

[54] BEAN-BAG CHAIR
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297/456
[51] Int. Cl.² A47C 07/02; A47C 01/12
[58] Field of Search 297/445, 455, 456, 458,
297/DIG. 3; 5/348, 355, 361

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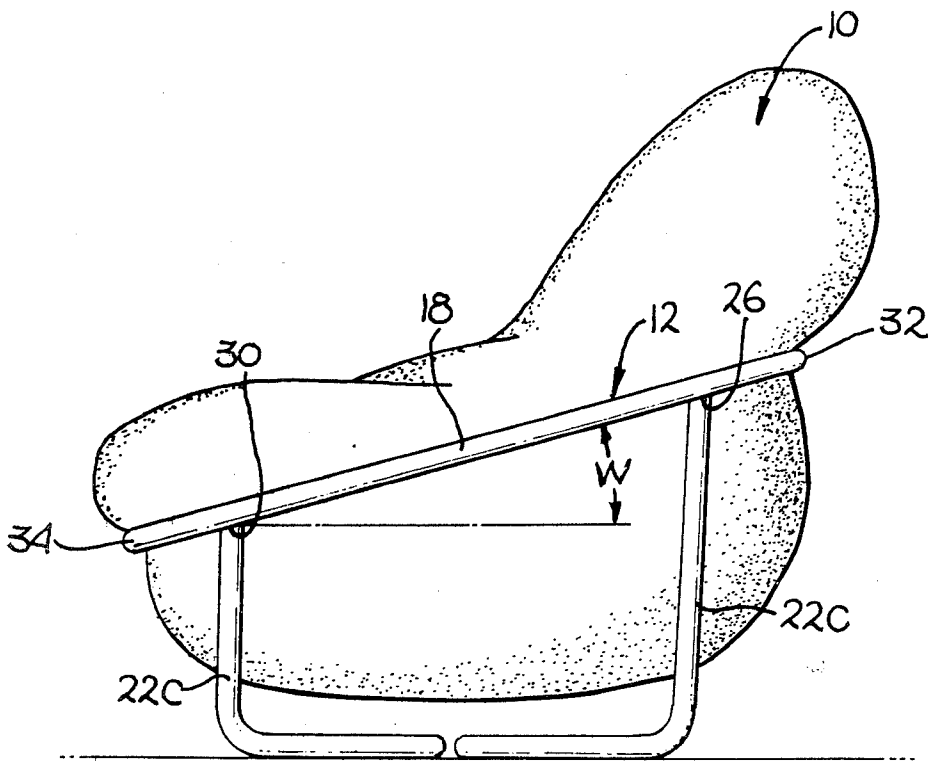
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Attorney, Agent, or Firm—Spensley, Horn & Lubitz

[57] ABSTRACT

A chair comprised of a fully enclosed, large, flexible bag which is partially filled with a plurality of resilient polystyrene pellets, commonly referred to as a "bean-bag" and a supporting structure adapted to maintain the bean-bag above the floor at a level which is normal for sitting, thereby enhancing substantially the ease with which the bean-bag can be used as a seating means. The supporting structure also constrains the outward expansion of the bean-bag, causing a generally upward displacement of the pellets therein when a person sits in it. The result is improved vertical support and greater comfort than that attainable from an unconstrained bean-bag on the floor or ground.

7 Claims, 11 Drawing Figures

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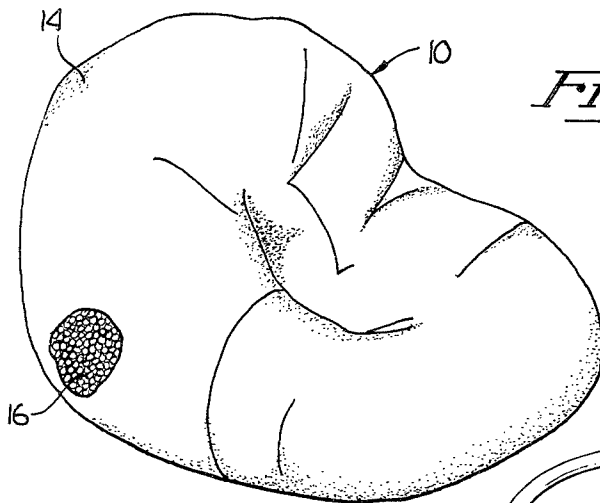


