

[54] CONTOURED BED SHEET

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5/354, 354 B

[56] **References Cited**

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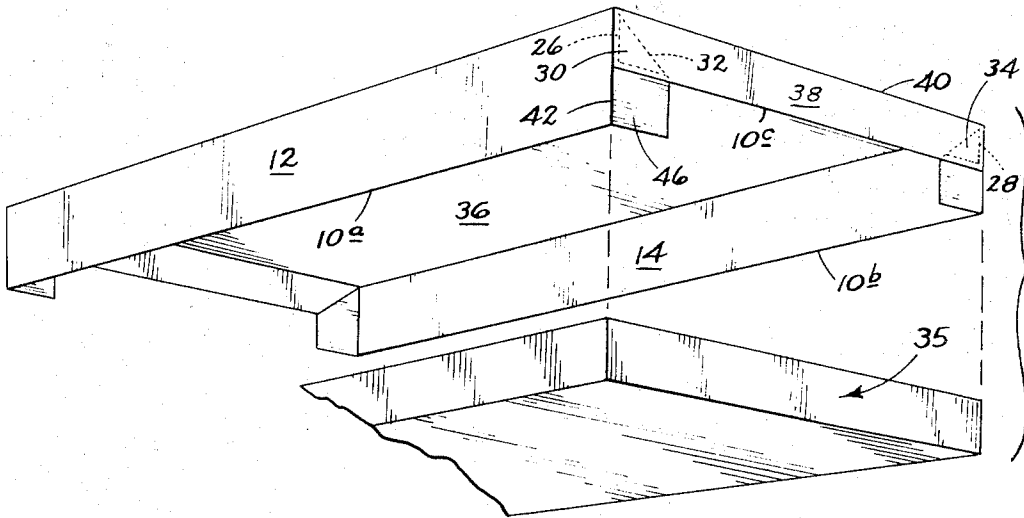
Assistant Examiner—Andrew M. Calvert.

