Oct. 28, 1958 G. TOMSIC 2,857,643

CONTOUR SHEETS

Filed May 28, 1956 2 Sheets-Sheet 1

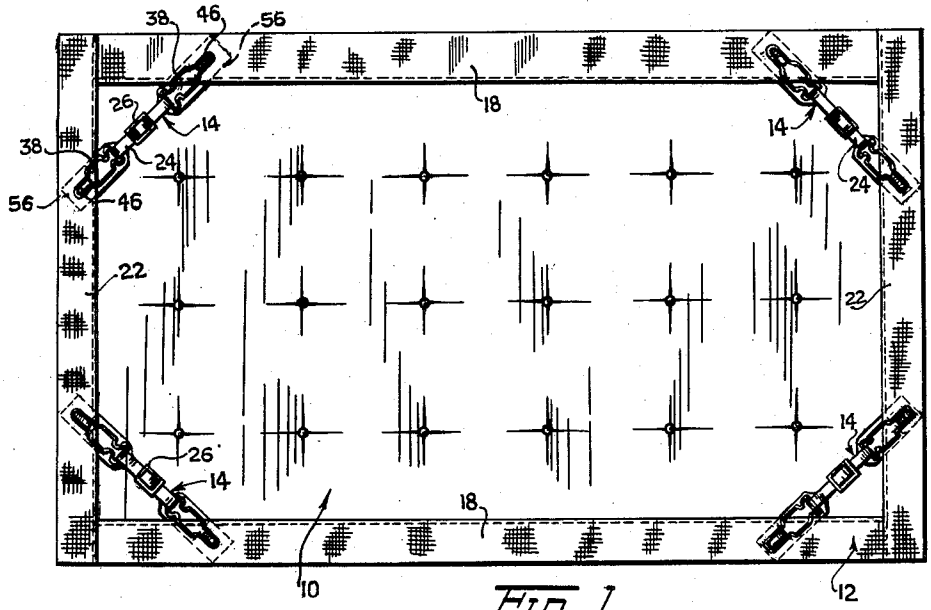


Fig. 1.

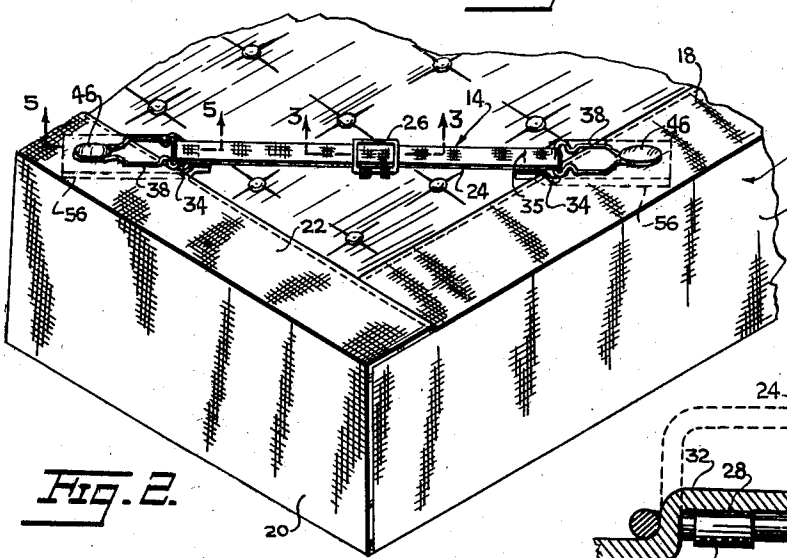


Fig. 2.

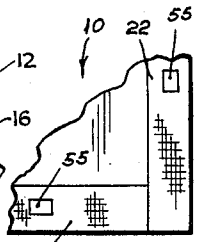


Fig. 1A.

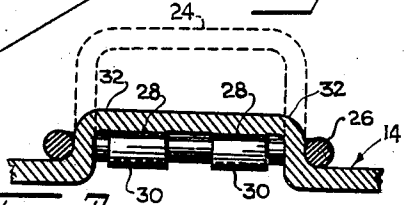


Fig. 3.

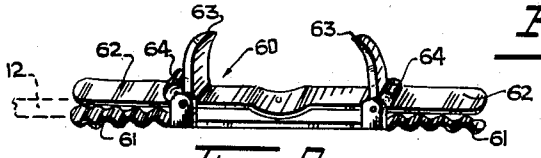


Fig. 9.