Fig. 1

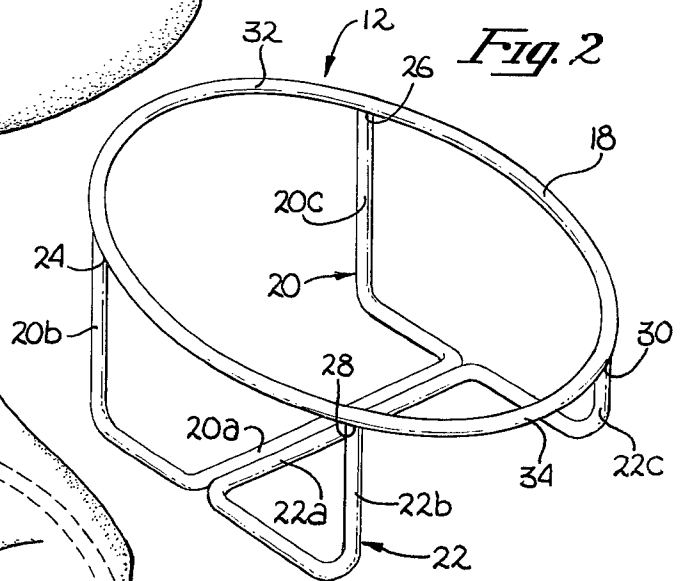


Fig. 2

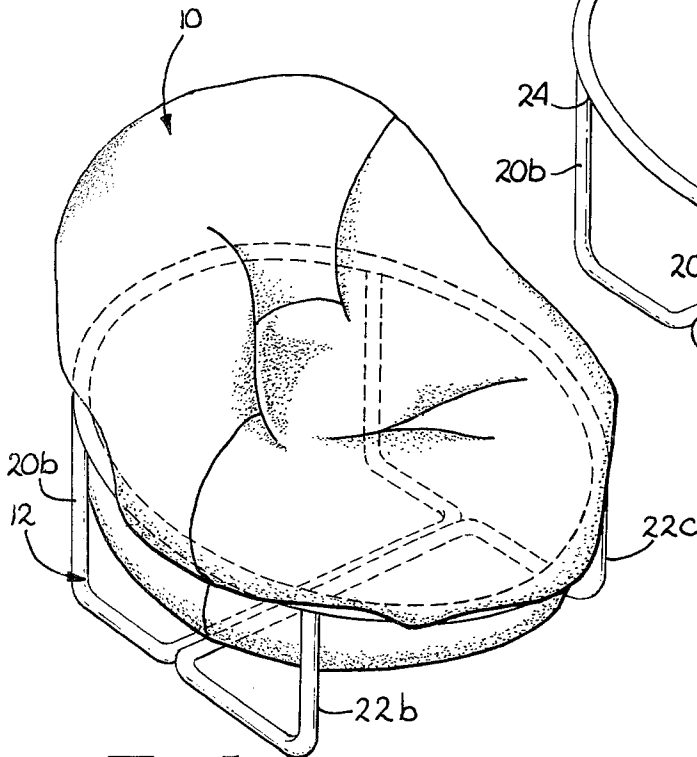


Fig. 3

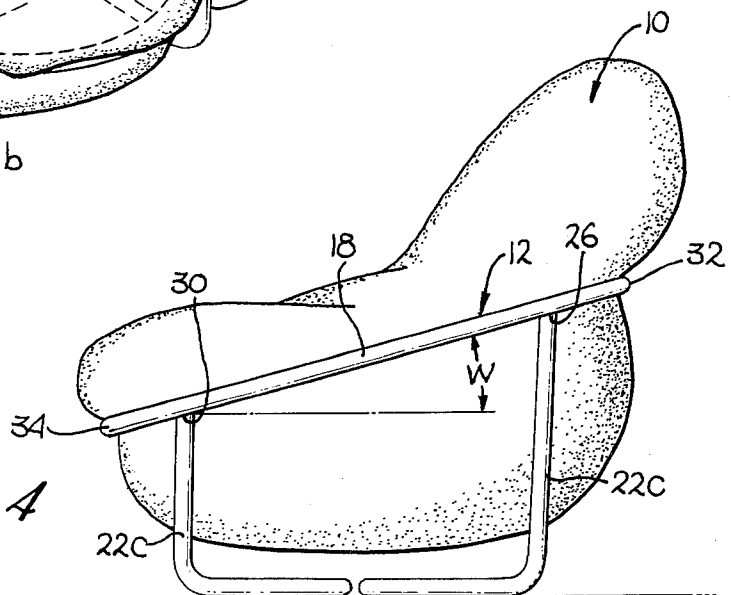
