Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).
Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to bedding foundations or bed frames and more particularly pertains to a new Unitary Body Bedding Foundation for constructing the top deck portion, the end walls and the side walls all as a single piece.

Description of the Prior Art

[0002] Bedding foundations or box springs frames have traditionally been manufactured using wood and wood by-products. Once the main structural box is completed, a fabric cover is added to conceal open areas and to match the fabric of the supported mattress. A manufacturer using wood as a material is constantly faced with the prospects of rising prices, decreasing supply and the risk of using inferior grades of wood. A plastic bedding foundation can be made as a single unit and solves the problems of using wood for bedding foundations.

[0003] The use of bedding foundations is known in the prior art. More specifically, bedding foundations heretofore devised and utilized are known to consist basically of familiar, expected and obvious structural configurations, notwithstanding the myriad of designs encompassed by the crowded prior art which have been developed for the fulfillment of countless objectives and requirements.


[0005] Reference is also made to U.S. Patent 4,970,743 which discloses a bed foundation consisting of a single sheet of corrugated cardboard folded along fold lines and unfoldable to make a box therefrom. A separate foundation insert is placed into the foundation box. Another Unitary Body Bed Foundation is disclosed in JP-A-4352908. This known bed foundation has integrally formed sides walls and end walls. In EP-A-0 440 607 a bed case is disclosed having a bottom plate or plates and side walls assembled by means of separate profile elements.

[0006] While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not disclose a new Unitary Body Bedding Foundation of the present invention. The inventive device, as defined in the independent claim 1, includes a top deck member having two spaced apart side walls and two spaced apart end walls on its bottom face. The side walls and the end walls are designed to be attachable to the top deck member to provide the Unitary Body Bed Foundation to aid in supporting the top deck member. The unitary body bed foundation may also include a support frame member adjacent the bottom face of the top deck member. The support frame member can be either a lattice support frame member having a plurality of longitudinal and latitudinal intersecting ribs included on the bottom face, or at least one lateral slat extended transversely between the two side walls and the ends of each lateral slat being accepted by a slat brace on each of the side walls.

[0007] In these respects, the Unitary Body Bedding Foundation according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides an apparatus primarily developed for the purpose of constructing the top deck portion, the end walls and the side walls all as a single piece.

SUMMARY OF THE INVENTION

[0008] In view of the foregoing disadvantages inherent in the known types of bedding foundations now present in the prior art, the present invention provides a new Unitary Body Bedding Foundation construction wherein the same can be utilized for constructing the top deck portion, the end walls and the side walls all as a single piece.

[0009] The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new Unitary Body Bedding Foundation apparatus which has many of the advantages of the bedding foundations mentioned heretofore many novel features that result in a new Unitary Body Bedding Foundation which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art bedding foundations, either alone or in any combination thereof.

[0010] To attain this, the present invention generally comprises a top deck member having two spaced apart side walls and two spaced apart end walls on its bottom face. The side walls and the end wall are designed to be attachable to the top deck member to provide the unitary body bed foundation. To aid in supporting the top deck member, the unitary body bed foundation may also include a support frame member adjacent the bottom face of the top deck member. The support frame member can be either a lattice support frame member having a plurality of longitudinal and latitudinal intersecting ribs included on the bottom face, or at least one lateral slat extended transversely between the two side walls and the ends of each lateral slat being accepted by a slat brace on each of the side walls.

[0011] There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

[0012] In this respect, before explaining at least one embodiment of the invention in detail, it is to be under-
stood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention.

It is therefore an object of the present invention to provide a new Unitary Body Bedding Foundation apparatus which has many of the advantages of the bedding foundations mentioned heretofore and many novel features that result in a new Unitary Body Bedding Foundation which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art bedding foundations, either alone or in any combination thereof.

It is another object of the present invention to provide a new Unitary Body Bedding Foundation which may be easily and efficiently manufactured and marketed.

It is a further object of the present invention to provide a new Unitary Body Bedding Foundation which is of a durable and reliable construction.

An even further object of the present invention is to provide a new Unitary Body Bedding Foundation which is susceptible of a low cost of manufacture with regard to both materials and labor, and which accordingly is then susceptible of low prices of sale to the consuming public, thereby making such Unitary Body Bedding Foundation economically available to the buying public.