INVENTOR.
GUY TOMSIC
BY
ATTORNEY

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CONTOUR SHEETS

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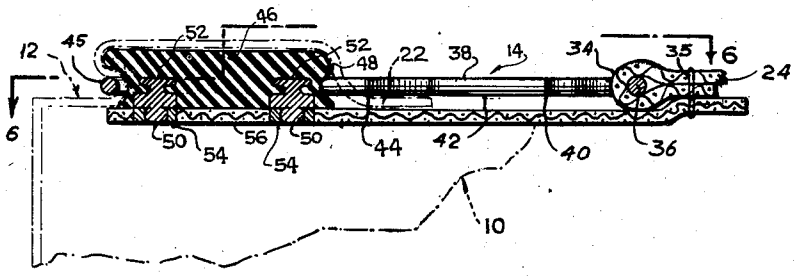


Fig. 5.

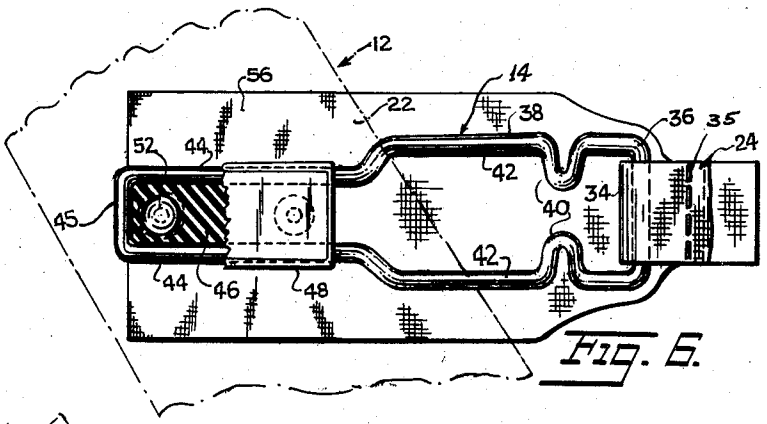


Fig. 6.

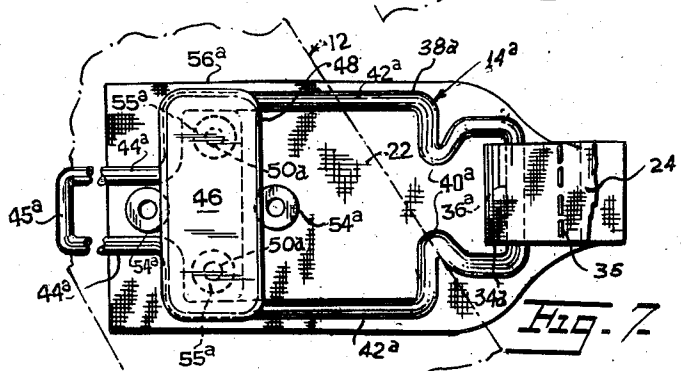


Fig. 7.

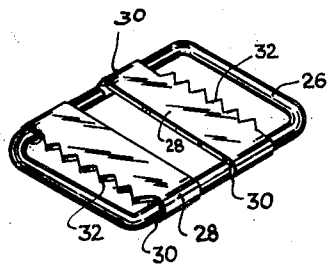


Fig. 4.

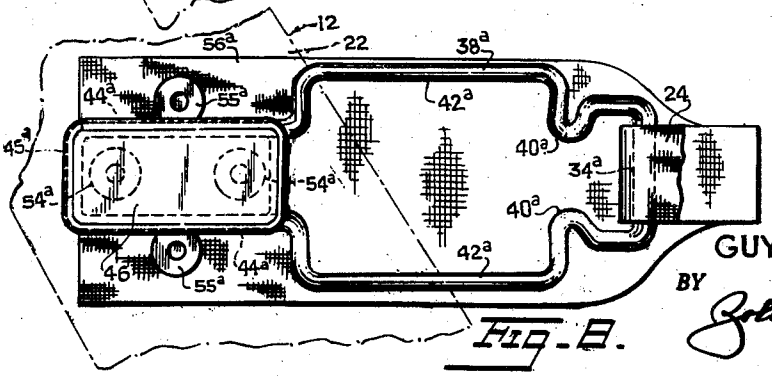


Fig. 8.

INVENTOR.
GUY TOMSIC
BY Zoltan A. Blackhof
ATTORNEY

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2,857,643

CONTOUR SHEETS

Guy Tomsic, New York, N. Y.

Application May 28, 1956, Serial No. 587,575
2 Claims. (Cl. 24—72.5)

The present invention relates to the class of sheets commonly known as contour sheets. Bed sheets of this type are adapted to be fitted at their corners about the corners of a mattress, so as to be held in position upon the mattress.