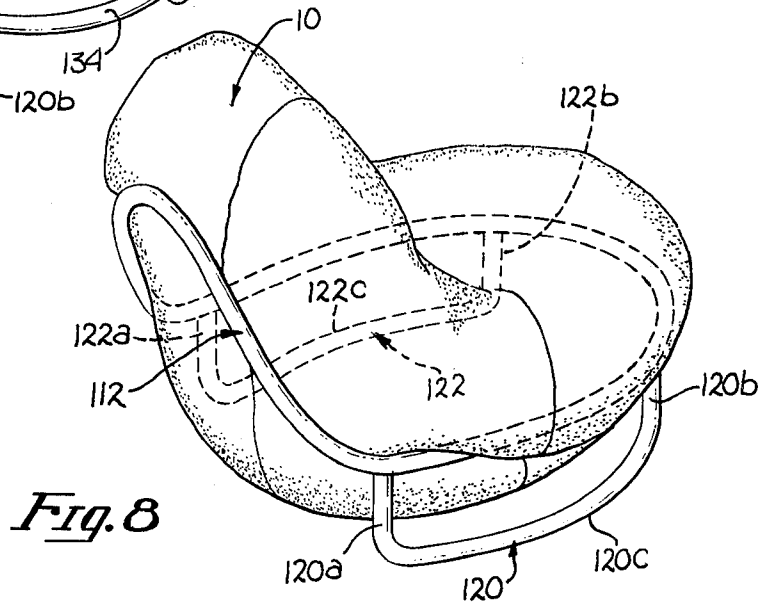
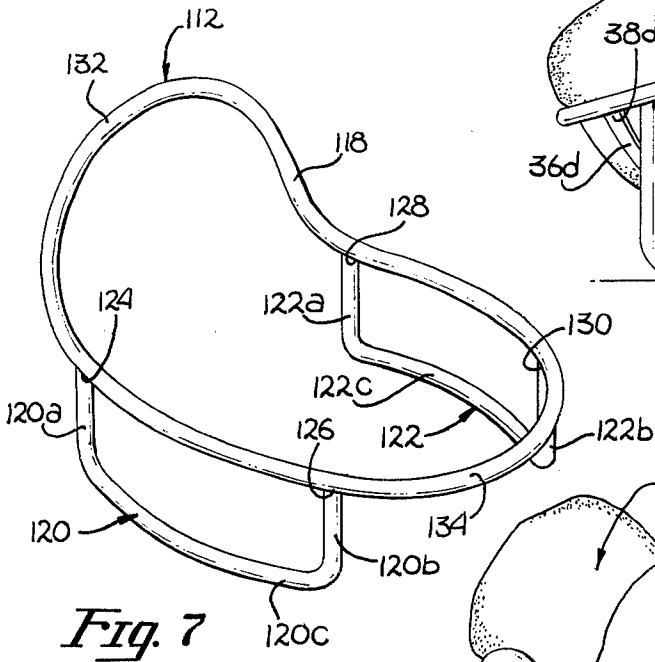
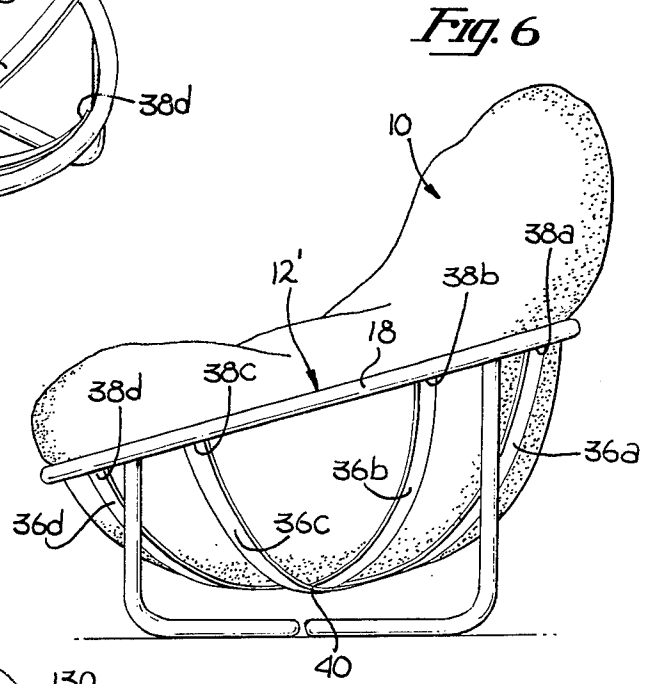
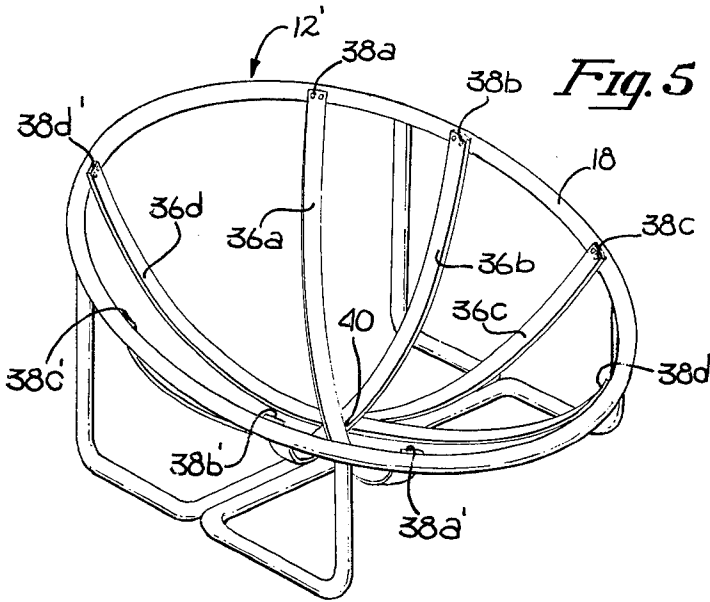


