底片 12 和侧壁 13 之间形成一个气室。同时将第一拉带结构 14 设置在所述气室内，且第一拉带结构 14 的上下两端分别与顶片 11 和底片 12 连接。其作用在于，当所述气室充气后，通过第一拉带结构 14 来限制顶片 11 和底片 12 分别向上和向下膨胀。特别地，顶片 11 和底片 12 均可以设置为双层结构，所述双层结构可以通过至少两个两片相互焊接以形成不同的图案。或者进一步地，在所述双层结构中还

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夹设有海绵的结构。

此处的所述支撑结构设置在所述气室内，所述支撑结构沿至少一侧壁 13 的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的侧壁 13 连接，所述支撑结构中至少一个内侧边缘与相邻的顶片 11 或底片 12 连接。

优选地，所述支撑结构包括第二拉带结构 15 和第三拉带结构 16。其中，第二拉带结构 15 中至少两个外侧边缘与相邻的侧壁 13 连接，第二拉带结构中至少一个内侧边缘与相邻的顶片 11 连接。第二拉带结构 15 设置为当所述气室充气后限制顶片 11 和侧壁 13 向上和侧向膨胀。

同时，第三拉带结构 16 中至少两个外侧边缘与相邻的侧壁 13 连接，第三拉带结构 16 中至少一个内侧边缘与相邻的底片 12 连接。第三拉带结构 16 设置为当所述气室充气后分别限制底片 12 和侧壁 13 向下和侧向膨胀。

在本实施例中，第二拉带结构 15 包括至少两个第一 I 型拉带 151，每一第一 I 型拉带 151 的一个外侧边缘 152 与相邻的侧壁 13 连接，另一个内侧边缘 153 与相邻的顶片 11 连接，且至少两个第一 I 型拉带 151 间隔布置。第三拉带结构 16 包括至少两个第二 I 型拉带 161，每一第二 I 型拉带 161 的一个外侧边缘 162 与相邻的侧壁 13 连接，另一个内侧边缘 163 与相邻的底片 12 连接，且至少两个第二 I 型拉带 151 间隔布置。本实施例中第一 I 型拉带 151 和第二 I 型拉带 161 均以两个为例，但其数量并不受本实施例限制，其可以采用多于两个的数量，均属于本发明的保护范围内。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。例如本实施例中第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而使第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，使第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

进一步地，至少两个第一 I 型拉带 151 相互间隔地排布于顶片 11 的下表面，且至少两个第二 I 型拉带 161 相互间隔地排布于底片 12 的上表面。至少两个第一 I 型拉带 151 在侧壁 13 的内表面上沿垂直方向间隔排布。至少两个第二 I 型拉带 161 在侧壁 13 的内表面上沿垂直方向间隔排布。

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此处，至少两个第一 I 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少两个第二 I 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，在至少两个第一 I 型拉带 151 上设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少两个第二 I 型拉带 161 设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 7 和图 8 所示）。

本发明中的第一拉带结构 14 可以采用直拉带、圆孔拉带、Y 型拉带或 X 型拉带其中一种拉带或多种拉带。同时，第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 均可以采用热塑性塑胶布制成，且第一拉带结构 14、第二拉带结构 15 及第三拉带结构 16 中的一个或多个至少部分地包括网布、夹网布或者线体。

其结构形式可以采用多种方式。例如，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

再例如，所述网布、或者所述线体至少部分两侧表面与 U 型胶布片条连接为一体，所述网布和所述线体夹设于所述 U 型胶布条中间。这些连接结构都可以有效地制成本发明充气床所需的拉带，这里仅为举例，但不局限于本实施例中的方案，其他可实现拉带形式的结构均在本发明的保护范围内。

在上述拉带的结构基础上，为了保证各个部件之间的牢固连接，第一拉带结构 14 通过高频焊接的方式连接在顶片 11 和底片 12 之间。同理，第二拉带结构 15 也通过高频焊接的方式连接在顶片 11 和侧壁 13 之间。第三拉带结构 16 通过高频焊接的方式连接在底片 12 和侧壁 13 之间。

通过上述结构形成的本发明充气床，其顶片 11 位于第二拉带结构 15 的上边缘内侧部分的高度低于顶片 11 位于第二拉带结构 15 的上边缘外侧部分的高度。底片 12 位于第三拉带结构 16 的下边缘内侧部分的高度低于底片 12 位于第三拉带结构 16 的下边缘外侧部分的高度。

此外，在充气床 10 上还包括内置气泵 20，将内置气泵 20 设置在侧壁 13 上，且位于第二拉带结构 15 的下边缘和第三拉带结构 16 的上边缘之间，用以供所述气室充气。同时，在充气床 10 上还设置有气阀 30，将气阀 30 设置在侧壁 13 上，用以供充气床 10 的充气或放气。

实施例二：

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图 9 为图 4 中沿 A-A 线剖开的实施例二的剖视图。图 10 为本发明充气床的实施例二的爆炸图一。图 11 为本发明充气床的实施例二的爆炸图二。

如图 9 至图 11 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 Y 型拉带 151，其中第一 Y 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，另一个内侧边缘 153 与顶片 11 连接。同理，第三拉带结构 16 包括至少一个第二 Y 型拉带 161，其中第二 Y 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，另一个内侧边缘 163 与底片 12 连接。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

进一步地，至少一个第一 Y 型拉带 151 的两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二 Y 型拉带 161 的两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一 Y 型拉带 151 整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二 Y 型拉带 161 整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一 Y 型拉带 151 上还设有气孔 154，使所述气室通过气孔 154 形成空气流通。至少一个第二 Y 型拉带 161 上还设有气孔 164，使所述气室通过气孔 164 形成空气流通（如图 10 和图 11 所示）。

实施例三：

图 12 为图 4 中沿 A-A 线剖开的实施例三的剖视图一。图 13 为图 4 中沿 A-A 线剖开的实施例三的剖视图二。图 14 为本发明充气床的实施例三的爆炸图一。图 15 为本发明充气床的实施例三的爆炸图二。

如图 12 至图 15 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一管型拉带 151，其中第一管型拉带

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151 上具有至少两个外侧边缘 152 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二管型拉带 161，第二管型拉带 161 上具有至少两个外侧边缘 162 分别与相邻的侧壁 13 连接，且至少另一个内侧边缘 163 与底片 12 连接。此处的第一管型拉带 151 和第二管型拉带 161 可以采用多种管型结构，例如呈三角形的管型结构，呈四边形的管型结构（如图 13 和图 14 所示）。

进一步地，至少一个第一管型拉带 151 与相邻的侧壁 13 连接的至少两个外侧边缘 152 在侧壁 13 的内表面上沿垂直方向间隔排布。至少一个第二管型拉带 161 与相邻的侧壁 13 连接的至少两个外侧边缘 162 在侧壁 13 的内表面上沿垂直方向间隔排布。

此处，至少一个第一管型拉带 151 整体为一个间断的环形结构。至少一个第二管型拉带 161 整体为一个间断的环形结构（如图 13 和图 14 所示）。

第二拉带结构 15 和第三拉带结构 16 优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构 15 和第三拉带结构 16 将对应的侧壁 13 分隔成五段式，从而将第二拉带结构 15 设置为当所述气室充气后，限制顶片 11 和侧壁 13 向上和侧向膨胀，将第三拉带结构 16 设置为当所述气室充气后，分别限制底片 12 和侧壁 13 向下和侧向膨胀。

当然，第二拉带结构 15 和第三拉带结构 16 也可以将对应的侧壁 13 分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

实施例四：

图 16 为图 4 中沿 A-A 线剖开的实施例四的剖视图。图 17 为本发明充气床的实施例四的爆炸图一。图 18 为本发明充气床的实施例四的爆炸图二。

如图 16 至图 18 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第二拉带结构 15 包括至少一个第一 V 型拉带 151，其中第一 V 型拉带 151 的两个外侧边缘 152 分别与相邻的侧壁 13 连接，且另一内侧边缘 153 与顶片 11 连接。第三拉带结构 16 包括至少一个第二 V 型拉带 161，其中第二 V 型拉带 161 的两个外侧边缘 162 分别与相邻的侧壁 13 连接，且另一内侧边缘 163 与顶片 11 连接。

进一步地，至少一个第一 V 型拉带 151 的两个外侧边缘 152 在侧壁 13 的

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内表面上沿垂直方向间隔排布。至少一个第二V型拉带161的两个外侧边缘162在侧壁13的内表面上沿垂直方向间隔排布。

此处，至少一个第一V型拉带151整体为一个闭合的环形结构或一个间断的环形结构。至少一个第二V型拉带161整体为一个闭合的环形结构或一个间断的环形结构。同时，至少一个第一V型拉带151上设有气孔154，使所述气室通过气孔154形成空气流通。至少一个第二V型拉带161上设有气孔164，使所述气室通过气孔164形成空气流通。

第二拉带结构15和第三拉带结构16优选地设置为在垂直方向间隔布置。本实施例中的第二拉带结构15和第三拉带结构16将对应的侧壁13分隔成五段式，从而将第二拉带结构15设置为当所述气室充气后，限制顶片11和侧壁13向上和侧向膨胀，将第三拉带结构16设置为当所述气室充气后，分别限制底片12和侧壁13向下和侧向膨胀。

当然，第二拉带结构15和第三拉带结构16也可以将对应的侧壁13分割成四段式、六段式等多段式结构，本实施例仅为举例，并不局限于此，其他大于等于四段式的结构都属于本发明的保护范围内。

实施例五：

图19为图4中沿A-A线剖开的实施例五的剖视图。图20为本发明充气床的实施例五的局部解剖结构示意图。

如图19和图20所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构14采用Y型拉带，且第一拉带结构14的上下两端分别与顶片11和底片12连接。第一拉带结构14中若干拉带之间相互间隔排布。第一拉带结构14中每一个拉带的上端呈分叉型，连接支撑顶片11，下端为直拉带型，向下连接底片12。当所述气室充气后，这种结构可以更有效地限制顶片11和底片12分别向上和向下膨胀。

实施例六：

图21为图4中沿A-A线剖开的实施例六的剖视图。

如图21所示，本实施例的结构与实施例五基本相同，其不同之处在于：第一拉带结构14采用上下两端都呈X型的拉带，并且第一拉带结构14的上下两端分别与顶片11和底片12连接。第一拉带结构14中若干拉带之间相互间隔

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排布。第一拉带结构 14 中每一个拉带的上端呈分叉型，向上连接顶片 11，下端同样也呈分叉型，向下连接底片 12。当所述气室充气后，这种结构可以更有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

实施例七：

图 22 为图 4 中沿 A-A 线剖开的实施例七的剖视图。图 23 为本发明充气床的实施例七的局部解剖结构示意图。图 24 为本发明充气床的实施例七的内部结构示意图。

如图 22 至图 24 所示，本实施例的结构与实施例一基本相同，其不同之处在于：第一拉带结构 14 中的若干拉带均采用圆孔拉带，且第一拉带结构 14 中每一个拉带的上下两端分别与顶片 11 和底片 12 连接。第一拉带结构 14 中若干拉带之间相互间隔排布。当所述气室充气后，其可以有效地限制顶片 11 和底片 12 分别向上和向下膨胀。

根据上述结构描述，上述各实施例之间的结构变化可以任意组合，并不受上述具体实施例的限制，即有关第二拉带结构 15 包含拉带的数量和第三拉带结构 16 包含拉带的数量不受限制，根据实际需求进行调整。

同理，第二拉带结构 15 中若干拉带之间的连接方式，以及第三拉条结构 16 中若干拉带之间的连接方式也不受上述实施例的局限，只要将侧壁 13 分隔成至少五段式（或大于等于四段）的形式即可，例如可以通过改变第二拉带结构 15 和第三拉条结构 16 中包含拉带的数量及连接方式将侧壁 13 分隔成六段、七段等多段形式。

当然，有关第一拉带结构 14 的结构形式可以在各种情况下通用，同样起到支撑顶片 11 和底片 12 的作用，有效限制顶片 11 和底片 12 分别向上和向下膨胀。

综上所述，本发明充气床通过采用各种类型的拉带结构，可以限制充气床的侧壁向外膨胀或变形。本发明充气床的结构有效地克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本发明充气床还可以防止用户在使用过程中滚落。

虽然以上描述了本发明的具体实施方式，但是本领域的技术人员应当理解，这些仅是举例说明，本发明的保护范围是由所附权利要求书限定的。本领域的

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技术人员在不背离本发明的原理和实质的前提下，可以对这些实施方式作出多种变更或修改，但这些变更和修改均落入本发明的保护范围。

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说 明 书 附 图

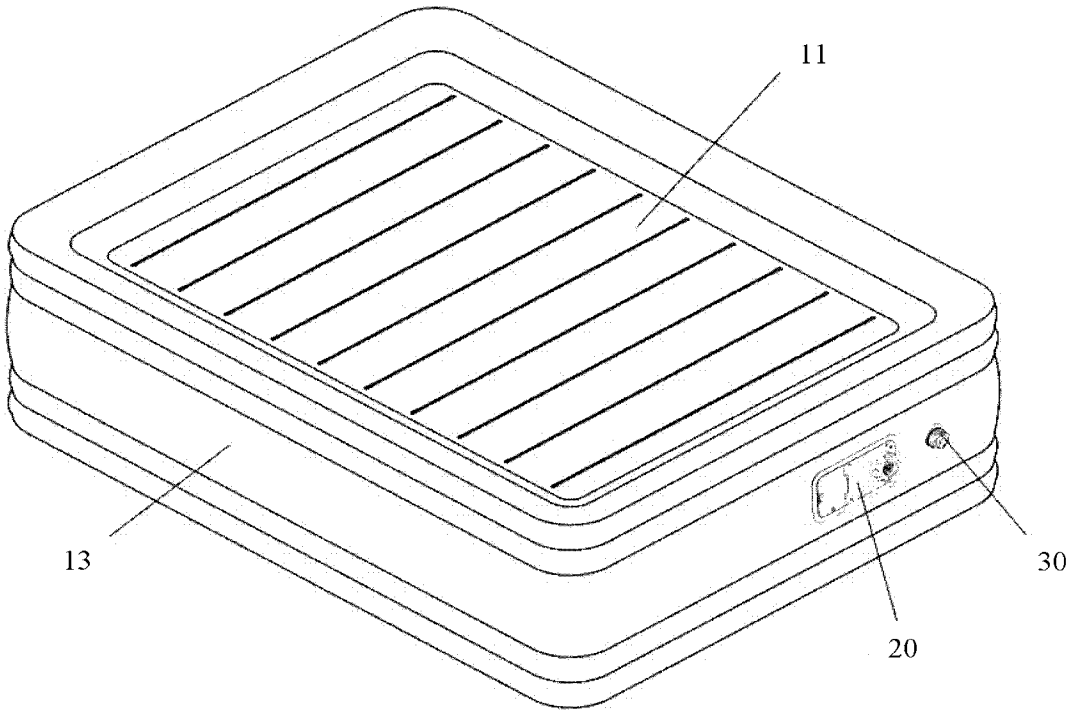


图 1

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Intex Recreation v. Bestway Inflatables

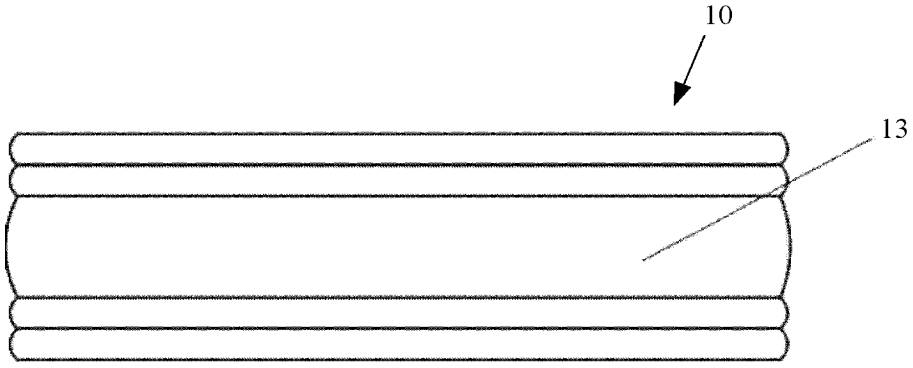


图 2

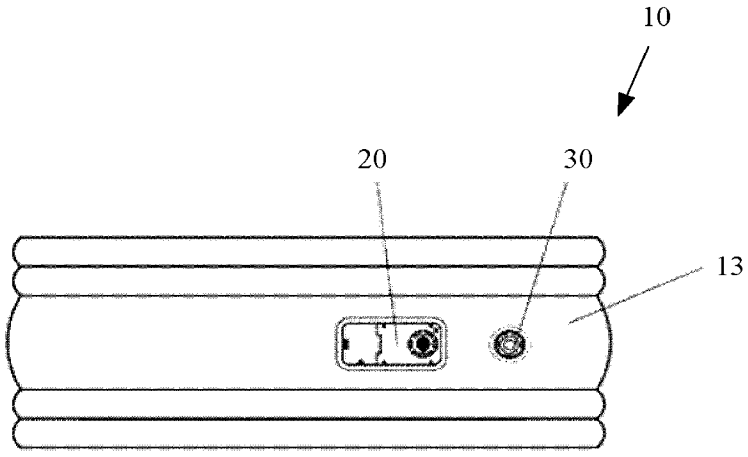


图 3

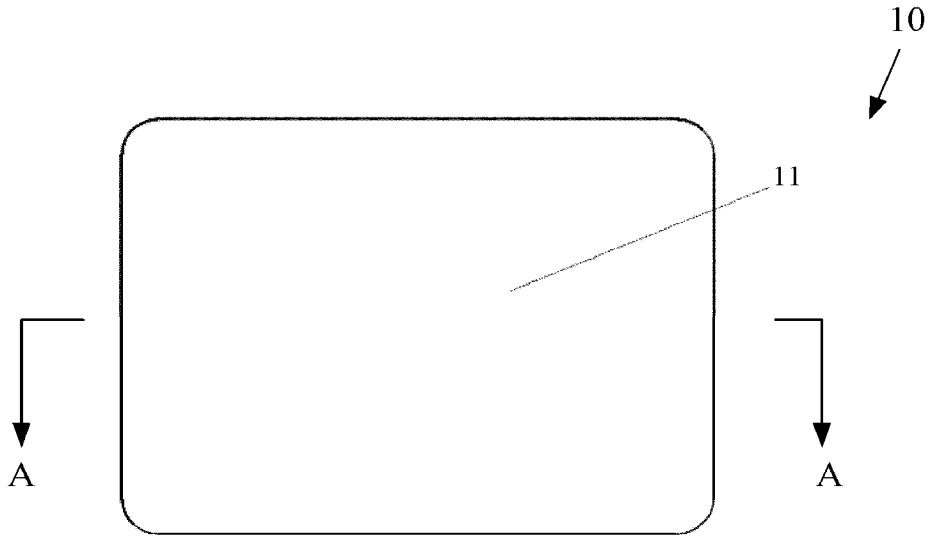


图 4

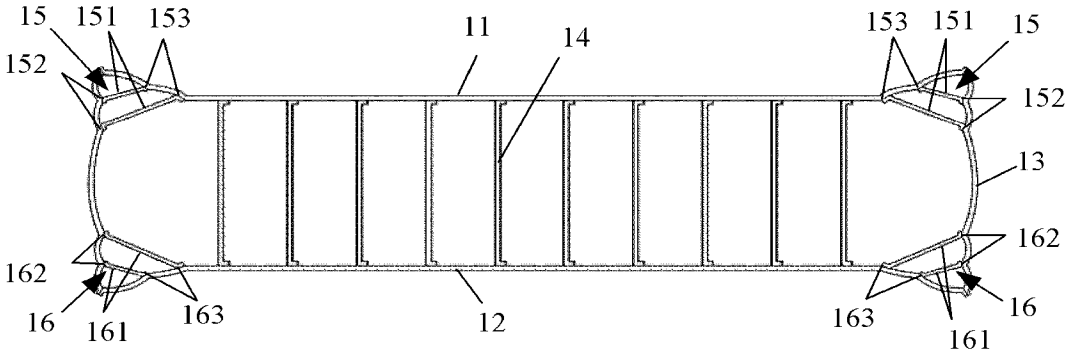


图 5

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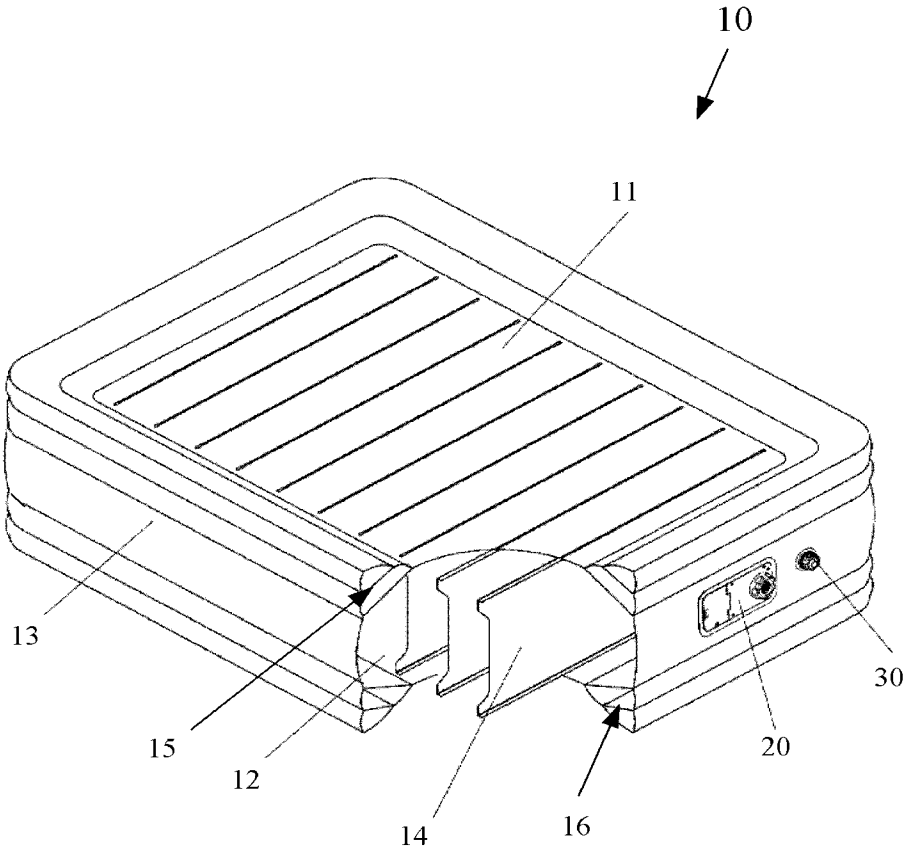


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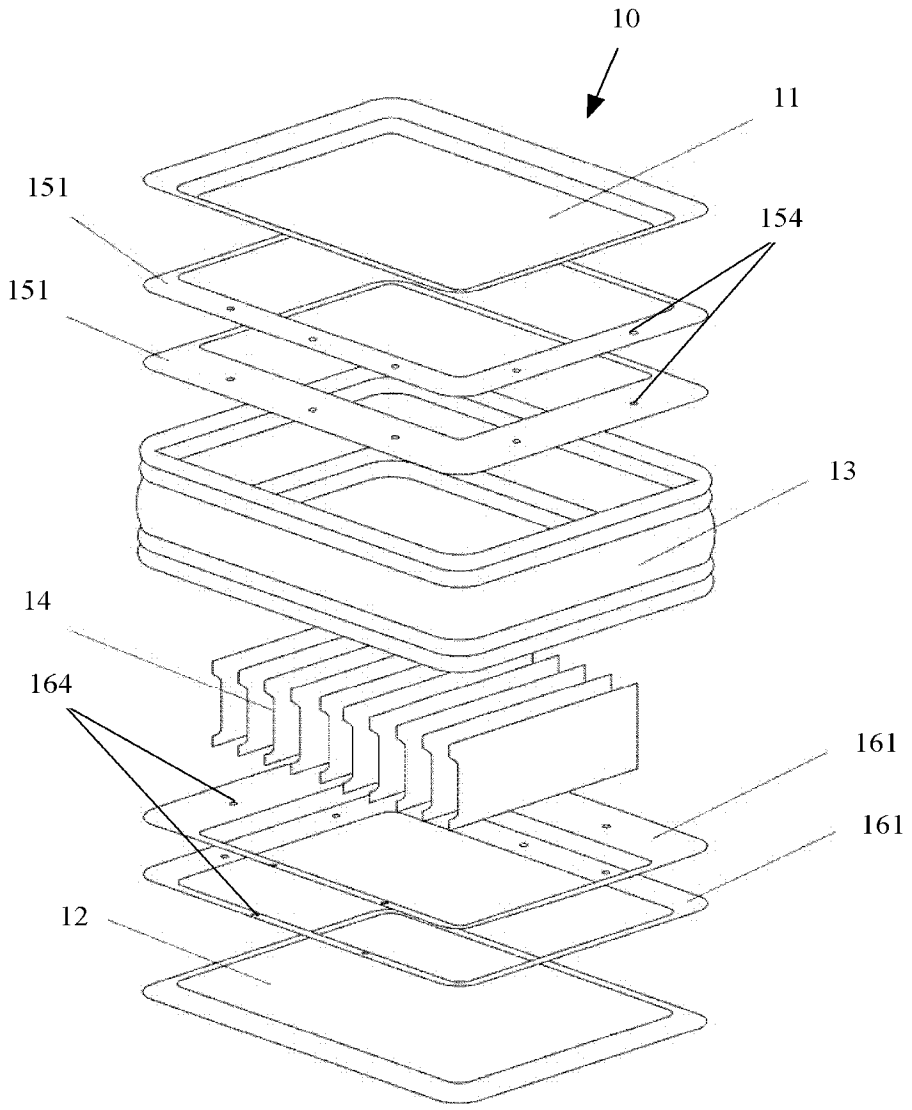


