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English


AIRBED WITH BUILT IN CLOCK

An airbed (2) having an integral clock (50) or audio player (300). The clock (50) may be mounted, for example, on a faceplate (32) that is mounted on a sidewall (24) of the airbed. In an embodiment, the clock (50) is formed integrally with an air pump (38) that is built-in to the bed. The air pump (38) and the clock (50) share a common faceplate (32), and the pump is mounted behind the faceplate. Controls (40, 52) for the pump (38) and the clock (50) are included on the front of the faceplate (32). In an embodiment, the clock (50) is a projection clock. That is, an image (252) of the time or other information provided by the clock (50) is projected outward from the clock, for example onto a wall or on a ceiling. In this manner, a user may view the time or other information while lying on the airbed (20), for example.
AIRBED WITH BUILT IN CLOCK

REFERENCE TO RELATED APPLICATION

(0001) This application claims the benefit of U.S. Provisional Application Serial Number 60/751,528, filed December 19, 2005, and incorporated herein by reference.

TECHNICAL FIELD OF THE INVENTION

(0002) The present invention is directed to inflatable products, and more specifically to airbeds.

BACKGROUND OF THE INVENTION

(0003) An airbed, sometimes called an "air mattress," is a large rectangular rubber or plastic (e.g., vinyl) bag that is filled with air so that it may be used as a bed. Airbeds are well known in the art, and have proven themselves to be very useful. On the one hand, an inflatable airbed may be deflated and folded to store the airbed in a closet or basement. On the other hand, when a guest is in need of a place to sleep, or when the owner of the airbed takes a trip to a place where there is no bed, the airbed may be inflated and may be used as a comfortable bed.
SUMMARY OF THE INVENTION

(0004) The following presents a simplified summary of some embodiments of the invention in order to provide a basic understanding of the invention. This summary is not an extensive overview of the invention. It is not intended to identify key/critical elements of the invention or to delineate the scope of the invention. Its sole purpose is to present some embodiments of the invention in a simplified form as a prelude to the more detailed description that is presented later.

(0005) In accordance with an embodiment, an airbed is provided having an integral clock. The clock may be mounted, for example, on a faceplate or in a receptacle that is mounted on a sidewall of the airbed.

(0006) In an embodiment, the clock is formed integrally on a faceplate with controls for a built-in air pump for the airbed. The air pump and the clock share a common faceplate, and the pump is mounted behind the faceplate. Controls for the pump and the clock are included on the outside of the faceplate.

(0007) In an embodiment, the clock is a projection clock. That is, an image of the time or other information provided by the clock is projected outward from the clock, for example on a wall or on a ceiling. In this manner, a
user may view the time or other information while lying on the airbed, for example.

(0008) In an embodiment, the clock is removable from the airbed so that a user may place the clock in a place where it is visible while the user is on the airbed. The clock may include a snap-in feature so that it may be easily removed and replaced.

(0009) In an embodiment, a radio, MP3 player, or other audio player is mounted on or is otherwise connected to an airbed. The music or audio player may include a speaker and a source of sound, such as a radio tuner or digital music storage. In an embodiment, a connection is provided for connecting a music storage device, such as a digital music player, to the airbed. The connection may be a plug or a wire, as examples.

(0010) Other features of the invention will become apparent from the following detailed description when taken in conjunction with the drawings, in which:
BRIEF DESCRIPTION OF THE DRAWINGS

(0011) FIGURE 1 is a side perspective view of an airbed incorporating a built-in pump and clock combination in accordance with an embodiment;

(0012) FIG. 2 is a side perspective view of the built-in pump and clock combination for the airbed of FIG. 1;

(0013) FIG. 3 is an front view of a faceplate for a clock and integral pump combination in accordance with one embodiment;

(0014) FIG. 4 is a front view of a faceplate for the built-in pump and clock combination of FIG. 1 in accordance with an embodiment;

(0015) FIG. 5 is a side perspective view of an alternate embodiment of a built-in pump and clock combination in accordance with an embodiment;