Fig. 4



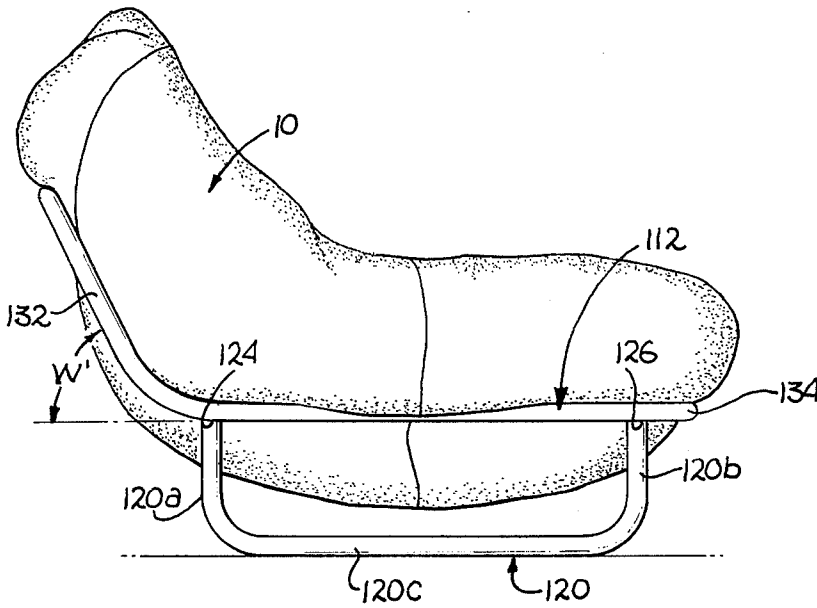


Fig. 9

Fig. 10

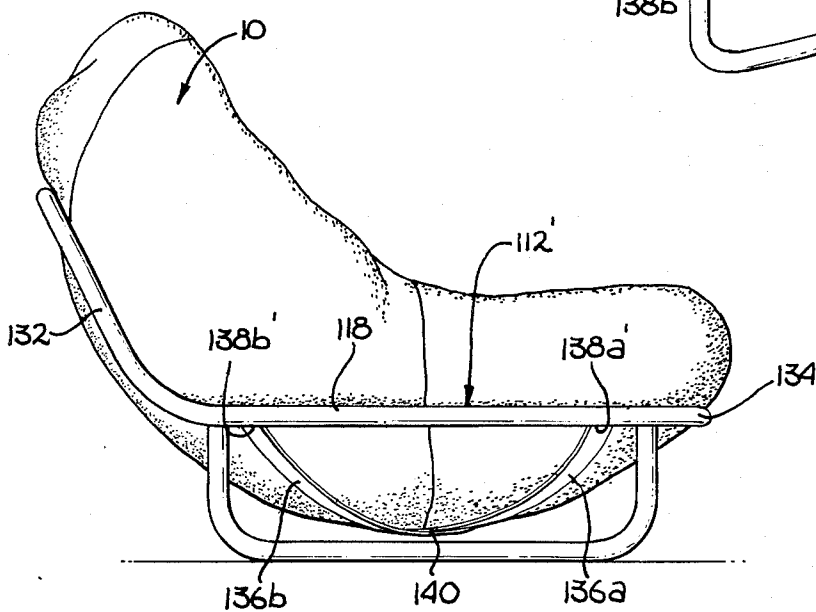
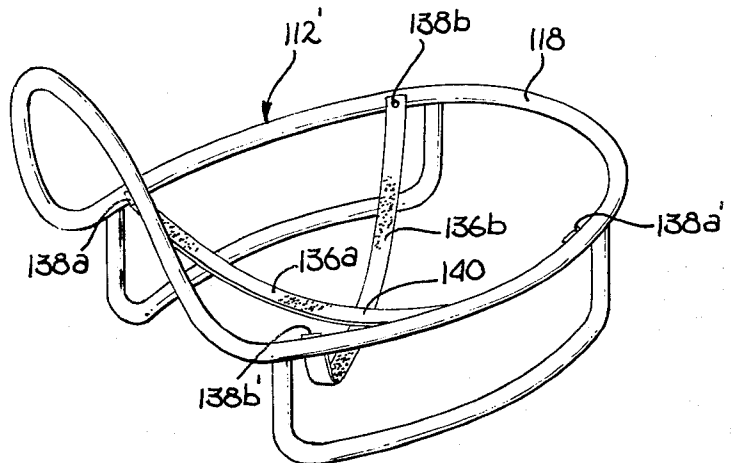


Fig. 11

BEAN-BAG CHAIR

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to chairs and more particularly, to a novel combination of a bean-bag and a supporting structure which (i) enhances the comfort attainable from a bean-bag alone and (ii) enables use of the bean-bag in a manner similar to that of conventional upholstered chairs.

2. Prior Art

A variety of seating devices are known in the furniture trade as the "bean-bag." The bean-bag is typically an assembly of flexible material segments sewn together to form an enclosure which is then partially filled with foam styrene beads of similar plastic pellets. The size of the complete assembly is made large enough so that it forms a seating unit. The pellets are capable of flowing like a fluid when subjected to the weight of a person sitting on the bean-bag. Thus, when a person sits on the partially filled bean-bag, the pellets flow out of the volume of space displaced by the person's body. As a result of this displacement, the pellets are redistributed so as to surround and support the body of the sitter. The comfort achieved is similar to that which would be derived from sitting on a partially filled air or water bag.

One principal shortcoming of the bean-bag alone is that it is normally placed on the floor or ground, requiring a sitter to get down into it. Many people do not possess the agility necessary to get into and out of a bean-bag resting on the floor. This is particularly true of elderly and handicapped people. In addition to the physical difficulty that some people experience in getting into and out of a bean-bag, still others are inhibited from using one because they feel that they appear awkward and clumsy while getting into and out of it. Some women are reluctant to sit in a bean-bag unless they are wearing slacks, again because the seating it provides is so close to the floor.