图 7

2016100205335

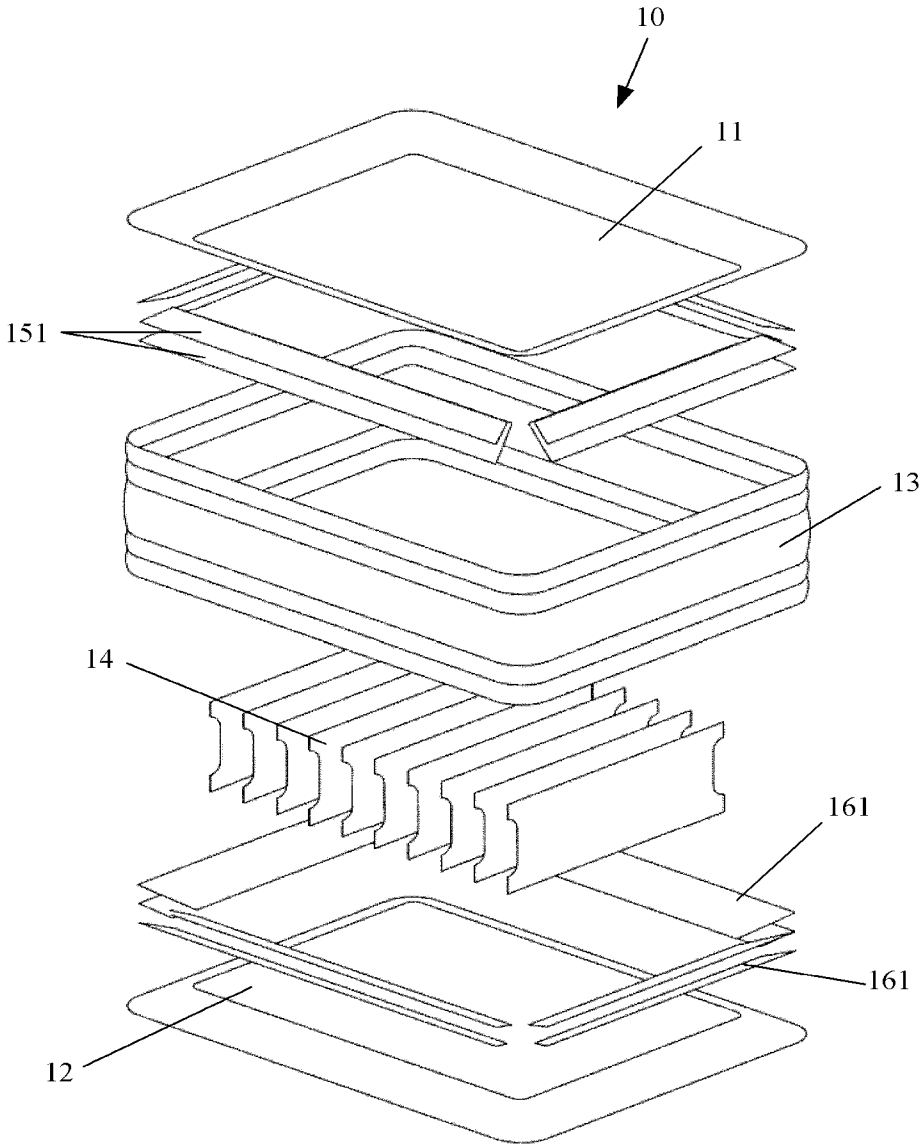


图 8

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Intex Recreation v. Bestway Inflatables

2016100205335

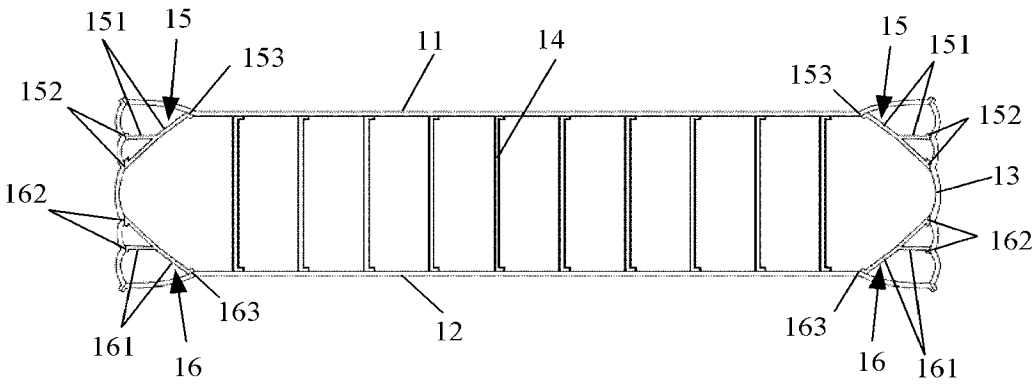


图 9

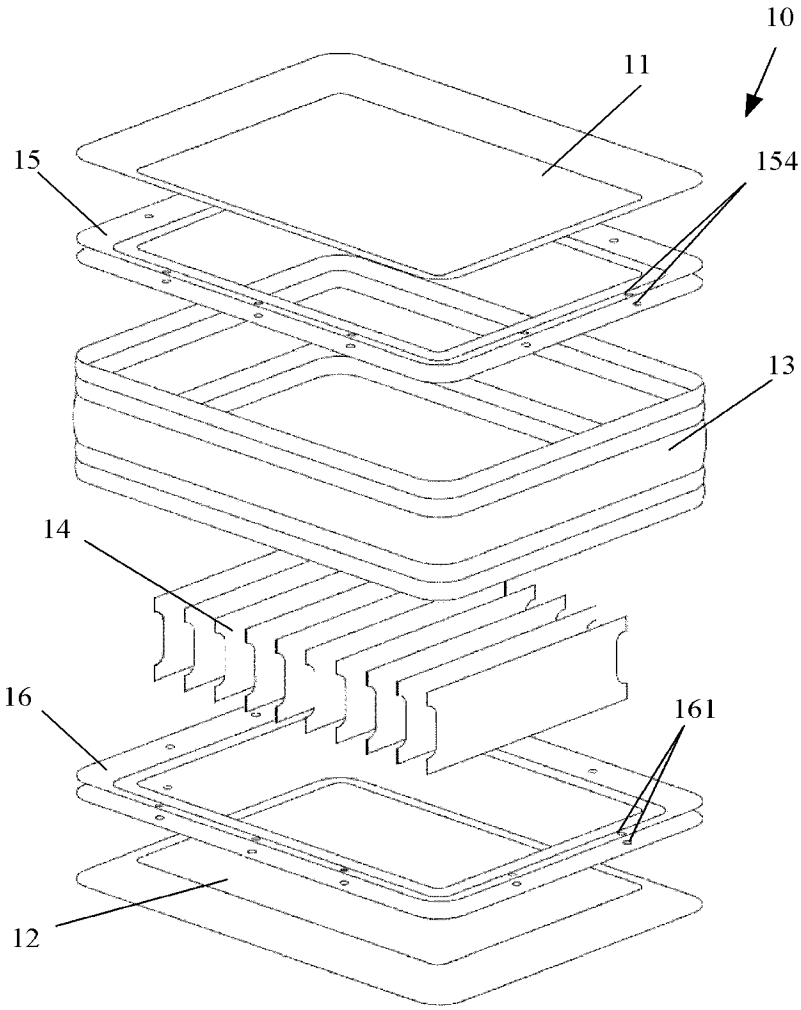


图 10

INTEX EX. 1003, Pg. 201
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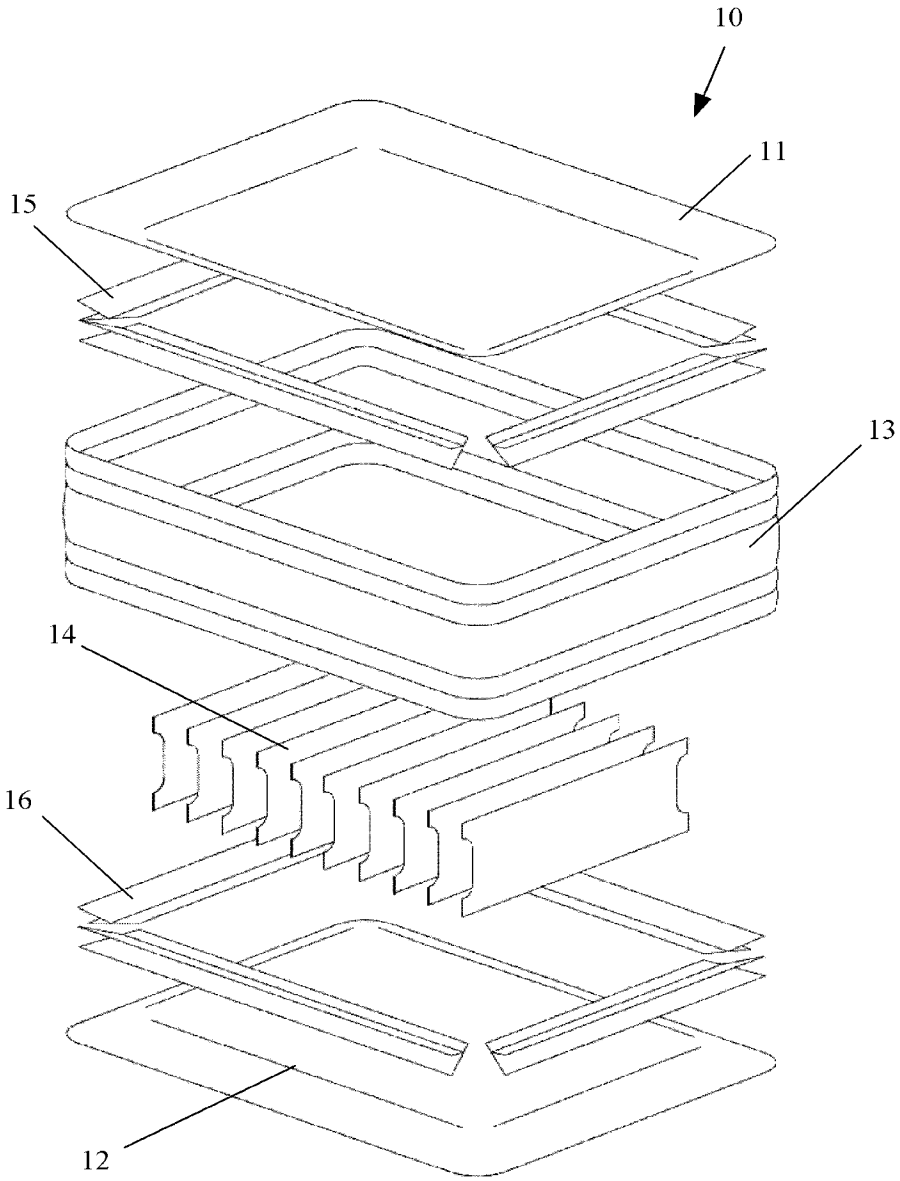


图 11

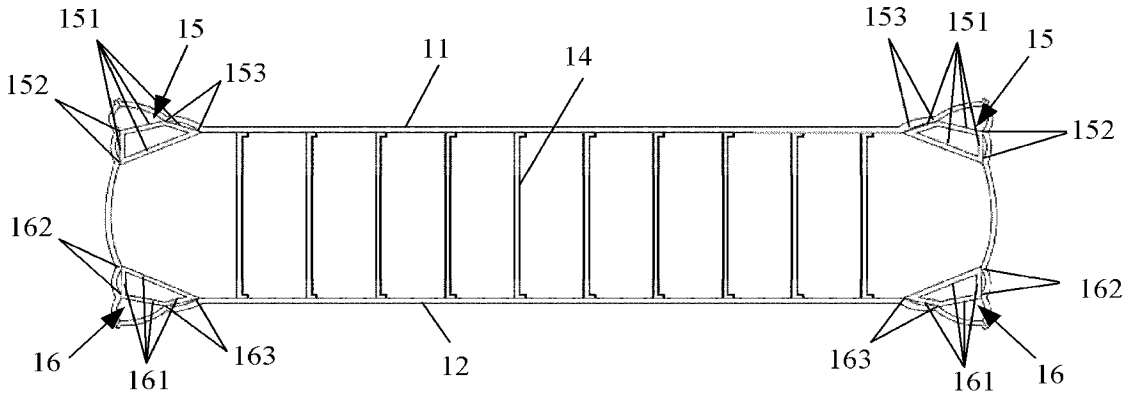


图 12

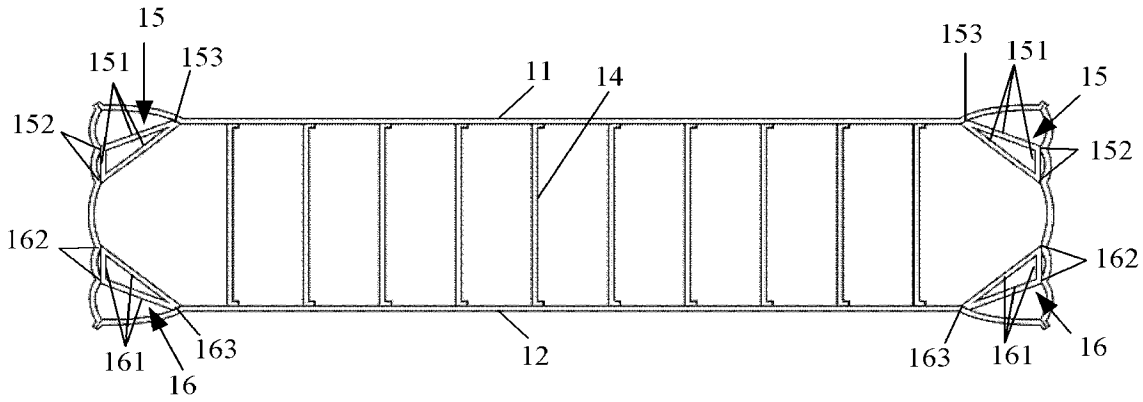


图 13

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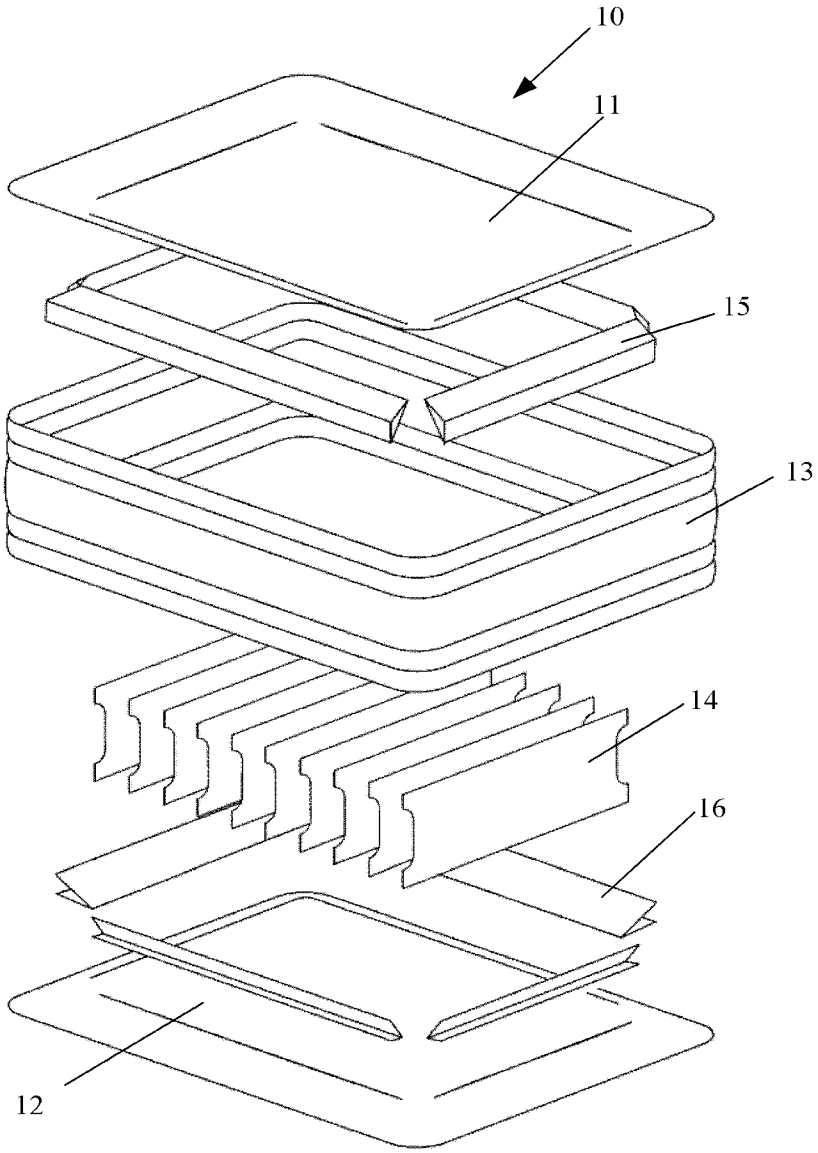


图 14

INTEX EX. 1003, Pg. 204
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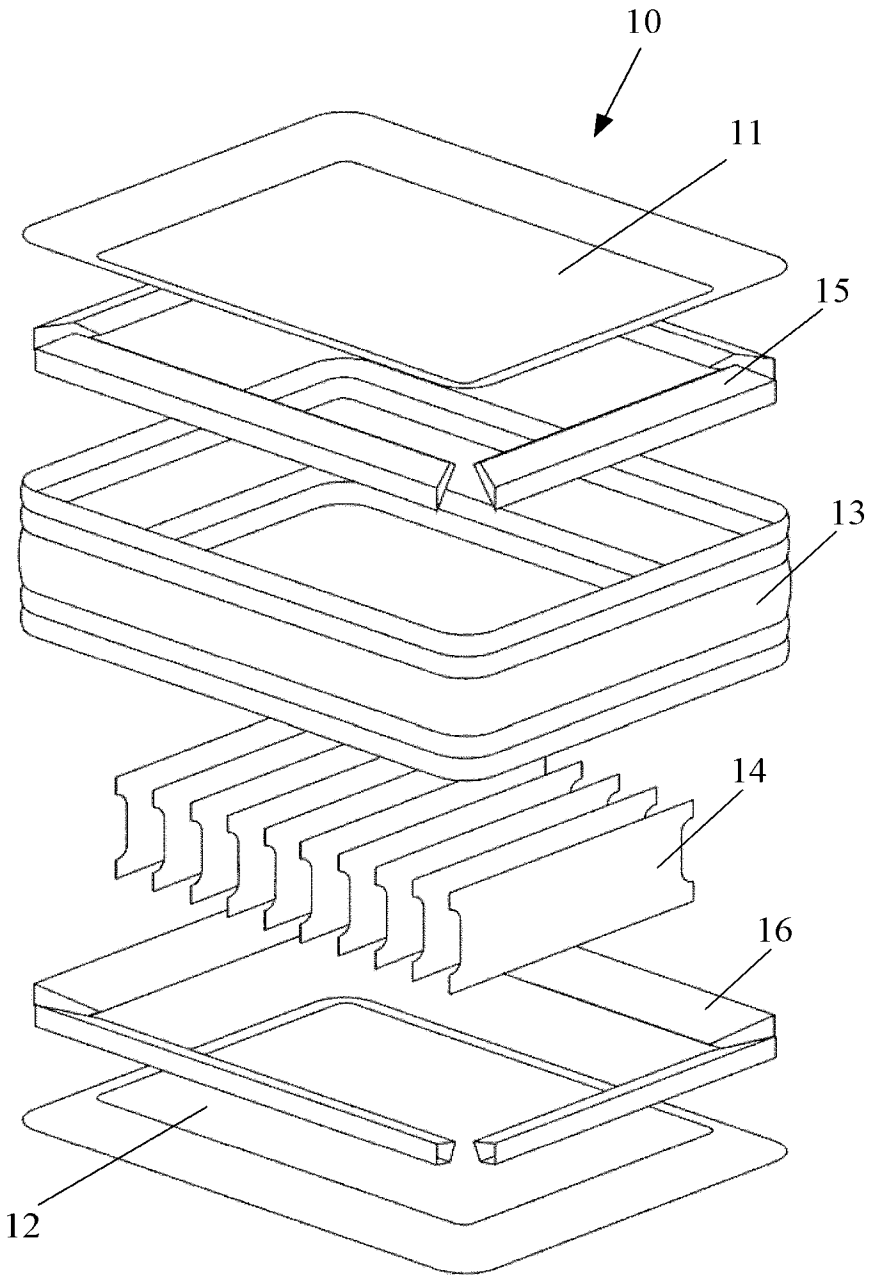


图 15

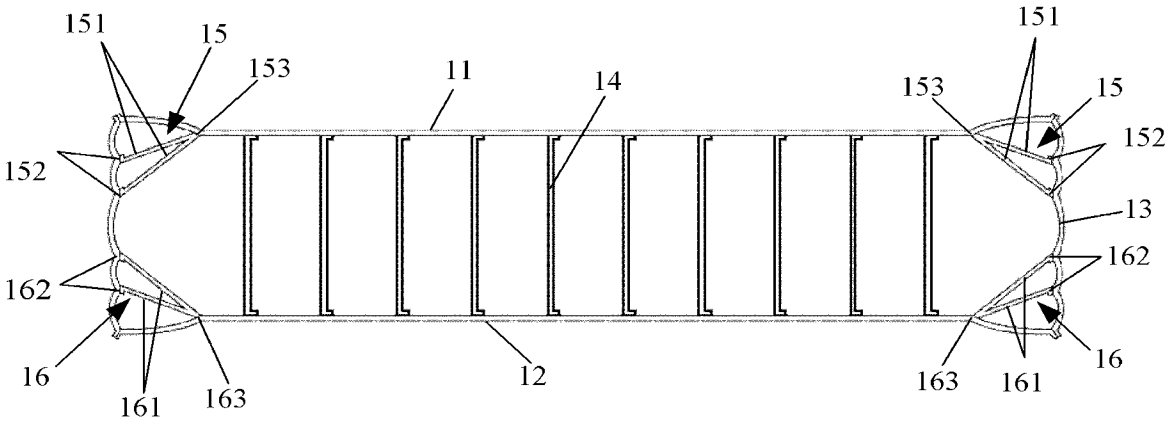


图 16

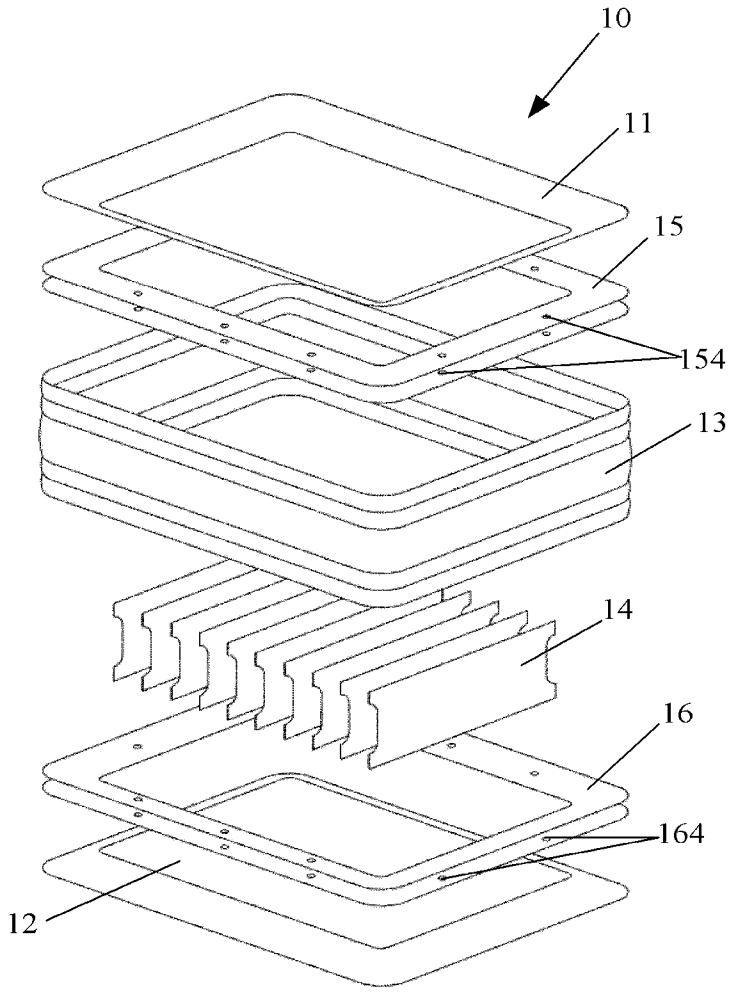


图 17

INTEX EX. 1003, Pg. 206
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2016100205335

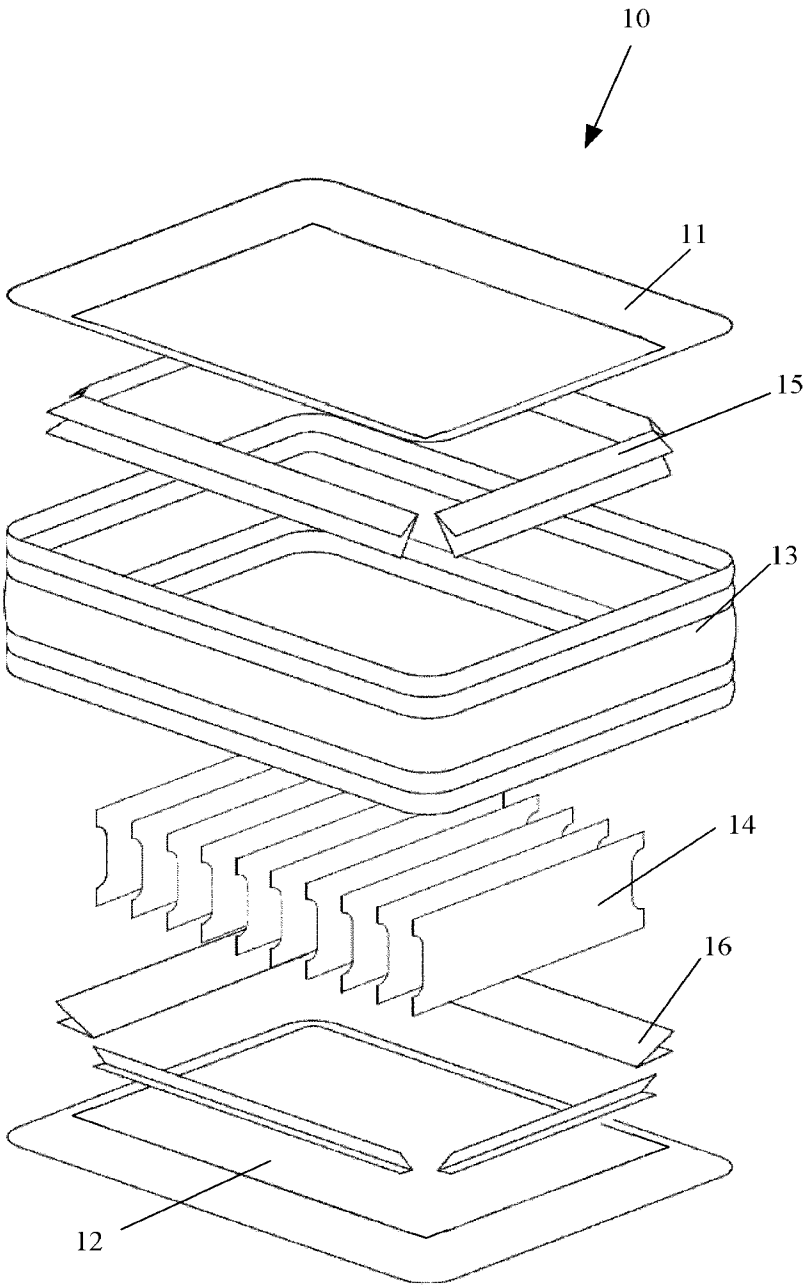


图 18

INTEX EX. 1003, Pg. 207
Intex Recreation v. Bestway Inflatables

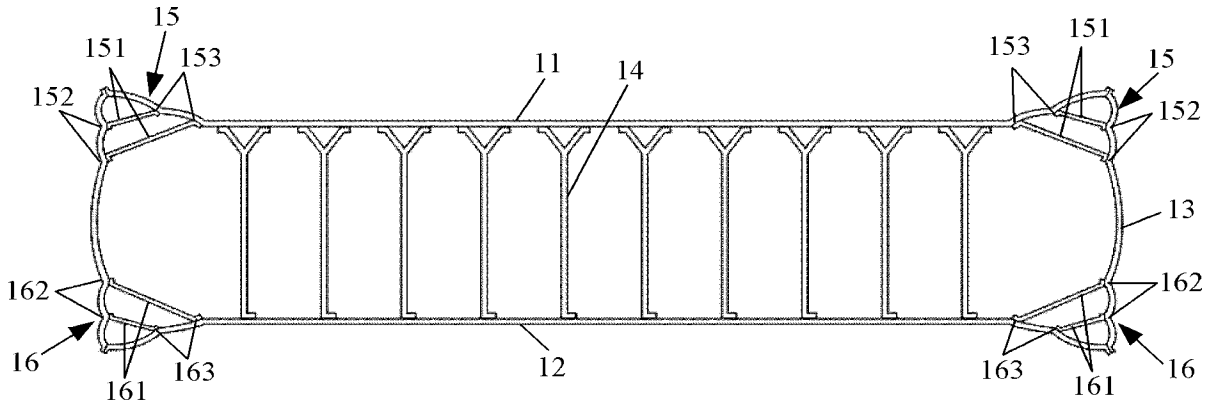


图 19

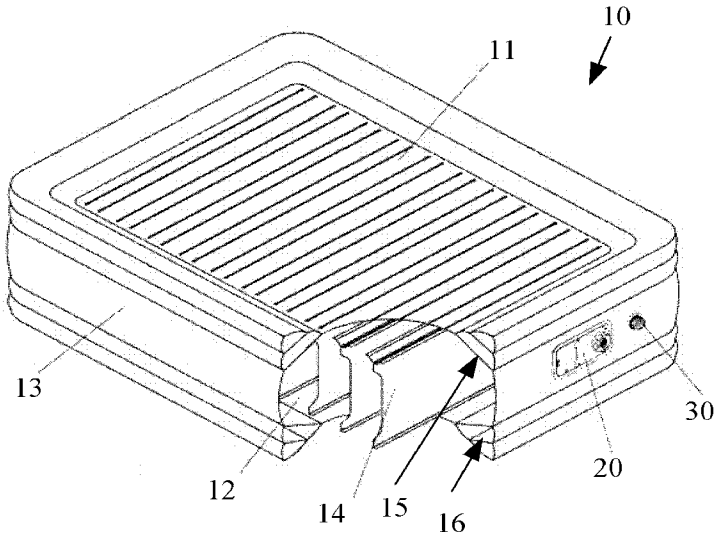


图 20

INTEX EX. 1003, Pg. 208
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2016100205335