The present invention is an improvement on existing sheets of this type, in respect to providing an improved means extending diagonally of the corners of the contour sheet, designed to effectively tension the sheet about the mattress. Said means is so designed as to be readily removable, adjustable in length, and, further, adapted for connection to conventional sheets, that is, sheets that are not provided with corner pockets, so that the conventional sheets can be swiftly adapted for use as a contour sheet similar to one having sewed in corner pockets.

Another object of importance is to provide a means connectable diagonally across the corners of a sheet, so designed as to be capable of manufacture at low cost, and to remain in a selected position of adjustment, so as to provide a continuing pull upon the sheet, effective to maintain the proper tension upon the sheet as long as the sheet is on the bed.

Another object of importance is to provide, in a device of the type referred to, clasp means in the form of elongated, resilient, peripherally flanged buttons detachably connectable to the sides and ends of the sheet, with said buttons being adapted for engagement in loops provided upon the opposite ends of a longitudinally adjustable strap element.

Still another object is to provide, in one form of the invention, means for adjusting the buttons into selected positions angularly spaced ninety degrees from each other, with a clasp loop being especially shaped to receive the button in either of said positions of the button, in a manner to place, if desired, additional tension upon the connecting strap, resulting in corresponding additional tension upon the sides and ends of the sheet tending to hold the sheet in proper position upon the mattress.

A further object of importance is to provide means of the character referred to that will be adapted to lie flat against the underside of the mattress when applied to a sheet, with the result that there will be no undesirable lumps, projections, or other formations upon the device that may tend to produce discomfort or, alternatively, tend to produce wear and damage to the sheets and mattress.

Still another object of importance is to provide a device of the character stated which will be adapted for use either on sheets of the type having sewed-in corner pockets, or, alternatively, so-called "flat," conventional sheets, without requiring modification or redesign of the device.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various

novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a bottom plan view of a mattress to which has been applied a sheet, the sheet being tensioned upon the mattress by means of diagonally extending corner connector means formed according to the present invention.

Fig. 1A is a fragmentary perspective detail view showing the marking on a corner of the mattress.

Fig. 2 is an enlarged, fragmentary perspective view showing one corner of the mattress and sheet with the device constituting the present invention applied thereto said mattress being inverted.

Fig. 3 is an enlarged, detail sectional view on line 3—3 of Fig. 2, showing the means for adjusting the length of the connecting strap, the dotted lines showing the strap taken up to shorten the overall length thereof.

Fig. 4 is an enlarged perspective view of the strap-adjusting buckle element per se.

Fig. 5 is an enlarged, fragmentary, longitudinal sectional view on line 5—5 of Fig. 2, showing the means for connecting the strap at its ends to cooperating portions of the sheet, the mattress being shown fragmentarily and in dotted lines.

Fig. 6 is a view on line 6—6 of Fig. 5, on the same scale as Fig. 5.

Fig. 7 is a view similar to Fig. 6 showing a modified form wherein the rubber button is adjustable between opposite extreme positions angularly spaced ninety degrees apart.

Fig. 8 is a view similar to Fig. 7 showing the modified form with the button adjusted to its opposite position.

Fig. 9 is a perspective view of a modified clasp device.

Referring to the drawings in detail, the reference numeral 10 generally designates a mattress of conventional box type construction, to which has been applied a sheet 12.

In the illustrated example, the sheet is wholly conventional, being the flat type without corner pockets. This showing has been provided to illustrate the adaptability of the invention for application to sheets of this type, that may already be in use, with the application of the device having the effect of forming the sheet into a sheet having the characteristics of a contour sheet having said corner pockets. It will be understood, however, that the invention is equally well adapted for use upon contour sheets having pockets at their corners receiving the corners of the mattress. This, it is believed, will be fully obvious from the description to be provided hereinafter, and accordingly, a showing of the device on contour sheets having sewed-in pockets has not been provided.

The device constituting the present invention has been generally designated 14, and as shown in Fig. 1, is used in a set of four identical devices, each extending diagonally across a corner of the mattress and sheet, at the underside of the mattress.

To use the device, the sheet 12, along its sides 16, is extended downwardly along the sides of the mattress 10, after which the longitudinal edge portions of the sheet, designated at 18, are folded under the mattress.

The same is done at the ends of the sheet, the ends 20 of the sheet being extended downwardly along the ends of the mattress, with the end edge portions 22 being folded under the mattress.

Since all the connecting devices 14 are identical to each other, the description of one will suffice for all of them.