The present invention overcomes the above described shortcomings of the conventional bean-bag by providing the bean-bag in a position elevated above the floor, at the normal level of sitting. More specifically, this invention discloses an improved supporting structure for elevating the bean-bag to a level which enables its use for sitting in the same manner as any other chair. The supporting structure also constrains the outward expansion of the bean-bag when subjected to the weight of the sitter, resulting in improved vertical support and greater comfort than that provided by a conventional bean-bag. In addition, the supporting structure disclosed by the present invention provides substantial back support which is not provided by conventional bean-bags. Thus, the present invention substantially broadens the appeal of the bean-bag by enabling it to be used like a chair, thereby making its inherent comfort available to more people than has heretofore been possible.

Bean-bag bases of the prior art are visually monolithic and typically formed of plastic materials. They merely provide a solid flat surface, i.e., a raised floor, for the bean-bag to rest upon. They have none of the advantages of the supporting structure of the present invention such as, for example, the improved flow of pellets.

Another shortcoming of the conventional bean-bag is the tendency of its "fill," typically styrene pellets, to lose their spongy resilience after a period of use. As a result, the bean-bag gradually collapses, the pellets lose their ability to flow and redistribute under the weight of a sitter and a general decrease in the comfort attainable is experienced. The present invention substantially overcomes this shortcoming of the prior art by utilizing a superior expandable polystyrene foam material for use as the "fill" of the bean-bag. The material disclosed has a greater resilience for a longer period of time than the material of the prior art.

BRIEF SUMMARY OF THE INVENTION

The present invention is a combination of a bean-bag and a supporting structure adapted to elevate the bean-bag above the floor level. In preferred embodiments of this invention, an improved material is used for the pellets which comprise the "fill" of the bean-bag.

The supporting structure is typically comprised of a metal, wood or plastic circumferential rim affixed or removably attached to one or more base members. The rim is configured to provide support to the rear of the bean-bag. Its diameter is selected to be less than that of the bean-bag, thereby providing support to the bag while additionally constraining its outward expansion under the weight of a sitter. The constraint on expansion causes the pellets, which are flowable in the manner of a fluid, to be displaced in a generally upward direction, increasing the amount of vertical support, and therefore the comfort, obtained from the bean-bag. In other embodiments of this invention, one or more straps are suspended from the rim of the supporting structure to provide additional support across the bottom of the bean-bag, as well as further constraint to its outward expansion. The length of the straps may be varied. The base members of the supporting structure maintain the circumferential rim and bean-bag at the proper sitting elevation.

Thus, it is a principal object of the present invention to enable the use of a bean-bag in the manner of a conventional chair, and thereby to broaden its appeal and usability.

Another principal object of this invention is to enhance the fluid characteristics of the bean-bag by constraining its outward expansion, and thereby to increase the comfort achievable.

A still further object of this invention is to provide a chair which combines the comfort of a bean-bag with the back support of a conventional chair.

The novel features which are characteristic of the present invention, as well as other objects and advantages thereof, will be better understood from the following detailed description, reference being had to accompanying drawings on which four presently preferred embodiments of the invention are illustrated.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front perspective view of a bean-bag assembly.

FIG. 2 is a front perspective view of a first preferred embodiment of a supporting structure utilized in the present invention.

FIG. 3 is a front perspective view of the bean-bag assembly of FIG. 1 disposed within the supporting structure of FIG. 2.

FIG. 4 is a side elevational view of the combination of bean-bag, assembly and supporting structure shown in FIG. 3.

FIG. 5 is a front perspective view of a second preferred embodiment of a supporting structure utilized in the present invention.

FIG. 6 is a side elevational view of the bean-bag assembly of FIG. 1 disposed within the supporting structure of FIG. 5.

FIG. 7 is a front perspective view of a third preferred embodiment of a supporting structure utilized in the present invention.

FIG. 8 is a rear perspective view of the bean-bag assembly of FIG. 1 disposed within the supporting structure of FIG. 7.

FIG. 9 is a side elevational view of the combination of bean-bag assembly and supporting structure shown in FIG. 8.

FIG. 10 is a rear perspective view of a fourth preferred embodiment of a supporting structure utilized in the present invention.

FIG. 11 is a side elevational view of the bean-bag assembly of FIG. 1 disposed within the supporting structure of FIG. 10.

DETAILED DESCRIPTION OF THE INVENTION

A typical bean-bag assembly 10 is shown in FIG. 1. The bean-bag assembly 10 is comprised of a loose, fully enclosed bag 14, typically made of a flexible, soft material such as expanded polyvinyl chloride which is partially filled with a multiplicity of "beans," i.e., generally spherical pellets 16, typically made of resilient material such as foamed styrene. The bag 14 is sewn together from a number of segments of the material used. Typically, only 60-70% of the inner volume of the bag 14 is filled with pellets 16. The bean-bag assembly 10 is very similar in form to a punching bag with most of the air out and without any means for hanging at the top. It is made, however, large enough to enable persons to use it as a means for sitting.