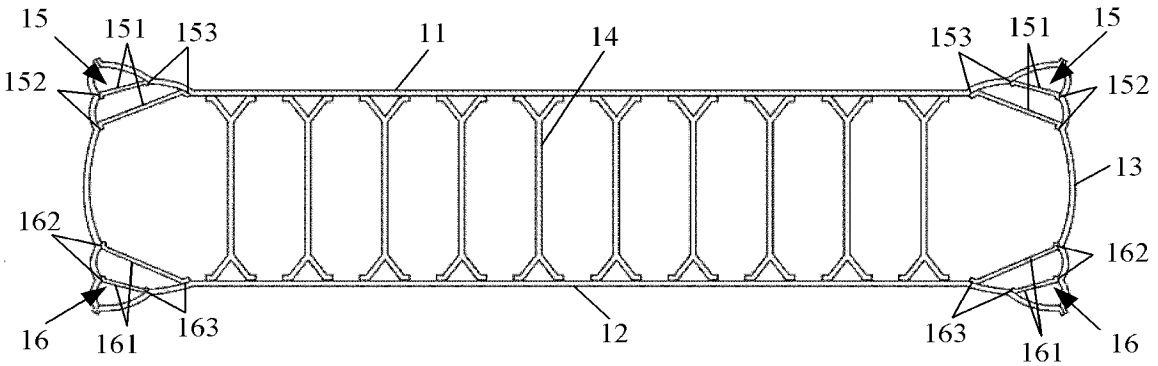


图 21

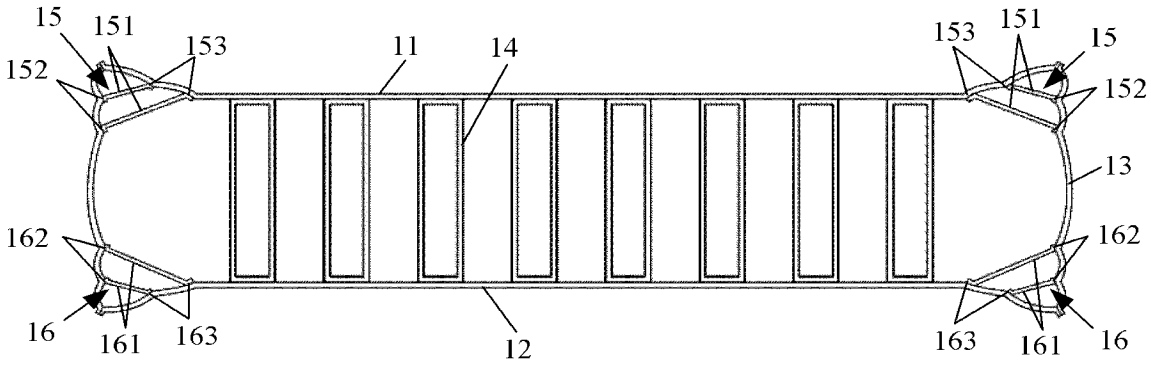


图 22

INTEX EX. 1003, Pg. 209
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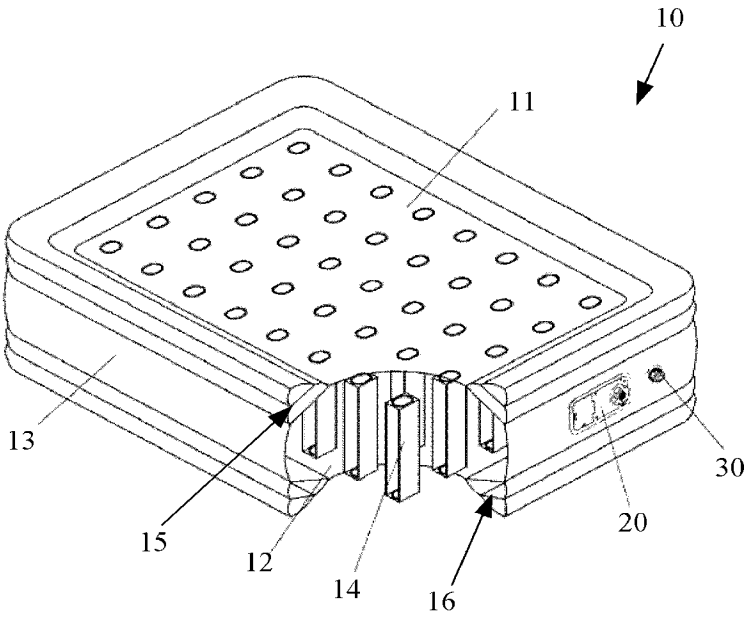


图 23

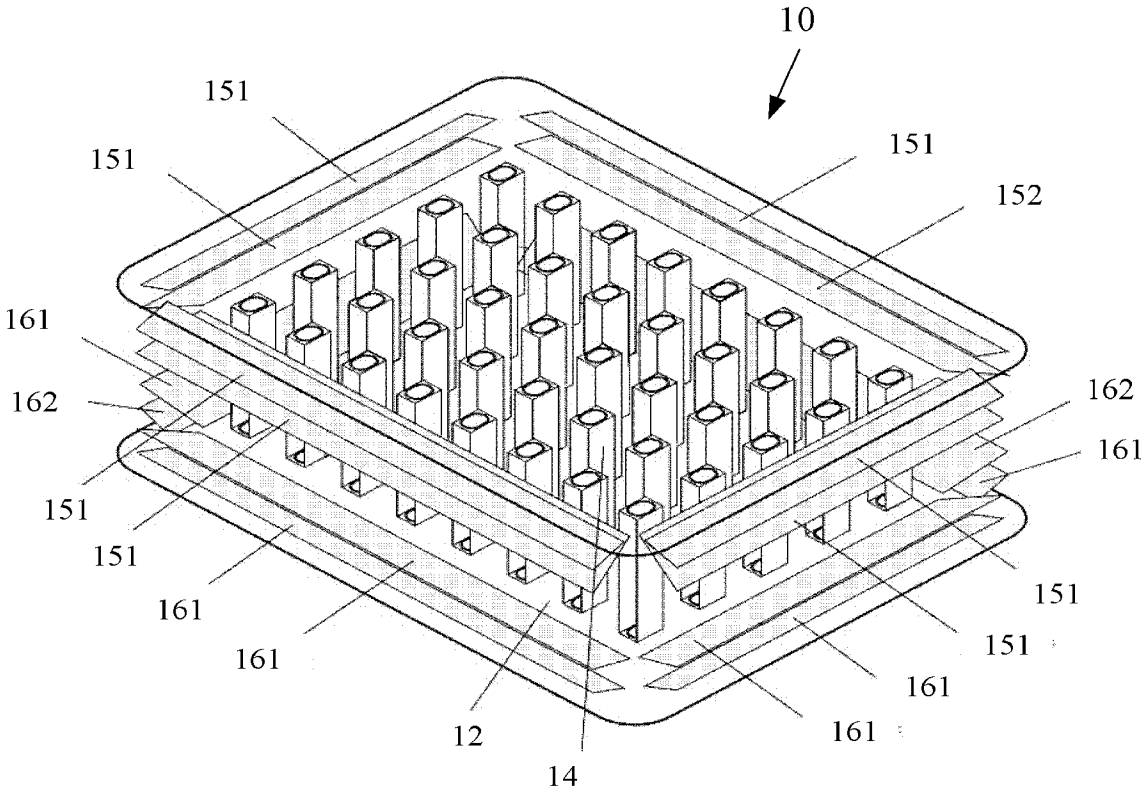


图 24

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(Not for submission under 37 CFR 1.99)

Application Number	15280513
Filing Date	2016-09-29
First Named Inventor	Feng LIU
Art Unit	3673
Examiner Name	SANTOS
Attorney Docket Number	09548.1303US01

U.S.PATENTS Remove

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	2	7337485		2008-03-04	Andrew T. METZGER	
	3	7165283		2007-01-23	BOSO et al.	
	4	6996867		2006-02-14	BOSO et al.	
	5	6971134		2005-12-06	Hsin-Tsai WU	
	6	6754926		2004-06-29	Cheng-Chung WANG	
	7	6701559		2004-03-09	BOSO et al.	
	8	6671910		2004-01-06	HSU et al.	

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	Application Number	15280513
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	First Named Inventor	Feng LIU
	Art Unit	3673
	Examiner Name	SANTOS
	Attorney Docket Number	09548.1303US01

	9	4541135		1985-09-17	Victor KARPOV	
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Filing Date	2016-09-29
First Named Inventor	Feng LIU
Art Unit	3673
Examiner Name	SANTOS
Attorney Docket Number	09548.1303US01

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Signature	/rongcyang/	Date (YYYY-MM-DD)	2016-12-21
Name/Print	Rong Yang	Registration Number	71641

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International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	52835
Filer:	Rong Yang/Margaux Denham
Filer Authorized By:	Rong Yang
Attorney Docket Number:	09548.1303US01
Receipt Date:	21-DEC-2016
Filing Date:	29-SEP-2016
Time Stamp:	17:22:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/280,513	09/29/2016	Feng LIU	09548.1303US01

CONFIRMATION NO. 1875

52835
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
MINNEAPOLIS, MN 55402-1683

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In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

INTEX EX. 1003, Pg. 218
Intex Recreation v. Bestway Inflatables

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	15/280,513
Filing Date	September 29, 2016
First Named Inventor	Feng LIU
Title	INFLATABLE BED
Art Unit	3673
Examiner Name	Robert G. Santos
Attorney Docket Number	100680-0427

SIGNATURE of Applicant or Patent Practitioner

Signature	/Brent A. Hawkins/	Date (Optional)	January 24, 2018
Name	Brent A. Hawkins	Registration Number	44,146
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA.
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 108547

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Bestway Inflatables & Material Corp.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	[signature]	Date (Optional)	July 17, 201[illegible]
Name	Frank Liu		
Title	Legal Representative		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to be filed by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	31598512
Application Number:	15280513
International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	52835
Filer:	Brent A. Hawkins/Julie Costello
Filer Authorized By:	Brent A. Hawkins
Attorney Docket Number:	09548.1303US01
Receipt Date:	24-JAN-2018
Filing Date:	29-SEP-2016
Time Stamp:	19:51:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	100680_0427_poa.pdf	332824 f64cab341b9364d2bce5a355f86702eb814393d2	no	2

Warnings:

Information:	
Total Files Size (in bytes):	332824

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/280,513	09/29/2016	Feng LIU	100680-0427

CONFIRMATION NO. 1875

POA ACCEPTANCE LETTER

108547
McDermott Will & Emery LLP
500 North Capitol Street NW
Washington, DC 20001

OC000000096967686

Date Mailed: 01/29/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/24/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/vnguyen/

INTEX EX. 1003, Pg. 223
Intex Recreation v. Bestway Inflatables

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/280,513	09/29/2016	Feng LIU	09548.1303US01

CONFIRMATION NO. 1875

POWER OF ATTORNEY NOTICE

52835
HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
45 South Seventh Street
Suite 2700
MINNEAPOLIS, MN 55402-1683

OC000000096967663

Date Mailed: 01/29/2018

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/24/2018.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/vnguyen/

INTEX EX. 1003, Pg. 224
Intex Recreation v. Bestway Inflatables

INFORMATION DISCLOSURE STATEMENT BY APPLICANT Form PTO-1449 (Modified) (Use several sheets if necessary)				COMPLETE IF KNOWN	
				Application Number	15/280,513
				Confirmation Number	1875
				Filing Date	September 29, 2016
				First Named Inventor	Feng LIU
				Group Art Unit	3673
				Examiner Name	Robert G. SANTOS
Sheet	1	of	1	Attorney Docket No.	100680-0427

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.	U.S. Patent or Application NUMBER	Kind Code (if known)	Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	2009/165211	A1	Rong-Jyh et al.	07-02-2009	
	2.	2013/145560	A1	Rong-Jyh et al.	06-13-2013	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Patent or Application Office	NUMBER	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T

OTHER NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	

EXAMINER	DATE CONSIDERED

DM_US 88811453-1.100680.0427

*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).

Electronic Acknowledgement Receipt

EFS ID:	31809925
Application Number:	15280513
International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	108547
Filer:	Brent A. Hawkins/Matthew Redlon
Filer Authorized By:	Brent A. Hawkins
Attorney Docket Number:	100680-0427
Receipt Date:	15-FEB-2018
Filing Date:	29-SEP-2016
Time Stamp:	19:58:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	1006800427idsTrans.pdf	1852200 029c0fa69fb32a9d32bacced0983b77c863c6052	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	1006800427sb08.pdf	1134191 906b3fff68c8706ae42a825d31613a664c5459ef	no	1

Warnings:
Information:
This is not an USPTO supplied IDS fillable form

Total Files Size (in bytes):	2986391

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: FENG LIU	EXAMINER: ROBERT G. SANTOS
APPLICATION NO.: 15/280,513	ART UNIT: 3673
FILED: SEPTEMBER 29, 2016	CONF. NO: 1875
FOR: **INFLATABLE BED**	

Information Disclosure Statement Within Three Months of Application Filing or Before First Action – 37 C.F.R. § 1.97(b)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

A. Timing of Submission

This information disclosure is being filed within three months of the filing date of this application or date of entry into the National Stage of an International Application or before the mailing date of a first Office Action on the merits or before the mailing date of a first Office Action on the merits after the filing of a Request for Continued Examination under 37 CFR §1.114, whichever occurs last (37 CFR 1.97(b)(4)). The references listed on the enclosed Form PTO-1449 (modified) may be material to the examination of this application; the Examiner is requested to make them of record in the application.

B. Cited Information

☒ Copies of cited references 1-2 which are issued patent(s) and/or published application(s) are not included (see 37 C.F.R. § 1.98(a)(2)(ii)).

C. Effect of Information Disclosure Statement (37 C.F.R. § 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference

is not prior art.

D. Fee Payment

No fees are believed due because this Information Disclosure Statement is being filed before the mailing date of the first Office Action. However, should the Commissioner determine that fees are due in order for this Information Disclosure Statement to be considered, the Commissioner is hereby authorized to charge such fees to Deposit Account No. 50-5907.

E. Patent Term Adjustment (37 C.F.R. § 1.704(d))

☐ The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. § 1.704(d).

Respectfully submitted,
McDermott Will & Emery

Date: /February 15, 2018/

/Brent A. Hawkins/
Brent A. Hawkins
Registration No. 44,146

Correspondence Address:
Customer No. 108547

INTEX EX. 1003, Pg. 229
Intex Recreation v. Bestway Inflatables

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	15/280,513
Filing Date	09-29-2016
First Named Inventor	Feng Liu
Title	INFLATABLE BED
Art Unit	3673
Examiner Name	KURILLA, ERIC J
Attorney Docket Number	81610.00147

SIGNATURE of Applicant or Patent Practitioner

Signature	/Nan Jiang/	Date (Optional)	February 1, 2019
Name	Nan Jiang	Registration Number	73350
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)	BESTWAY INFLATABLES & MATERIAL CORP.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through: 11/30/2014. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 35161

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

BESTWAY INFLATABLES & MATERIAL CORP.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	[signature]	Date (Optional)	October 25 2018
Name	Feng Liu		
Title	Executive Vice President		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	35033957
Application Number:	15280513
International Application Number:	
Confirmation Number:	1875
Title of Invention:	INFLATABLE BED
First Named Inventor/Applicant Name:	Feng LIU
Customer Number:	108547
Filer:	Nan Jiang/Karen Hopf
Filer Authorized By:	Nan Jiang
Attorney Docket Number:	100680-0427
Receipt Date:	01-FEB-2019
Filing Date:	29-SEP-2016
Time Stamp:	14:00:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	81610147Transmittal.pdf	173939 a2f77f833184685e6887fca3d5504e0c2eed7365	no	1

Warnings:

Information:					
2	Power of Attorney	BestwayPowerofAttorney.pdf	4865862 ed786fff915f1082a64e3238bdc95c4d908c8f23	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	5039801		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/280,513	09/29/2016	Feng LIU	100680-0427

CONFIRMATION NO. 1875

POWER OF ATTORNEY NOTICE

108547
McDermott Will & Emery LLP
500 North Capitol Street NW
Washington, DC 20001

OC000000105633694

Date Mailed: 02/05/2019

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2019.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mmasfaw/

INTEX EX. 1003, Pg. 234
Intex Recreation v. Bestway Inflatables

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/280,513	09/29/2016	Feng LIU	81610.00147

CONFIRMATION NO. 1875

POA ACCEPTANCE LETTER

35161
DICKINSON WRIGHT PLLC
1825 Eye St., NW
Suite 900
WASHINGTON, DC 20006

OC000000105633731

Date Mailed: 02/05/2019

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2019.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mmasfaw/

INTEX EX. 1003, Pg. 235
Intex Recreation v. Bestway Inflatables

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/280,513	09/29/2016	Feng LIU	81610.00147	1875

35161 7590 04/25/2019

DICKINSON WRIGHT PLLC
1825 Eye St., NW
Suite 900
WASHINGTON, DC 20006

EXAMINER	
KURILLA, ERIC J	

ART UNIT	PAPER NUMBER
3673	

NOTIFICATION DATE	DELIVERY MODE
04/25/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dwpatents@dickinsonwright.com

INTEX EX. 1003, Pg. 236
Intex Recreation v. Bestway Inflatables

Office Action Summary	Application No. 15/280,513	Applicant(s) LIU, Feng	
	Examiner ERIC J KURILLA	Art Unit 3673	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 09/29/2016.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-30 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☐ Claim(s) _____ is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☑ Claim(s) 1-30 are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Election/Restriction

1. This application contains claims directed to the following patentably distinct species

Species I: Figs. 5-8;

Species II: Figs. 9-11;

Species III: Figs. 12-15;

Species IV: Figs. 16-18;

Species V: Figs. 19-20;

Species VI: Fig. 21;

Species VII: Fig. 22-24.

Figs. 1-4 appear to be generic to all species.

The species are independent or distinct because they are mutually exclusive to one another. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, or a single grouping of patentably indistinct species, for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims appear to be generic.

There is a search and/or examination burden for the patentably distinct species as set forth above because at least the following reason(s) apply: There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or

electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected species or grouping of patentably indistinct species**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species or grouping of patentably indistinct species.

Should applicant traverse on the ground that the species, or groupings of patentably indistinct species from which election is required, are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing them to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one

of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC J KURILLA whose telephone number is (571)270-7294. The examiner can normally be reached on 7AM-6PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 571-272-6856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ERIC J KURILLA/
Primary Examiner, Art Unit 3673

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15280513
Filing Date	2016-09-29
First Named Inventor	Feng Liu
Art Unit	3673
Examiner Name	Eric J. Kurilla
Attorney Docket Number	081610.00147

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	202751069	CN	U	2013-02-27	Intex Industries Xiamen Co., Ltd.		☓
	2	203137719	CN	U	2013-08-21	Intex Industries Xiamen Co., Ltd.		☒
	3	201045987	CN	Y	2008-04-16	Rongzhi Song		☒

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15280513
	Filing Date	2016-09-29
	First Named Inventor	Feng Liu
	Art Unit	3673
	Examiner Name	Eric J. Kurilla
	Attorney Docket Number	081610.00147

	4	205457538	CN	U	2016-08-17	Shanghai Bestway Inflatables & Material Corp.		☒
	5	103110297	CN	A	2013-05-22	Intex Industries Xiamen Co., Ltd.		☒
	6	2706070	CN	Y	2005-06-29	Mignda Plastic Xiamen Co., Ltd.		☒
	7	2904820	CN	Y	2007-05-30	Shanghai Bestway Inflatables		☒

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	European Search Report dated May 11, 2017	
	2	SIPO Search Report dated January 30, 2019	☓

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15280513
	Filing Date	2016-09-29
	First Named Inventor	Feng Liu
	Art Unit	3673
	Examiner Name	Eric J. Kurilla
	Attorney Docket Number	081610.00147

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Nan Jiang/	Date (YYYY-MM-DD)	2019-05-28
Name/Print	Nan Jiang	Registration Number	73350

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Espacenet

Bibliographic data: CN202751069 (U) — 2013-02-27

Structure of double-layer air mattress

Inventor(s): LIU FENG ± (LIU FENG)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP ± (SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)

Classification: - international: ***A47C27/08***
- cooperative: **A47C27/087**

Application number: CN20122363528U 20120725

Priority number(s): CN20122363528U 20120725

Abstract of CN202751069 (U)

A structure of a double-layer air mattress comprises a top sheet, a bottom sheet and an annular enclosing sheet. The upper edge and the lower edge of the annular enclosing sheet are respectively fixedly connected with the peripheral edge of the top sheet and the peripheral edge of the bottom sheet to form a closed inflatable air chamber, and a plurality of pulling straps which are fixedly connected with the top sheet and the bottom sheet are arranged between the top sheet and the bottom sheet. The structure is characterized in that a middle-layer sheet is arranged between the top sheet and the bottom sheet, the peripheral edge of the middle-layer sheet is fixedly connected with the annular enclosing sheet, a plurality of open pores are arranged on the middle-layer sheet, the quantity and positions of the open pores correspond to the quantity and positions of the pulling straps, and the pulling straps are penetratingly arranged in the open pores of the middle-layer sheet. The structure has the advantages that the internal structure of the air mattress is simplified, the pulling straps are directly spliced with the top sheet 1 and the bottom sheet 2, machining procedures are reduced as compared with the traditional air mattress comprising pulling straps which respectively arranged between a top sheet and a middle-layer sheet and between the middle-layer sheet and a bottom sheet of the traditional air mattress, the machining cost is reduced, and the production efficiency is improved.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 202751069 U
(45)授权公告日 2013.02.27

(21)申请号 201220363528.1

(22)申请日 2012.07.25

(73)专利权人 上海荣威塑胶工业有限公司
地址 201812 上海市嘉定区曹安路3065号

(72)发明人 刘峰

(74)专利代理机构 上海市华诚律师事务所 31210
代理人 李平

(51)Int.Cl.
A47C 27/08(2006.01)

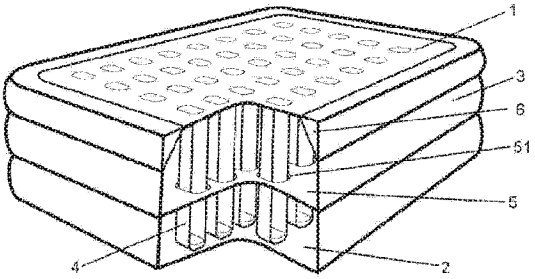
权利要求书 1 页 说明书 2 页 附图 2 页

(54)实用新型名称

一种双层充气床的结构

(57)摘要

一种双层充气床的结构，包括顶片、底片、环形围片，环形围片的上边缘和下边缘分别与顶片和底片的四周边缘固接，构成一个密闭的可充气的气室，顶片和底片之间设有与顶片和底片固接的若干拉带，其特征在于在顶片和底片之间设有一中层片，该中层片的四周边缘与环形围片固接，在中层片上设有若干开孔，开孔的数量和位置与拉带的数量和位置相对应，拉带穿设于中层片的开孔内。本实用新型的优点是简化了充气床的内部结构，拉带直接与顶片1和底片2熔接，相比于传统充气床在顶片与中层片以及中层片与底片之间分别设置拉带，减少了加工的工序，节约加工成本，提高生产效率。



CN 202751069 U

1. 一种双层充气床的结构，包括顶片、底片、环形围片，环形围片的上边缘和下边缘分别与顶片和底片的四周边缘固接构成一个密闭的可充气的气室，顶片和底片之间设有与顶片和底片固接的若干拉带，其特征在于在顶片和底片之间设有一中层片，该中层片的四周边缘与环形围片固接，在中层片上设有若干开孔，开孔的数量和位置与拉带的数量位置相对应，拉带穿设于中层片的开孔内。

2. 根据权利要求 1 所述的双层充气床的结构，其特征在于所述拉带为 I 形拉带。

3. 根据权利要求 1 所述的双层充气床的结构，其特征在于在顶片和围片之间还设有环形拉带。

4. 根据权利要求 3 所述的双层充气床的结构，其特征在于在顶片和围片之间设有的环形拉带为斜拉带，其上边缘和下边缘分别与顶片和环形围片固接。

INTEX EX. 1003, Pg. 248
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一种双层充气床的结构

技术领域

[0001] 本实用新型涉及充气床的结构，尤其涉及一种双层充气床的结构。

[0002] 背景技术

[0003] 充气床由于携带方便、便于收藏兼具良好的舒适性等优点越来越得到人们的喜爱，充气床可以在居家和户外多种场合使用。传统的充气床主要有顶片、底片、环形围片和若干拉带构成，由于充气床的高度较充气床垫的高度高许多，充气后环形围片会向外膨胀变形，为了避免这种情况通常在顶片和底片设置四周与环形围片固接的中层片以保持良好的外观，因此在顶片与中层片之间以及中层片与底片之间都需要分别设置拉带，这样的结构复杂，加工的步骤较多影响了生产效率同时也增加了生产成本。