Still yet another object of the present invention is to provide a new Unitary Body Bedding Foundation which provides in the apparatuses of the prior art some of the advantages thereof, while simultaneously overcoming some of the disadvantages normally associated therewith.

Still another object of the present invention is to provide a new Unitary Body Bedding Foundation for constructing the top deck portion, the end walls and the side walls all as a single piece.

Yet another object of the present invention is to provide a new Unitary Body Bedding Foundation which includes a top deck member having two spaced apart side walls and two spaced apart end walls on its bottom face. The side walls and the end walls are designed to be attachable to the top deck member to provide the unitary body bed foundation. To aid in supporting the top deck member, the unitary body bed foundation may also include a support frame member adjacent the bottom face of the top deck member. The support frame member can be either a lattice support frame member having a plurality of longitudinal and latitudinal intersecting ribs included on the bottom face, or at least one lateral slat extended transversely between the two side walls and the ends of each lateral slat being accepted by a slat brace on each of the side walls.

Still yet another object of the present invention is to provide a new Unitary Body Bedding Foundation that is constructed out of a combination of new and recycled plastic rather than the traditional wood foundation so that it does not creak, and is unaffected by moisture, and its structural strength is not weakened through use unlike the traditional wood bed foundation.

Even still another object of the present invention is to provide a new Unitary Body Bedding Foundation that is constructed so that it may be shipped in more convenient packaging.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

- Figure 1 is a bottom perspective view of a Unitary Body Bedding Foundation which is not part of the present invention showing the lattice support frame member.
- Figure 2 is a partial cross-sectional view taken along line 2-2 of Figure 1.
- Figure 3 is an exploded perspective view of a Unitary Body Bedding Foundation of the present invention having attachable side walls and end walls.
- Figure 4 is a partial cross-sectional view taken from line 4-4 of Figure 3 showing the detail of the insertion of the top deck attachment portion into the side wall slot of the top deck member.
- Figure 5 is a perspective view of the showing a version of the unitary body bed foundation with lateral slats extending transversely between the side walls.
- Figure 6 is a partial sectional view showing the relationship of the slat brace and the end of a lateral slat as seen from line 6-6 on Figure 5.
DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] With reference now to the drawings, and in particular to Figures 1 through 6 thereof, a Unitary Body Bedding Foundation generally designated by the reference numeral 10 will be described.

[0026] As best illustrated in Figures 1 through 6, the Unitary Body Bedding Foundation 10 comprises a rectangular shaped top deck member 10 that can be made to any dimension. The top deck member 10 is designed to be of sufficient size so it can support a mattress upon it. On the outer perimeter of its bottom face 21 are a pair of similarly aligned and spaced apart side walls 30,34 and a pair of similarly aligned and spaced apart end walls 24,27.

[0027] As shown in Figure 3, the side walls 30,34 and the end walls 24,27 are attachable to the top deck member 10 to provide the unitary body bed foundation. Each of the side walls 30,34 includes a top deck attachment portion 32,36 extending along its length. Similarly, each of the end walls 24,27 has a top deck attachment portion 25,28 extending along its length. Correspondingly, the top deck member 20 has a side wall attachment slot or slots 22 extending around the outer perimeter of its bottom face 21. The top deck attachment portions 25,28,32,36 are inserted into and accepted by the attachment slot or slots 22 at the top deck attachment portions' 25,28,32,36 respective position on the bottom face 21.

[0028] As shown in Figure 1, the unitary body bed foundation 10 has a support frame member 40 comprising a lattice support frame member 42 included as integral part of the bottom face 21 of the top deck member 20. The lattice support frame member 42 is comprised of a plurality of spaced apart longitudinal rib members 43 being intersected by a plurality of spaced apart latitudinal rib members 44. The lateral rib members 44 extend transversely between the interior faces 35 of the side walls 30,34 while the longitudinal rib members 43 extend transversely between the interior faces 26,29 of the end walls 24,27. The support frame member 40 is not shown in Figure 3.