When the bean-bag assembly 10 is subjected to pressure, the pellets 16 are able to flow and redistribute themselves, much in the same way as a fluid. Thus, when a person seats himself into the bean-bag assembly 10, the pellets 16 are displaced from the volume of space occupied by the user's body and they flow into unoccupied portions within the interior of the bag 14. The flow and redistribution of the pellets 16 enable the bean-bag assembly 10 both to conform to the contours of the user's body, in whatever position he assumes, and to provide support to his body. The result is a highly comfortable means for sitting, similar to that attainable if one were to sit in an air or water filled bag.

The present invention utilizes an improved material for the pellets 16, a material which withstands for a greater period of time the tendency of the pellets 16 to collapse, i.e., to lose their spongy resilience. This improved material is an expandable polystyrene foam in the shape of small balls, produced and sold by (i) the Basf-Dot Company as BR21, and by (ii) Sinclair Koppers as FKP524. While the above-identified material is produced for manufacture into molded insulation and packaging structures having nothing to do with furniture or bean-bags, it has been discovered that it has excellent properties for use as the fillings in bean-bag assemblies 10. For example, balls of this material "pack" easier, thereby giving more form to the bag; they are

also more resilient, last longer and are lighter in weight. In conventional bean-bag assemblies 10, the filling, i.e., pellets 16, are typically derived from ground-up, scrapped, molded products made of styrene or polystyrene, such as insulated coffee cups and the like. Pellets 16 made of this conventional material are of inferior quality in that they collapse more quickly, resulting in a reduction of the comfort obtainable from the bean-bag assembly 10 and in the greater cost of having to re-fill the bag 14 more frequently.

A first embodiment of a supporting structure 12 is shown in FIG. 2. It may be manufactured from tubular metal, plastic or wood and is comprised of a generally circular circumferential upper rim 18 affixed or removably attached to a pair of generally U-shaped base members 20 and 22. Members 20 and 22 are the rearward and forward members of supporting structure 12 respectively. Member 20 is comprised of legs 20a, 20b and 20c, where leg 20c forms the bottom of the U, with legs 20a and 20b extending from it at right angles in the rearward direction. Leg 20a and approximately equal lengths of the lower portions of legs 20b and 20c are located in a horizontal plane for direct engagement with the floor or ground. The upper portions of legs 20b and 20c are of approximately equal length and are disposed vertically to support rim 18 at points 24 and 26, respectively. Similarly, member 22 is comprised of legs 22a, 22b and 22c, where leg 22a forms the bottom of the U with legs 22a and 22b extending from it at right angles in the forward direction. Leg 22a and approximately equal lengths of the lower portions of legs 22b and 22c are located in a horizontal plane for direct engagement with the floor or ground, leg 22a being disposed adjacent to leg 20a along their entire lengths in the transverse direction. The upper portions of legs 22b and 22c are of approximately equal length and are disposed vertically to support rim 18 at points 28 and 30 respectively. The lengths of the vertical (upper) portions of legs 20b and 20c are greater than the lengths of the corresponding portions of legs 22b and 22c. As a result the plane of rim 18 is disposed at an angle W from the horizontal, as shown most clearly in FIG. 4. Angle W is typically in the range from 10°-15°. However, it should be understood that in other embodiments of this invention, the range of angle W could be 0°-30° from the horizontal. By disposing the plane or rim 18 at angle W from the horizontal, rear support is provided to the back of the bean-bag assembly 10 by the higher rearward portion 32 of rim 18. Correspondingly, the lower frontward portion 34 of rim 18 supports the front end of the bean-bag assembly 10 at an elevation which is most comfortable for the sitter's legs.

The combination of bean-bag assembly 10 and supporting structure 12, comprising a first preferred embodiment of the invented bean-bag chair, is shown in FIGS. 3 and 4. As can be seen, the diameter of the rim 18 is less than that of the bean-bag assembly 10. When placed over the supporting structure 12 the bean-bag assembly 10 is elevated to the normal sitting level of a chair and maintained thereby securely. In addition, the supporting structure 12 constrains and thereby limits the outward expansion of the bean-bag assembly 10. This causes a generally upward displacement of the flowable pellets 14 when a person sits in the invented bean-bag chair. As a result, the present invention provides greater vertical support to the body of a sitter, and therefore greater comfort, than that provided by an

unconstrained bean-bag assembly 10 alone on a floor.

A second preferred embodiment of this invention comprises the bean-bag assembly 10 and a supporting structure 12' shown in FIG. 5. Supporting structure 12' is the same as supporting structure 12 with the addition, however, of four straps 36a, 36b, 36c and 36d, each affixed at its respective ends to generally opposite points 38a and 38a', 38b and 38b', 38c and 38c', and 38d and 38d' on rim 18 respectively. It should be understood that while four straps 36a-36d are shown in this particular embodiment, the present invention contemplates any number of straps 36 as a function of the additional support sought. Straps 36 are typically made from materials such as polyvinyl chloride. Straps 36 made from this material have a high coefficient of friction with the material of bag 14, thereby substantially eliminating movement of the bean-bag assembly 10 in the supporting structure 12. Their lengths are approximately equal and of such magnitude that they hang below the plane or rim 18, intersecting at their lowest points 40 below the center of rim 18 but above the floor or ground. Typically, at their lowest point 40, straps 36a-36d are at least one inch above the floor or ground.

