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(54) **APPARATUS AND METHOD FOR COMPRESSING A MATTRESS TO A UNIFORM FIRMNESS**

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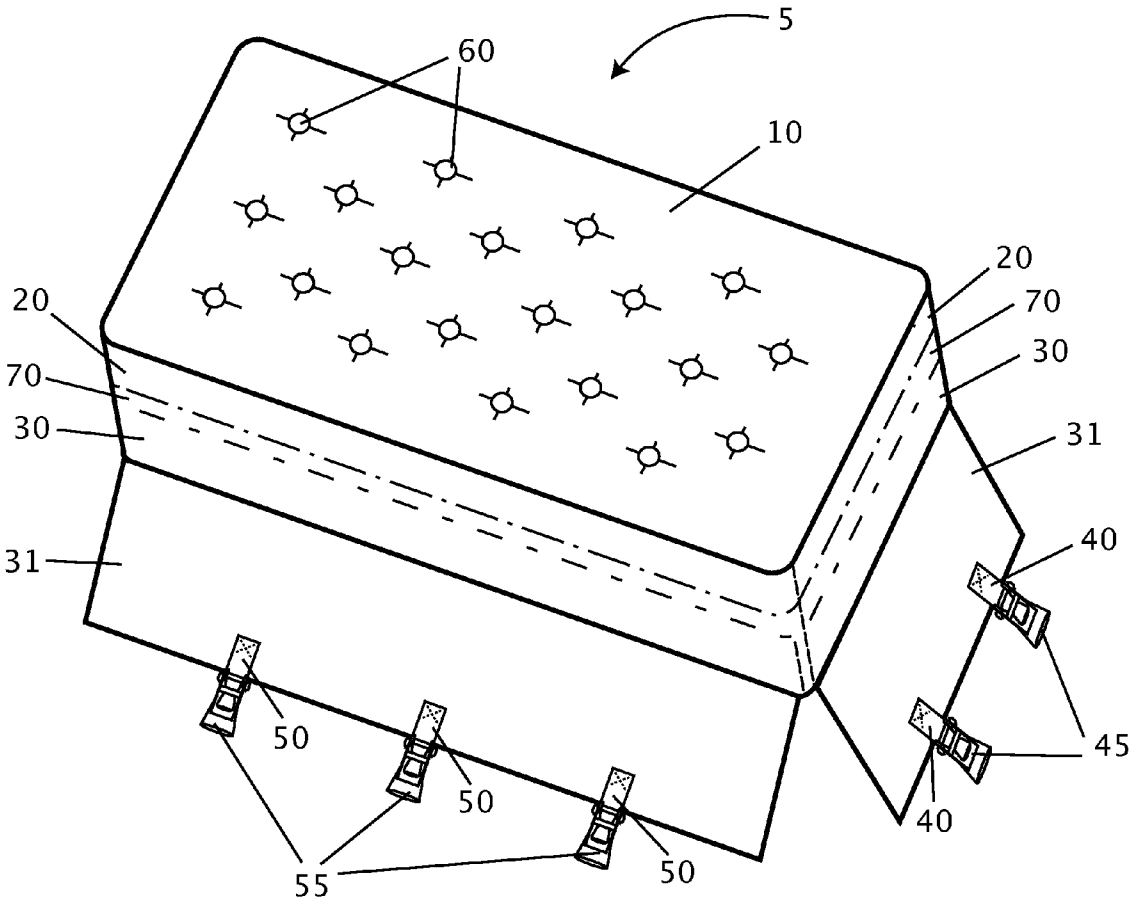
(57) **ABSTRACT**

Various embodiments of this invention disclose an apparatus and method for compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress.