(0016) FIG. 6 is a side perspective view of a receptacle in the side of an airbed for receiving a clock in accordance with an embodiment; and

(0017) FIG. 7 is a side perspective view of a built-in audio player and pump combination in accordance with an embodiment.
DETAILED DESCRIPTION

(0018) In the following description, various embodiments of the present invention will be described. For purposes of explanation, specific configurations and details are set forth in order to provide a thorough understanding of the embodiments. However, it will also be apparent to one skilled in the art that the present invention may be practiced without the specific details. Furthermore, well-known features may be omitted or simplified in order not to obscure the embodiment being described.

(0019) Referring now to the drawings, in which like reference numerals represent like parts throughout the several views, FIG. 1 shows an airbed 20 in accordance with an embodiment. The airbed 20 includes a top 22 and a bottom (not shown). The top 22 and the bottom are connected by a sidewall 24. Together, the top 22, the bottom, and the sidewall 24 form an enclosed space, or air bladder, which may be inflated so that the airbed 20 may be used as a mattress in a manner known in the art.

(0020) The airbed 20 includes a built-in clock and pump combination 30. In the embodiment shown in the drawings, the built-in clock and pump combination 30 are mounted on the sidewall 24 at a foot of the airbed 20. However, in alternate embodiments, the built-in clock and pump combination 30 may be mounted in other positions,
included but not limited to, on the sidewall 24 on the left or right side of the bed, on the top 22, at a juncture of the top and the sidewall 24, or at another suitable location.

Pumps that are formed integrally with, or built into, an airbed are known and are shown, for example, in U.S. Patent Number 6,793,469 to Chung, and U.S. Published Application Number 2002/0194678. In general, such integral pumps include a plate that is molded, welded, or otherwise attached to a sidewall of an airbed. A pump is mounted in the plate and is arranged so that it may blow air into and/or out of the air bladder of the airbed.

For the clock and pump combination 30 shown in the drawings, an outer faceplate 32 is positioned so that it is viewable from an exterior of the airbed 20. In the embodiment shown in the drawings, a battery receptacle 34 is located on the right side of the clock and pump combination 30, just behind the faceplate 32. This battery receptacle 34 is configured to receive four D cell batteries 36, but a different number or size may be utilized. In addition, the clock and pump combination 30 of the present invention may be utilized with other power sources, including, but not limited to, an AC power cord with a DC adapter, or a rechargeable battery pack. An integral pump 38 is mounted behind the battery receptacle 34. Only a portion of the
pump 38 is shown in FIG. 2, but the operation and structure of such pumps are known.

(0023) A pump control 40 is mounted centrally on the faceplate 32. This pump control 40 allows a user to control operation of the pump 38, for example between "deflate," "off," and "inflate" positions. Other controls may be provided for operation of the pump 38, including, but not limited to, a remote control.

(0024) In the embodiment shown in the drawings, a clock 50 is mounted on the front of the faceplate 32. The clock includes controls 52 for setting time, and, if desired, an alarm for the clock 50. A remote control (not shown) may be provided for operation of the clock. In the embodiment shown in the drawings, the clock operates on a single AA cell battery 54, but other size batteries or power supplies may be used. In addition, if desired, a single power supply (e.g., batteries, a rechargeable battery pack, or AC connected to a DC converter) may be used to power both the pump 38 and the clock 50.

(0025) As can be seen in FIG. 4, the clock 50 additionally includes a projector lens 56. The projector lens 56 permits an internal projector (not shown) to project an image 252 (FIG. 1) of the time through the projector lens 56 so that the image is magnified and reflected on a surface, such as a ceiling or a wall.
systems are known, and are disclosed, for example, in U.S. Patent Number 5,260,919 to Tsai. The projection system disclosed in that patent includes a projector, a speculum, and a convex lens. The speculum reflects time displayed by the projector, and the convex lens magnifies and projects the reflected image so that it may be easily seen. Other systems may be used for projecting an image.