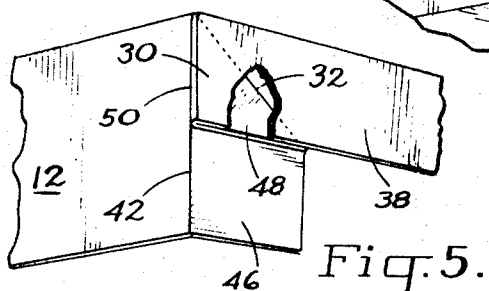
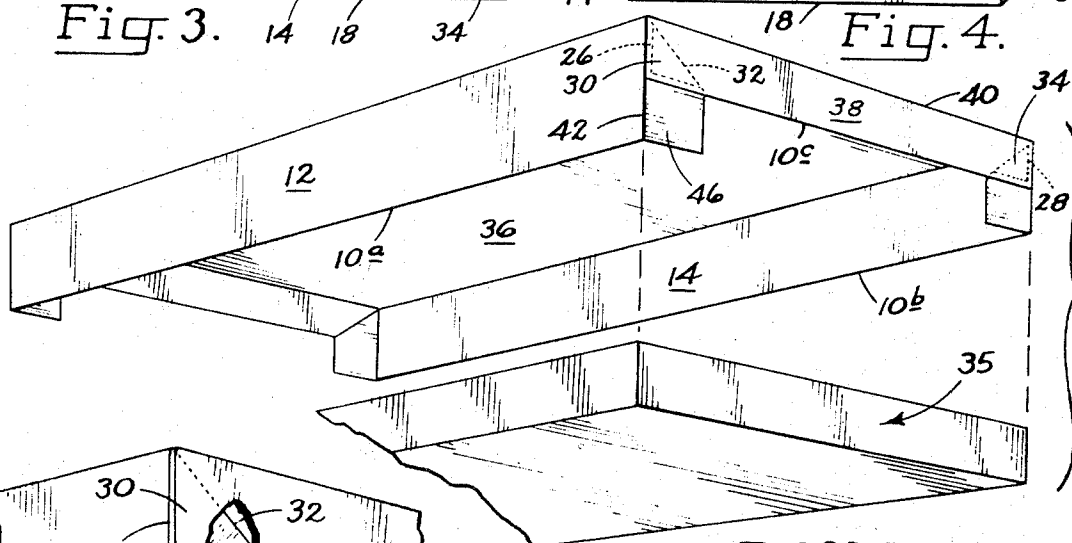
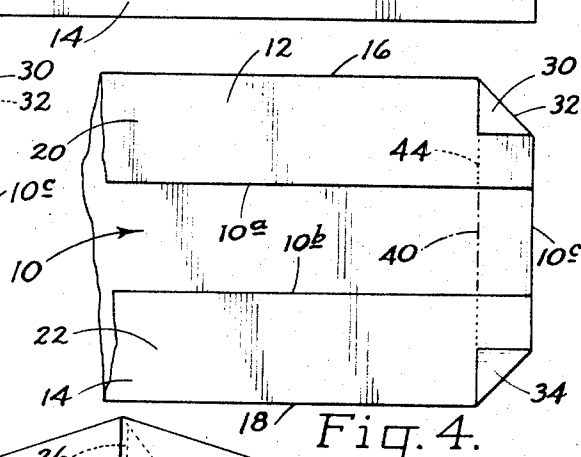
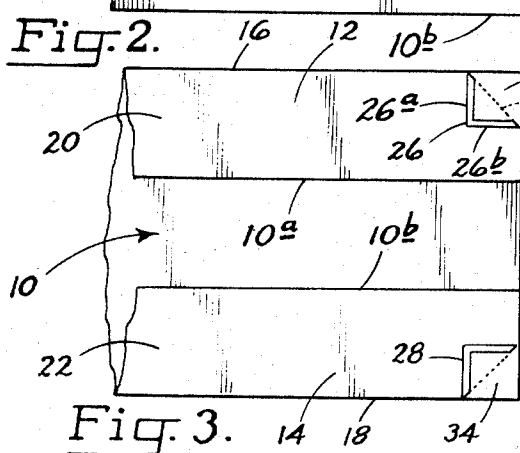
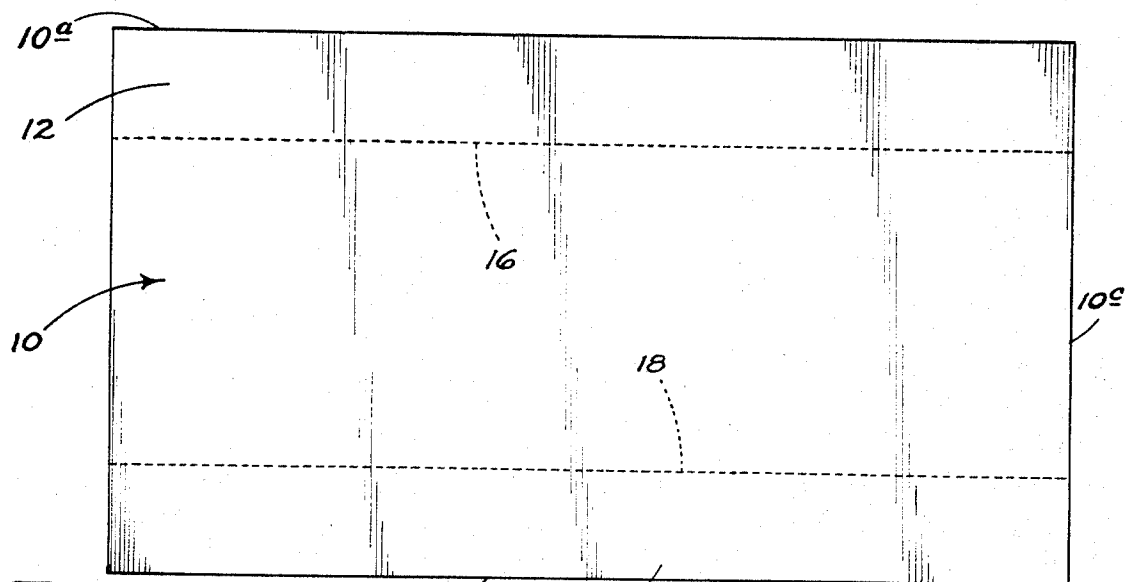
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[57] ABSTRACT

A contoured bed sheet made from a single, substantially rectangular expanse of flexible material by folding over flaps adjacent opposite edges to form a rectangular article having double-ply edge margins. An outer corner portion of an edge margin thus formed is folded over against remainder portions of such edge margin, along a line extending diagonally of the fold line for the flap in such edge margin. The corner is adhesively secured to the underlying remainder portions. When the flaps are lifted from the central expanse of the sheet, they form side panels, and the end of the expanse which has the folded over corner portions forms an end panel.

7 Claims, 5 Drawing Figures





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CONTOURED BED SHEET

This invention relates to contoured bed sheets. The invention particularly relates to contoured bed sheets of the type that may be made of disposable material such as paper.