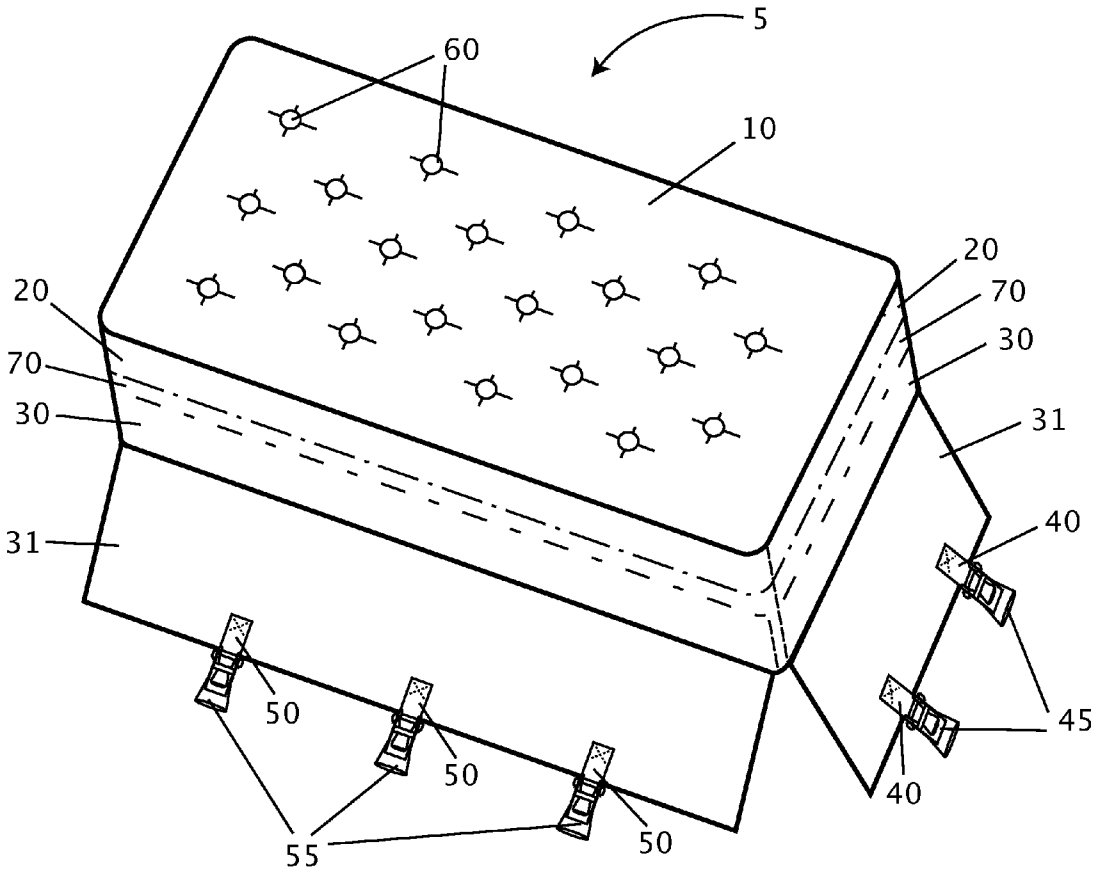


Figure 1

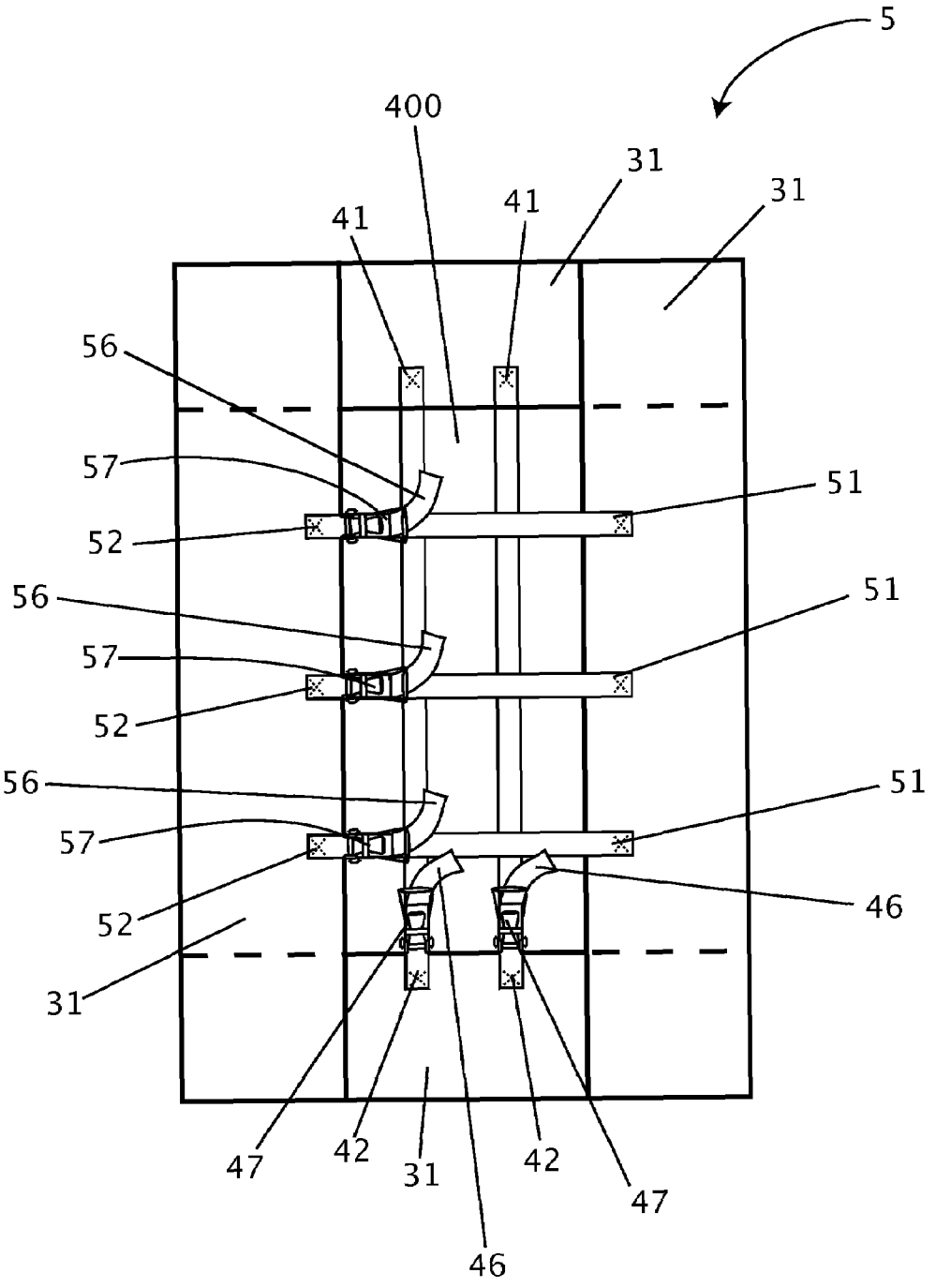

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Figure 2

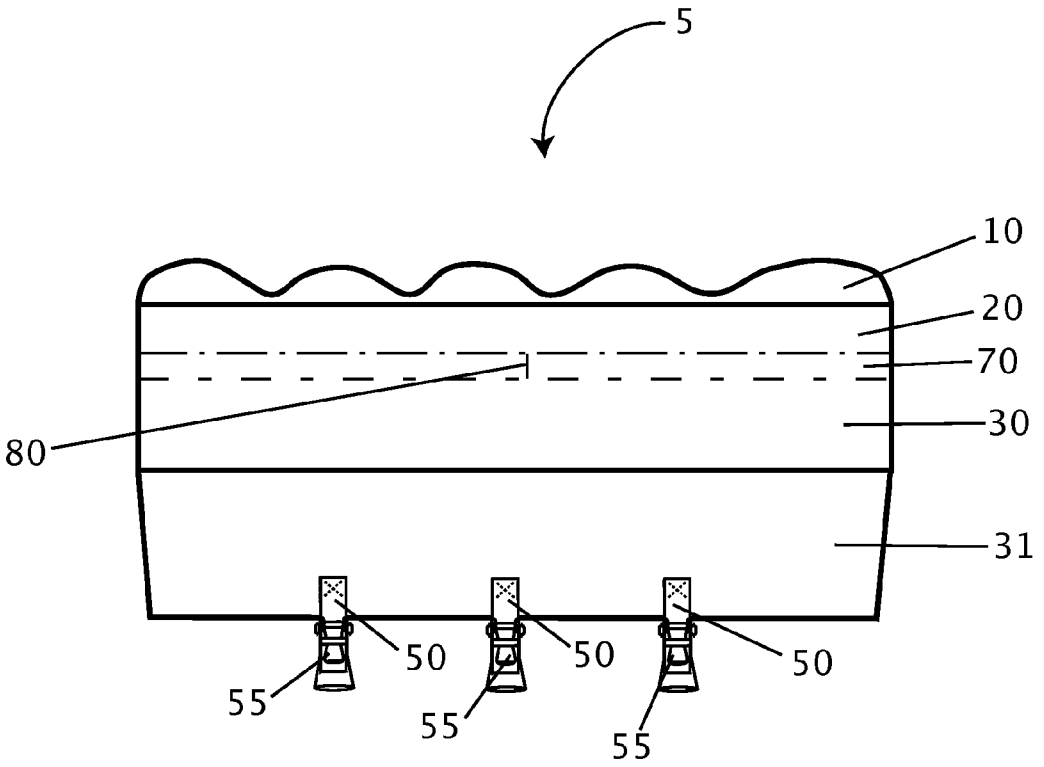

Figure 3

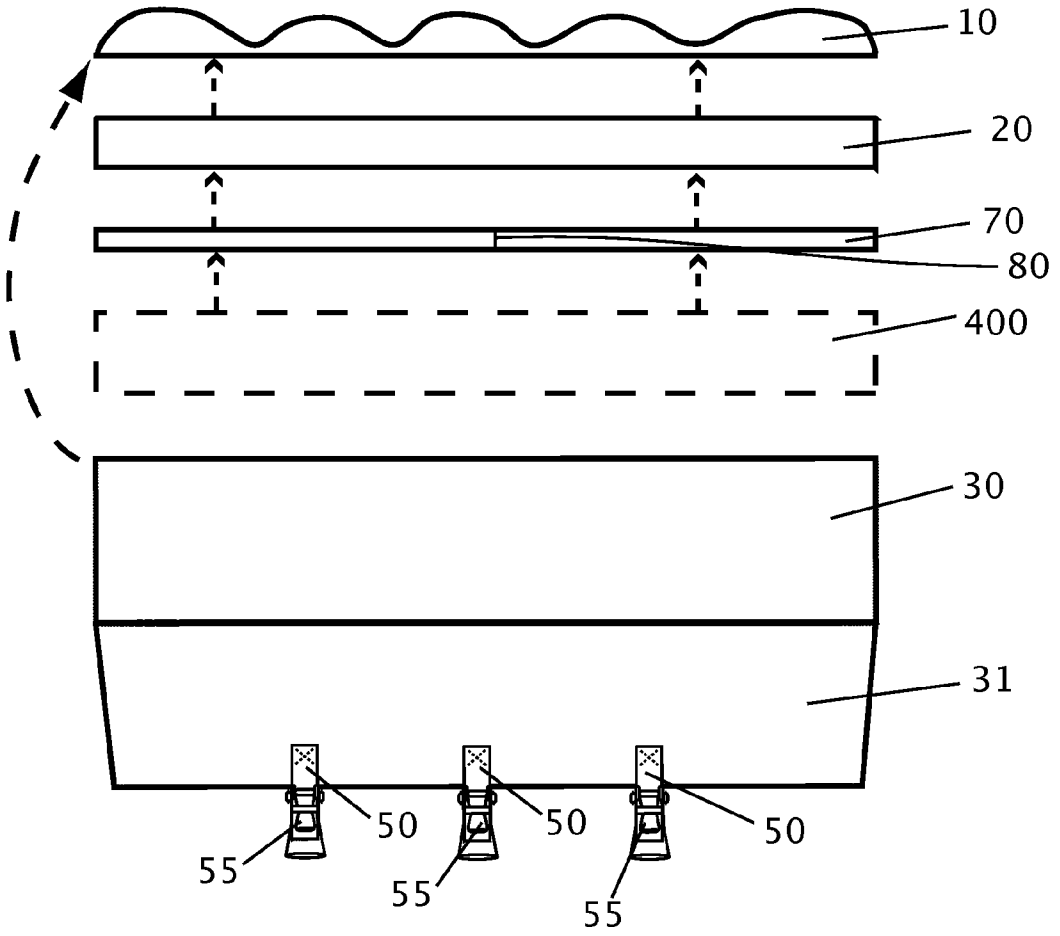

Figure 4

APPARATUS AND METHOD FOR COMPRESSING A MATTRESS TO A UNIFORM FIRMNESS

BACKGROUND OF THE INVENTION

[0001] This invention generally relates to bedding devices. Specifically, it pertains to an apparatus and method for compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress.

[0002] A mattress is an important device in obtaining a good night's sleep and getting the rest a body needs each night. Mattresses come in many different shapes, sizes, and styles and they vary widely in firmness. Typically, a mattress has a spring core that is covered with a padding layer to increase the comfort of the mattress user. Mattresses frequently are one of three basic designs: firm; plush (which is softer than firm); and pillow-top (which is softer than plush). Modern springs are extremely durable and essentially keep their spring tension forever. A mattress typically keeps an even spring tension even if certain springs are consistently used more than others. Padding, on the other hand, is much less durable, and starts to break down after only a short time. Frequently, the padding, due to consistent sleep patterns, will break down in those areas that are used the most. This breakdown of padding affects all three types of mattresses: firm, plush, and pillow top. This padding breakdown causes the mattress to become lumpy and uncomfortable.

[0003] For years, mattress manufactures have attempted to solve the problem of the lumpy mattress. One common solution is integrating a padded topper on both sides of the mattress. This is called a double sided pillow-top mattress. The pillow top portions of the mattress are not removable. With this configuration, the bottom pad is compressed to an even firmness by the weight of the mattress and user. Thus, each time the mattress is flipped the padded-top portion of the mattress provides even padded support. Unfortunately, this solution only works for a short time because eventually the padded toppers on each side completely break down and stop providing the comfort desired by the user. Furthermore, flipping a mattress is not an easy task. Frequently, the owner of the mattress may delay flipping the mattress and this can cause irrevocable damage to the padding of the mattress.