(0026) The projection clock 50 shown in FIG. 4 provides a benefit in that the projected image 252 reflected on a ceiling or wall is easily viewable by a user that is lying on the airbed 20. Thus, a user does not have to move significantly to view the time or other display reflected by the clock 50.

(0027) If desired, information other than time may be projected as an image on a wall or ceiling. The information may be static or may change, such as a video. In addition, if desired, the image 252 may be projected only at particular times, such as at an alarm for the clock and/or at set time intervals, such as once per hour.

(0028) Two different versions of clocks 150, 50 are shown in FIGS. 3 and 4, respectively. The clock 150 in FIG. 3 is basically the same as the clock 50 in FIGS. 4 and 2, except that it does not include projection functions. A user on the airbed 20 may view the clock 150 as desired. However, because of the position of the clock 150 on the
sidewall 24, the user will have to lean over the top 22 of the airbed 20 to view the display for the clock 150.

(0029) In accordance with an alternate embodiment, a clock, such as the clock 250 shown in FIG. 5, may be removable from a combined pump and clock 70. The combined pump and clock 70 includes a built-in pump 138 and a battery receptacle 72. In addition, the clock 250 is mounted in a receptacle 82. The clock may include various different types of locking devices for engaging the clock in place, including hook and loop fasteners, tabs, magnets, clips, snaps, clamps, or one of these, or any combination of these. Other ways of holding a clock in place may be used.

(0030) In the embodiment shown, the clock 250 includes tabs 80 on the side which may be grasped by a user's fingers. These tabs 80 release detents (not shown, but known) from openings (also not shown) in the outer edges of the receptacle 82. In this manner, the clock 250 may be easily removed from the combined clock and pump 70 so that the clock may be placed in a location where it is more easily viewable for a user on the airbed 20. For example, the clock 250 may be placed on a bedside table.

(0031) In accordance with an embodiment, such a removable clock may be provided in an airbed 20 independent of a pump. For example, as shown in FIG. 6, a receptacle 90 is mounted in the side of an airbed, for example by welding,
heat fusing, or another suitable manner. A clock, such as the clock 250, may be removably attached to the receptacle, for example in one of the manners described above.

(0032) Although the clocks 50 and 150 are shown as being mounted integrally with a pump, as described above, a clock may alternatively be permanently or removably mounted on an airbed independent of a pump. In addition, a clock may be mounted with another structure on an airbed, such as on a plate with a valve for inflating the airbed, or positioned on a plate that removably receives a pump.

(0033) In an embodiment, an airbed may be provided with an audio player, such as a radio or media player. The radio or media player may be mounted, for example, in combination with a pump and clock combination, such as the pump and clock combination 30, or may be mounted without a pump and/or a clock. In an embodiment, such an audio player may be mounted with just a pump, although in another embodiment such a player may be mounted with just the clock, or the player may be mounted on the airbed all alone.

(0034) The audio player may be, for example, a compact disk player or a digital music player, such as a MP3 player. In another embodiment, the audio player may include a connector for such a media player or a music storage device. The connecter may be, for example, RCA jacks or a docking port for receiving a digital music player such as an
IPOD digital music player. In accordance with an embodiment, an airbed including or connectable to such an audio player may have, for example, a speaker, a small amplifier, a power button, and/or a volume knob/button. Such a product would allow the user to listen to music while sleeping and without the use of headphones, although a headphone jack may be provided in addition to, or instead of, a speaker.

(0035) An example is shown in FIG. 7. In FIG. 7, a pump and audio player combination 330 includes a pump 338 having a control 340. A battery compartment 334 is located to one side, but may be positioned in another location.

(0036) The audio player and pump combination 330 includes a speaker 350. In addition, the combined audio player and pump 330 includes a jack 360 designed to be attached to a digital music player, such as an MP3 player. The speaker 350 includes a power button 362.

(0037) To operate the pump and audio player combination 330, a user attaches a digital music player to the jack 360 and turns on the speaker 350 by using the power button 362. In the embodiment shown in the drawings, volume is controlled via the digital music player, but a volume control may alternatively or additionally be provided on the pump and audio player combination 330.