[0004] 发明内容

[0005] 本实用新型针对已有技术中存在的缺陷，提供一种使用舒适、外形美观且加工简便的新型的双层充气床的结构，本实用新型包括顶片、底片、环形围片，环形围片的上边缘和下边缘分别与顶片和底片的四周边缘固接构成一个密闭的可充气的气室，顶片和底片之间设有与顶片和底片固接的若干拉带，其特征在于在顶片和底片之间设有一中层片，该中层片的四周边缘与环形围片固接，在中层片上设有若干开孔，开孔的数量和位置与拉带的数量位置相对应，拉带穿设于中层片的开孔内。

[0006] 所述拉带为 I 形拉带，在顶片和围片之间还设有环形拉带。该环形拉带为斜拉带，其上边缘和下边缘分别与顶片和环形围片固接。

[0007] 本实用新型的优点是简化了充气床的内部结构，拉带直接与顶片 1 和底片 2 熔接，相比于传统充气床在顶片与中层片以及中层片与底片之 间分别设置拉带，减少了加工的工序，节约加工成本，提高生产效率。

附图说明

[0008] 图 1 是本实用新型的结构示意图；

[0009] 图 2 是本实用新型局部剖视图，显示内部结构；

[0010] 图 3 是本实用新型的剖面示意图。

具体实施方式

[0011] 下面结合附图进一步说明本实用新型的实施例。

[0012] 实施例一

[0013] 参见图 1、图 2 和图 3，本实用新型的一种充气床的结构包括顶片 1、底片 2、围片 3，围片 3 为环形的，其上边缘和下边缘分别与顶片 1 和底片 2 的四周边缘通过高频熔接构成一个密闭的可充气的气室，顶片 1 和底片 2 之间沿充气床的长度方向和宽度方向设有若干拉带 4，拉带 4 分别与顶片 1 和底片 2 高频熔接固接，拉带 4 和围片 3 共同限定了充气床的高度，以此，充气床形成一个可以供使用者躺在上面的较为平整的表面，拉带 4 可以根据需要制作成环形拉带和 I 形拉带，在顶片 1 和底片 2 之间设有中层片 5 其四周边缘与环形围

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片 3 高频熔接固接，中层片 5 在限定了环形围片 3 中段的形状，可避免充气床充气后环形围片向外侧过度膨胀，在中层片 5 沿充气床长度和宽度方向设有若干开孔 51，其数量和位置与拉带 4 的数量和位置相对应，开孔 51 的大小设置为比充气后的拉带 4 外围尺寸相应或略大，以能容纳拉带 4 穿设于中层片 5 的开孔 51 内。

[0014] 在顶片 1 和围片 3 之间还设有环形拉带拉带 6，该环形拉带 6 为斜拉带，其上边缘和下边缘分别与顶片 1 和环形围片 3 固接。该环形拉带 6 的作用同样是防止环形围片 3 充气后的形状，同时增加床垫顶片 1 的美观。

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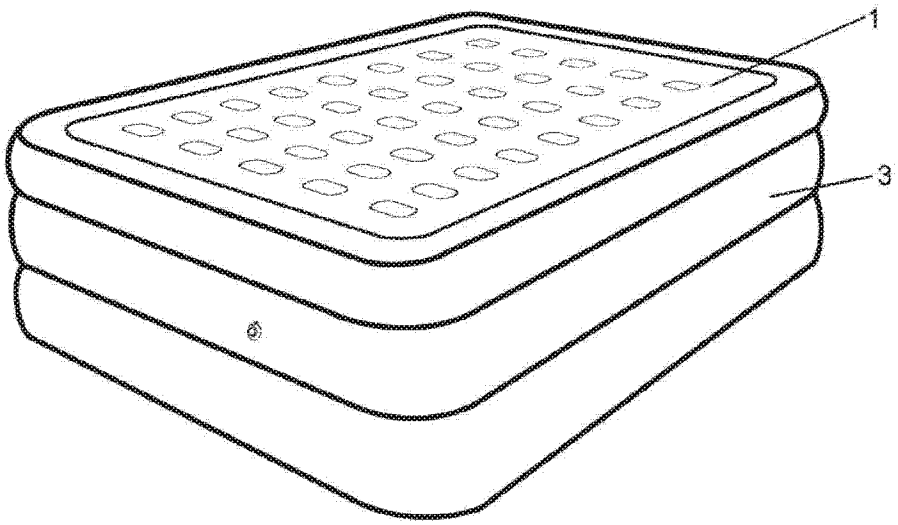


图 1

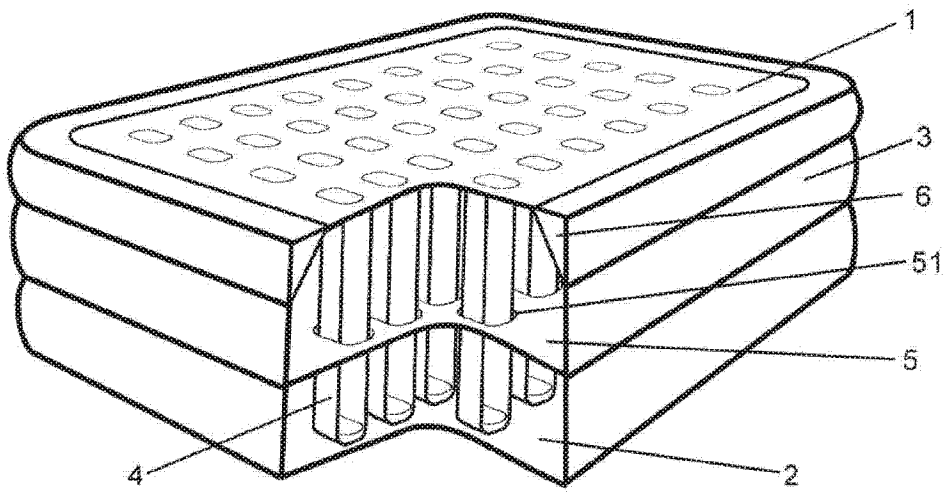


图 2

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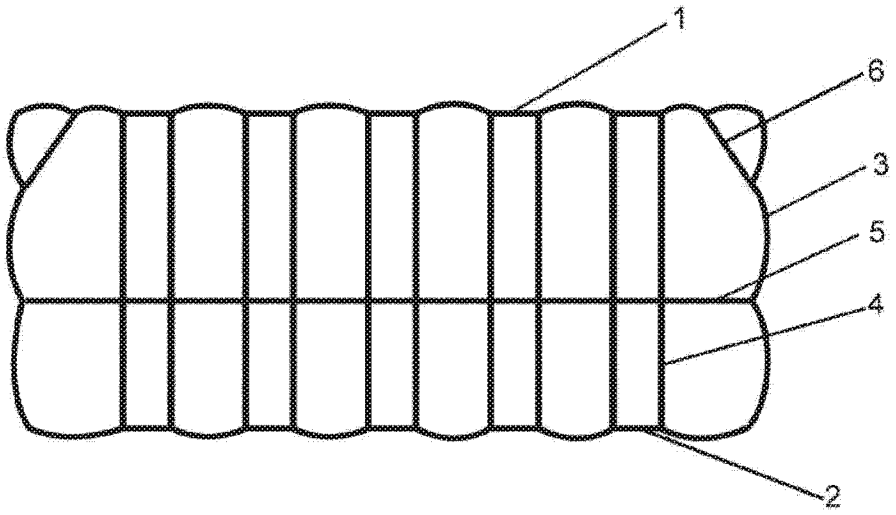


图 3

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Espacenet

Bibliographic data: CN203137719 (U) — 2013-08-21

Obliquely pulling fixing structure for air chamber of inflatable product

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Classification:	**- international:** ***A47C27/08; A47C31/00***
	- cooperative: **A47C27/087**
Application number:	CN20132042268U 20130125
Priority number(s):	CN20132042268U 20130125

Abstract of CN203137719 (U)

The utility model discloses an obliquely pulling fixing structure for an air chamber of an inflatable product. The structure comprises an upper piece, a lower piece, a plurality of drawstrings and an encircling piece, wherein both ends of each drawstring are respectively connected to the lower surface of the upper piece and the upper surface of the lower piece; and meanwhile, the upper and lower edges of the encircling piece are respectively connected with the edges of the upper and lower pieces to form the inflatable product with the air chamber. The structure further comprises a side encircling drawstring, wherein one end of the side encircling drawstring is connected with to the middle part of the inner surface of the encircling piece, while the other end of the side encircling drawstring is connected to the lower surface of the upper piece close to the edge or the upper surface of the lower piece close to the edge. The side encircling drawstring used for connecting the middle of the encircling piece and the upper piece or/and the lower piece of the inflatable product, so that a traction and limiting effect to the middle of the encircling piece of the inflatable product in higher position can be realized. Therefore, not only is the encircling piece prevented from protruding too much to affect the strength and attraction of the product, but also the material cost and manufacturing cost of the product are effectively lowered.

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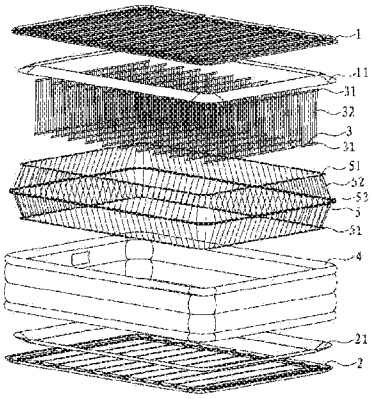
权利要求书1页 说明书3页 附图7页

(54)实用新型名称

充气产品气室斜拉固定结构

(57)摘要

本实用新型公开了一种充气产品气室斜拉固定结构，其包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气室的充气产品；其中还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上。通过设置的侧围拉带连接充气产品围片的中部与上片或/和下片，实现对具有较高高度的充气产品的围片中部达到一牵引限位作用，不仅防止围片外凸较多而影响产品的强度及美观，而且有效降低了产品材料成本及制作成本。



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1. 一种充气产品气室斜拉固定结构，其包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气室的充气产品；其特征在于：还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上。

2. 如权利要求 1 所述的充气产品气室斜拉固定结构，其特征在于：所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，其中在复数根线体的中部再固定有一塑胶片条，侧围拉带两端的环形塑胶片条是分别连接上片与下片，而中部的塑胶片条是连接于围片内表面的中部。

3. 如权利要求 1 所述的充气产品气室斜拉固定结构，其特征在于：所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，此侧围拉带一端的塑胶片条连接于围片内表面的中部，另一端是连接于上片与下片上。

4. 如权利要求 1、2 或 3 所述的充气产品气室斜拉固定结构，其特征在于：所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片焊接。

5. 如权利要求 4 所述的充气产品气室斜拉固定结构，其特征在于：所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

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充气产品气室斜拉固定结构

技术领域

[0001] 本实用新型是关于一种充气产品结构，特别是指一种充气产品气室斜拉加固结构。

背景技术

[0002] 充气产品，如充气床具有易使用、重量轻容易移动，及收藏携带方便的特性，使得其作为临时性或是非固定式的床体使用时是相当适宜的选择。而充气后床体厚度较小的充气床一般均是户外使用较多，若要增进充气床的舒适性以媲美家庭使用的床铺时，充气床充气后的厚度则必须如一般床铺的高度，且要保证床面的平整，同时结构亦必须较稳固。

[0003] 配合图 1 所示，具有床铺高度的充气床，为防止床周外凸较大及支撑力度，以及充气腔内定型强度，通常是采用两个独立气室 A、B 叠加而成，即需要设置中层片体 C，由两个独立围带分别连接此中层片体 C 及上下片体构成两个充气腔，在两充气腔内分别设置拉带组以形成床体造型。如此结构必然存在如下缺点；

[0004] 1、材料成本高，由于中层片体的设置是便于定型及提高床体的功能，该中层片体的设置不仅增加了材料的需求量，同时亦增加了床体的重量。

[0005] 2、两个独立气腔内的拉带需分别焊接，无形中增加了床体制作的繁琐，因而制作成本亦居高不下。

实用新型内容

[0006] 本实用新型的目的是提供一种充气产品气室斜拉固定结构，其在保证产品高度、强度的同时防止产品周缘外凸过多而影响产品的美观性，并可有效减少材料成本及制作成本。

[0007] 为实现上述目的，本实用新型的解决方案是：

[0008] 一种充气产品气室斜拉固定结构，其包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气室的充气产品；其中：还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上。

[0009] 所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，其中在复数根线体的中部再固定有一塑胶片条，侧围拉带两端的环形塑胶片条是分别连接上片与下片，而中部的塑胶片条是连接于围片内表面的中部。

[0010] 所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，此侧围拉带一端的塑胶片条连接于围片内表面的中部，另一端是连接于上片与下片上。

[0011] 所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片焊接。

[0012] 所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地

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片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

[0013] 采用上述方案后，本实用新型通过设置的侧围拉带连接充气产品围片的中部与上片或／和下片，实现对具有较高高度的充气产品的围片中部达到一牵引限位作用，不仅防止围片外凸较多而影响产品的强度及美观，而且有效降低了产品材料成本及制作成本。

附图说明

[0014] 图 1 为习用品的立体外观图；

[0015] 图 2 为本实用新型实施例 1 的立体分解图；

[0016] 图 3 为本实用新型实施例 1 的外观示意图；

[0017] 图 4 为本实用新型实施例 1 的局部剖视示意图；

[0018] 图 5 为本实用新型实施例 2 的立体分解图；

[0019] 图 6 为本实用新型实施例 2 的外观示意图；

[0020] 图 7 为本实用新型实施例 2 的局部剖视示意图。

具体实施方式

[0021] 配合图 2 至图 7 所示，本实用新型揭示了一种充气产品气室斜拉固定结构，特别是针对矩形的充气产品，其包括一上片 1、一下片 2、复数个拉带 3 及一围片 4，还包括有侧围拉带 5，各拉带 3 的两端是分别连接于上片 1 的下表面及下片 2 的上表面，同时围片 4 的上下边分别与上片 1 的周缘及下片 2 的周缘连接后，便构成一具有充气室的充气产品，而侧围拉带 5 的一端是连接于围片 4 内表面的中部，另一端是连接于上片 1 近周缘的下表面或下片 2 近周缘的上表面上。

[0022] 以下充气产品是以充气床为例进行说明，并不局限于充气床。

[0023] 如图 2、3、4 所示的本实用新型实施例 1，其中的各拉带 3 为对应床体宽度或长度的带体，拉带 3 是由两端的塑胶片条 31 连接复数根线体 32 构成，塑胶片条 31 用于与上片 1 及下片 2 的焊接，而线体 32 承拉较强的牵引力；而侧围拉带 5 为一整体的环形拉带，其由两端的环形塑胶片条 51 连接复数根线体 52 构成，其中在复数根线体 52 的中部再固定有一塑胶片条 53，如此侧围拉带 5 两端的环形塑胶片条 51 是分别连接上片 1 与下片 2，而中部的塑胶片条 53 是连接于围片 4 内表面的中部。

[0024] 此处侧围拉带 5 的设置是令围片 4 的中部进一步受到牵制，使其内凹，以保证具有较高高度并具一个充气腔的充气床其周缘的美观性，以防止周缘外凸较多，同时保证床体周缘的强度及床体整体的支撑强度。

[0025] 为提高床体的美观性，在上片 1 与围片 4 及下片 2 与围片 4 之间还分别设有一环形上吸地片 11 及一环形下吸地片 21，即上片 1 通过环形上吸地片 11 与围片 4 的上周缘连接在一起，而下片 2 通过环形下吸地片 21 与围片 4 的下周缘连接在一起。

[0026] 如图 5、6、7 所示的本实用新型的实施例 2，其中的各拉带 3 同样为对应床体宽度或长度的带体，拉带 3 同样是由两端的塑胶片条 31 连接复数根线体 32 构成，塑胶片条 31 用于与上片 1 及下片 2 的焊接，而线体 32 承接较强的牵引力；而侧围拉带 5 为一整体的环形拉带，其由两端的环形塑胶片条 51 连接复数根线体 52 构成，此侧围拉带 5 一端的塑胶片条

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51 连接于围片 4 内表面的中部，另一端是连接于上片 1 与下片 2 上，如此防止具有较高高度并具一个充气腔的充气床其周缘外凸较大，保证床体周缘的强度及床体整体的支撑强度。

[0027] 同样为提高床体的美观性，在上片 1 与围片 4 及下片 2 与围片 4 之间还分别设有一环形上吸地片 11 及一环形下吸地片 21，即上片 1 通过环形上吸地片 11 与围片 4 的上周缘连接在一起，而下片 2 通过环形下吸地片 21 与围片 4 的下周缘连接在一起。

[0028] 此处需说明的是，上述实施例 1、2 的拉带 3 及侧围拉带 5 并不局限于此塑胶片条与复数根线体的结构，亦可采用整体塑胶片的线性拉带或柱状拉带同样可以实施，只要其可满足充气产品内压的要求即可。

[0029] 综上所述，本实用新型通过设置连接充气产品围片 4 的中部与上片 1 或 / 和下片 2，实现对具有较高高度的充气产品围片 4 中部达到一牵引限位作用，不仅防止围片外凸较多而影响产品的强度及美观，而且有效降低了产品材料成本及制作成本。

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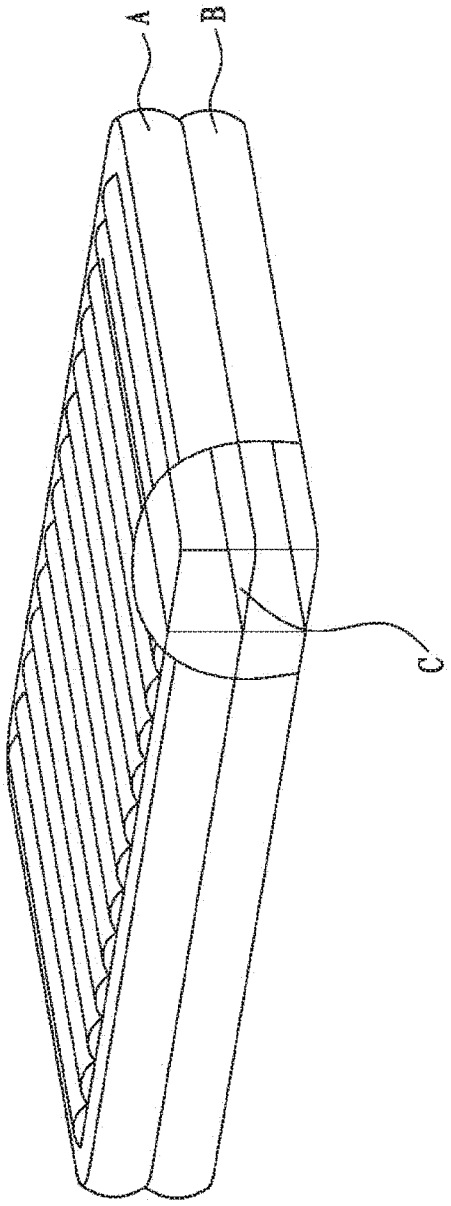


图 1

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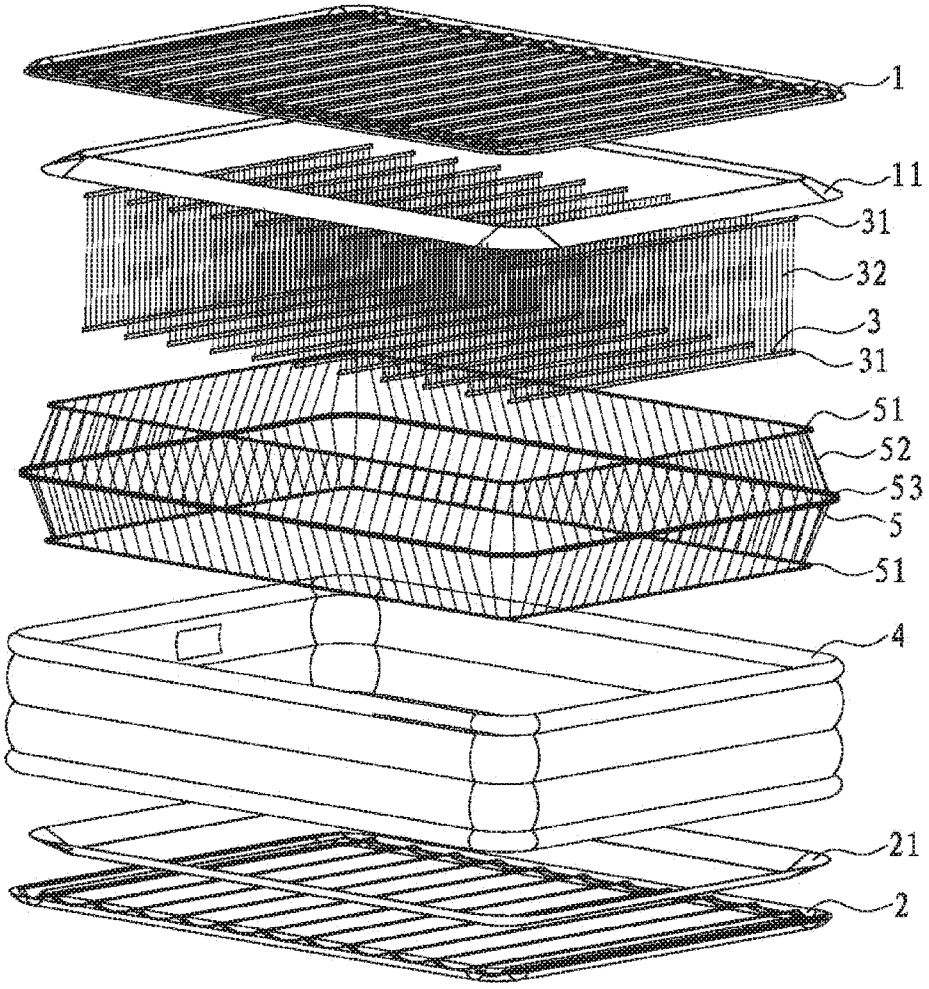


图 2

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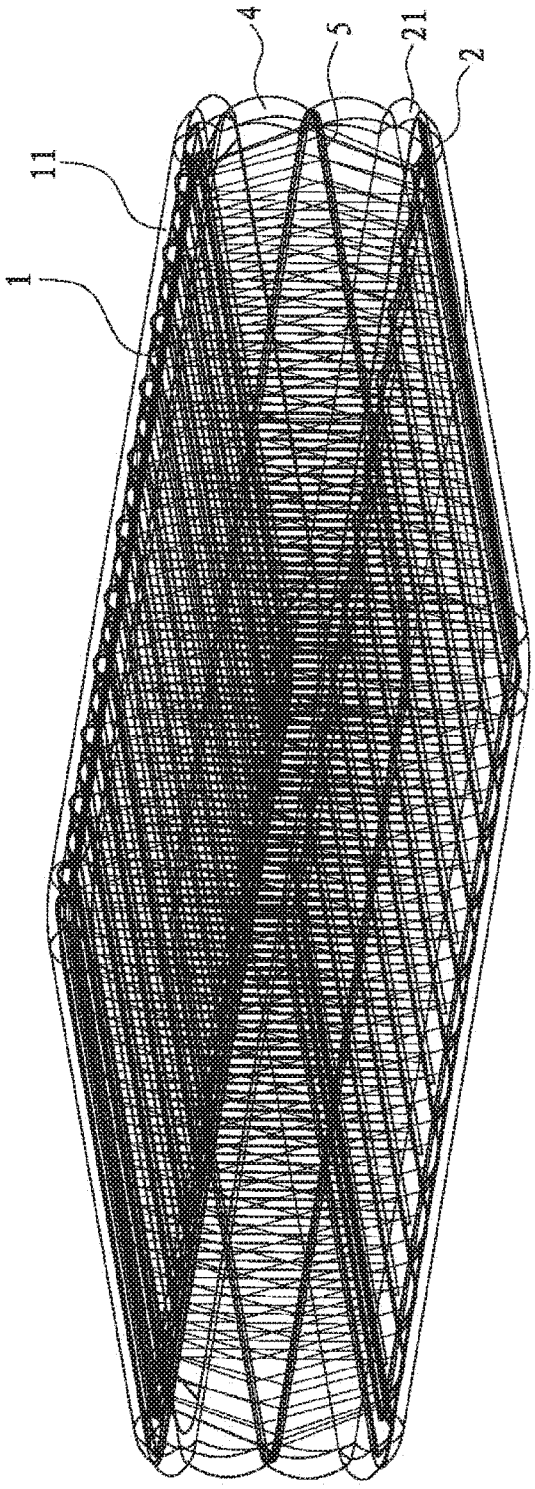


图 3

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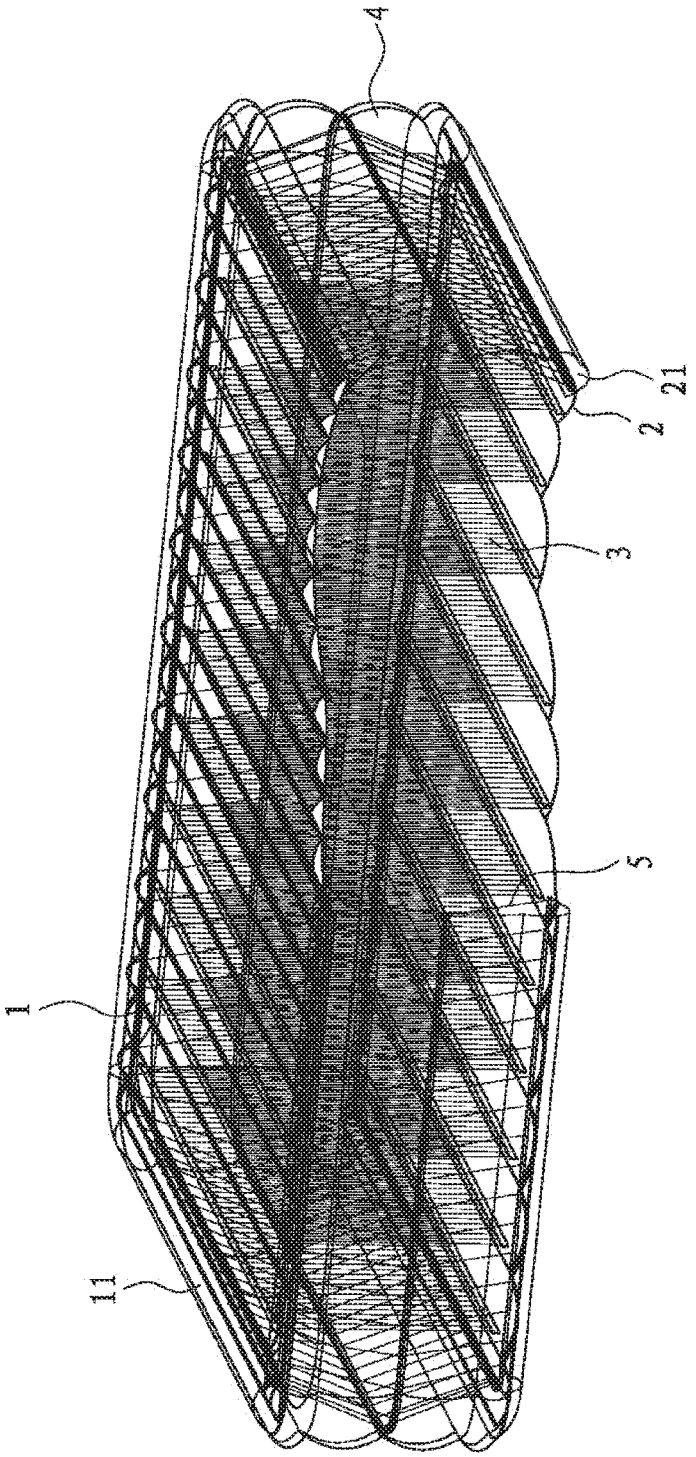