[0029] Another optional variant of support frame member 40 shown in Figures 5 and 6 comprises at least one and preferably a plurality of lateral slats 46,47,48 where each lateral slab 46,47,48 is positioned adjacent to the bottom face 21 of the top deck member 20 and extended transversely between the side walls 30,34 so each of its ends is adjacent one of the interior faces 35 of the side walls 30,34. On each of the interior faces 35 of the side walls 30,34 there is a U-shaped slit brace 50,51,52,53,54,55 for each lateral slab 46,47,48. As shown in Figure 5, the slit braces 51,53,55 on one side wall 30 may be in alignment with their corresponding slit brace 50,52,54 on the other side wall 34. Each slit brace 50,51,52,53,54,55 accepts one end of each lateral slab 46,47,48 so that the slats 46,47,48 are attached to the side walls 30,34. For further strength and stability, the ends of each lateral slab 46,47,48 may be coupled to its respective slit braces 50,51,52,53,54,55 and the side walls 30,34 by a fastener 60 such as a threaded screw.

[0030] In manufacturing the unitary body bed foundation 10, the top deck member 20, the side walls 30,34, the end walls 24,27, the support frame member 40, and the lattice support frame member 42 are made of plastic. As an example, the plastic may be made of a combination of polyolefins, linear low density polyethylene, low density polyethylene, high density polyethylene, polypropylene, polyethylene terephthalate. The plastics may also be a combination of virgin plastics and recycled plastics. The plastic may also include other additives such as fire retardants, stabilizers, and color pigments. The elements of the unitary body bed foundation 10 may be manufactured using compression molding, injection molding or thermoforming. Additionally, the lateral slats 46,47,48 may be made of metal, wood or of plastic as described above.

[0031] As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

[0032] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0033] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the claims.

Claims

1. A unitary body bed foundation, comprising:

   a top deck member (10) having a bottom face (21), a pair of side walls (30, 34), and a pair of end walls (24, 27), said side walls (30, 34) being spaced apart, said end walls (24, 27) being spaced apart; and

   a support frame member (40) being positioned adjacent said bottom face (21) of said top deck member (10) for providing additional support to said top deck member;

characterized in that said side walls (30, 34) and said end walls (24, 27) are attachable to said bottom
face (21) of the top deck member (10), said side walls (30, 34) each including a top deck attachment portion (32, 36), said end walls (24, 27) each having a top deck attachment portion (25, 28), said top deck member (10) having at least one attachment slot (22) being extended around the outer perimeter of its bottom face (21), said attachment slot (22) accepting said top deck attachment portion (32, 36) of said side walls (30, 34) and accepting said top deck attachment portion (25, 28) of said end walls (24, 27), said top deck member (10), said side walls (30, 34), said end walls (24, 27) are made of plastic.

2. The unitary body bed foundation of claim 1, characterized in that said support frame member (40) is a lattice support frame member (42) being included as an integral part of said bottom face (21) of said top deck member (10), said lattice support frame member (42) being extended between said side walls (30, 34) and said end walls (24, 27).

3. The unitary body bed foundation of claim 2, characterized in that said lattice support frame member (42) includes a plurality of spaced apart longitudinal rib members (43) and a plurality of spaced apart latitudinal rib members (44), said latitudinal rib members (44) intersecting said longitudinal rib members (43), said longitudinal rib members (43) being extended between said end walls (24, 27) and said latitudinal rib members (44) being extended between said side walls (30, 34).

4. The unitary body bed foundation of claim 1, characterized in that said support frame member (40) comprises at least one lateral slat (46) having a first end and a second end, and the said side walls (30, 34) each having at least one slat brace (50, 51) for said lateral slat (46), said lateral slat (46) being extended transversely between said side walls (30, 34) and being positioned adjacent to said bottom face (21) of said top deck member (10), said first end of said lateral slat (46) being accepted by said slat brace (50) of one of said side walls, and said second end of said lateral slat (46) being accepted by said slat brace (51) of the other of said side walls.

5. The unitary body bed foundation of claim 4, characterized in that said slat brace (50) of one said side walls is substantially aligned with said slat brace (51) of the other of said side walls.