[0004] Another solution is for the user to buy a separate padded topper and simply overlay the mattress with the separate padded topper. However, this solution is flawed because underneath the added separate padded topper the mattress is still lumpy and this lumpiness translates through the padded topper to become apparent to the user. Thus, the problem is only partly masked, poorly, rather than solved.

[0005] Another solution is disclosed in U.S. Pat. No. 7,340,788, issued to Traub. Traub describes a method of increasing the firmness of a mattress, and thereby reducing the lumpiness of a mattress, by wrapping the mattress in a sheet of material using fasteners. Although this solution may increase the firmness of the mattress and thereby reduce lumpiness, the mattress is completely stripped of a padded topper and is thus a less comfortable mattress than was originally manufactured. Moreover, because the Traub method does not disclose the use of a stiff partition to create even compression, the Traub method does not evenly compress the mattress, and therefore, the "solution" of Traub actually causes new lumps to form due to the uneven compression.

[0006] Indeed, there is no device currently available that both compresses a mattress to a uniform firmness and providing a new or additional pillow top to the mattress. Thus, there is a need in the art for an apparatus and method for compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress.

BRIEF SUMMARY OF THE INVENTION

[0007] To minimize the limitations in the prior art, and to minimize other limitations that will become apparent upon reading and understanding the present specification, the present invention discloses an apparatus and method for compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress. The mattress compression device can be used with any type of mattress, including: firm, plush, or pillow-top.

[0008] One embodiment of this invention is a mattress compression device, comprising: a top portion; a soft support portion; a firm support portion; a skirt portion; and one or more binding portions. The binding portions firmly bind the mattress compression device to a mattress and compress the mattress uniformly. The top portion, the soft support portion, and the firm support portion are stacked such that the soft support portion is between the top portion and the firm support portion. The firm support portion is divided to allow for folding of the mattress compression device. The firm support portion compresses a top of the mattress to provide an even surface for the soft support portion and the top portion. The one or more binding portions are adjustable to allow the user to increase or decrease the firmness of the mattress.

[0009] Another embodiment of the invention is a method for compressing a mattress, the steps comprising: providing a mattress; providing a mattress compression device, wherein the mattress compression device comprises a top portion, a soft support portion, a firm support portion, a skirt portion, and an one or more binding portions; covering the mattress with the mattress compression device; turning the mattress so that the one or more binding portions are on top of the mattress; coupling the one or more binding portions together such that the binding portions are on a bottom side of the mattress and the top portion, the soft support portion, and the firm support portion are on a top side of the mattress; and tightening the one or more binding portions together such that the mattress is compressed to a uniform firmness and the top portion and the soft support portion provide a new mattress pillow top or an additional mattress pillow top. The firm support portion is divided to allow for folding of the firm support. The top portion, the soft support portion, and the firm support portion are stacked such that the soft support portion is between the top portion and the firm support portion. The firm support portion compresses a top of the mattress to provide an even surface for the soft support portion and the top portion. The one or more binding portions are adjustable to allow the user to increase or decrease the firmness of the mattress. The mattress is a pillow top mattress.

[0010] An object of the present invention is to provide an apparatus and method that will overcome the deficiencies of the prior art.

[0011] Another object of the present invention is to provide an apparatus that will compress a lumpy mattress to give the mattress a uniform firmness.

[0012] Another object of the present invention is to provide an apparatus that will add an additional pillow topper or add a new pillow topper to a mattress.

[0013] Another object of the present invention is to provide a durable mattress compression device that will work on a wide variety of mattresses.

[0014] Another object of the present invention is to provide an inexpensive and easy to use mattress compression device.

[0015] Another object of this invention is to provide an apparatus and method of compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress.

[0016] Another object of this invention is to make a firm mattress softer.

[0017] Another object of this invention is to make a soft mattress firmer.

[0018] Another object of this invention is to protect a new mattress from developing imperfections.

[0019] Another object of this invention is to inexpensively add years of usage to a mattress. This would be particularly useful to the hotel industry, where, instead of buying new mattresses, the old mattresses could be revitalized by the present invention.

[0020] Another object of the present invention is to fix an old mattress that has one or more body impressions.

[0021] Other features and advantages are inherent in the mattress compression device and method claimed and disclosed will become apparent to those skilled in the art from the following detailed description and its accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] FIG. **1** is an illustration of a perspective view of one embodiment of the mattress compression device.