图 4

INTEX EX. 1003, Pg. 262
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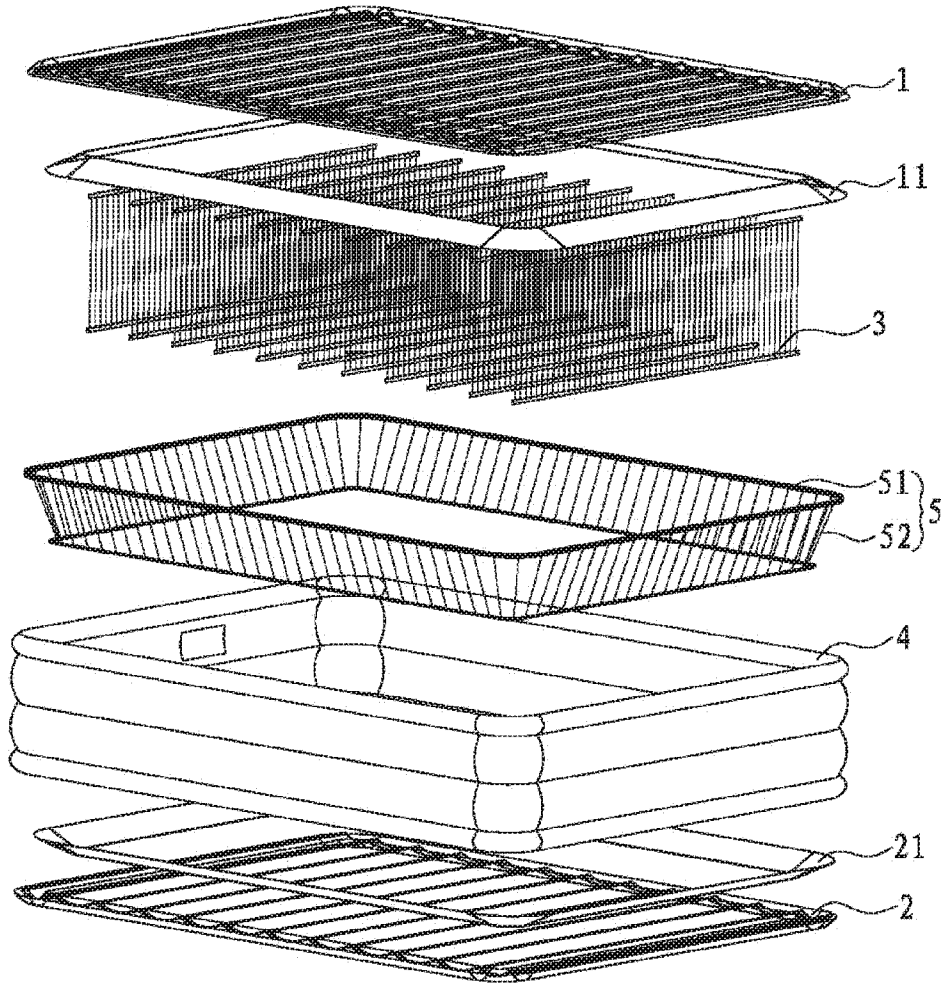


图 5

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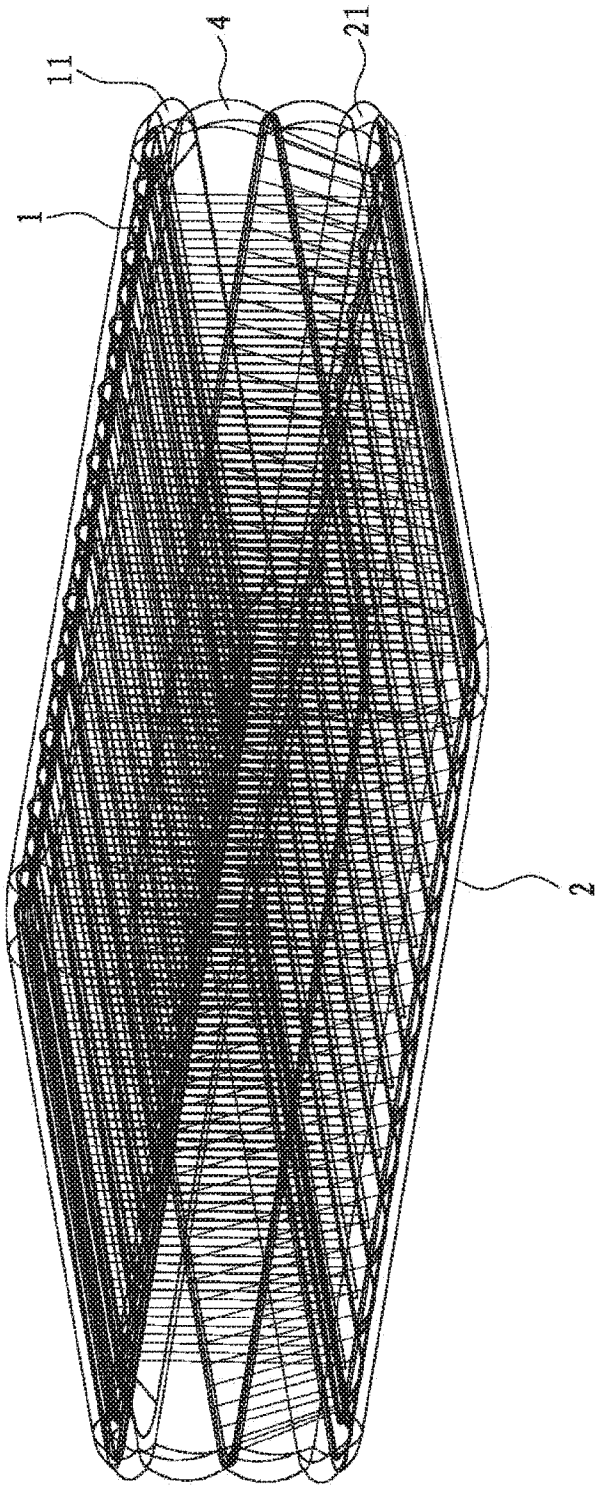


图 6

INTEX EX. 1003, Pg. 264
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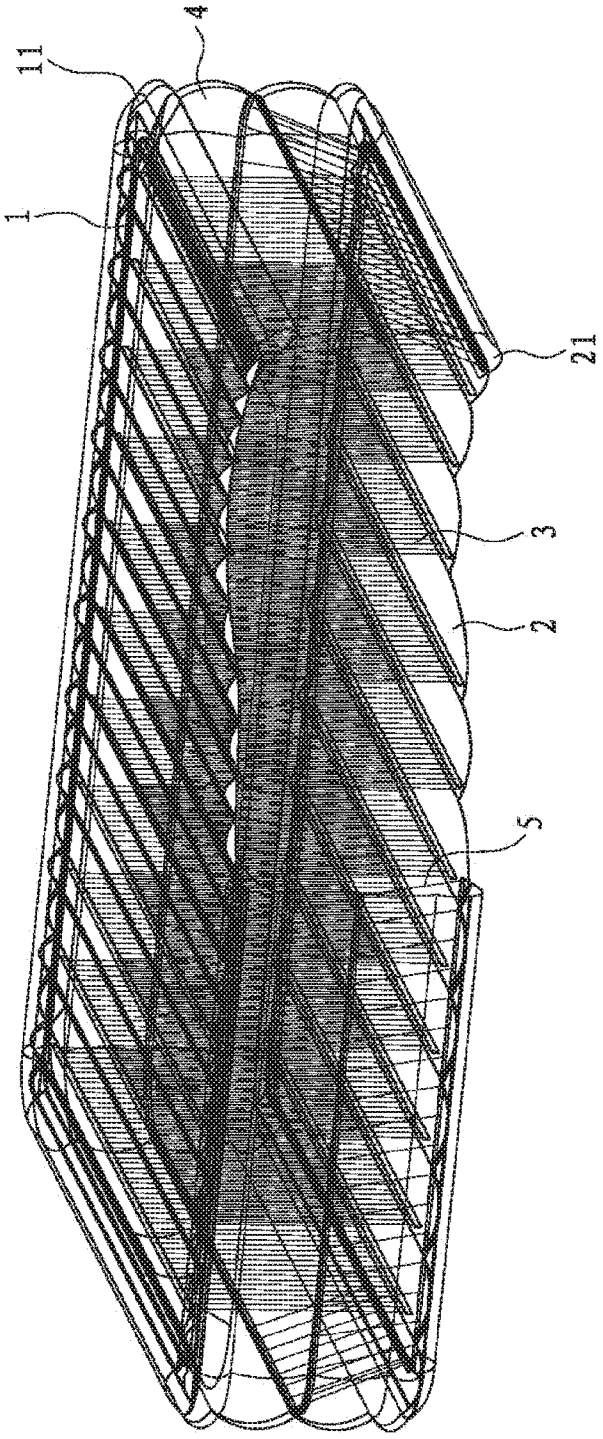


图 7

INTEX EX. 1003, Pg. 265
Intex Recreation v. Bestway Inflatables

Espacenet

Bibliographic data: CN201045987 (Y) — 2008-04-16

Air bed

Inventor(s): RONGZHI SONG [CN]; ZONGPING YAN [CN] ± (SONG RONGZHI, ; YAN ZONGPING)

Applicant(s): RONGZHI SONG [CN] ± (SONG RONGZHI)

Classification: **- international:** ***A47C17/00; A47C27/10***
- cooperative: **A47C27/081; A47C27/087**

Application number: CN20072139672U 20070404

Priority number(s): CN20072139672U 20070404

Also published as: DE202007008326 (U1) FR2914545 (A3) FR2914545 (B3)

Abstract of CN201045987 (Y)

The utility model relates to an airbed, comprising a bottom fabric cloth, a top fabric cloth and a periphery cloth. The utility model is characterized in that: the top fabric cloth is distant from the bottom fabric cloth, and the edge of the bottom fabric cloth is connected with the corresponding edge of the top fabric cloth via the periphery cloth; an air space is generated together with the bottom fabric cloth, the top fabric cloth and the periphery cloth, and an oblique drawstring is arranged in the air space of the airbed; one end of the oblique drawstring is connected with the periphery cloth, and the other end is alternatively connected with the top fabric cloth or the bottom fabric cloth. The utility model has the advantages of greatly saving material and manufacturing cost of the airbed and keeping multilayer structure and appearance of the airbed by using the oblique drawstring.

Espacenet

Bibliographic data: CN103110297 (A) — 2013-05-22

Reinforcing structure of inflatable product

Inventor(s): LIN HUAXIANG; XU YAOYUAN ± (LIN HUAXIANG, ; XU YAOYUAN)

Applicant(s): INTEX IND XIAMEN CO LTD ± (INTEX INDUSTRIES (XIAMEN) CO., LTD)

Classification: **- international:** ***A47C27/08; A47C31/00***
- cooperative:

Application number: CN20131029419 20130125 Global Dossier

Priority number(s): CN20131029419 20130125

Abstract of CN103110297 (A)

The invention discloses a reinforcing structure of an inflatable product. The reinforcing structure comprises an upper sheet, a lower sheet, a plurality of drawstrings and an enclosing sheet, wherein two ends of each drawstring are respectively connected to the lower surface of the upper sheet and the upper surface of the lower sheet, and meanwhile, the upper edge and the lower edge of the enclosing sheet are respectively connected with the circumferential edge of the upper sheet and the circumferential edge of the lower sheet to form an inflatable product with an inflatable space; and the reinforcing structure further comprises a side enclosing drawstring, wherein one end of the side enclosing drawstring is connected to the middle part of the inner surface of the enclosing sheet, the other end of the side enclosing drawstring is connected to the lower surface, close to the circumferential edge, of the upper sheet and the upper surface, close to the circumferential edge, of the lower sheet, or the other end of the side enclosing drawstring is connected to the opposite surface of the enclosing edge connected with the one end of the side enclosing drawstring. According to the reinforcing structure, the side enclosing drawstring can have a certain traction limiting effect on the middle part of the enclosing sheet of the inflatable product with high height so as to prevent the inflatable product from protruding outwards too much to influence the strength and attractive appearance of the inflatable product, therefore not only is the material cost of the inflatable product effectively reduced, but also the manufacturing cost of the inflatable product can be effectively reduced.

(19)中华人民共和国国家知识产权局

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A47C 27/08(2006.01)

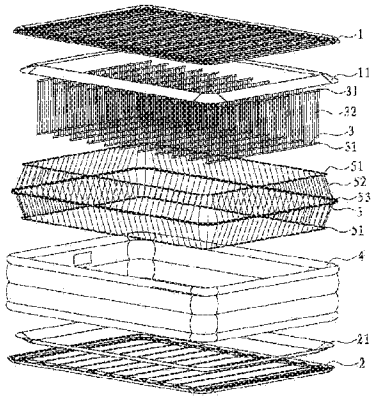
权利要求书1页 说明书3页 附图9页

(54)发明名称

充气产品加固结构

(57)摘要

本发明公开了一种充气产品加固结构，包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气空间的充气产品，其中还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上，此另一端亦或连接于其一端连接的围片的相对面上。本发明通过设置侧围拉带，可以对具有较高高度的充气产品的围片中部具有一定的牵引限位作用，防止其外凸较多而影响强度及美观，不仅有效降低产品材料成本，而且可以有效降低产品的制作成本。



CN 103110297 A

1. 一种充气产品加固结构，其包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气空间的充气产品，其特征在于：还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上，此另一端亦或连接于其一端连接的围片的相对面上。

2. 如权利要求 1 所述的充气产品加固结构，其特征在于：所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，其中在复数根线体的中部再固定有一塑胶片条，侧围拉带两端的环形塑胶片条是分别连接上片与下片，而中部的塑胶片条是连接于围片内表面的中部。

3. 如权利要求 1 所述的充气产品加固结构，其特征在于：所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，此侧围拉带一端的塑胶片条连接于围片内表面的中部，另一端是连接于上片与下片上。

4. 如权利要求 1、2 或 3 所述的充气产品加固结构，其特征在于：所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片的焊接。

5. 如权利要求 4 所述的充气产品加固结构，其特征在于：所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

6. 如权利要求 1 所述的充气产品加固结构，其特征在于：所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片的焊接；侧围拉带包括复数个线状侧拉带，各侧拉带两端通过连接片而连接于围片中部内表面的相对面上。

7. 如权利要求 6 所述的充气产品加固结构，其特征在于：所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

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充气产品加固结构

技术领域

[0001] 本发明是关于一种充气产品结构，特别是指一种充气产品加固结构。

背景技术

[0002] 充气产品，如充气床具有易使用、重量轻容易移动，及收藏携带方便的特性，使得其作为临时性或是非固定式的床体使用时是相当适宜的选择。而充气后床体厚度较小的充气床一般均是户外使用较多，若要增进充气床的舒适性以媲美家庭使用的床铺时，充气床充气后的厚度则必须如一般床铺的高度，且要保证床面的平整，同时结构亦必须较稳固。

[0003] 配合图 1 所示，具有床铺高度的充气床，为防止床周外凸较大及支撑力度，以及充气腔内定型强度，通常是采用两个独立气室 A、B 叠加而成，即需要设置中层片体 C，由两个独立围带分别连接此中层片体 C 及上下片体构成两个充气腔，在两充气腔内分别设置拉带组以形成床体造型。如此结构必然存在如下缺点：

1、材料成本高，由于中层片体的设置是便于定型及提高床体的功能，该中层片体的设置不仅增加了材料的需求量，同时亦增加了床体的重量。

[0004] 2、两个独立气腔内的拉带需分别焊接，无形中增加了床体制作的繁琐，因而制作成本亦居高不下。

发明内容

[0005] 本发明的目的是提供一种充气产品加固结构，其在保证产品高度的同时保证产品周缘外凸有限的美观性同时，有效减少材料成本及制作成本。

[0006] 为实现上述目的，本发明的解决方案是：

一种充气产品加固结构，其包括一上片、一下片、复数个拉带及一围片，各拉带的两端是分别连接于上片的下表面及下片的上表面，同时围片的上下边分别与上片的周缘及下片的周缘连接后构成一具有充气空间的充气产品，其中：还包括有侧围拉带，侧围拉带的一端是连接于围片内表面的中部，另一端是连接于上片近周缘的下表面或下片近周缘的上表面上，此另一端亦或连接于其一端连接的围片的相对面上。

[0007] 所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，其中在复数根线体的中部再固定有一塑胶片条，侧围拉带两端的环形塑胶片条是分别连接上片与下片，而中部的塑胶片条是连接于围片内表面的中部。

[0008] 所述侧围拉带为一整体的环形拉带，其由两端的环形塑胶片条连接复数根线体构成，此侧围拉带一端的塑胶片条连接于围片内表面的中部，另一端是连接于上片与下片上。

[0009] 所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片的焊接。

[0010] 所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

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[0011] 所述的各拉带为对应床体宽度或长度的带体，拉带是由两端的塑胶片条连接复数根线体构成，两端的塑胶片条分别与上片及下片的焊接；侧围拉带包括复数个线状侧拉带，各侧拉带两端通过连接片而连接于围片中部内表面的相对面上。

[0012] 所述上片与围片及下片与围片之间还分别设有一环形上吸地片及一环形下吸地片，即上片通过环形上吸地片与围片的上周缘连接在一起，而下片通过环形下吸地片与围片的下周缘连接在一起。

[0013] 采用上述方案后，本发明通过设置侧围拉带，可以对具有较高高度的充气产品的围片中部具有一定的牵引限位作用，防止其外凸较多而影响强度及美观，不仅有效降低产品材料成本，而且可以有效降低产品的制作成本。

附图说明

[0014] 图 1 为习用品的立体外观图；

图 2 为本发明实施例 1 的立体分解图；

图 3 为本发明实施例 1 的外观示意图；

图 4 为本发明实施例 1 的局部剖视示意图；

图 5 为本发明实施例 2 的立体分解图；

图 6 为本发明实施例 2 的外观示意图；

图 7 为本发明实施例 2 的局部剖视示意图；

图 8 为本发明实施例 3 的立体分解图；

图 9 为本发明实施例 3 的外观示意图。

具体实施方式

[0015] 配合图 2 至图 9 所示，本发明揭示了一种充气产品加固结构，特别是针对矩形的充气产品，其包括一上片 1、一下片 2、复数个拉带 3 及一围片 4，还包括有侧围拉带 5，各拉带 3 的两端是分别连接于上片 1 的下表面及下片 2 的上表面，同时围片 4 的上下边分别与上片 1 的周缘及下片 2 的周缘连接后，便构成一具有充气空间的充气产品，而侧围拉带 5 的一端是连接于围片 4 内表面的中部，另一端是连接于上片 1 近周缘的下表面或下片 2 近周缘的上表面上，此另一端亦或连接于其一端连接的围片 4 的相对面上。

[0016] 以下充气产品是以充气床为例进行说明，并不局限于充气床。

[0017] 如图 2、3、4 所示的本发明实施例 1，其中的各拉带 3 为对应床体宽度或长度的带体，拉带 3 是由两端的塑胶片条 31 连接复数根线体 32 构成，塑胶片条 31 用于与上片 1 及下片 2 的焊接，而线体 32 承拉较强的牵引力；而侧围拉带 5 为一整体的环形拉带，其由两端的环形塑胶片条 51 连接复数根线体 52 构成，其中在复数根线体 52 的中部再固定有一塑胶片条 53，如此侧围拉带 5 两端的环形塑胶片条 51 是分别连接上片 1 与下片 2，而中部的塑胶片条 53 是连接于围片 4 内表面的中部。

[0018] 此处侧围拉带 5 的设置是令围片 4 的中部进一步受到牵制，使其内凹，以保证具有较高高度并具一个充气腔的充气床其周缘的美观性，以防止周缘外凸较多，同时保证床体周缘的强度及床体整体的支撑强度。

[0019] 为提高床体的美观性，在上片 1 与围片 4 及下片 2 与围片 4 之间还分别设有一环

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形上吸地片 11 及一环形下吸地片 21，即上片 1 通过环形上吸地片 11 与围片 4 的上周缘连接在一起，而下片 2 通过环形下吸地片 21 与围片 4 的下周缘连接在一起。

[0020] 如图 5、6、7 所示的本发明的实施例 2，其中的各拉带 3 同样为对应床体宽度或长度的带体，拉带 3 同样是由两端的塑胶片条 31 连接复数根线体 32 构成，塑胶片条 31 用于与上片 1 及下片 2 的焊接，而线体 32 承接较强的牵引力；而侧围拉带 5 为一整体的环形拉带，其由两端的环形塑胶片条 51 连接复数根线体 52 构成，此侧围拉带 5 一端的塑胶片条 51 连接于围片 4 内表面的中部，另一端是连接于上片 1 与下片 2 上，如此防止具有较高高度并具一个充气腔的充气床其周缘外凸较大，保证床体周缘的强度及床体整体的支撑强度。

[0021] 同样为提高床体的美观性，在上片 1 与围片 4 及下片 2 与围片 4 之间还分别设有一环形上吸地片 11 及一环形下吸地片 21，即上片 1 通过环形上吸地片 11 与围片 4 的上周缘连接在一起，而下片 2 通过环形下吸地片 21 与围片 4 的下周缘连接在一起。

[0022] 此处需说明的是，上述实施例 1、2 的拉带 3 及侧围拉带 5 并不局限于此塑胶片条与复数根线体的结构，亦可采用整体塑胶片的线性拉带或柱状拉带同样可以实施，只要其可满足充气产品内压的要求即可。

[0023] 如图 8、9 所示所示的本发明的实施例 3，其中的各拉带 3 同样为对应床体宽度或长度的带体，拉带 3 同样是由两端的塑胶片条 31 连接复数根线体 32 构成，塑胶片条 31 用于与上片 1 及下片 2 的焊接，而线体 32 承拉较强的牵引力；而侧围拉带 5’包括复数个线状侧拉带 51’，各侧拉带 51’两端通过连接片 52’而连接于围片 4 中部内表面的相对面上，由于拉带 3 的中部为具有间隙的线体 32，因此可令侧拉带 51’而穿过各线体 32 而顺利的与围片 4 连接在一起。此结构的侧围拉带 5’同样可以实现对围片 4 外凸的制约，以保证具有较高高度并具一个充气腔的充气床其周缘的美观性，以防止周缘外凸较多，同时保证床体周缘的强度及床体整体的支撑强度。

[0024] 同样为提高床体的美观性，在上片 1 与围片 4 及下片 2 与围片 4 之间还分别设有一环形上吸地片 11 及一环形下吸地片 21，即上片 1 通过环形上吸地片 11 与围片 4 的上周缘连接在一起，而下片 2 通过环形下吸地片 21 与围片 4 的下周缘连接在一起。

[0025] 综上所述，本发明通过设置侧围拉带，可以对具有较高高度的充气产品的围片中部具有一定的牵引限位作用，防止其外凸较多而影响强度及美观，不仅有效降低产品材料成本，而且可以有效降低产品的制作成本。

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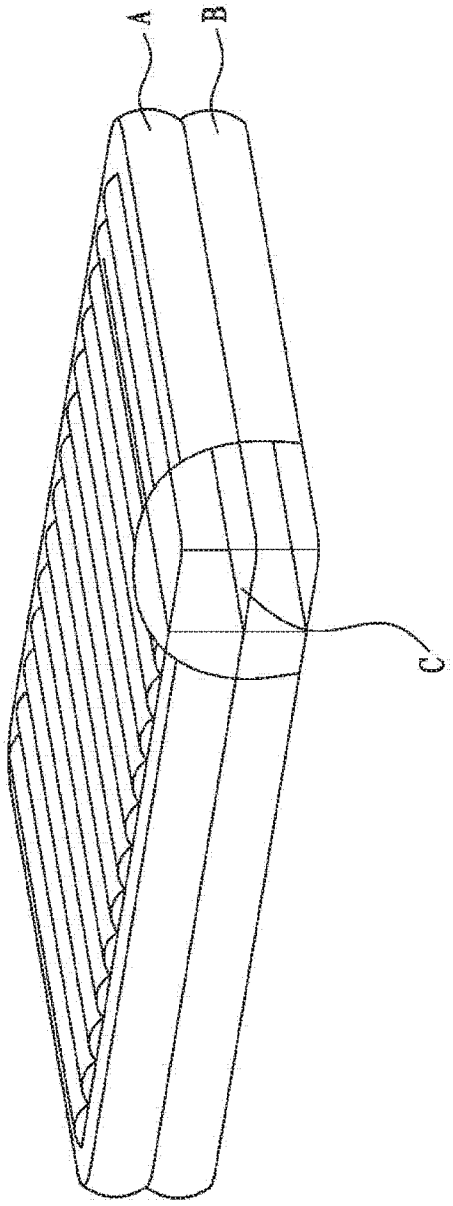


图 1

INTEX EX. 1003, Pg. 273
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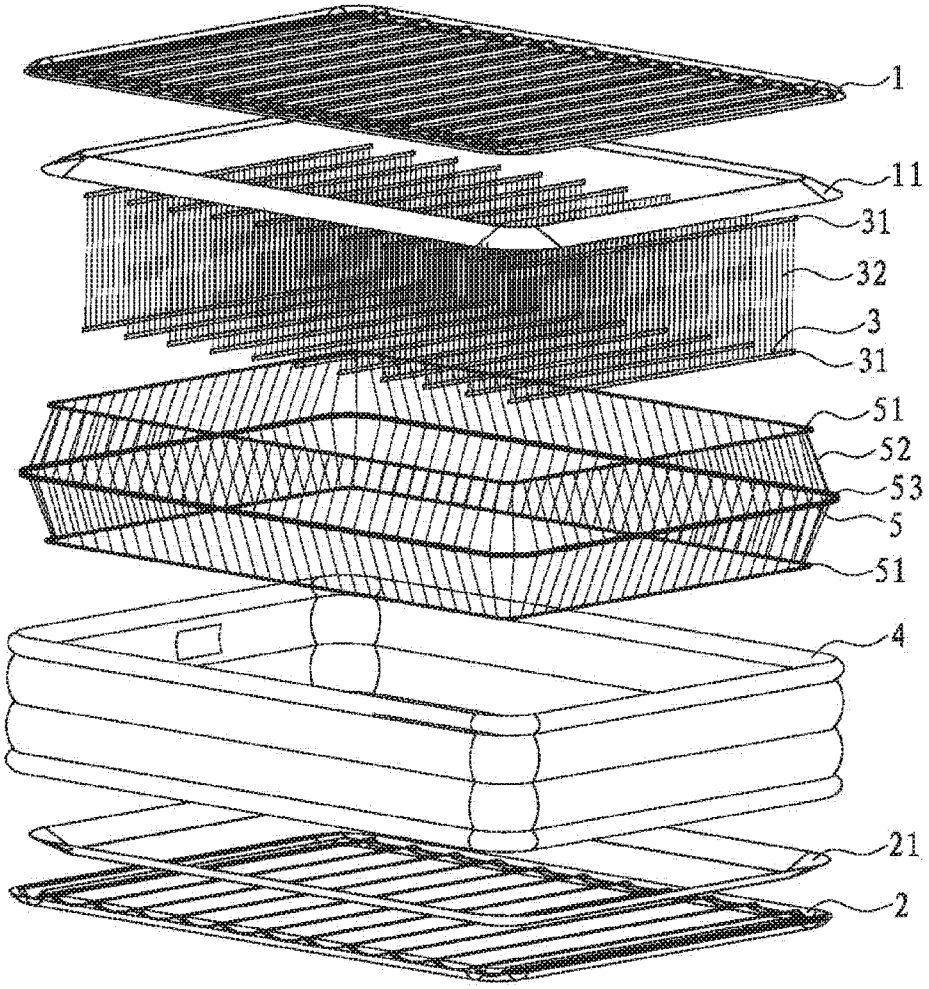