Various forms of contoured bed sheets have been devised in the past. Those intended for the manufacture of bed sheets out of paper, however, have not been entirely satisfactory for various reasons. For one thing, certain types of constructions do not lend themselves to being made easily and economically from a web of material such as paper in a paper making operation. Certain constructions are difficult to fit to a mattress. With still other types of contoured bed sheets, there is not sufficient strength, particularly at the corners, to make a practical product.

A general object of the invention is to provide a novel contoured bed sheet which is simply and economically produced.

Another object is to provide a novel method for producing such a contoured bed sheet, which method lends itself to inexpensive mass production techniques.

Yet another object is to provide a contoured bed sheet prepared from a single substantially rectangular expanse of flexible material, such as paper, where side panels in the sheet are prepared by folding over side flaps in the expanse of flexible material. Outer corners of these folded over flaps are again folded over along lines extending diagonally of the flap's fold lines. These outer corners are adhesively secured to underlying remainder portions of the side flaps. The contoured bed sheet may be placed directly on a mattress without any extensive preparation other than pulling out the side flaps. Such causes an end panel in the sheet to form where the folded over corners are located. The adhesive holding the folded over corners in place contributes strength and rigidity to the bed sheet with such fitted on a mattress.

These and other objects and advantages will become more fully apparent as the following description is read in conjunction with the drawings, wherein:

FIG. 1 is a perspective view of a contoured bed sheet according to the invention, showing such superposed over a portion of a mattress upon which it is to be placed;

FIG. 2 is a plan view of a rectangular expanse of flexible material which may be folded into the contoured bed sheet illustrated in FIG. 1;

FIGS. 3 and 4 illustrate successive steps in a method for forming such a bed sheet; and

FIG. 5 is an enlarged view of a corner of the bed sheet illustrated in FIG. 1.

Referring now to the drawings, and first more particularly to FIG. 2, a contoured bed sheet may be prepared from a unitary, substantially rectangular expanse of flexible material, such as paper, as exemplified by the rectangular paper sheet 10. In a paper making facility, such are easily prepared by cutting a continuous web of paper into sheets of proper width and length.

At an early step in the preparation of the bed sheet, elongated narrow flaps, such as those shown at 12 and 14 adjacent opposite terminal edges 10a, 10b of the sheet, are folded over a common face of the expanse of paper. Such folding takes place along fold lines 16, 18 which can be seen to generally parallel terminal edges 10a, 10b. As the result of such a folding operation a

substantially rectangular article, having what are referred to herein as double-ply edge margins, is formed, as is best illustrated in FIGS. 3 and 4. Such edge margins are given the reference numerals 20, 22.

The bed sheet is completed by folding over outer corner portions of the edge margins, and bonding such to underlying remainder portions of the edge margins. Usually, although this is not a necessity, such is best performed by applying the adhesive used in such bonding before the folding of such corner portions. As a consequence, such will be described as the next step performed in the bed sheet manufacture.

Referring to FIG. 3, illustrated at 26 is an elongated adhesive deposit including a ribbon of adhesive 26a extending normal to fold line 16 and a ribbon or adhesive 26b extending normal to the end edge 10c of the expanse of paper. Another similar adhesive deposit is shown at 28 in connection with edge margin 22.

When an outer corner portion of an edge margin, as demonstrated by outer corner portion 30 of edge margin 20 is folded over against remainder underlying portions of the edge margin, along a line such as that shown at 32 which extends diagonally of fold line 16, the edges of such corner portion move over and against the adhesive deposit 26. The same result occurs when a corner portion, such as that shown at 34, is folded over to lie against remainder portions of edge margin 22. It will be noted that in the embodiment illustrated, the lines along which the corner portions are folded extend at substantially 45° angles relative to fold lines 16, 18.

It would, of course, be possible to prepare the adhesive deposits that bond the corner portions in place on the corner portions that are folded over, rather than as just described.

Some sheets, such as those used as the bottom sheet in making a bed, are contoured at both ends. On the other hand, if contouring is done with a sheet which is to serve as a top sheet, such would only be done at one end of the sheet. With sheets contoured only at one end, the corner portions described would be folded over at only one end of the sheet. With sheets contoured at both ends, these corner portions would be prepared at both extremities of the sheet.

An article prepared as just described is readily opened up and placed in operative position for placing on a mattress (such as that illustrated partially at 35 in FIG. 1) by partially unfolding side flaps 12 and 14, as shown in FIG. 1, whereby they depend from and are substantially normal to a central expanse 36 in the bed sheet. These side flaps form what are referred to herein as side panels in the bed sheet.

