

May 24, 1960

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2,937,386

MATTRESS HANDLE AND VENTILATOR ASSEMBLY

Filed Jan. 21, 1958

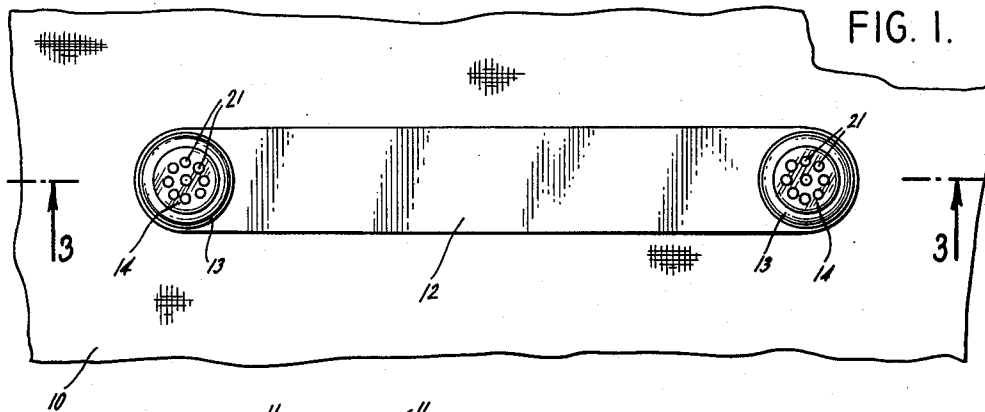
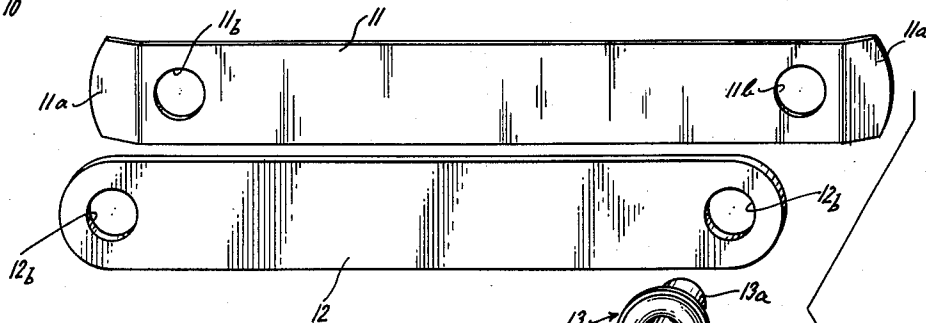


FIG. 2.

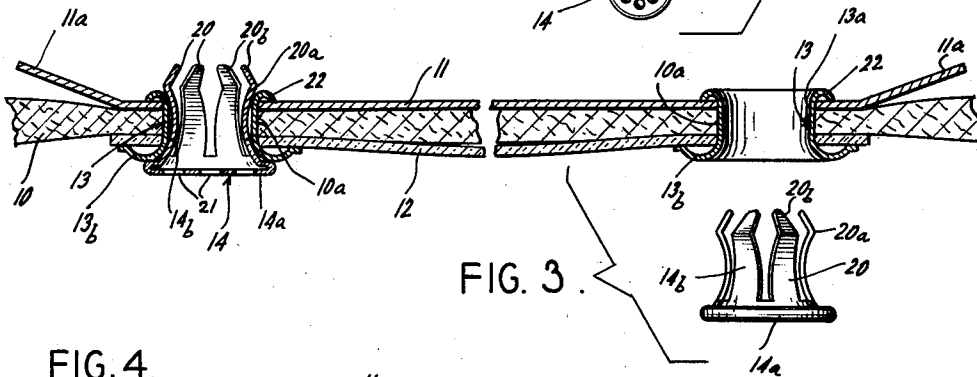


FIG. 3.

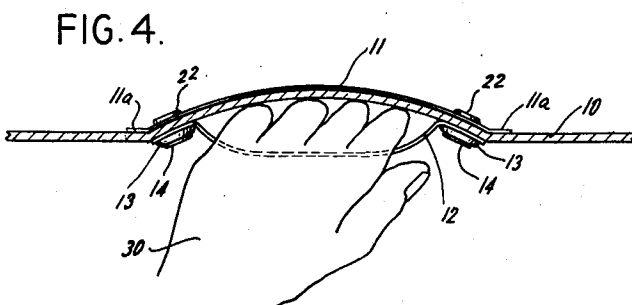


FIG. 4.

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MATTRESS HANDLE AND VENTILATOR ASSEMBLY

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Filed Jan. 21, 1958, Ser. No. 710,361

5 Claims. (Cl. 5—345)

This invention relates to an improvement in mattress handle assemblies, and in particular relates to an improved mattress handle assembly wherein ventilators are incorporated in the assembly.