6. The unitary body bed foundation of claim 4, characterized in that said first end of said lateral slat (46) is coupled to said slat brace (50) of one of said side walls by means of a fastener (60) and said second end of said lateral slat (46) is coupled to said slat brace (51) of the other of said side walls by means of a fastener (60).

7. The unitary body bed foundation of claim 4, characterized in that said lateral slat (46) is made of metal, wood or plastic.

8. The unitary body bed foundation of claim 1, characterized in that said support frame member (40) is made of plastic.

Patentansprüche

1. Einheitlicher Matratzenunterbau, umfassend:

   ein Oberdeck-Element (10) mit einer Unterseite (21), einem Paar Seitenwänden (30, 34) und einem Paar Endwänden (24, 27), wobei die Seitenwände (30, 34) voneinander abgestanzt sind, wobei die Endwände (24, 27) voneinander abgestanzt sind; und
   e) ein Stützrahmenelement (40), das benachbart zur Unterseite (21) des Oberdeck-Elements (10) positioniert ist, um dem Oberdeck-Element (10) zusätzliche Unterstützung zu verleihen;

2. Einheitlicher Matratzenunterbau nach Anspruch 1, dadurch gekennzeichnet, dass die Seitenwände (30, 34) und die Endwände (24, 27) an der Unterseite (21) des Oberdeck-Elements (10) befestigbar sind, wobei die Seitenwände (30, 34) jede einen Oberdeck-Befestigungsteil (32, 36) umfassen, wobei die Endwände (24, 27) jede einen Oberdeck-Befestigungsteil (25, 28) aufweisen, wobei das Oberdeck-Element (10) mindestens einen Befestigungsschlitz (22) aufweist, der sich um den Außenumfang seiner Unterseite (21) erstreckt, wobei der Befestigungsschlitz (22) den Oberdeck-Befestigungsteil (32, 36) der Seitenwände (30, 34) aufnimmt und den Oberdeck-Befestigungsteil (25, 28) der Endwände (24, 27) aufnimmt, wobei das Oberdeck-Element (10), die Seitenwände (30, 34), die Endwände (24, 27) aus Kunststoff hergestellt sind.

3. Einheitlicher Matratzenunterbau nach Anspruch 2, dadurch gekennzeichnet, dass das Stützrahmenelement (40) ein Gitterstützrahmenelement (42) ist, das als Integralteil der Unterseite (21) des Oberdeck-Elements (10) enthalten ist, wobei das Gitterstützrahmenelement (42) sich zwischen den Seitenwänden (30, 34) und den Endwänden (24, 27) erstreckt.

4. Einheitlicher Matratzenunterbau nach Anspruch 2, dadurch gekennzeichnet, dass das Gitterstützrahmenelement (42) eine Vielzahl voneinander abgestanztener Längsrippenelemente (43) und eine Vielzahl voneinander abgestanztener Querrippenelemente (44), die die Längsrippenelemente (43) kreuzen, beinhaltet, wobei die Längsrippenelemente (43) sich zwischen den Endwänden (24, 27) erstrecken.
Support de matelas unitaire, comprenant:

1. Revendications


5. Einheitlicher Matratzenunterbau nach Anspruch 4, dadurch gekennzeichnet, dass die Lattenverankerung (50) einer der Seitenwände im Wesentlichen zu der Lattenverankerung (51) der anderen der besagten Seitenwände geflüchtet ist.

6. Einheitlicher Matratzenunterbau nach Anspruch 4, dadurch gekennzeichnet, dass das erste Ende der Querlatte (46) mittels eines Befestigungselements (60) mit der Lattenverankerung (50) einer der Seitenwände gekoppelt ist und das zweite Ende der Querlatte (46) mittels eines Befestigungselements (60) mit der Lattenverankerung (51) einer der Seitenwände gekoppelt ist.


8. Einheitlicher Matratzenunterbau nach Anspruch 1, dadurch gekennzeichnet, dass das Stützrahmenelement (40) aus Kunststoff hergestellt ist.