With such pulling out of the side flaps, at that end of the bed sheet which is contoured an end panel is formed, as demonstrated by end panel 38 in FIG. 1. This end panel results from an end margin in the sheet of paper tending to fold over along a fold line, such as that shown in dot-dash outline at 40 in FIG. 4, to accommodate the opening up and separation of the side flaps to form side panels.

At the same time that the end panel tends to take shape, the corners of the bed sheet, such as the corner shown at 42 in FIG. 1 tend to be formed. Corner 42 forms from an end margin of flap 12 bending on itself along a fold line indicated in dashed outline at 44 in FIG. 4.

In the completed bed sheet with such in operative position, a tab such as that shown at 46 results which is actually part of original flap 12, such forming an extension of the side panel in the bed sheet. The joinder of tab 46 with the side panel is through a bend, or crease, which is normal to the central expanse. Another tab is present, shown at 48 (see FIG. 5), which is joined to the end panel through a fold line 50 generally paralleling crease, or fold line, 44 which forms corner 42. Tabs 46, 48 in turn, are joined to each other along the line 32 inclining relative to central expanse 36 as shown in FIG. 1.

It will be noted with reference to FIGS. 3 and 4 that the corner portions illustrated, when folded over, do not take up the entire width of an edge margin. As a result, in a completed bed sheet and as demonstrated by corner portion 30 in FIG. 4, an edge is presented in the corner portion which is substantially parallel to the fold line 16, but spaced somewhat toward the fold line from terminal edge 10a. With the bed sheet folded out, or unfolded, to prepare it for placing on a mattress (as shown in FIG. 1), with this type of construction the end panel that is formed may be of a width which roughly corresponds to the mattress thickness, whereas the side panels may have a greater width to enable them to be tucked under the mattress.

In FIG. 1 the adhesive deposits 26, 28 are indicated in dashed outline. It will be noted that one ribbon in the adhesive deposit extends generally parallel to the corner in a contoured sheet which helps to shape and rigidify this region of the bed sheet. The other extends parallel to the terminal edge of the end panel serving to keep this region of the end in place.

It should be obvious from this description that the manufacture of the contoured bed sheet is extremely simple from a manufacturer's point of view. The folds and limited gluing that are required may be readily performed using mass production techniques. The contoured bed sheet which results is easily partially unfolded to take the desired general shape of the mattress merely by pulling outwardly on the side flaps described.

It is appreciated that changes and variations are possible in the invention as would be apparent to one skilled in the art.

It is claimed and desired to secure by Letters Patent:
1. A contoured bed sheet comprising a substantially

rectangular expanse of flexible material having elongated narrow flaps adjacent opposite terminal edges of the expanse folded over a common face of the expanse along fold lines extending substantially parallel to said terminal edges producing a pair of opposed double-ply edge margins, at least one corner of the bed sheet being formed by folding an outer corner portion of one of said edge margins over against remainder portions of said edge margin along a line extending diagonally of the fold line in said edge margin, said corner portion being adhesively bonded to the underlying remainder portions of said edge margin.

2. The sheet of claim 1, wherein the diagonal line along which said corner portion is folded extends at substantially a 45° angle relative to said fold line.

3. The sheet of claim 1, wherein an edge in said folded over corner portion extends substantially parallel to said fold line and is spaced toward said fold line from the terminal edge of the flap in said edge margin.

4. The sheet of claim 1, wherein an edge in said folded over corner portion extends substantially normal to said fold line, and an adhesive deposit extending substantially parallel to said edge bonds the corner portion to underlying remainder portions of the edge margin.

5. A contoured bed sheet formed from a single substantially rectangular sheet of flexible material comprising, in operative position, a substantially rectangular central expanse, side panels depending from opposite sides of said central expanse, and at least one end panel depending from an end of said central expanse; at least one of said side panels having an end tab underlying said end panel and joined to the side panel through a crease which is normal to said central expanse; another tab lying between the end panel and the first-mentioned tab which is joined to the end panel through a crease parallel and adjacent the first-mentioned crease; said tabs being integrally joined along a line inclining relative to said central expanse; and means adhesively securing the two tabs together.

6. The sheet of claim 5, wherein a side panel has a greater width than said end panel.

7. The sheet of claim 5, wherein said second-mentioned tab is joined to said first-mentioned tab by an adhesive line extending adjacent and paralleling said creases.

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