The connecting device **14** includes an elongated strap **24**, which can be of elastic material if desired, although a nonelastic, strong, reinforced fabric could be used with equal facility.

The connecting strap **24**, intermediate its ends, is passed through an adjusting buckle **26**. This, as shown in Fig. 4, is in the form of a rectangular frame, and slidable longitudinally upon and extending transversely of the frame, adjacent the opposite ends thereof, are crosspieces **28**, in the form of flat sheets of metal material, the ends of which are rolled to provide sleeves **30** receiving the opposite sides of the frame of the buckle. On the edges of the crosspieces that face toward the opposite ends of the frame, there are formed teeth **32**.

By reason of this construction, with the strap passed above the crosspieces and then under the ends of the frame as shown in Fig. 3, adjustments in the overall length of the strap can be readily effected. For example, if the strap is to be at its maximum length, it will be adjusted to the full line position of Fig. 3, flat against the top surfaces of the crosspieces **28**. If, however, the strap is to be shortened, the slidable elements **28** are shifted inwardly, causing the teeth **32** to disengage from the material of the strap. The strap is then lifted upwardly to the dotted line position of Fig. 3, after which the slide elements **28** are shifted once again toward the ends of the frame, causing the teeth **32** to bite into the strap material.

At its opposite ends, the strap **24** is folded upon itself as at **34**, and the folded portion is stitched to the body part of the strap, thus to provide transversely extending sleeves receiving the inner ends **36** of a clasp **38**. The clasp **38** is in the form of an elongated, closed frame, and as shown in Fig. 6, the inner end portion **36** of said frame merges at its ends into short side portions which in turn merge into inwardly directed crimps **40**, said crimps merging into elongated, parallel side portions **42**. Side portions **42** merge into inwardly directed offset parts of the sides of the frame, which in turn merge into parallel, straight extensions **44** of the side portions **42**. The extensions **44** are spaced apart a substantially smaller distance than are the side portions **42**, as will be noted from Fig. 6, and are integrally connected at the outer end of the clasp by an outer end portion **45**.

An elongated rubber button **46** is formed with a peripheral flange **48**, providing an overhang that overlies the extensions **44** and outer end portion **45** when the button is received in the slot-like space defined between the extensions **44** (see Fig. 6).

Downwardly facing male gripper snap fastener elements **50** are provided upon the longitudinal median of the rubber button or block **46**, adjacent to the opposite ends of the block, and these are formed with flat heads **52** embedded in the material of the rubber block as shown in Fig. 5. The male fastener elements **50** are adapted to be detachably engaged in conventional female snap fastener elements **54** embedded in a short strap member **56** of either elastic or inelastic fabric material forming an extension of the strap **24**. The strap member **56** is secured at one end to the strap **24** by the stitching **35** forming the folded portion **34**. The clasp **38** rests loosely on the surface of the strap.

In order to apply the connecting or tensioning device to a conventional sheet, the short strap members **56** carrying the bottoms or blocks **46** are inserted under the adjacent portions **18** and **22** of the sheet **12** adjacent the corners thereof as shown in Fig. 1. The buttons or blocks bulge the material of the sheet upwardly thereabout and the clasps **38**, are swung downwardly so that their wide portions **42** envelope the bulged material over the buttons or blocks. The clasps **38** are then pulled longitudinally to bring the narrow portions **44** into gripping relation with the material at the sides of the buttons or blocks thereby detachably fastening the straps **24** to the sheet.

When the connecting or tensioning devices are applied to the four corners of the sheet, tension will be exerted on the sheet along the lines extending diagonally across the corners of the sheet to hold the same properly tensioned upon the mattress, without possibility of slippage of the sheet from the desired position.

The sheet may be suitably marked as shown at **55** in Fig. 1A to show the proper locations for attachment of the ends of the connecting devices.

The connecting or tensioning devices may readily be removed from the sheet to permit laundering of the sheet.

In the form of the invention shown in Figs. 7 and 8, means is provided for increasing the tension with which the sheet is stretched diagonally across the corners. In Fig. 7, the modified connecting device **14ª** includes a strap **24** identical to the first form of the invention. Said strap may or may not be provided with the buckle **26**, as desired. Further, the sheet **12** is identical to the first form, as is the button **46** together with its male gripper fastener elements **50ª**.

In this form of the invention, the clasp **38ª** is basically similar to the clasp **38**. However, there is a difference in that the side portions **42ª** are spaced apart a greater distance than are the side portions **42**. The strap-connected inner end portion of the frame of the clasp, however, is similar to the first form, including an end **36ª** passing through the sleeve **34ª** of strap **24**. The crimps **40ª** merge into the side portions **42ª**, with the side portions **42ª** merging at their outer ends into offset portions that in turn merge into the extensions **44ª** connected by the outer end portion **45ª**. The extensions **44ª** are of a length, and are spaced apart, similarly to the extensions **44**.