[0023] FIG. **2** is an illustration of a bottom view of one embodiment of the mattress compression device and shows the coupling of the straps.

[0024] FIG. **3** is an illustration of a side view of one embodiment of the mattress compression device.

[0025] FIG. **4** is an illustration of a side modified exploded view of one embodiment of the mattress compression device.

DETAILED DESCRIPTIONS OF THE DRAWINGS

[0026] In the following detailed description of the preferred embodiment, reference is made to the accompanying drawings that form a part hereof, and in which is shown, by way of illustration, a specific embodiment in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

[0027] In the following detailed description of various embodiments of the invention, numerous specific details are set forth in order to provide a thorough understanding of various aspects of one or more embodiments of the invention. However, one or more embodiments of the invention may be practiced without these specific details. In other instances, well-known methods, procedures, and/or components have not been described in detail so as not to unnecessarily obscure aspects of embodiments of the invention.

[0028] FIG. **1** is an illustration of a perspective view of one embodiment of the mattress compression device. As shown in FIG. **1**, the mattress compression device **5** preferably includes top portion **10**, soft support portion **20**, top skirt **30**, bottom skirt **31**, end straps **40**, end couplings **45**, side straps **50**, side couplings **55**, comfort gatherings **60**, and firm support portion **70**. FIG. **1** shows how mattress compression device **5** is preferably constructed, with top portion **10** on top of soft support portion **20**, which is on top of firm support portion **70**. Although FIG. **1** shows the mattress as a standard large rectangular shape, mattress compression device **5** may be used with any shape, size, firmness, or style of mattress. Mattress compression device **5** is preferably placed on top of a mattress, such that top portion **10**, soft support portion **20**, and firm support portion **70** completely cover the top of the mattress. Preferably the skirt is comprised of top skirt **30** (which is attached to the ends and sides of top portion **10** and hangs over soft support portion **20**, firm support portion **70**, and the side sides and ends of the mattress) and bottom skirt **31** (which is preferably long enough to wrap around the bottom of the mattress and allows the end straps **40** and the side straps **50** to couple with their counterpart straps from the other end and other side on the bottom of the mattress). As shown in FIG. **1**, bottom skirt **31** is preferably separated at the corners so that when bottom skirt **31** wraps around the bottom of the mattress it may do so in an even and smooth manner. Soft support portion **20** and firm support portion **70** are shown with broken lines because in FIG. **1** they are covered by top skirt **30** and thus would not normally be visible in a perspective view.

[0029] FIG. **1** also shows how top portion **10** is preferably padded and typically resembles a standard padded mattress topper. Comfort gatherings **60** form evenly spaced pockets of padding in top portion **10** and make top portion **10** look like a standard padded mattress topper well known in the art. Top portion **10** is preferably made from woven natural fabric materials, but may be made from any materials without deviating from the scope of the invention. Mattress compression device **5** may be made from natural or organic materials. This allows a user the chance to affordably sleep on such desired surfaces. An original mattress made with natural or organic materials is very expensive and is outside the price range of many people who would prefer to sleep on natural or organic materials. In addition to being made with natural or organic materials, mattress compression device **5** may be made from special foams and fabrics that are resistant to dust mites and mildew. This is important to users who are allergic to dust mites and mildew. Finally, mattress compression device **5** may be made with inexpensive materials or it may be made with expensive materials, such as high resiliency foam, latex, or memory foam without deviating from the scope of the invention.

[0030] FIG. **1** also shows mattress compression device **5**, as preferred, with three (3) side straps **50** and two (2) end straps **40**. However, mattress compression device **5** may have any number of straps or even other types of binding devices without deviating from the scope of the invention.

[0031] FIG. **2** is an illustration of a bottom view of one embodiment of the mattress compression device and shows the coupling of the straps. To properly install mattress compression device **5**, the user should cover the top of the mattress with the mattress compression device **5** and then flip the mattress so that the bottom side of the mattress is facing up. Although not shown in FIG. **2**, preferably there are one or more elastic bands that are placed on the bottom of the mattress compression device **5**, preferably one band at each corner. These bands will allow the user to temporarily hold mattress compression device **5** in place so that the user can use the straps to firmly attach mattress compression device **5** to the mattress. As shown in FIG. **2**, mattress compression device **5** preferably has bottom skirt **31** that wraps around

from the sides and ends of a mattress. Bottom skirt **31** is preferably long enough to cover most of the bottom of the mattress **400**. As shown in FIG. **2**, mattress compression device **5** has right side straps **51**, left side straps **52**, top end straps **41**, bottom end straps **42**, right side loose strap edges **56**, left side ratchet couplings **57**, top end loose strap edges **46**, and bottom end ratchet couplings **47**. FIG. **2** shows the right side straps **51**, left side straps **52**, top end straps **41**, and bottom end straps **42** attached to the sides and ends of bottom skirt **31**. As shown in FIG. **2**, the right side straps **51** and the left side straps **52** couple with each other while the top end straps **41** and bottom end straps **42** couple with each other. This simultaneous cross coupling compresses the mattress so that all the padding in the mattress **400** is compressed and effectively taken out of action. In this compressed state, the mattress **400** has an even firmness because the only cushioning element of the mattress available is the springs.

