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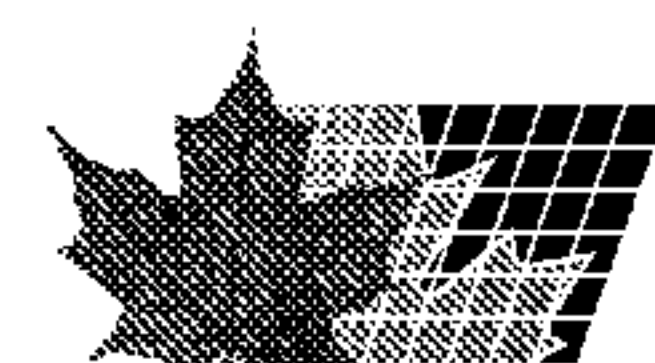
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(54) Titre : DISPOSITIF FAVORISANT LE SOMMEIL

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(57) **Abrégé/Abstract:**

Heartburn is a disorder caused by various reasons. In dealing with this disorder, there are different methods used such as medicinal therapy, change of diet and lifestyle and surgical procedures. In addition to the above mentioned, there are devices to raise the upper portion of the body during sleep to prevent upward movement of stomach contents. In this invention, a generally wedge shaped apparatus will support the upper body in a raised position to start the sleep cycle and will collapse after a period of time to allow the user to sleep on generally a flat plain and comfortably in various positions such as facing up or sides.



Abstract

Heartburn is a disorder caused by various reasons. In dealing with this disorder, there are different methods used such as medicinal therapy, change of diet and lifestyle and surgical procedures. In addition to the above mentioned, there are devices to raise the upper portion of the body during sleep to prevent upward movement of stomach contents. In this invention, a generally wedge shaped apparatus will support the upper body in a raised position to start the sleep cycle and will collapse after a period of time to allow the user to sleep on generally a flat plain and comfortably in various positions such as facing up or sides.

Specification

This invention relates to a collapsible device for controlling causes and symptoms of acid reflux.

In dealing with acid reflux problem, it is common to have the head side of bed raised to create a down ward flow for the stomach contents towards the bottom of the stomach and away from the esophagus. In addition, there are wedges made of foam or other materials to be used on conventional beds to support the upper back in creating the same downward effect for the upper body, however, these methods and devices do not provide a natural and comfortable condition for the user during sleep. Raising the head side of the bed creates a down ward slope effect, causing the body to slide towards the end of the bed during sleep. Conventional wedges create the same condition only in part by lifting the upper portion of the body with the same slope effect. In addition, the user is limited in options such as sleeping comfortably on his or her sides due to the unnatural bend a wedge will create while a person is sleeping on his or her side.

I have found that these disadvantages can be overcome by having a collapsible device to keep the torso of a user on a slant for a length of time so the stomach can process and empty its contents before the device is switched to collapse mode. With this method, user has the option of starting the bedtime on an elevated position and change to a conventional flat position at a period during bedtime without having to interrupt sleep or rest.

Detailed description of the preferred embodiment

In drawing which illustrates embodiment of the invention, the generally wedge shaped collapsible apparatus is shown on bed B in one of the ways it can be arranged for regular use.

A sheet of air impermeable material formed and sealed to create generally wedge shaped pad A, comprising base surface 12, support surface 14 and back surface 16. Side panels 18 are connecting and sealing base, support and back surfaces to make pad A inflatable. Base surface 12, shown in this drawing, is approximately 24" in length and is arranged in generally a horizontal plain as the foundation for connecting all other surfaces forming wedge shaped pad A.

Support surface 14 is connected to base surface 12 at edge 20 and extends in an inclined angle to reach, shown in this drawing, a height of approximately 7" for supporting the torso of a user on a slant with the head and shoulders up.

Back surface 16 extends in generally a vertical plain to connect base surface 12 and support surface 14 at the opposite end to edge 20.

Side panels 18 are generally triangle shaped extending upwards to connect base surface 12, support surface 14 and back surface 16 on either sides of pad A.

Air inlet 22 provides fluid communication between the interior of pad A and air pump 24. Air inlet 22 is positioned on back surface 16 and proximate one of side panels 18 to minimize the possibility of bulging under the user's pillow once pad A has collapsed to flat position.

Air pump 24 is connected to house hold electrical outlet 26 by cord 28 and is the source of air supply for pad A. Normally closed valve 38 is linked to air pump 24 for controlling fluid communication between air pump 24 and pad A.