The straps 36a-36d provide additional support to the bean-bag assembly 10, over and above that which is provided by supporting structure 12 itself, by engaging the bottom of the bean-bag assembly 10 which hangs through the interior space of the rim 18. The straps 36a-36d, by farther constraining the outward expansion of the bean-bag assembly 10, enhance the generally upward displacement of the pellets 14 when a person sits in the invented bean-bag chair, causing thereby an increase in the vertical support provided and in the comfort obtained. The combination of bean-bag assembly and supporting structure 12', comprising a second preferred embodiment of the invented bean-bag chair is shown in FIG. 6.

With reference to supporting structure 12' the present invention contemplates an additional, optional feature, namely, the adjustability of the lengths of straps 36a-36d. This can be achieved by providing more than one location along each strap 36a-36d where it may be attached to rim 18. For example, if straps 36a-36d are attached to rim 18 by passing a means for hanging, affixed to the rim 18, through a corresponding hole in each strap adjustability is achieved by simply locating additional holes in each strap in a manner similar to the way in which a man's belt is adjusted to his waist. If the straps 36a-36d are affixed to the rim 18 by the engagement of corresponding attaching means, then adjustability is similarly achieved by locating additional attaching means along the length of each strap 36a-36d.

The third embodiment of a supporting structure 112 is shown in FIG. 7. Like supporting structure 12 it may be manufactured from tubular metal, plastic or wood. It is comprised of a generally elliptically shaped circumferential rim affixed or removably attached at points along its sides to a pair of substantially symmetrical U-shaped base members 120 and 122. Member 120 is comprised of legs 120a, 120b and 120c, where leg 120c forms the bottom of the U, with legs 120a and 120b extending from it at right angles. Leg 120c is disposed horizontally for direct engagement with the floor or ground, while legs 120a and 120b are disposed vertically to support rim 118 at points 124 and 126 respectively. Similarly, member 122 is comprised of legs

122a, 122b and 122c, where leg 122c forms the bottom of the U, with legs 122a and 122b extending from it at right angles. Leg 122c is disposed horizontally for direct engagement with the floor or ground while legs 122a and 122b are disposed vertically to support rim 118 at points 128 and 130 respectively. The forward portion 139 of rim 118, in the longitudinal direction is located in a substantially horizontal plane, whereas the rearward portion 132 of rim 118 is disposed at an angle W' from the horizontal, as most clearly shown in FIG. 10. Angle W' is typically in the range from 50°-80°. Rearward portion 132 of rim 118 provides rear support to the back of bean-bag assembly 10, thereby increasing the comfort of the bean-bag assembly 10 as compared to that achievable when the bean-bag assembly 10 merely rests on the floor or ground in an unsupported condition.

The combination of bean-bag assembly 10 and supporting structure 112, comprising a third embodiment of the present invention, is shown in FIGS. 8 and 9. As is the case with other embodiments of this invention, describe hereinabove, the supporting structure 112 elevates the bean-bag assembly 10 to the normal sitting level of a chair. It also constrains the outward expansion of the bean-bag assembly 10 which causes a generally upward displacement of the flowable pellets 14 when a person sits in the present invention. The result is greater vertical support and enhanced comfort.

A fourth preferred embodiment of this invention comprises the bean-bag assembly 10 and a supporting structure 112' shown in FIG. 10. Supporting structure 112' is the same as supporting structure 112 with the addition, however, of two straps 136a and 136b, each affixed at its respective ends to generally opposite points 138a and 138a', and 138b and 138b' on rim 118 respectively. It should be understood that, while two straps 136a and 136b are shown in this particular embodiment, the present invention is not so limited, and contemplates any number of straps 136 as a function of the additional support desired. Straps 136, like straps 36 are typically made of materials such as polyvinyl chloride. Similarly, their lengths are approximately equal and of such magnitude that they hang below the plane of the forward portion 134 of rim 118, intersecting at their lowest point 140 but just above the floor or ground, typically, at least by about 1 inch. The function of the straps 136a and 136b in this embodiment, and the resulting advantages of their inclusion, are substantially the same as those described hereinabove with respect to the embodiment 12' shown in FIG. 5. In addition, the optional adjustability of the lengths of straps 136a and 136b, described with respect to embodiment 12' is likewise contemplated for embodiment 112'. The combination of bean-bag assembly 10 and supporting structure 112', comprising a fourth preferred embodiment of the present invention is shown in FIG. 11.

Although this invention has been disclosed and described with reference to particular embodiments, the principles involved are susceptible of other applications, various changes in form and detail, which may be apparent to persons skilled in the art, without departing from the spirit and scope of the invention. This invention, therefore, is not intended to be limited to the particular embodiments herein disclosed.