One object of this invention is to provide handle and ventilator components for assembly with a mattress wall, wherein eyelet means entirely separate from the ventilators are provided for securing the handle components to the mattress wall, and wherein the ventilators may be readily assembled with the handle after the handle is assembled with the mattress. This makes it possible to use eyelets of conventional design to secure the handle components to the mattress wall, and makes possible the provision of a simplified ventilator construction.

Another object of this invention is to provide a handle and ventilators for assembly with a mattress wall, which handle when assembled will lie flat along its entire length against the outer or front face of the mattress wall.

Another object of this invention is to provide a handle which may be assembled with a mattress wall simultaneously with a flexible reinforcing bar for the inner surface of the mattress wall, and wherein ventilators may be readily assembled with the handle after the handle has been assembled with the mattress wall.

In accordance with a preferred embodiment of the invention, the handle and ventilator components comprise simply a flexible reinforcing bar for the inner face of the mattress wall, a flat, flexible handle strap for location against the outside of the mattress wall, a pair of eyelets and the ventilators. In assembly, the eyelets are passed through registering holes in the handle strap, the mattress wall and the reinforcing bar, prior to heading over the shank of the eyelet against the reinforcing bar. This eliminates the need for inserting the ends of the handle through the eyelets after assembly of the eyelets and the reinforcing bar with the mattress wall. Also, this construction leaves the bores of the eyelets unblocked so that ventilators may be assembled therein.

In accordance with said preferred embodiment of my invention, the ventilator consists of a split rivet having the head thereof provided with small perforations and the shank of which is shaped so that it may be inserted frictionally into the bore of the eyelet from the outside or front. The assembly of the ventilators with the eyelets is extremely simple, and may be done immediately after assembly of the other components of the mattress handle assembly with the mattress wall. This eliminates the need for punching additional holes in the mattress wall and for separately mounting ventilators into place in such other holes of the mattress wall. Also, this construction makes it unnecessary for the ventilators to support any of the load upon the handle assembly when the mattress is lifted.

In accordance with my invention, if for any reason a ventilator should fall out of the eyelet hole, which is extremely unlikely, it is a simple matter to press-fit a replacement ventilator into the eyelet hole.

Other objects and advantages of the invention will be

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apparent from the following description, in conjunction with the annexed drawings, in which a preferred embodiment of the invention is disclosed.

In the drawings:

Fig. 1 is an elevation of the external or front face of the side wall of a mattress, showing my improved mattress handle and ventilator assembly mounted thereon. The mattress wall is shown fragmentarily.

Fig. 2 is an exploded perspective view of the components of my improved mattress handle and ventilator assembly.

Fig. 3 is a section on line 3—3 of Fig. 1, but is partly exploded and shows one of the ventilators prior to insertion through the hole of an eyelet.

Fig. 4 is a view similar to Fig. 3, but drawn to reduced scale, and showing the manner in which the handle tape may be grasped in the hand.

Figs. 1—3 of the drawing are substantially to full scale of a working model of the invention, and reference is made to these views to complete the disclosure herein.

Fig. 1 shows a portion of the side wall or border 10 of a conventional mattress. Optionally, wall 10 may be the wall of a box spring or any other appropriate article. As is well known, the wall or border 10 of the mattress is normally held taut around the periphery of the mattress. The mattress handle and ventilator assembly comprises a flexible and resilient, elongated reinforcing bar or strap 11, a handle strap 12, a pair of eyelets 13 and a pair of ventilators 14.

As an important feature of this invention, these components can be sold by the handle manufacturer in kit form to the mattress manufacturer who may readily assemble the components with the mattress wall 10.

The reinforcing bar or strap 11 may be made of any suitable thick spring steel so as to have the appropriate flexibility and resiliency, and yet be of sufficient strength to reinforce wall 10 against the pull of the mattress handle strap. The ends 11a of bar 11 are optionally turned rearwardly at a slight angle to the main portion of bar 11, which is normally fairly straight. Slightly inwardly of the end portions 11a, holes 11b are formed in bar 11.

Eyelet 13 is conventional and includes the usual shank 13a and head 13b of enlarged diameter.

The handle strap 12 is elongated and is provided with holes 12b adjacent the ends thereof. Said strap 12 may be made of any suitable flexible material, which is preferably non-stretchable. Optionally, strap 12 may be made of plastic of sufficient sheet thickness. Optionally, also, strap 12 may be made of cloth tape material. Optionally, the ends of strap 12 are rounded.

In the working model shown in the drawings, tape 12 was made of polyvinyl chloride which was substantially non-stretchable under the load imposed in lifting a mattress.

The ventilator 14 is optionally and preferably in the form of a split rivet having a head 14a and a shank 14b. The major portion of shank 14b, with the exception of the portion immediately adjacent head 14a, is slotted in the direction of length of the shank so as to divide said shank into a plurality of resilient tongues 20. In the working model there were six such tongues 20. Each said tongue 20 is radially inwardly bowed, the bow terminating at its lower end at point 20a. The overall diameter of shank 14b at the points 20a is normally greater than the diameter of the bore of eyelet 13. Beyond the points 20a, the tongues 20 are radially inwardly inclined at 20b, said tongue extensions 20b serving as cams.