Air hose 30 connects air inlet 22 to air pump 24 and is of a desirable length to provide means of placing air pump 24 at a distance from pad A so the sounds generated during inflation and deflation are reaching the user at reduced levels. In addition, placing air pump 24 at a distance from pad A is reducing clutter on bed B.

Control panel 32 having switch 36 and timer 40, is connected to air pump 24 by cord 34 so the user can operate the apparatus from a convenient place proximal to bed B.

User will position pad A on a desired rest place shown in this drawing as bed B and activate switch 36 to simultaneously start air pump 24 and move valve 38 to open position so the air can flow through hose 30 to air inlet 22 and inside pad A. Once pad A is inflated to a desired rigidity, user will release switch 36 to simultaneously deactivate air pump 24 and release valve 38 so it can return to normally closed position and stop back flow of air from pad A towards air pump 24. User will set timer 40 to a desired length of time and start the sleep or rest period by lying on pad A. Upon expiration of the set time, valve 38 is switched to open position independent from air pump 24 and for sufficient length of time to allow the weight of the user's torso to exhaust the air out of pad A. Air pump 24 remains deactivated during deflation period. Once deflation is completed, valve 38 returns to its normally closed position in preparation for the next use cycle.

Claims

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

- 1- A collapsible apparatus of the type adapted to be inflated by an air source for supporting the torso of a user in an inclined angel with the head and shoulders towards the higher end, said generally wedge shaped apparatus comprising:
 - (a) An inflatable generally wedge shaped pad made of air impermeable material having a bottom in generally a horizontal plain as the base surface, a top in an inclined angel as the support surface and connected to said base surface along one edge to form low end of said wedge shaped pad , a vertical surface opposite to said low end connecting said base and said support surfaces at the high end of said wedge shaped pad as the back surface, said Base, support and back surfaces connected and sealed on the two sides of said pad by generally triangle shaped side surfaces.
 - (b) Air inlet means preferably positioned on said back surface for providing fluid communication between the source of air and the interior of said inflatable pad.
 - (c) An air supply unit containing an electric air pump connected to a normally closed flow valve, said flow valve adapted to switch to open state in synchronicity with said air pump switching to active state, said flow valve also adapted to switch to open state independent from said air pump.
 - (d) An air hose connecting said air supply unit to said air inlet of said pad.
 - (e) A control panel connected to said air supply unit by a cable of suitable length to control said air supply unit from a convenient location, said control panel equipped with a switch for activating said air pump to inflate said pad, said control panel also equipped with a timing device to set time delay for a desirable length in which the said pad remains inflated, upon expiration of selected time said flow valve to open independent from said air pump and remain open for a suitable length of time allowing the weight of the users torso to deflate said pad while the said air source remains deactivated, said flow valve returning to closed position at any time between the end of deflation period and the start of the next use cycle of said apparatus.
2. An apparatus defined in claim 1 in which said pad is made to a universal size and shape to serve users of all heights and weights.
3. An apparatus defined in claim 1 in which said pad is customized for desired heights and weights.
4. An apparatus defined in claim 1 in which said pad is adjustable to different lengths.
5. An apparatus defined in claim 1 in which said pad is adjustable to different heights.
6. An apparatus defined in claim 1 in which said air pump is manual.
7. An apparatus defined in claim 1 in which said air pump is battery operated.
8. An apparatus as defined in claim 1 in which air pressure, fluids, springs and mechanical arrangements are used in any combination or independently as means of propping the user torso in an inclined angel, said air or fluid bags consist of at

least one reservoir capable of communicating with additional reservoirs or outside air to create different levels of elevation.

9. An apparatus as defined in claim 1 in which said support surface is covered to provide a user with a more comfortable surface to rest upon.
10. An apparatus as defined in claim 1 in which the base surface is extended beyond the lower end of said support surface for the lower portion of the user body to rest upon thereby preventing said pad from moving.
11. An apparatus as defined in claim 1 in which said support surface is adapted to eliminate the need for a pillow.
12. An apparatus defined as in claim 1 in which said control panel is adapted to be wireless.
13. An apparatus defined as in claim 1 in which a solenoid can be adapted to operate the flow valve independent from the air source arrangement.
14. An apparatus defined as in claim 1 in which the air inlet and air outlet are separated and positioned apart so the air release system is independent of the air source and flow valve arrangement.
15. An apparatus defined as in claim 1 in which the timer settings are factory set.