The short strap **56ª** in this form of the invention, however, carries two pairs of opposed female snap fasteners **54ª**, **54ª**, **55ª**, **55ª**. One pair of female elements **54ª**, **54ª**, is arranged identically to the pair of female elements **54**, **54** of the first form of the invention, that is the elements are disposed longitudinally of the strap member **56ª**. The other pair of elements **55ª**, **55ª** however is aligned so that the elements are disposed in a line perpendicular to a straight line drawn between the elements **54ª**, **54ª** of the first pair, or along a line aligned with the longitudinal center of the strap **56ª**. In other words, the several female elements are angularly spaced ninety degrees apart in a circular path drawn about the center point of the short strap **56ª**.

By reason of this arrangement, the button or block **46** can be adjusted to either of the positions shown in Figs. 7 or 8. For example, the block can be adjusted to the Fig. 7 position, in which it extends normally to the direction in which it extends in the first form of the invention, with the male gripper fastener elements being connected to the female elements **55ª**. The button thus extends perpendicularly to the length of the strap **24**. However, the side portions **42ª** are so spaced apart as to be engageable under the ends of the flange **48** of the button, with the inwardly directed offsets at the outer ends of the side portions **42ª** also engaging under said flange.

This places the strap **24** under substantial tension, in effect reducing the distance between the points at which the device **14ª** is connected to the sheet.

If it is desired to increase this distance, one merely adjusts the button **46** to the Fig. 8 position, with the male gripper fastener elements, connected to the female elements **54ª**. Now, the clasp is usable in the same manner as in the first form, that is, the button is received in the space between the extensions **44ª**. It will be seen that this permits the clasp to be shifted to the right relative to the button, as compared to the clasp position of Fig. 7, and obviously, this has the effect of reducing the tension of the connecting strap **24**, in effect increasing the distance between the points at which the device **14ª** is connected to the bed sheet.

In Fig. 9 another clasp device **60** is shown with a pair

of corrugated ends 61 with a lock spring 62 thereover adapted to clamp the sheet 12 when the handles 63 of the cam members 64 are turned in the direction toward the ends of the spring 62.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. Means for securing a bed sheet to a mattress, comprising a device for connection between the sides and ends of the sheet adjacent and diagonally across corners of the sheet, said device comprising a connecting strap, a strap extension on said strap, button means on the extension detachably connected to the sides and ends of the sheet, and fastening means at the ends of the strap separably connected to said button means, said button means being in the form of an elongated block of resilient material, having a peripheral overhang engaging the fastening means, said fastening means comprising a clasp of loop formation, having an endless, rigid frame in which the block is inserted, said frame being connected at one end to the strap, and including side portions merging into inwardly offset extensions, said block being engageable between the extensions, the block including male gripper fastener elements spaced longitudinally thereof, the strap extension including female elements spaced correspondingly to the male elements to provide separable connection of the button means to the strap extension said male elements being formed with heads embedded in the underside of the block.

2. Means for securing a bed sheet to a mattress, comprising a device for connection between sides and ends of the sheet adjacent and diagonally across corners of the sheet, said device comprising a connecting strap, a strap extension on said strap, button means on the extension detachably connected to the sides and ends of the sheet, and fastening means at the ends of the strap separably connected to said button means, said button means being in the form of an elongated block, of resilient material, having a peripheral overhang engaging the fastening means, said fastening means comprising a clasp of loop formation, having an endless, rigid frame in which the block is inserted, said frame being connected at one end to the strap, and including side portions merging into inwardly offset extensions, said block being engageable between the extensions, the block including male snap fastener elements spaced longitudinally thereof, the strap extension including female snap elements, spaced correspondingly to the male elements to provide separable connection of the button means to the strap extension the female snap elements associated with each block comprising two pairs of female snap elements, the elements of one pair being aligned with the longitudinal axis of said strap and the female elements of the other pair being aligned in a line perpendicular to said longitudinal axis of said strap, for connection of the male elements to a selected pair of the female elements, whereby to effect adjustments of the block between opposite extreme positions through ninety degrees between a first position in which the block extends perpendicularly to the longitudinal axis of the strap and a second position in which the block is aligned with said longitudinal axis, said side portions of the clasp frame receiving the block in the first-named position thereof and the extensions of the clasp frame receiving the block in the second-named position thereof.

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