The head 14a is provided with a plurality of perforations 21 of small diameter, so as to effectively cover the bore of eyelet 13 against the entry of most foreign matter, while still permitting air flow into and out of the mattress.

In the assembly of the components with the mattress wall 10, the mattress wall 10 is perforated at 10a, by any suitable means, the distance between the two perforations 10a of the wall being substantially the same as the distance between the two openings 11b of bar 11. The ball 11 is placed against the internal face of wall 10, and strap 12 is placed against the external face of wall 10 with each set of openings 11b, 12b and 10a in registration.

The shank 13a of eyelet 13 is then extended through the registering openings 12b, 10a and 11b, with head 13b abutting the front face of handle strap 12. The rear end portion of shank 13a is then headed over at 22, by any suitable means, against the rear face of reinforcing bar 11. Bar 11, wall 10 and strap 12 are held clampingly between the eyelet heads 13b and 22.

The ventilators 14 are then assembled with the mattress handle by merely force-pressing each shank 14b through the bore of eyelet 13 until the rear annular face of head 14a abuts eyelet head 13b. The finger extensions 20b strike cammingly against the entrance to the bore of eyelet 13, during this assembly operation, thereby forcing the resilient fingers 20 radially inwardly during the assembly operation. When the ventilator head 14a abuts the eyelet head 13b, shank points 20a clear the rear end of the eyelet shank, and the fingers 20 spring back outwardly and bear under tension against the peripheral wall of the shank of eyelet 13. This is clearly shown on the left-hand side of Fig. 3.

As shown in Fig. 3 the points 20a are located radially slightly outwardly of the periphery of the bore of the eyelet. As a result, the ventilator 14 is seated firmly within the bore of the eyelet and cannot normally become dislodged. Of course, if for any reason ventilator 14 were to become dislodged, it would be a simple matter to press-fit the same ventilator, or a replacement ventilator, back into the bore of the eyelet.

Fig. 4 shows the manner of use of the handle assembly. The operator places the fingers of his hand 30 between strap 12 and mattress wall 10. Strap 12 and bar 11 flex to permit sufficient enlargement of the space between strap 12 and wall 10, so as to accommodate the bulk of the fingers. Fig. 4 shows how the inclined end portions 11a of bar 11 tend to lie against mattress wall 10 in the flexed condition of bar 11.

Upon removal of the fingers of the hand 30 from the space between strap 12 and wall 10, the resiliency of bar 11 returns the bar, strap 12 and handle 10 to their normal condition of Figs. 1 and 3, wherein bar 11 is substantially straight and wherein strap 12 lies substantially flush against the front or outer face of mattress wall 10.

While I have disclosed a preferred embodiment of my invention, and have indicated various changes, omissions and additions which may be made therein, it will be apparent that various other changes, omissions and additions may be made in the invention, without departing from the scope and spirit thereof.

I claim:

1. A handle and ventilator assembly for a flexible wall comprising a spring bar having openings adjacent the respective ends thereof and overlying one surface of said

wall, a flexible handle tape having openings adjacent respective ends thereof and overlying the other surface of said wall, eyelets having tubular shanks extending through the respective openings of said handle tape and of said spring bar, and through the flexible wall, said eyelets having heads at each end respectively overlying the handle tape and the spring bar and said eyelets constituting the sole means anchoring said handle tape and bar together and to said wall, and ventilator closures for the eyelet shanks each comprising a perforated head extending across the outer end of the associated eyelet shank and a generally tubular spring shank frictionally engaged through the associated eyelet shank.

2. The combination with a mattress wall having spaced eyelets extending therethrough, said wall including flexible resilient reinforcing means for maintaining said wall normally straight but capable of being manually flexed to increase the distance between said eyelets, of a flexible handle overlying the outer surface of said mattress wall and having openings through which the tubular shanks of said eyelets extend, said eyelets having unitary heads respectively abutting the outer face of the handle tape and the inner face of the wall, said reinforcing means normally holding said handle tape taut, said eyelets constituting the sole means anchoring said handle to said reinforcing means and wall, and ventilators having heads adapted to overlie the outer surfaces of the outer heads of said eyelets and of greater diameters than the bore shanks of said eyelets, said ventilators having generally tubular spring shanks extending frictionally into the bores of the respective eyelets.

3. A combination according to claim 2, each ventilator shank being split inwardly of the head to divide it into fingers, said fingers being spring fingers and extending inwardly of the associated eyelet, at least the inner end portion of each ventilator shank being normally of greater diameter than the shank of the associated eyelet, said fingers being flexed inwardly by insertion of the ventilator shank into the eyelet shank.

4. A combination according to claim 3, said fingers being provided with portions which catch against the inner end surface of the associated eyelet.

5. An assembly as claimed in claim 1 in which the ends of said bar are bent away from said wall beyond the bar openings to lie against the wall when the central portion of the bar is flexed inwardly.

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