[0032] FIG. **2** also shows the couplings, as preferred, as an adjustable ratchet buckle system. An adjustable ratchet buckle allows the user to tightly bind the right side straps **51** and left side straps **52** (or the top end straps **41** and the bottom end straps **42**) and adjustably compress mattress **400**. The tighter the straps are ratcheted together, the more compressed and firm mattress **400** becomes. The adjustable ratchet buckle shown in FIG. **2** is well known in the art and provides, as preferred, a significant compression force. An example of a type of adjustable ratchet buckle that may be used with the present invention is disclosed in U.S. Pat. No. 4,227,286, issued to Holmberg. As shown in FIG. **2**, the adjustable ratchet buckle has left side ratchet couplings **57** and right side loose strap edges **56** (and bottom end ratchet couplings **47** and top end loose strap edges **46**). The right side loose strap edges **56** engage the left side ratchet couplings **57** and the straps on both the right side and the left side are pulled tight. When the left side ratchet couplings **57** are ratcheted, the left and right sides of bottom skirt **31** are pulled closer together and the mattress **400** is thus compressed. The top and bottom ends are preferably ratcheted in the same manner. Although mattress compression device **5** is rarely removed from mattress **400**, it is preferred that the ratchets have an easy release mechanism.

[0033] Although FIG. **2** only shows one type of coupling device, the coupling device of mattress compression device **5** can be any tightening apparatus, including, but not limited to tying together extensions of material of the bottom skirt **31**, ropes, corsets, bungees, belts, straps, zip-ties, chains, clips, cords, strings, cables, fasteners, staples, hook and loop, bands, latches, stitches, snaps, elastic bands, or clamps.

[0034] FIG. **3** is an illustration of a side view of one embodiment of the mattress compression device. FIG. **3** shows mattress compression device **5** with a top portion **10**, a soft support portion **20**, a firm support portion **70**, a top skirt **30**, and a bottom skirt **31**, side straps **50**, side couplings **55**, and division **80**. Soft support portion **20** and firm support portion **70** are shown with broken lines because they are interior structures and are typically covered by top skirt **30**, and are thus hidden from normal view. As shown in FIG. **3**, top portion **10** is preferably a comfortable pillow type mattress topper and is very similar to other mattress toppers known in the art. Top portion **10** is stacked on top of soft support portion **20**. Soft support portion **20** is preferably made from foam or memory foam, but can be made from any soft and shape retaining padded material. Soft support portion **20** is stacked on top of firm support portion **70**. Firm support portion **70** is preferably a thin, yet firm, plastic or wooden board. Firm support portion **70**, once the mattress is compressed, provides additional stability and even surface on which top portion **10** and soft support portion **20** rest. Additionally, firm support portion **70** helps compress the old existing pillow top of the mattress. Without firm support portion **70**, the mattress compression device **5** may not be able to sufficiently compress large (and possibly very lumpy and uneven) pillow toppers so that an even surface is created. In this way, firm support portion **70**, combined with soft support portion **30** and top portion **10** act as a new or additional pillow top to the mattress.

[0035] Although firm support portion **70** is preferably thin and made from a firm (yet still giving) material such as plastic or wood, firm support portion **70** can be any thickness and may be made from any material so long as the springs of the mattress still provide comfort to the user.

[0036] FIG. **3** also shows firm support portion **70** with division **80**. Division **80** is preferably in the middle of the side of firm support portion **70** and runs the entire width of firm support portion **70**. Division **80** allows mattress compression device **5** to be folded in half to allow for easier storage and shipment. Division **80** may be a complete separation between two halves of firm support portion **70**, a living hinge, or any type of knuckle hinge system without deviating from the scope of the invention. Although division **80** is shown evenly dividing a bottom half and top half of mattress compression device **5**, division **80** may unevenly divide or may divide the right side and left side of mattress compression device **5** without deviating from the scope of the invention. Finally, division **80** may also be more than one division, and thus allow for multiple folding points of mattress compression device **5**.