(0038) After the digital music player is connected,
music on the digital music player may be played through the speaker 350. This feature provides readily accessible music for a user, without the user having to wear headphones provided with the digital music player.

(0039) The audio player features may be combined with the clock to provide a sleep function (e.g., a function where music is played for a particular amount of time and then is shut off), an alarm function with music, or other features. In addition, the projection features described above may be used to project the title or other information about music or other audio files that are being played.

(0040) Other variations are within the spirit of the present invention. Thus, while the invention is susceptible to various modifications and alternative constructions, a certain illustrated embodiment thereof is shown in the drawings and has been described above in detail. It should be understood, however, that there is no intention to limit the invention to the specific form or forms disclosed, but on the contrary, the intention is to cover all modifications, alternative constructions, and equivalents falling within the spirit and scope of the invention, as defined in the appended claims.

(0041) All references, including publications, patent applications, and patents, cited herein are hereby incorporated by reference to the same extent as if each
reference were individually and specifically indicated to be incorporated by reference and were set forth in its entirety herein.

(0042) The use of the terms "a" and "an" and "the" and similar referents in the context of describing the invention (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. The terms "comprising," "having," "including," and "containing" are to be construed as open-ended terms (i.e., meaning "including, but not limited to," unless otherwise noted. The term "connected" is to be construed as partly or wholly contained within, attached to, or joined together, even if there is something intervening. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., "such as") provided herein, is intended merely to better illuminate embodiments of the invention and
does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the invention.

(0043) Preferred embodiments of this invention are described herein, including the best mode known to the inventors for carrying out the invention. Variations of those preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. The inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the invention to be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context.
WHAT IS CLAIMED IS:

1. An airbed comprising a clock mounted on the airbed.

2. The airbed of claim 1, wherein the clock is mounted on a faceplate that is mounted on the airbed.

3. The airbed of claim 2, wherein the faceplate is mounted on a sidewall of the airbed.

4. The airbed of claim 1, wherein the clock is mounted on a structure to which an air pump for the bed is attached.

5. The airbed of claim 4, wherein the clock and the controls for the air pump share a common faceplate.

6. The airbed of claim 5, wherein the pump is mounted behind the faceplate.

7. The airbed of claim 4, further comprising a projection system mounted on the airbed, the projection system for projecting an image.
8. The airbed of claim 7, wherein the projection system is mounted to the faceplate.

9. The airbed of claim 7, wherein the image displays time from the clock.

10. The airbed of claim 1, further comprising a projection system mounted on the airbed, the projection system for projecting an image.

11. The airbed of claim 10, wherein the image displays time from the clock.

12. The airbed of claim 1, wherein the clock is removably attached to the airbed.

13. The airbed of claim 12, further comprising a receptacle mounted on the airbed and for receiving the clock.

14. The airbed of claim 13, wherein the clock includes a snap-in feature so that the clock may be easily removed and replaced in the receptacle.
15. The airbed of claim 1, further comprising an audio player mounted on the airbed.

16. The airbed of claim 15, wherein the audio player comprises a speaker.

17. The airbed of claim 16, wherein the airbed comprises a connection for connecting a music storage device.

18. The airbed of claim 17, wherein the music storage device comprises a digital music player.

19. The airbed of claim 17, wherein the connection comprises a plug or a wire.

20. An airbed comprising an audio player mounted on the airbed.

21. The airbed of claim 20, wherein the audio player comprises a speaker.

22. The airbed of claim 21, wherein the airbed comprises a connection for connecting a music storage device.
23. The airbed of claim 22, wherein the music storage device comprises a digital music player.

24. The airbed of claim 22, wherein the connection comprises a plug or a wire.

25. The airbed of claim 20, wherein the audio player is mounted to a built-in pump on the airbed.

26. An airbed comprising a projection system mounted on the airbed, the projection system for projecting an image.