图 2

INTEX EX. 1003, Pg. 274
Intex Recreation v. Bestway Inflatables

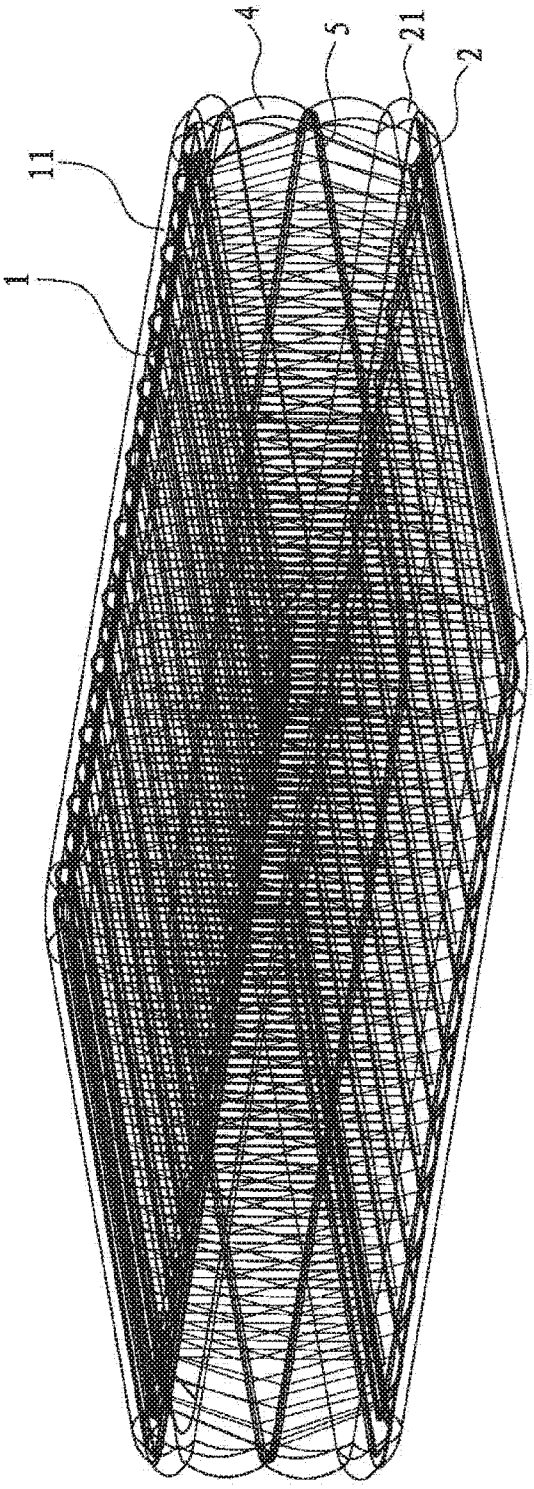


图 3

INTEX EX. 1003, Pg. 275
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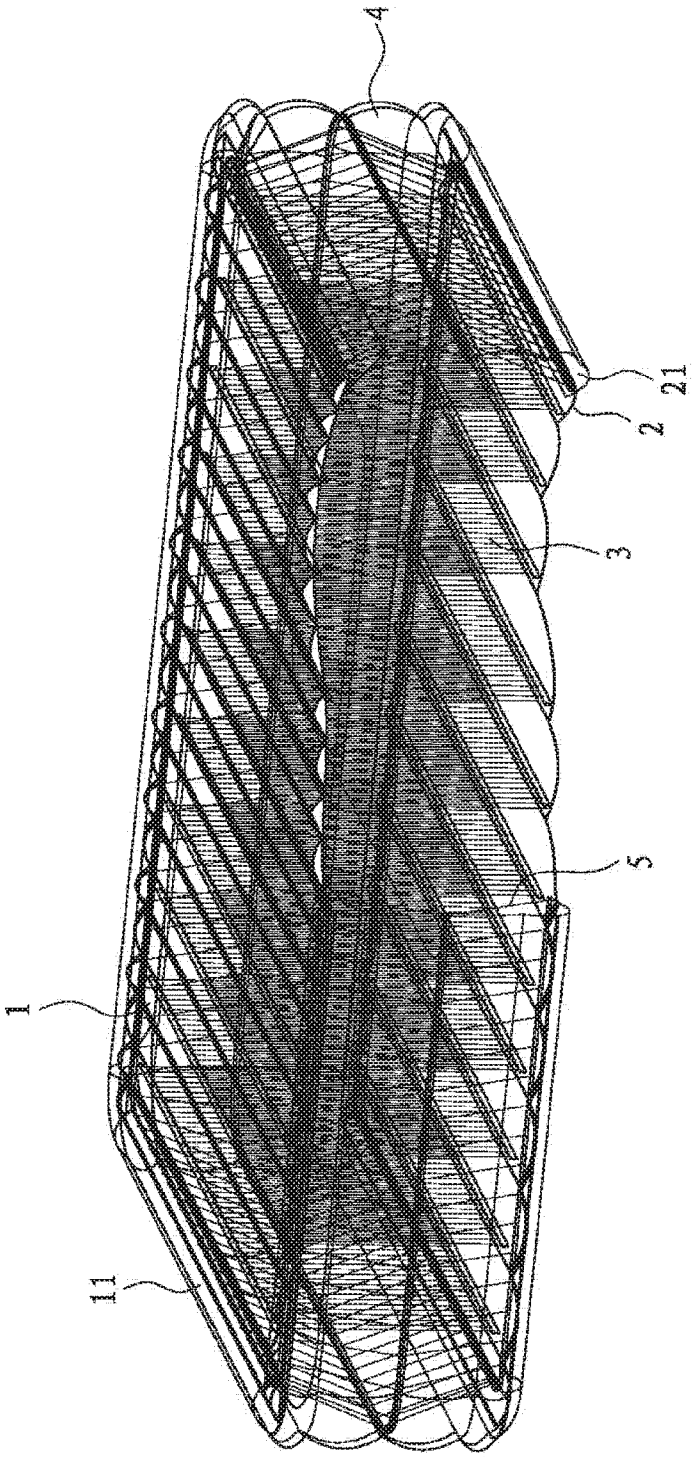


图 4

INTEX EX. 1003, Pg. 276
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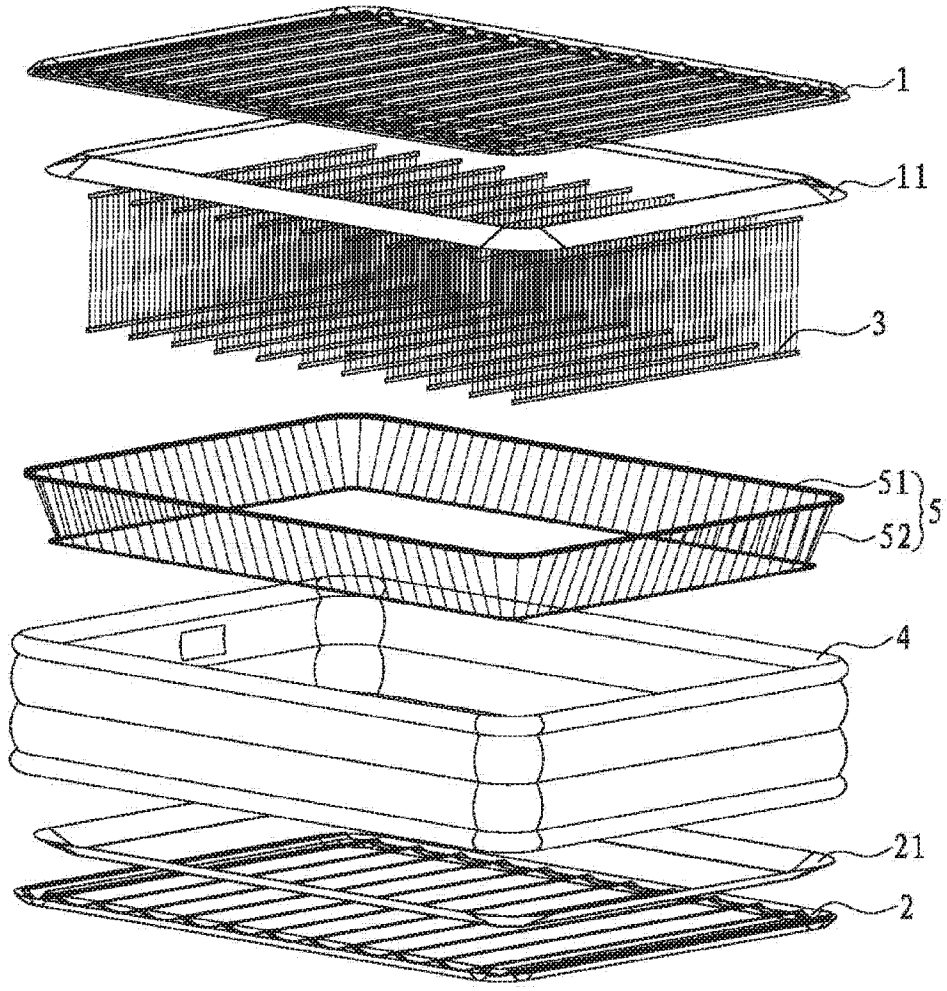


图 5

INTEX EX. 1003, Pg. 277
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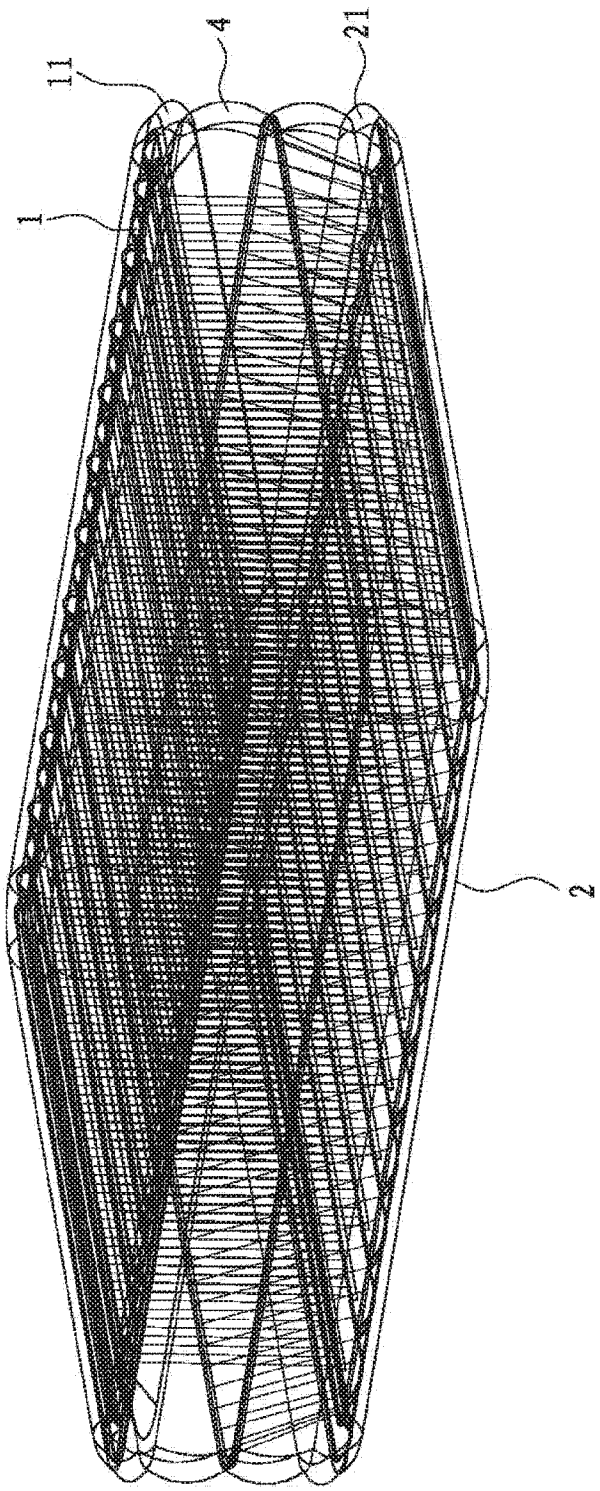


图 6

INTEX EX. 1003, Pg. 278
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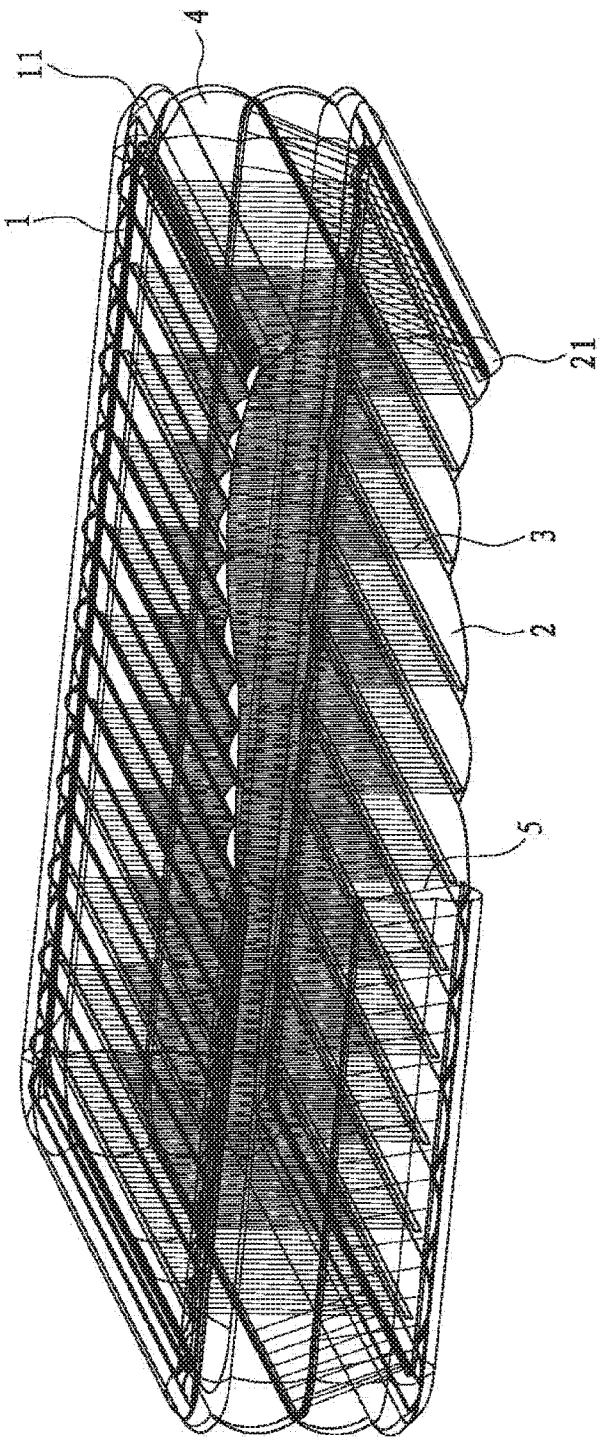


图 7

INTEX EX. 1003, Pg. 279
Intex Recreation v. Bestway Inflatables

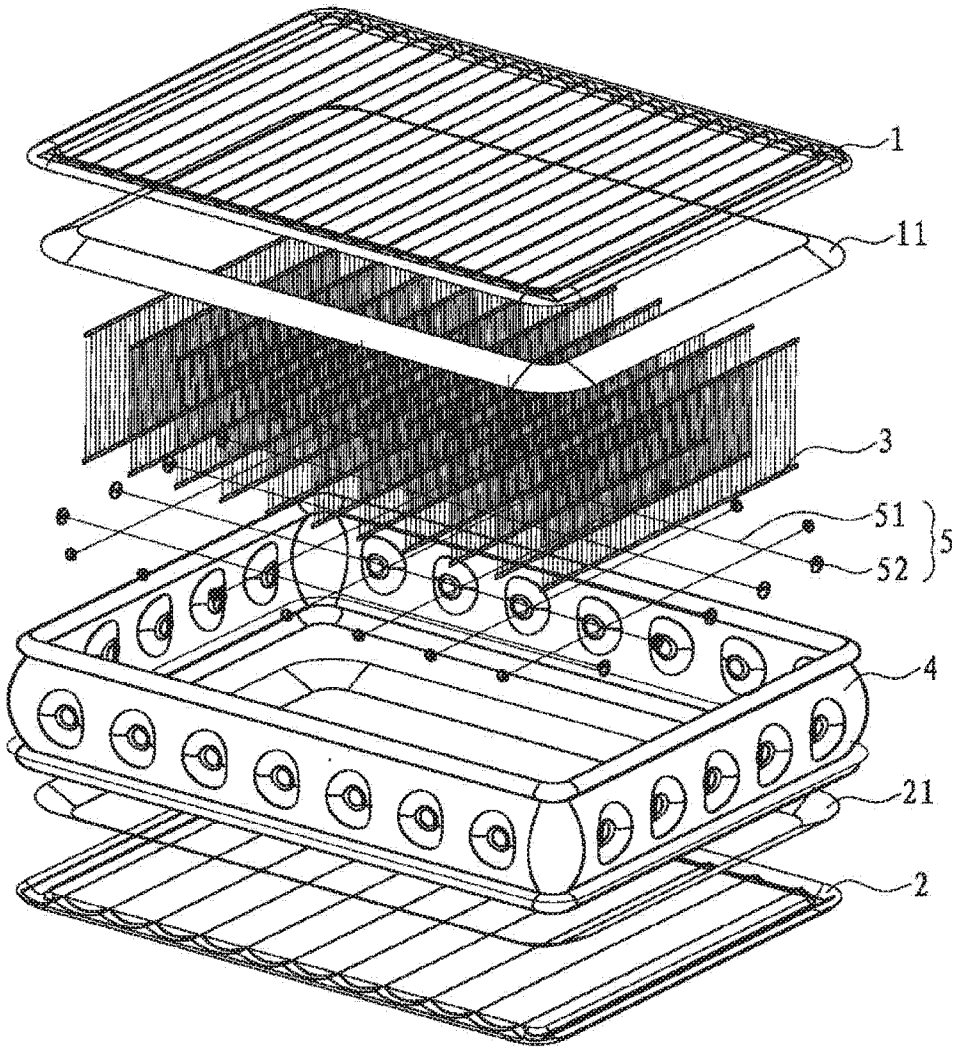


图 8

INTEX EX. 1003, Pg. 280
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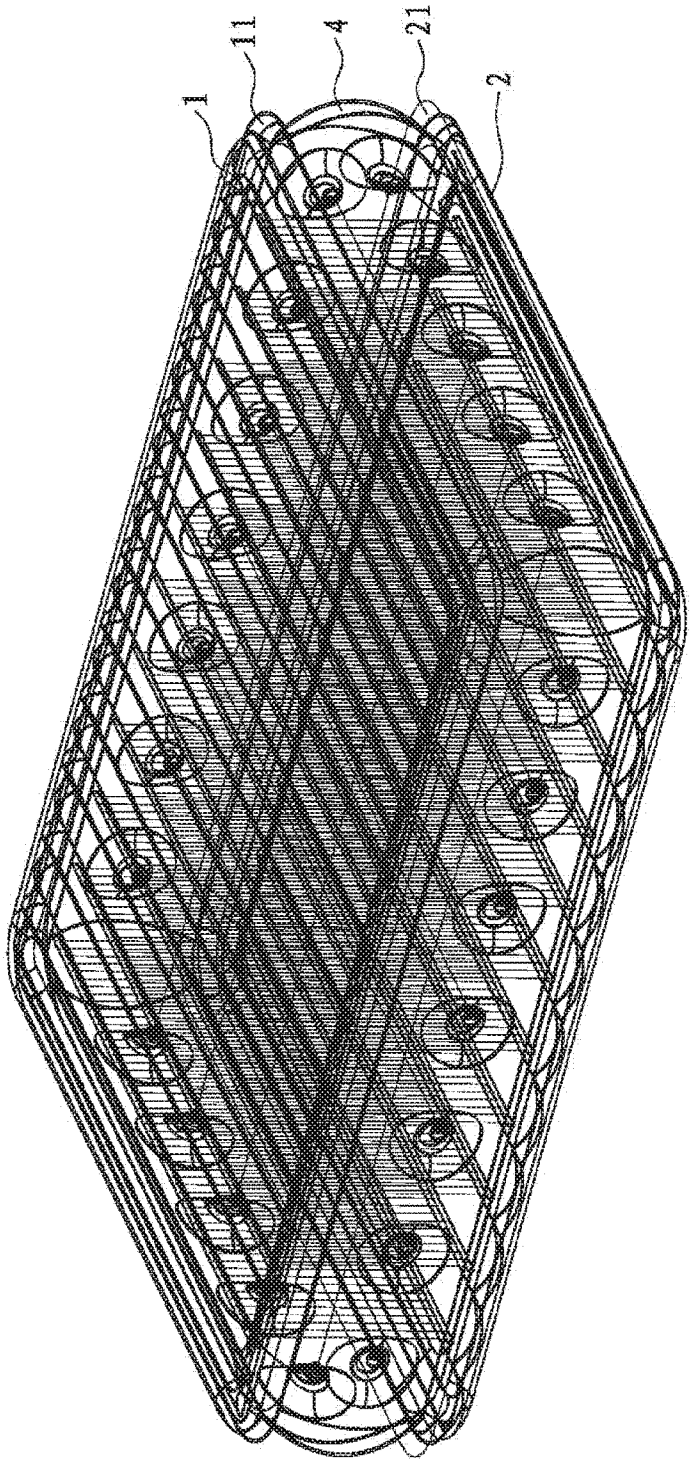


图 9

INTEX EX. 1003, Pg. 281
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Espacenet

Bibliographic data: CN2706070 (Y) — 2005-06-29

Aeration bed having ground suction function

Inventor(s): LIN HUAXIANG [CN]; XU YAOYUAN [CN] ± (HUAXIANG LIN, ; YAOYUAN XU)

Applicant(s): MINGDA PLASTIC XIAMEN CO LTD [CN] ± (MINGDA PLASTIC (XIAMEN) CO LTD)

Classification: **- international:** ***A47C27/08;*** (IPC1-7): A47C27/08
- cooperative: **A47C27/087**

Application number: CN2004247352U 20040616

Priority number(s): CN2004247352U 20040616

Abstract of CN2706070 (Y)

The utility model discloses an aeration bed having ground suction function, comprising a facing material, a bottom material, a strap unit, a medial material and a surrounding slice. The strap unit is connected to the facing material and the bottom material, and the surrounding material circles around and connects with the facing material edge, the medial material and the bottom material. Wherein, the medial material primarily comprises a front, a back, a left and a right four pulling-on pieces respectively combining the four edging of the bottom material and the centre section of the surrounding slices. The four pulling-on pieces of the medial material can adopt some leftover bits and pieces. Compared with the medial material adopting monolithic sheet material in the prior art, materials can be saved a lot, and the leftover bits and pieces of industrial material are efficiently utilized, and unnecessary wasting is avoided.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl[7]
A47C 27/08

[12] 实用新型专利说明书

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[11] 授权公告号 CN 2706070Y

[22] 申请日 2004.6.16

[21] 申请号 200420047352.4

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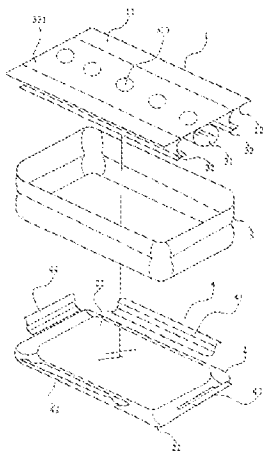
代理人 渠述华

权利要求书 1 页 说明书 4 页 附图 4 页

[54] 实用新型名称 具有吸地功能的充气床

[57] 摘要

本实用新型公开了一种具有吸地功能的充气床，其主要包括一面料、一底料、一拉带组、一中层料及一围片，拉带组连接面料及底料，围料是围绕并连接面料边缘、中层料及底料边缘；其中该中层料主要是由前、后、左、右四个拉片组成，其分别将底料的四边与围片中部连接在一起。中层料是由四个拉片可采用一些边角料，相对在先技术的中层料是采用整块的片材材料节省了很多，有效利用了边角余料，又避免了不必要的浪费。



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1、一种具有吸地功能的充气床，其主要包括一面料、一底料、一拉带组、一中层料及一围片，拉带组连接面料及底料，围料是围绕并连接面料边缘、中层料及底料边缘；其特征在于：该中层料主要是由前、后、左、右四个拉片组成，其分别将底料的四边与围片中部连接在一起。

2、如权利要求 1 所述的具有吸地功能的充气床，其特征在于：该中层料的前、后拉片大小相同，左、右拉片的大小相同。

3、如权利要求 1 或 2 所述的具有吸地功能的充气床，其特征在于：左、右拉片的长度接近底料的长度，而前、后拉片的长度接近底料的宽度。

4、如权利要求 1 所述的具有吸地功能的充气床，其特征在于：拉带组包括至少一组由“0”型拉片配合左右两个“I”型拉片构成的拉片组组成。

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具有吸地功能的充气床

技术领域

本实用新型是关于一种空气床结构，特别是指一种具有吸地功能的充气床。

背景技术

由于充气床易使用、重量轻容易移动，及收藏携带方便的特性，使得其作为临时性或是非固定式的床体使用时是相当适宜的选择。而充气后床体厚度较小的充气床一般均是户外使用较多，若要增进充气床的舒适性以媲美家庭使用的床铺时，充气床充气后的厚度则必须如一般床铺的高度，且结构亦必须较这稳固，因此产生一种为了增进舒适性及支撑稳固而制作的充气床。

如图 1、2、3 所示，为公开号为 CN1459265A 的“具有定位设计的充气床”，其包含有一面料 1’、一底料 2’、一拉带组 3’、一中层料 4’及一围料 5’。面料 1’形成有床表面 11’及内侧面 12’。底料 2’与面料 1’大小相近，其也形成有底面 21’及内里面 22’。拉带组 3’为多个呈并列状的纵向拉带 31’，拉带 3’的上下侧缘连接在面料 1’的内侧面 12’与底料 2’的内里面 22’。中层料 4’为一配合底料 2’形状大小的环形塑胶片，其中央中空处形成内侧边缘 41’，而最外侧形成外侧边缘 42’，内侧边缘 41’熔接在底料 2’的内里面 22’上接近外侧的地方。围料 5’是一长条形的塑胶片材形状，用以围绕在外侧处，其上下方的侧缘分别与面料 1’的外侧边缘及底料 2’的外侧边缘互相熔接，而中层料 4’的外侧缘 42’也连接在围料 5’上并位于面料 1’与底料 2’的中间。