[0037] FIG. **4** is an illustration of a side modified exploded view of one embodiment of the mattress compression device. FIG. **4** shows mattress compression device **5** with a top portion **10**, a soft support portion **20**, a firm support portion **70**, a top skirt **30**, and a bottom skirt **31**, side straps **50**, side couplings **55**, and division **80**. FIG. **4** also shows mattress **400**, which is the device that the mattress compression device **5** surrounds and compresses. FIG. **4** shows how the interior structures, soft support portion **20** and firm support portion **70**, are stacked underneath of the top portion **10** and preferably rest on mattress **400**. Preferably top skirt **30** connects to the sides and edges of top portion **10** and thus covers and conceals soft support portion **20** and firm support portion **70**. Preferably top skirt **30** is also long enough to cover mattress **400**.

[0038] In summary, the present invention is an apparatus and method for compressing a mattress to a uniform firmness and providing a new or additional pillow top to the mattress.

[0039] The foregoing description of the preferred embodiment of the invention has been presented for the purposes of illustration and description. While multiple embodiments are disclosed, still other embodiments of the present invention will become apparent to those skilled in the art from the above detailed description, which shows and describes illustrative embodiments of the invention. As will be realized, the invention is capable of modifications in various obvious aspects, all without departing from the spirit and scope of the present invention. Accordingly, the detailed description is to be regarded as illustrative in nature and not restrictive. Also, although not explicitly recited, one or more embodiments of the invention may be practiced in combination or conjunction with one another. Furthermore, the reference or non-refer-

ence to a particular embodiment of the invention shall not be interpreted to limit the scope the invention. It is intended that the scope of the invention not be limited by this detailed description, but by the claims and the equivalents to the claims that are appended hereto.

What is claimed is:

1. A mattress compression device, comprising:
a top portion;
a firm support portion;
a skirt portion; and
an one or more binding portions.

2. The mattress compression device of claim **1**, further comprising:
a soft support portion;
wherein said one or more binding portions firmly bind said mattress compression device to a mattress and compress said mattress uniformly.

3. The mattress compression device of claim **2**, wherein said top portion, said soft support portion, and said firm support portion are stacked such that said soft support portion is between said top portion and said firm support portion.

4. The mattress compression device of claim **3**, wherein said firm support portion is divided to allow for folding of said mattress compression device.

5. The mattress compression device of claim **4**, wherein said firm support portion compresses a top of said mattress to provide an even surface for said soft support portion and said top portion.

6. The mattress compression device of claim **5**, wherein said one or more binding portions are adjustable to allow the user to increase or decrease the firmness of said mattress.

7. A mattress compression device, comprising:
a top portion;
a soft support portion;
a skirt portion;
a firm support portion; and
an one or more binding portions;
wherein said top portion, said soft support portion, and said firm support portion are stacked such that said soft support portion is between said top portion and said firm support portion.

8. The mattress compression device of claim **7**, wherein said firm support portion compresses a top of a mattress to provide an even surface for said soft support portion and said top portion.

9. The mattress compression device of claim **8**, wherein said one or more binding portions firmly bind said mattress compression device to said mattress and compress said mattress uniformly.

10. The mattress compression device of claim **9**, wherein said firm support portion is divided to allow for folding of said mattress compression device.

11. The mattress compression device of claim **10**, wherein said one or more binding portions are adjustable to allow the user to increase or decrease the firmness of said mattress.

12. A method for compressing a mattress, the steps comprising:
providing a mattress;
providing a mattress compression device, wherein said mattress compression device comprises a top portion, a soft support portion, a firm support portion, a skirt portion, and an one or more binding portions;
covering a top of said mattress with said mattress compression device;
turning said mattress so that said one or more binding portions are on top of an underside of said mattress;
coupling said one or more binding portions together such that said binding portions are on said underside of said mattress and said top portion, said soft support portion, and said firm support portion are on said top side of said mattress; and
tightening said one or more binding portions together such that said mattress is compressed to a uniform firmness and said top portion and said soft support portion provide a new mattress pillow top or an additional mattress pillow top.

13. The method of claim **12**, wherein said firm support portion is divided to allow for folding of said firm support.

14. The method of claim **13**, wherein said top portion, said soft support portion, and said firm support portion are stacked such that said soft support portion is between said top portion and said firm support portion.

15. The method of claim **14**, wherein said firm support portion compresses said top of said mattress to provide an even surface for said soft support portion and said top portion.

16. The method of claim **15**, wherein said one or more binding portions are adjustable to allow the user to increase or decrease the firmness of said mattress.

17. The method of claim **16**, wherein said mattress is a pillow top mattress.

* * * * *