Revidications

1. Support de matelas unitaire, comprenant:

un élément de plaque supérieure (10) présentant une face inférieure (21), une paire de parois latérales (30, 34), et une paire de parois d’extrémité (24, 27), lesdites parois latérales (30, 34) étant espaçées l’une de l’autre, lesdites parois d’extrémité (24, 27) étant espaçées l’une de l’autre ; et

un élément de cadre de support (40) étant positionné de manière adjacente à ladite face inférieure (21) dudit élément de plaque supérieure (10) pour fournir un support additionnel audit

élément de plaque supérieure (10) ;

caractérisé en ce que lesdites parois latérales (30, 34) et lesdites parois d’extrémité (24, 27) peuvent être fixées à ladite face inférieure (21) dudit élément de plaque supérieure (10), lesdites parois latérales (30, 34) comportant chacune une partie de fixation de plaque supérieure (32, 36), lesdites parois d’extrémité (24, 27) présentant chacune une partie de fixation de plaque supérieure (25, 28), ledit élément de plaque supérieure (10) présentant au moins une fente de fixation (22) étendue autour du périmètre externe de sa face inférieure (21), ladite fente de fixation (32, 36) acceptant ladite partie de fixation de plaque supérieure (32, 36) desdites parois latérales (30, 34) et acceptant ladite partie de fixation de plaque supérieure (25, 28) desdites parois d’extrémité (24, 27), ledit élément de plaque supérieure (10), lesdites parois latérales (30, 34), lesdites parois d’extrémité (24, 27) sont fabriqués en plastique.

2. Support de matelas unitaire selon la revendication 1, caractérisé en ce que ledit élément de cadre de support (40) est un élément de cadre de support en treillis (42) inclus en faisant partie intégrante de ladite face inférieure (21) dudit élément de plaque supérieure (10), ledit élément de cadre de support en treillis (42) étant étendu entre lesdites parois latérales (30, 34) et lesdites parois d’extrémité (24, 27).

3. Support de matelas unitaire selon la revendication 2, caractérisé en ce que ledit élément de cadre de support en treillis (42) comporte une pluralité d’éléments de nervure longitudinale espacés les uns des autres (43) et une pluralité d’éléments formant nervure latitudinale espacés les uns des autres (44), lesdits éléments de nervure longitudinale (43) croisant lesdits éléments de nervure latitudinale (44) étant étendus entre lesdites parois d’extrémité (24, 27) et lesdits éléments de nervure latitudinale (44) étant étendus entre lesdites parois latérales (30, 34).

4. Support de matelas unitaire selon la revendication 1, caractérisé en ce que ledit élément de cadre de support (40) comprend au moins une lame latérale (46) présentant une première et une seconde extrémité, et lesdites parois latérales (30, 34) présentant chacune au moins une armature de lame (50, 51) pour ladite lame latérale (46), ladite lame latérale (46) étant étendue transversalement entre lesdites parois latérales (30, 34) et étant positionnée de manière adjacente à ladite face inférieure (21) dudit élément de plaque supérieure (10), ladite première extrémité de ladite lame latérale (46) étant acceptée par ladite armature de lame (50) d’une desdites parois latérales, et ladite seconde extrémité de ladite lame latérale (46) étant acceptée par ladite armature...
de lame (51) de l’autre desdites parois latérales.

5. Support de matelas unitaire selon la revendication 4, caractérisé en ce que ladite armature de lame (50) d’une desdites parois latérales est sensiblement alignée sur ladite armature de lame (51) de l’autre desdites parois latérales.

6. Support de matelas unitaire selon la revendication 4, caractérisé en ce que ladite première extrémité de la lame latérale (46) est couplée à ladite armature de lame (50) d’une desdites parois latérales au moyen d’un dispositif de fixation (60) et ladite seconde extrémité de ladite lame latérale (46) est couplée à ladite armature de lame (51) de l’autre desdites parois latérales au moyen d’un dispositif de fixation (60).

7. Support de matelas unitaire selon la revendication 4, caractérisé en ce que ladite lame latérale (46) est fabriquée en métal, bois ou plastique.

8. Support de matelas unitaire selon la revendication 1, caractérisé en ce que ledit élément de cadre de support (40) est fabriqué en plastique.
REFERENCES CITED IN THE DESCRIPTION

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