如图 2、3.所示，整体材料熔接完成后，面料 1’、底料 2’及围料 5’可共同界定一充气空间，当充入气体后，因中层料 4’的区隔作用，使将充气床的高度提高，同时当使用者位于面料 1’的床表面 11’上面有一向下施加的重力时，底料 2’与支承面 6’之间形成一大型吸盘的作用，使充气床更为稳固定位在支承面 6’上而不容易移动。相反地，当使用者不使用时，充气床即不再受重力压迫时，吸盘作用消失，此时充气床可形成较为容易移动的状态。

但是上述结构的充气床仍存有下述的缺陷：

1、浪费材料：中料层是采用配合底料形状的片体，其中部是挖空以形成内侧边缘，因此该中料层必须是采用整体的片材，而中部被挖除的部份无形中是形成了材料的浪费。

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2、舒适度欠佳：如拉带组是采用纵向的拉带，则拉带对面料的支撑强度高，但是硬度高，躺着不够舒服；如拉带组采用环形拉带，躺着虽然柔软，但其支撑强度不佳。

实用新型内容

本实用新型的主要目的是提供一种节约材料的具有吸地功能的充气床。

本实用新型的次要目的是提供一种使用更加舒适的具有吸地功能的充气床。

为实现上述目的，本实用新型的解决方案是：一种具有吸地功能的充气床，其主要包括一面料、一底料、一拉带组、一中层料及一围片，拉带组连接面料及底料，围料是围绕并连接面料边缘、中层料及底料边缘；其中：该中层料主要是由前、后、左、右四个拉片组成，其分别将底料的四边与围片中部连接在一起。

该中层料的前、后拉片大小相同，左、右拉片的大小相同。

左、右拉片的长度接近底料的长度，而前、后拉片的长度接近底料的宽度。

所述的拉带组由包括至少一组由一个“0”型拉带配合左右两个“I”型拉带构成。

采用上述方案后，本实用新型相对在先技术具有以下优点：

1、节约材料：本实用新型中的中层料是由四个拉片组成，因此采用一些边角料即可将底料与围料连接在一起，相对在先技术的中层料是采用整块的片材材料节省了很多，有效利用了边角余料，又避免了不必要的浪费。

2、强度高、使用更舒适：本实用新型的拉带组是采用至少一组由一个“0”型拉带配合左右两个“I”型拉带，“0”形拉带与面料及底料是点接触熔接，其具备一定的柔软度，而“I”型拉带与面料及底料是线接触熔接，其又具备了纵向拉带的支撑强度。

附图说明

图 1 是在先技术的立体分解图；
图 2 为在先技术的组合外观图；
图 3 为图 2 的剖视示意图；
图 4 为本实用新型的立体分解图；
图 5 为本实用新型的组合衡向剖视图；
图 6 为本实用新型的组合纵向剖视图。

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具体实施方式

请参阅图 4 所示，本实用新型的充气床其亦包含有一面料 1、一底料 2、一拉带组 3、一中层料 4 及一围料 5。

面料 1 为一所需床面大小面积的塑胶片材，其同样形成有一面向上方的床表面 11 及一与床表面 11 相反而面向下方的内侧面 12。

底料 2 亦为一塑胶片材，其配合面料 1 的形状但是面积大约与面料 1 相同，底料 2 也形成有一面向下方的底面 21 及一与底面 21 相反而面向上方的内里面 22。

围料 5 是呈一长条形的塑胶片材形状，其围绕后形成一床体的外框支架。

本实用新型的关键在于：

中层料 4 是由四个小形的片材组成的一组拉片组，该四个片材分别是为一组大小相同的左内拉片 41、右内拉片 42 及一组大小相同的前内拉片 43、后内拉片 44；此四个拉片可采用一些塑胶片材的边角余料，左、右拉片 41、42 的长度接近底料 2 的长度，而前、后拉片 43、44 的长度接近底料 2 的宽度。

拉带组 3 包括有一组及一组以上的呈纵向排列的拉带分组，每一组的拉带是由一个“0”型拉带 31 配合左右对称的两个“I”型拉带 32 构成，各拉带的长度与面料 1 及底料 2 的长度接近。

配合图 5、6 所示，拉带组 3 是分别熔接在面料 1 的内侧面 11 及底料 2 的内里面 22 上，使面料 1 与底料 2 保持一定的距离关系；而中层料 4 的左、右、前、后拉片 41、42、43、44 的一边分别熔接在底料 2 的内里面 22 接近外侧的地方，而另一边分别熔接在围料 5 上并位于面料 1 及底料 2 的中间；最后面料 1 及底料 2 的外边缘依次熔接在围料 5 的上下方的侧缘处，一具有充气空间的充气床即形成。

整体材料熔接完成后，面料 1、底料 2 及围料 5 可共同界定一充所空间 A，当充入气体后，由于中层料 4 的各拉片的牵引作用，可使底料 2 相对支撑面 6 形成一腔室 B，此腔室 B 的形成，使得整体充气床的高度提高，当使用者位于面料 1 的床表面 11 上时，其会向下对床施加的重力，充气空间 A 会有向下变形的作用，使得位于充气空间 A 下方的腔室 B 中的空气被挤压出腔室 B 之外，而腔室 B 可更为紧压在支承面 6 上，其效果可使整体充床如同一大型吸盘的作用，使充气床更为稳固定位在支承面上而不容易移动。相反地，当使用者不使用时，充气床即不再受重力压迫，充气空间 A 可回复原状，外侧的空气又可进入腔室 B 中，即底料 2 相对支撑面 6 的空间内，此时充气床可形成较为容易移动的状态。

综上所述，本实用新型不仅可以具备在先技术中提升床体高度、

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支撑稳固的功能，而且中层料 4 的四个拉片采用的边角余料相对在先技术中层料 4'采用的整体片材形成的拉片更为节省材料；同时再请配合图 4 所示，本实用新型中的拉带组 3 是采用“0”型拉带 31 配合左右对称的两个“I”型拉带 32 支撑床面 11，“0”型拉带 31 与床面 11 是形成点或面 311 的熔接，其可使床面 11 具有一定的柔软度，“I”型拉带 32 与床面 11 是形成的线性 321 熔接，又具备了纵向拉带的支撑强度，使用者躺着时会感觉床面更加舒适。

INTEX EX. 1003, Pg. 288
Intex Recreation v. Bestway Inflatables

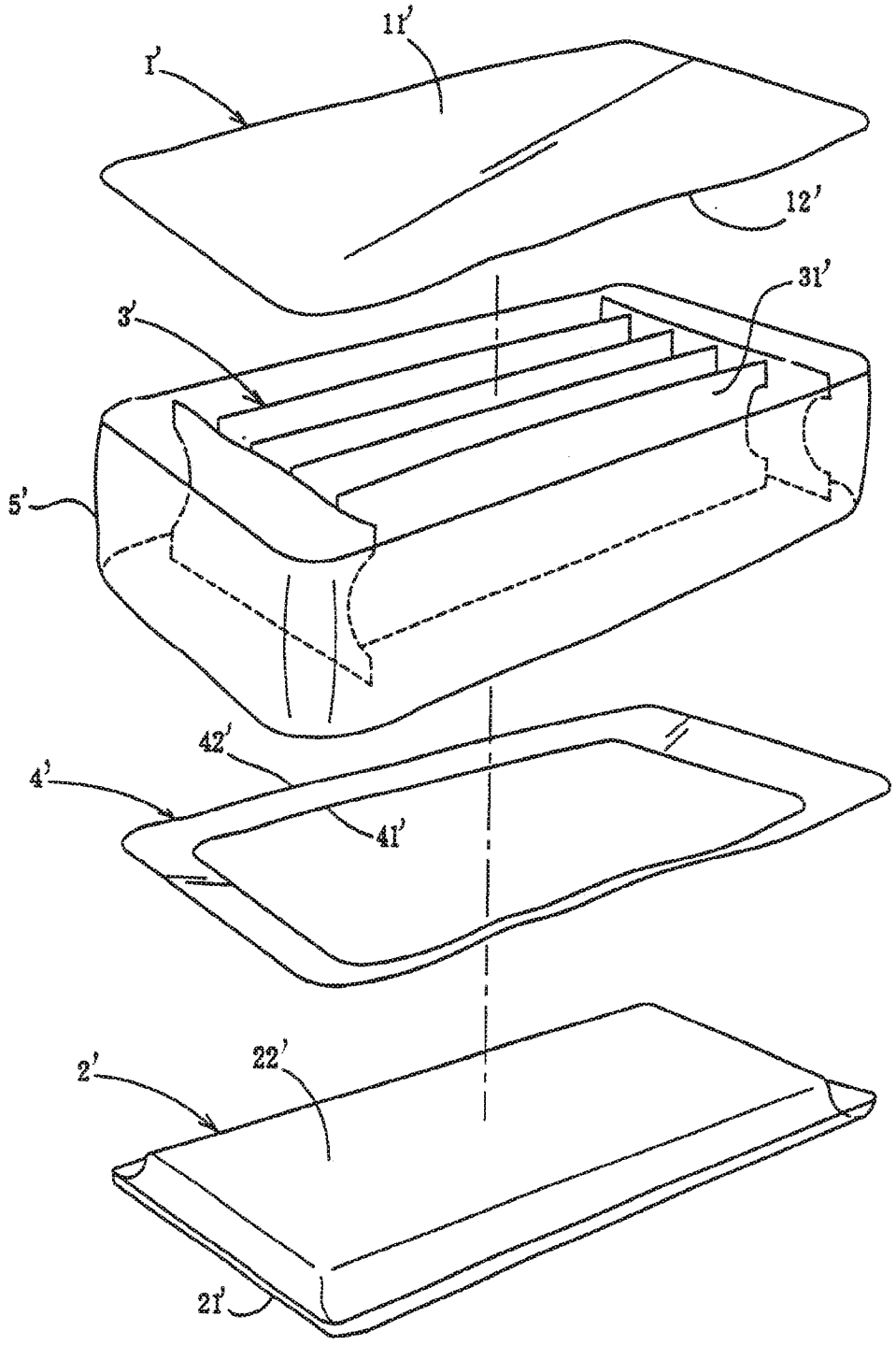


图1

INTEX EX. 1003, Pg. 289
Intex Recreation v. Bestway Inflatables

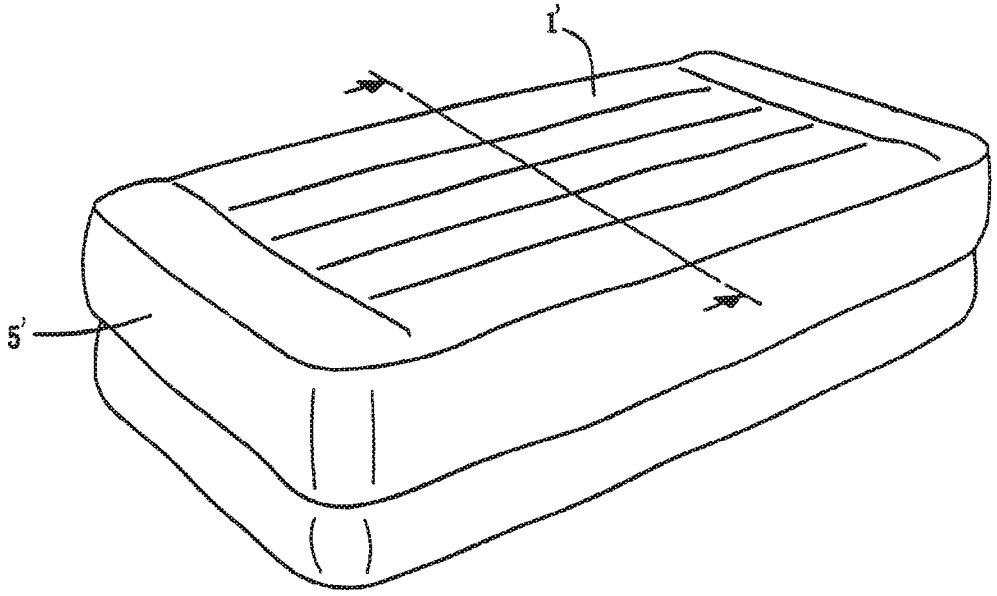


图 2

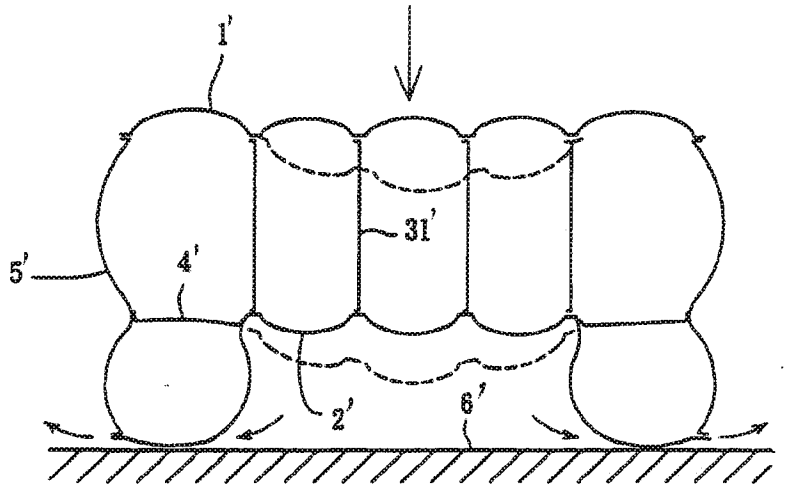


图 3

INTEX EX. 1003, Pg. 290
Intex Recreation v. Bestway Inflatables

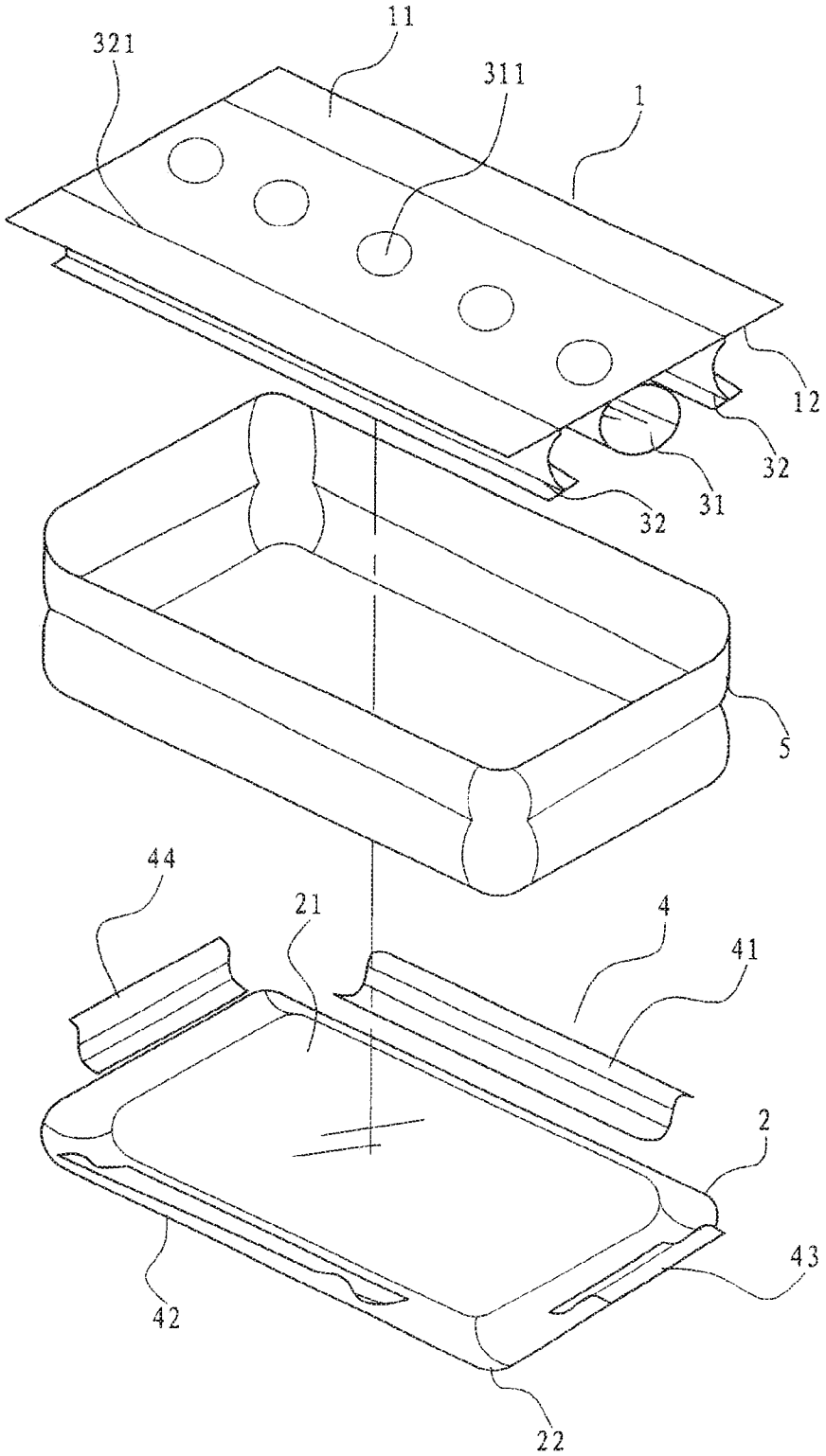


图4

INTEX EX. 1003, Pg. 291
Intex Recreation v. Bestway Inflatables

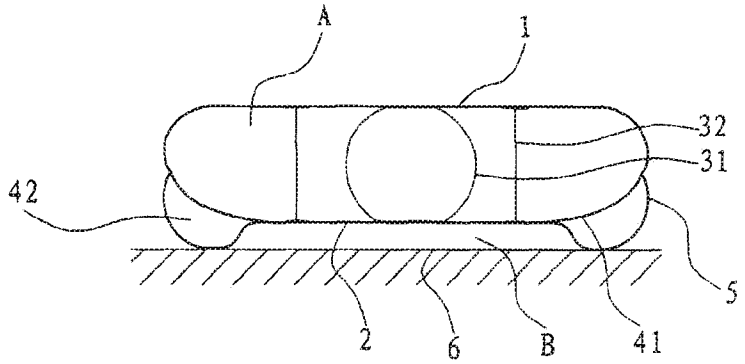


图5

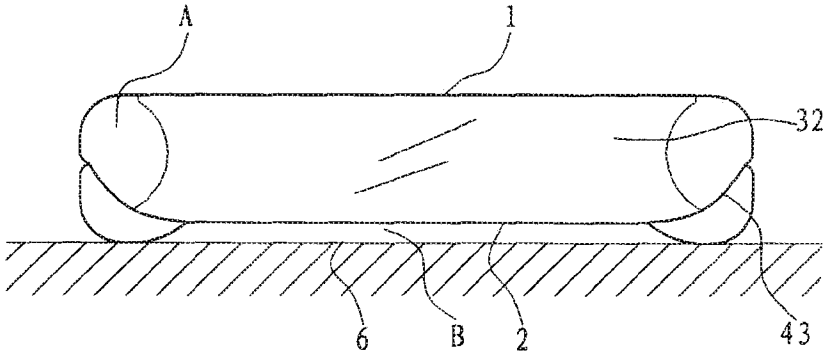


图6

INTEX EX. 1003, Pg. 292
Intex Recreation v. Bestway Inflatables

Espacenet

Bibliographic data: CN2904820 (Y) — 2007-05-30

Draw strap structure of air mattress

Inventor(s): LIU FENG [CN] ± (FENG LIU)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & [CN] ± (SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)

Classification: - international: ***A47C27/08***
- cooperative: **A47C27/081**; **A47C27/087**

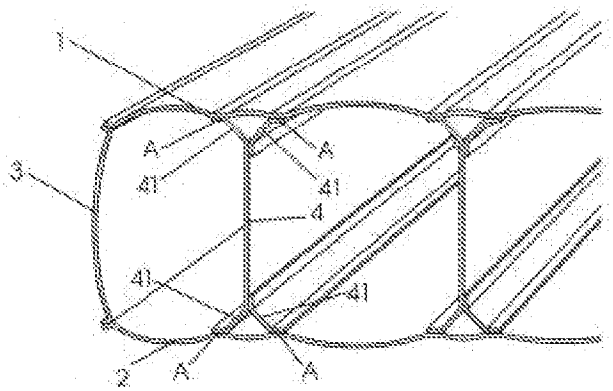
Application number: CN20062042365U 20060602

Priority number (s): CN20062042365U 20060602

Also published as: US2007277324 (A1)

Abstract of CN2904820 (Y)

A draw strap structure of air mattress, mainly comprise a face sheet, a bottom sheet and a surrounding sheet. Draw straps connecting the face sheet and the bottom sheets are provided between the face sheet and the bottom sheet. The utility model is characterized in that two portions extending to the two sides are provided at least on one end of the draw straps, and the external surface of the extending portion connects respectively with the face sheet and the bottom sheet; the cross section of the draw straps is of I or J or X or Y shape. The advantage of the present utility model lies in that connecting surfaced between the draw straps and the face sheet, the bottom sheets are added based on original draw straps which reduces the pull force born by unit area at the jointing part and thus lengthen the service life of the pneumatic mattress.



[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
A47C 27/08 (2006.01)

[12] 实用新型专利说明书

专利号 ZL 200620042365.1

[45] 授权公告日 2007 年 5 月 30 日

[11] 授权公告号 CN 2904820Y

[22] 申请日 2006.6.2

[21] 申请号 200620042365.1

[73] 专利权人 上海荣威塑胶工业有限公司

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[74] 专利代理机构 上海市华诚律师事务所

代理人 李 平

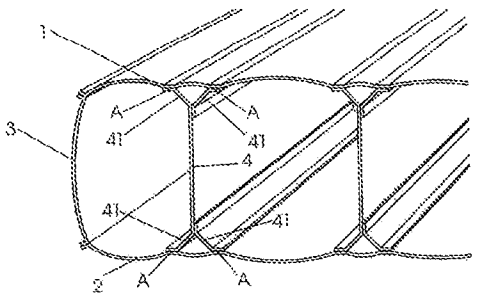
权利要求书 1 页 说明书 3 页 附图 2 页

[54] 实用新型名称

充气床垫的拉带结构

[57] 摘要

一种充气床垫的拉带结构，主要包括面片、底片和围片，在面片和底片之间设有连接面片和底片的拉带，其特征在于所述拉带上下两端至少有一端设有两个向两侧延伸的部分，延伸部分的外表面分别与面片或底片连接，拉带的截面形状呈“工”或“丁”或“X”或“丫”形。本实用新型的优点是在原有拉带的基础上增加了拉带与面片、底片的连接面，降低了接缝处单位面积承受的拉力，增加了充气床垫使用寿命。



1. 一种充气床垫的拉带结构，主要包括：面片、底片和围片，在面片和底片之间设有连接面片和底片的拉带，其特征在于所述拉带上下两端至少有一端设有两个向两侧延伸的部分，延伸部分的外表面分别与面片或底片连接，拉带的截面形状呈“I” 或“T”或“X”或“Y”形。

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充气床垫的拉带结构

技术领域

本实用新型涉及一种充气床垫,特别涉及一种充气床垫的拉带结构。

技术背景

目前充气床垫由于携带方便、便于收藏兼具良好的舒适性等优点越来越得到人们的喜爱和流行，它不仅可以当作备用的床垫使用，而且还可以在野外露营时使用。传统的充气床垫一般采用直拉带、S 形拉带等类型，其上下两端分别与面片和底片单侧连接，其截面形状一般为“]”或“Z”形，拉带在床垫充气后对面片和底片产生垂直方向的拉力，在拉带和面片或底片连接的接缝处受力较为集中，容易造成拉带和面片或底片的连接处剥离或面片、底片被撕裂，特别是在床垫内部气压值较高的情况下，或是在床垫受到较大的外部冲击力内部气压值瞬间提高到较高气压值的情况下，更容易造成损坏。有些充气床垫为了克服接缝处剥离、撕裂问题，采用增加拉带或加厚面片和底片材料厚度的方法提高强度，虽能使充气床垫损坏的情况有所改善，但制造成本大大增加。

发明内容

本实用新型的发明目的针对已有技术中存在的缺陷,提供了一种充气床垫的拉带结构。

本实用新型主要包括：面片、底片和围片，在面片和底片之间设有连接面片和底片的拉带，其特征在于所述拉带上下两端至少有一端设有两个向两侧延伸的部分，延伸部分的外表面分别与面片或底片连接，拉带的截面形状

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呈“I” 或“T”或“X”或“Y”形。

本实用新型的优点是在原有拉带的基础上增加了拉带与面片、底片的连接面，降低了接缝处单位面积承受的拉力，增加了充气床垫使用寿命。

附图说明

图 1 本实用新型X截面形状的拉带结构示意图；

图 2 本实用新型Y截面形状的拉带结构示意图；

图 3 本实用新型I截面形状的拉带结构示意图；

图 4 本实用新型T截面形状的拉带结构示意图。

1 面片、 2 底片、 3 围片、4 拉带、 41 延伸部分、A 焊缝

具体实施方式

实施例 1

下面结合附图进一步说明本实用新型的实施例：

参见图 1，呈“X”形截面形状的拉带，拉带 4 上下两端各设有两个向两侧延伸部分 41 分别与面片 1 或底片 2 连接，其连接的方法为高频焊接。充气床垫充气以后拉带 4 通过上下两端向两侧延伸部分 41 对面片 1 和底片 2 施加拉力，面片 1 和底片 2 所受的拉力得到分散，同时拉带 4 上下两端向两侧延伸部分 41 对焊缝 A 起到保护作用，这样拉带 4 和面片 1 或底片 2 的连接处不易产生剥离或者发生面片 1、底片 2 在受到拉带 4 垂直方向的较大拉力时被撕裂，即使在床垫内部气压值较高的情况下，或是在床垫受到较大的外部冲击力内部气压值瞬间提高到较高气压值的情况下，拉带 4 与面片 1 和底片 2 的连接也是非常牢固的。

实施例 2

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参见图 2，与实施例 1 相同，所不同的是拉带 4 的截面形状呈“丁”形。拉带 4 只在上端设有两个向两侧延伸部分 41 与面片 1 连接，主要是增加拉带 4 和面片 1 的连接部位的牢固度，下端只设有一个延伸部分 41，与底片 2 连接。

实施例 3

参见图 3，与实施例 1 相同，所不同的是拉带 4 的截面形状呈“工”形。拉带 4 只在上端设有两个向两侧延伸部分 41 与面片 1 连接，主要是增加拉带 4 和面片 1 的连接部位的牢固度，下端也设有两个向两侧延伸部分 41 与与底片 2 连接。

实施例 4

参见图 4，与实施例 1 相同，所不同的是拉带 4 的截面形状呈“丁”形。拉带 4 只在上端设有两个向两侧延伸部分 41 与面片 1 连接，主要是增加拉带 4 和面片 1 的连接部位的牢固度，下端只设有一个延伸部分 41，与底片 2 连接。