We claim:

1. A bean-bag chair comprised of:

a. a bean-bag assembly comprising a fully enclosed bag having a unitary interior volume, each portion of said volume freely communicating with every other portion thereof, and a plurality of resilient flowable pellets contained within and partially filling said bag, said pellets being made of expandable polystyrene foam;

b. a supporting structure comprising a circumferential rim affixed to at least one base member disposed beneath it, said rim defining an interior space whose dimensions are sufficiently less than the corresponding dimensions of said bean-bag assembly, such that said rim supports said bean-bag assembly and substantially constrains the outward expansion thereof,

whereby said bean-bag assembly is elevated above the floor at a level which is normal for sitting in a chair, and said pellets are displaced in a generally upward direction within said interior volume of said bag when said bag is subjected to the weight of a person sitting thereon.

2. The chair of claim 1 wherein said circumferential rim is substantially planar and circular, said rim being affixed to first and second generally U-shaped base members having vertical legs, said first base member being located under the rearward portion of said rim and said second base member being disposed under the forward portion of said rim, the length of said vertical legs of said first base member being greater than that of said legs of said second base member, whereby the plane of said rim is maintained at an angle of 0° - 30° from the horizontal, said rearward portion of said rim being higher than said forward portion thereof, thereby providing support to the back of said bean-bag assembly.

3. The chair of claim 1 wherein said circumferential rim is substantially elliptical and has forward and rearward portions in the longitudinal direction, the plane of said forward portion thereof being approximately horizontal and the plane of said rearward portion thereof being located at an angle of 50° - 80° from the horizontal, said rim being affixed to first and second generally U-shaped base members at points on the sides of said forward portion, whereby said rearward portion provides support to the back of said bean-bag assembly.

4. The chair of claim 1 having in addition thereto at least one strap affixed to said rim at points thereon which are on approximately opposite sides thereof, said strap having a length which causes it to be suspended within said space defined by said rim, whereby said strap engages the bottom of said bean-bag assembly, providing thereby additional support thereof.

5. The chair of claim 4 wherein the length of said strap is adjustable.

6. A bean-bag chair comprised of:

a. a bean-bag assembly comprising a fully enclosed, expanded polyvinyl chloride bag and a plurality of expandable polystyrene foam pellets, contained within and partially filling said bag, said pellets being resilient and flowable;

b. a supporting structure comprising a substantially planar and circular circumferential rim, said rim being removably attached to first and second gen-

erally U-shaped base members having vertical legs, said first base member being located under the rearward portion of said rim and said second base member being disposed under the forward portion of said rim, the length of said vertical legs of said first base member being greater than that of said legs of said second base member so as to cause said rim to be disposed at an angle of 10° - 15° from the horizontal, said rearward portion of said rim being higher than said forward portion thereof, the diameter of said rim being less than the corresponding dimensions of said bean-bag assembly; and

c. a plurality of polyvinyl chloride straps, each of said straps being affixed to said rim at points thereon which are on approximately opposite sides thereof, said straps each having an adjustable length, said length being sufficient to cause said straps to be suspended within the space defined by said rim, whereby said bean-bag assembly is elevated above the floor at a level which is normal for sitting, said pellets are displaced in a generally upward direction within said bag when said bag is subjected to the weight of a person sitting thereon, said rearward portion of said rim provide support to the back of said bean-bag assembly, and said straps engage the bottom of said bean-bag assembly, providing thereby additional support thereof.

7. A bean-bag chair comprised of:

a. a bean-bag assembly comprising a fully enclosed, expanded polyvinyl chloride bag and a plurality of expandable polystyrene foam pellets, contained within and partially filling said bag, said pellets being resilient and flowable;

b. a supporting structure comprising a substantially elliptical circumferential rim having forward and rearward portions in the longitudinal direction, said rim being fixedly secured to first and second generally U-shaped base members at points on the sides of said forward portion of said rim, the plane of said forward portion thereof being approximately horizontal and the plane of said rearward portion thereof being located at an angle of 50° - 80° from the horizontal, said rim defining an inner space whose dimensions are less than the corresponding dimensions of said bean-bag assembly; and

c. a plurality of polyvinyl chloride straps, each of said straps being affixed to said rim at points thereon which are on approximately opposite sides thereof, said straps each having an adjustable length, said length being sufficient to cause said straps to be suspended within the space defined by said rim, whereby said bean-bag assembly is elevated above the floor at a level which is normal for sitting, said pellets are displaced in a generally upward direction within said bag when said bag is subjected to the weight of a person sitting thereon, said rearward portion of said rim provides support to the back of said bean-bag assembly, and said straps engage the bottom of said bean-bag assembly, providing thereby additional support thereof.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,899,210

DATED : August 12, 1975

INVENTOR(S) : Clair A. Samhammer and Steven N. Lederman

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 6, line 31, "Supprting" should be --Supporting--;

Column 7, line 55, delete "chair"; line 57, after "bag" insert --having a unitary interior volume, each portion of said volume freely communicating with every other portion thereof,--.

Column 8, line 22, after "said" insert --interior volume of said--; line 24, "provide" should be --provides--; line 30, after "bag" insert --having a unitary interior volume, each portion of said volume freely communicating with every other portion thereof,--; line 57, after "said" insert --interior volume of said--.

Signed and Sealed this

Fourth **Day of** *December 1979*

[SEAL]

Attest:

SIDNEY A. DIAMOND

Attesting Officer

Commissioner of Patents and Trademarks