INTEX EX. 1003, Pg. 298
Intex Recreation v. Bestway Inflatables

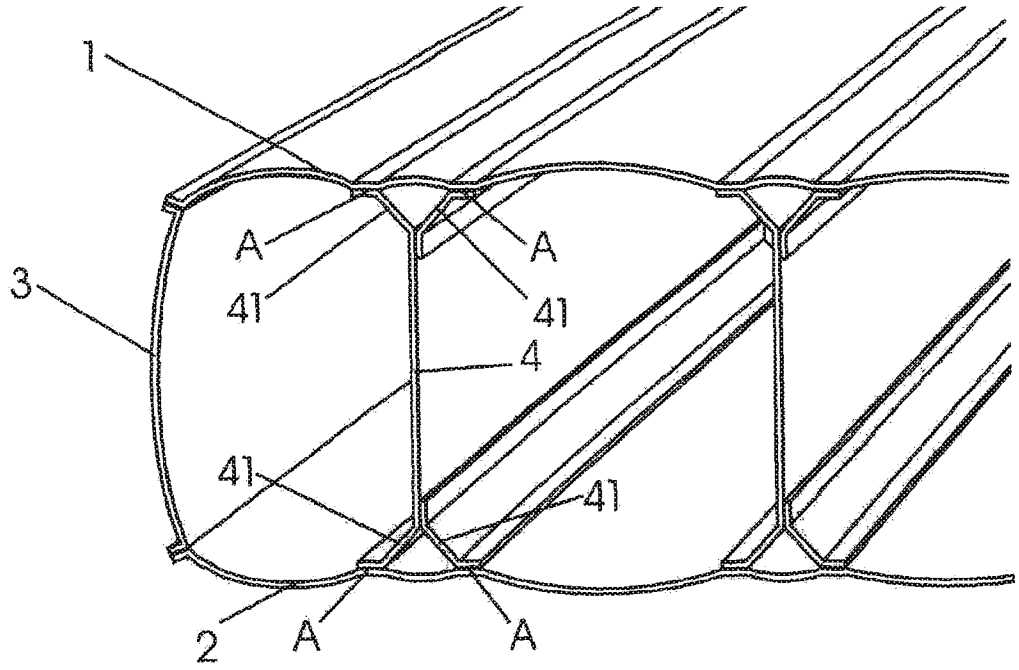


图 1

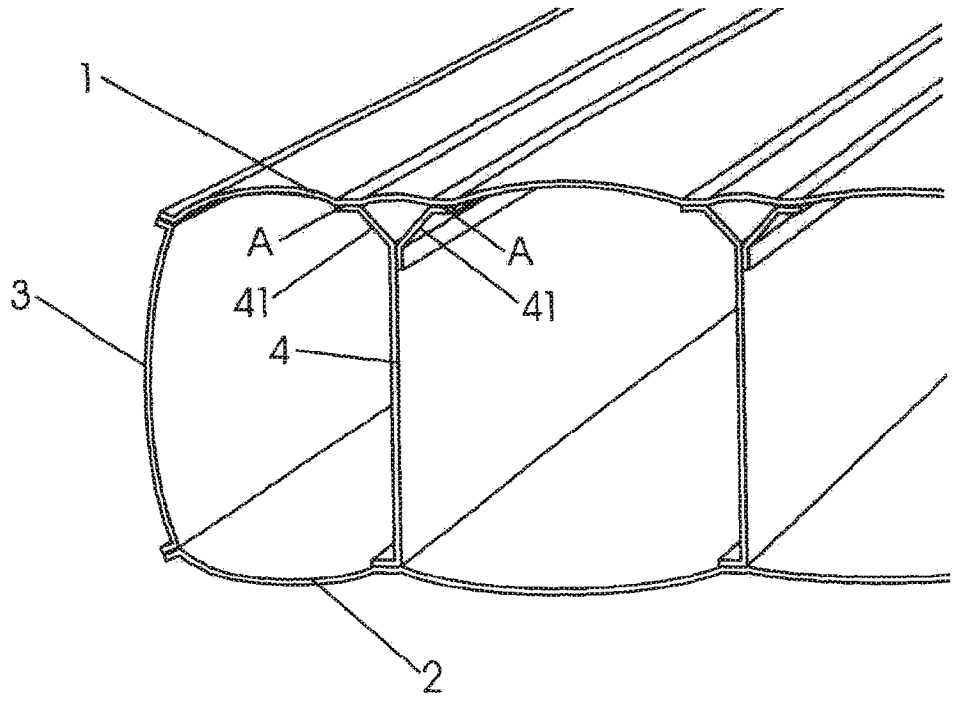


图 2

INTEX EX. 1003, Pg. 299
Intex Recreation v. Bestway Inflatables

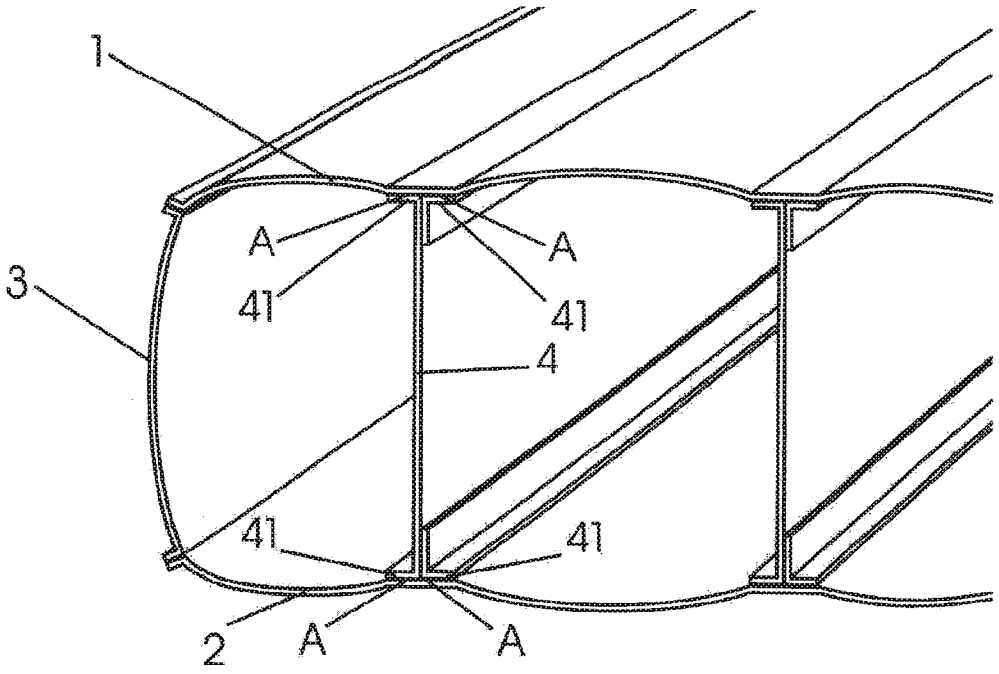


图 3

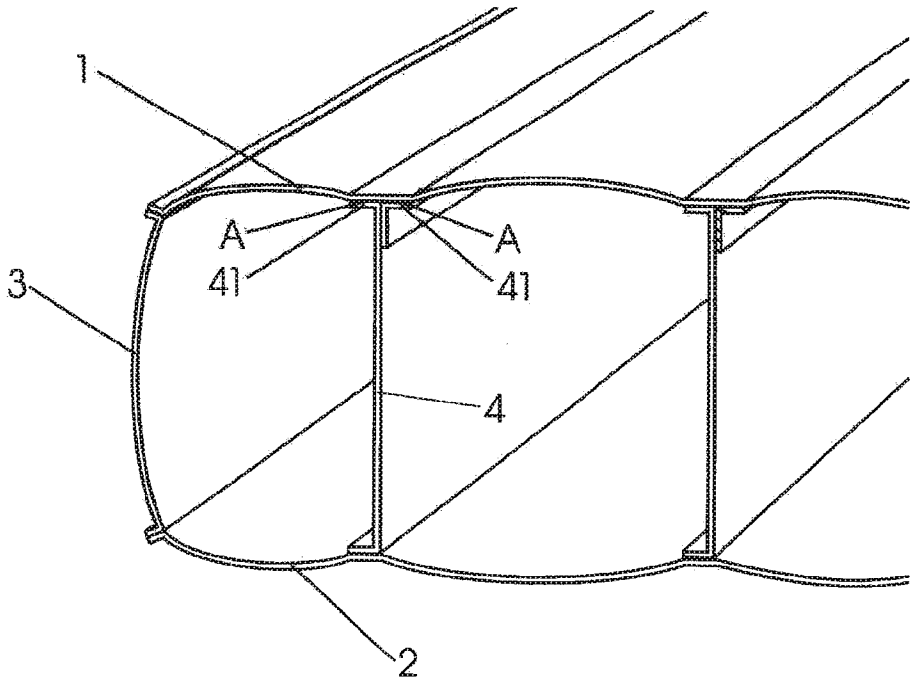


图 4

INTEX EX. 1003, Pg. 300
Intex Recreation v. Bestway Inflatables

Espacenet

Bibliographic data: CN205457538 (U) — 2016-08-17

Air bed

Inventor(s): LIU FENG ± (刘峰)

Applicant(s): SHANGHAI BESTWAY INFLATABLES AND MAT CORP ± (上海荣威塑胶工业有限公司)

Classification: **- international:** ***A47C27/08***
- cooperative:

Application number: CN20162031074U 20160113

Priority number(s): CN20162031074U 20160113

Abstract of CN205457538 (U)

The utility model provides an air bed, it includes: interval arrangement about top flat and the film, the top edge of an at least lateral wall with the outward flange of top flat is connected, the lower limb of lateral wall with the outward flange of film is connected, the top flat the film with form an air chamber between the lateral wall, at least one first stretching strap structure sets up in the air chamber, just the upper and lower both ends of first stretching strap structure respectively with the top flat with the film is connected, and an at least bearing structure, set up in the air chamber, bearing structure is along at least one the length direction of lateral wall sets up, two at least outside edges are respectively with adjacent among the bearing structure the lateral wall is connected, at least one inboard edge is with adjacent among the bearing structure the top flat or the film is connected. The utility model discloses air bed has fine stability, has overcome prior art's air bed and the problem that the air bed pad was turned on one's side easily, but also can prevent that the user from rolling in the use.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 205457538 U
(45)授权公告日 2016.08.17

(21)申请号 201620031074.6

(22)申请日 2016.01.13

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代理人 陈亮

(51)Int.Cl.
A47C 27/08(2006.01)

(ESM)同样的发明创造已同日申请发明专利

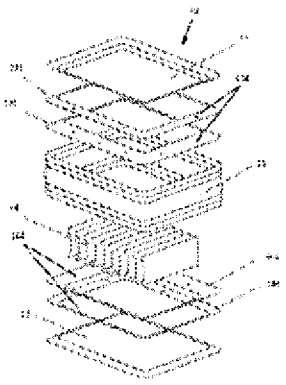
权利要求书3页 说明书9页 附图15页

(54)实用新型名称

充气床

(57)摘要

本实用新型提供了一种充气床，其包括：顶片和底片上下间隔布置；至少一侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；至少一第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。本实用新型充气床具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题，而且还可以防止用户在使用过程中滚落。



CN 205457538 U

1.一种充气床,其特征在于,所述充气床包括:

顶片和底片,所述底片与所述顶片上下间隔布置;

至少一侧壁,所述侧壁的上边缘与所述顶片的外边缘连接,所述侧壁的下边缘与所述底片的外边缘连接,所述顶片、所述底片和所述侧壁之间形成一个气室;

至少一第一拉带结构,所述第一拉带结构设置在所述气室内,且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接;以及

至少一支撑结构,设置在所述气室内,所述支撑结构沿至少一所述侧壁的长度方向设置,所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接,所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

2.如权利要求1所述的充气床,其特征在于,所述支撑结构包括第二拉带结构和第三拉带结构,所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接,所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接;以及

所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接,所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

3.如权利要求2所述的充气床,其特征在于,所述第二拉带结构和所述第三拉带结构上分别设有多个气孔,所述气室通过所述气孔形成空气流通。

4.如权利要求2所述的充气床,其特征在于,所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

5.如权利要求2所述的充气床,其特征在于,所述第二拉带结构包括至少两个第一I型拉带,每一所述第一I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接,且至少两个所述第一I型拉带间隔布置。

6.如权利要求2所述的充气床,其特征在于,所述第三拉带结构包括至少两个第二I型拉带,每一所述第二I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接,且至少两个所述第二I型拉带间隔布置。

7.如权利要求2所述的充气床,其特征在于,所述第二拉带结构包括至少一个第一Y型拉带,其中,所述第一Y型拉带的两个外侧边缘分别与相邻的所述侧壁连接,一内侧边缘与所述顶片连接。

8.如权利要求2所述的充气床,其特征在于,所述第三拉带结构包括至少一个第二Y型拉带,其中,所述第二Y型拉带的两个外侧边缘分别与相邻的所述侧壁连接,一内侧边缘与所述底片连接。

9.如权利要求2所述的充气床,其特征在于,所述第二拉带结构包括至少一个第一管型拉带,所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接,且至少一内侧边缘与所述顶片连接。

10.如权利要求2所述的充气床,其特征在于,所述第三拉带结构包括至少一个第二管型拉带,所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接,且至少一内侧边缘与所述底片连接。

11.如权利要求2所述的充气床,其特征在于,所述第二拉带结构包括至少一个第一V型拉带,其中,所述第一V型拉带的两个外侧边缘分别与相邻的所述侧壁连接,且一内侧边缘与所述顶片连接。

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12.如权利要求2所述的充气床，其特征在于，所述第三拉带结构包括至少一个第二V型拉带，其中，所述第二V型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

13.如权利要求5所述的充气床，其特征在于，所述至少两个第一I型拉带相互间隔地排布于所述顶片的下表面。

14.如权利要求6所述的充气床，其特征在于，所述至少两个第二I型拉带相互间隔地排布于所述底片的上表面。

15.如权利要求5所述的充气床，其特征在于，所述至少两个第一I型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

16.如权利要求6所述的充气床，其特征在于，所述至少两个第二I型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

17.如权利要求7所述的充气床，其特征在于，所述至少一个第一Y型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

18.如权利要求8所述的充气床，其特征在于，所述至少一个第二Y型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

19.如权利要求9所述的充气床，其特征在于，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

20.如权利要求10所述的充气床，其特征在于，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

21.如权利要求11所述的充气床，其特征在于，所述至少一个第一V型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

22.如权利要求12所述的充气床，其特征在于，所述至少一个第二V型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

23.如权利要求5所述的充气床，其特征在于，所述至少两个第一I型拉带整体为一个闭合的环形结构或一个间断的环形结构。

24.如权利要求6所述的充气床，其特征在于，所述至少两个第二I型拉带整体为一个闭合的环形结构或一个间断的环形结构。

25.如权利要求7所述的充气床，其特征在于，所述至少一个第一Y型拉带整体为一个闭合的环形结构或一个间断的环形结构。

26.如权利要求8所述的充气床，其特征在于，所述至少一个第二Y型拉带整体为一个闭合的环形结构或一个间断的环形结构。

27.如权利要求9所述的充气床，其特征在于，所述至少一个第一管型拉带整体为一个间断的环形结构。

28.如权利要求10所述的充气床，其特征在于，所述至少一个第二管型拉带整体为一个间断的环形结构。

29.如权利要求11所述的充气床，其特征在于，所述至少一个第一V型拉带整体为一个闭合的环形结构或一个间断的环形结构。

30.如权利要求12所述的充气床，其特征在于，所述至少一个第二V型拉带整体为一个闭合的环形结构或一个间断的环形结构。

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31.如权利要求1所述的充气床，其特征在于，所述第一拉带结构为直拉带、圆孔拉带、Y型拉带或X型拉带其中一种拉带或多种拉带。

32.如权利要求2所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

33.如权利要求2所述的充气床，其特征在于，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

34.如权利要求33所述的充气床，其特征在于，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

35.如权利要求33所述的充气床，其特征在于，所述网布、或者所述线体至少部分两侧表面与U型胶布片条连接为一体，所述网布和所述线体夹设于所述U型胶布条中间。

36.如权利要求2所述的充气床，其特征在于，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

37.如权利要求2所述的充气床，其特征在于，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

38.如权利要求2所述的充气床，其特征在于，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

39.如权利要求2所述的充气床，其特征在于，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

40.如权利要求1所述的充气床，其特征在于，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的充气或放气。

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充气床

技术领域

[0001] 本实用新型涉及充气床或充气床垫领域，特别涉及一种充气床，其结构设置为可限制侧壁向外膨胀或变形。

背景技术

[0002] 目前，充气床和充气床垫已经非常流行。充气床和充气床垫具有重量轻、便于携带和收藏等优点，因而被广泛应用于各种不同的场合。例如，在家庭充气床和充气床垫通常可以作为临时的床，供来访的客人使用。另外还非常适合在户外野营时使用。

[0003] 在现有技术中，充气床和充气床垫一般由PVC胶布、PU胶布等制成，且具有许多不同的结构，其中比较典型的机构是由顶片、底片，以及与顶片和底片相连接的侧壁构成可充气的气室。在气室内部设有连接顶片和底片且间隔排列的拉带，以构成具有一定高度且上表面大致平坦的可供人躺在上面的形状。

[0004] 在现有的充气床和充气床垫中，有的具有较高的高度，充气床和充气床垫充气后的侧壁容易膨胀和变形，影响到充气床和充气床垫外观的美观，充气床和充气床垫的膨胀和变形也会造成气室内的气压衰减，使得充气床和充气床垫偏软降低了充气床和充气床垫的舒适性。

[0005] 因此，为了解决上述侧壁膨胀的问题，有的充气床和充气床垫在顶片和底片之间设置了中层片，并将中层片与侧壁连接。这种结构的充气床和充气床垫虽然使侧壁膨胀和变形的问题略有改善，但仍然没有达到理想的效果。而且由于顶片与中层片之间，以及中层片与底片之间都需要设置连接拉带，使得充气床和充气床垫的制造过程更加复杂，即所需胶布也更多。

[0006] 另外，在现有技术中，高度较高的充气床和充气床垫存在稳定性方面的缺陷。当用户躺在或者坐在靠近充气床和充气床垫的边缘处时，充气床和充气床垫容易发生侧翻。为了改善其稳定性，美国专利US 6671910在充气床底片的外围设置了充气的稳定管。然而，这种结构不仅会影响充气床的外观美观，也给用户带来了使用的不便。

实用新型内容

[0007] 本实用新型要解决的技术问题是为了克服现有技术中充气床和充气床垫的侧壁容易膨胀、变形以及充气床和充气床垫稳定性差，容易侧翻的缺陷，提供一种充气床。

[0008] 本实用新型是通过下述技术方案来解决上述技术问题的：一种充气床，其特点在于，所述充气床包括：顶片和底片，所述底片与所述顶片上下间隔布置；

[0009] 至少一侧壁，所述侧壁的上边缘与所述顶片的外边缘连接，所述侧壁的下边缘与所述底片的外边缘连接，所述顶片、所述底片和所述侧壁之间形成一个气室；

[0010] 至少一第一拉带结构，所述第一拉带结构设置在所述气室内，且所述第一拉带结构的上下两端分别与所述顶片和所述底片连接；以及

[0011] 至少一支撑结构，设置在所述气室内，所述支撑结构沿至少一所述侧壁的长度方

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向设置，所述支撑结构中至少两个外侧边缘分别与相邻的所述侧壁连接，所述支撑结构中至少一个内侧边缘与相邻的所述顶片或所述底片连接。

[0012] 较佳地，所述支撑结构包括第二拉带结构和第三拉带结构，所述第二拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第二拉带结构中至少一个内侧边缘与相邻的所述顶片连接；以及

[0013] 所述第三拉带结构中至少两个外侧边缘与相邻的所述侧壁连接，所述第三拉带结构中至少一个内侧边缘与相邻的所述底片连接。

[0014] 较佳地，所述第二拉带结构和所述第三拉带结构上分别设有多个气孔，所述气室通过所述气孔形成空气流通。

[0015] 较佳地，所述第二拉带结构和所述第三拉带结构在垂直方向间隔布置。

[0016] 较佳地，所述第二拉带结构包括至少两个第一I型拉带，每一所述第一I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述顶片连接，且至少两个所述第一I型拉带间隔布置。

[0017] 较佳地，所述第三拉带结构包括至少两个第二I型拉带，每一所述第二I型拉带的外侧边缘和内侧边缘分别与相邻的所述侧壁和所述底片连接，且至少两个所述第二I型拉带间隔布置。

[0018] 较佳地，所述第二拉带结构包括至少一个第一Y型拉带，其中，所述第一Y型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述顶片连接。

[0019] 较佳地，所述第三拉带结构包括至少一个第二Y型拉带，其中，所述第二Y型拉带的两个外侧边缘分别与相邻的所述侧壁连接，一内侧边缘与所述底片连接。

[0020] 较佳地，所述第二拉带结构包括至少一个第一管型拉带，所述第一管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述顶片连接。

[0021] 较佳地，所述第三拉带结构包括至少一个第二管型拉带，所述第二管型拉带上具有至少两个外侧边缘分别与相邻的所述侧壁连接，且至少一内侧边缘与所述底片连接。

[0022] 较佳地，所述第二拉带结构包括至少一个第一V型拉带，其中，所述第一V型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述顶片连接。

[0023] 较佳地，所述第三拉带结构包括至少一个第二V型拉带，其中，所述第二V型拉带的两个外侧边缘分别与相邻的所述侧壁连接，且一内侧边缘与所述底片连接。

[0024] 较佳地，所述至少两个第一I型拉带相互间隔地排布于所述顶片的下表面。

[0025] 较佳地，所述至少两个第二I型拉带相互间隔地排布于所述底片的上表面。

[0026] 较佳地，所述至少两个第一I型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

[0027] 较佳地，所述至少两个第二I型拉带在所述侧壁的内表面上沿垂直方向间隔排布。

[0028] 较佳地，所述至少一个第一Y型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0029] 较佳地，所述至少一个第二Y型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0030] 较佳地，所述至少一个第一管型拉带与相邻的所述侧壁连接的所述至少两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0031] 较佳地，所述至少一个第二管型拉带与相邻的所述侧壁连接的所述至少两个外侧

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边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0032] 较佳地，所述至少一个第一V型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0033] 较佳地，所述至少一个第二V型拉带的两个外侧边缘在所述侧壁的内表面上沿垂直方向间隔排布。

[0034] 较佳地，所述至少两个第一I型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0035] 较佳地，所述至少两个第二I型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0036] 较佳地，所述至少一个第一Y型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0037] 较佳地，所述至少一个第二Y型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0038] 较佳地，所述至少一个第一管型拉带整体为一个间断的环形结构。

[0039] 较佳地，所述至少一个第二管型拉带整体为一个间断的环形结构。

[0040] 较佳地，所述至少一个第一V型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0041] 较佳地，所述至少一个第二V型拉带整体为一个闭合的环形结构或一个间断的环形结构。

[0042] 较佳地，所述第一拉带结构为直拉带、圆孔拉带、Y型拉带或X型拉带其中一种拉带或多种拉带。

[0043] 较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构均采用热塑性塑胶布制成。

[0044] 较佳地，所述第一拉带结构、所述第二拉带结构及所述第三拉带结构中的一个或多个至少部分地包括网布、夹网布或者线体。

[0045] 较佳地，所述网布或者所述线体至少部分两侧表面分别与两片相对的胶布片条连接为一体，所述网布和所述线体夹设于两片相对的胶布条之间。

[0046] 较佳地，所述网布、或者所述线体至少部分两侧表面与U型胶布片条连接为一体，所述网布和所述线体夹设于所述U型胶布条中间。

[0047] 较佳地，所述第一拉带结构通过高频焊接的方式与所述顶片和所述底片连接；所述第二拉带结构通过高频焊接的方式与所述顶片和所述侧壁连接；所述第三拉带结构通过高频焊接的方式与所述底片和所述侧壁连接。

[0048] 较佳地，所述顶片位于所述第二拉带结构的上边缘内侧部分的高度低于所述顶片位于所述第二拉带结构的上边缘外侧部分的高度。

[0049] 较佳地，所述底片位于所述第三拉带结构的下边缘内侧部分的高度低于所述底片位于所述第三拉带结构的下边缘外侧部分的高度。

[0050] 较佳地，所述充气床还包括内置气泵，所述内置气泵设置在所述侧壁上，且位于所述第二拉带结构的下边缘和所述第三拉带结构的上边缘之间，用以供所述气室充气。

[0051] 较佳地，所述充气床还包括气阀，所述气阀设置在所述侧壁上，用于所述充气床的

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充气或放气。

[0052] 本实用新型的积极进步效果在于：

[0053] 本实用新型充气床克服了现有技术中具有较高高度的充气床和充气床垫侧壁向外膨胀变形的缺陷，外观更加美观。其具有很好的稳定性，克服了现有技术的充气床和充气床垫容易侧翻的问题。此外，本实用新型充气床还可以防止用户在使用过程中滚落。

附图说明

[0054] 本实用新型上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显，在附图中相同的附图标记始终表示相同的特征，其中：

[0055] 图1为本实用新型充气床的立体图。

[0056] 图2为本实用新型充气床的主视图。

[0057] 图3为本实用新型充气床的右视图。

[0058] 图4为本实用新型充气床的俯视图。

[0059] 图5为图4中沿A-A线剖开的实施例一的剖视图。

[0060] 图6为本实用新型充气床的实施例一的局部解剖结构示意图。

[0061] 图7为本实用新型充气床的实施例一的爆炸图一。

[0062] 图8为本实用新型充气床的实施例一的爆炸图二。

[0063] 图9为图4中沿A-A线剖开的实施例二的剖视图。

[0064] 图10为本实用新型充气床的实施例二的爆炸图一。

[0065] 图11为本实用新型充气床的实施例二的爆炸图二。

[0066] 图12为图4中沿A-A线剖开的实施例三的剖视图一。

[0067] 图13为图4中沿A-A线剖开的实施例三的剖视图二。

[0068] 图14为本实用新型充气床的实施例三的爆炸图一。

[0069] 图15为本实用新型充气床的实施例三的爆炸图二。

[0070] 图16为图4中沿A-A线剖开的实施例四的剖视图。

[0071] 图17为本实用新型充气床的实施例四的爆炸图一。

[0072] 图18为本实用新型充气床的实施例四的爆炸图二。

[0073] 图19为图4中沿A-A线剖开的实施例五的剖视图。

[0074] 图20为本实用新型充气床的实施例五的局部解剖结构示意图。

[0075] 图21为图4中沿A-A线剖开的实施例六的剖视图。

[0076] 图22为图4中沿A-A线剖开的实施例七的剖视图。

[0077] 图23为本实用新型充气床的实施例七的局部解剖结构示意图。

[0078] 图24为本实用新型充气床的实施例七的内部结构示意图。

具体实施方式

[0079] 为让本实用新型的上述目的、特征和优点能更明显易懂，以下结合附图对本实用新型的具体实施方式作详细说明。

[0080] 在下面的描述中阐述了很多具体细节以便于充分理解本实用新型，但是本实用新型还可以采用其它不同于在此描述的其它方式来实施，因此本实用新型不受下面公开的具

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