Nov. 26, 1963 A. F. BARNES 3,111,688

FITTED SHEET

Filed Nov. 6, 1961

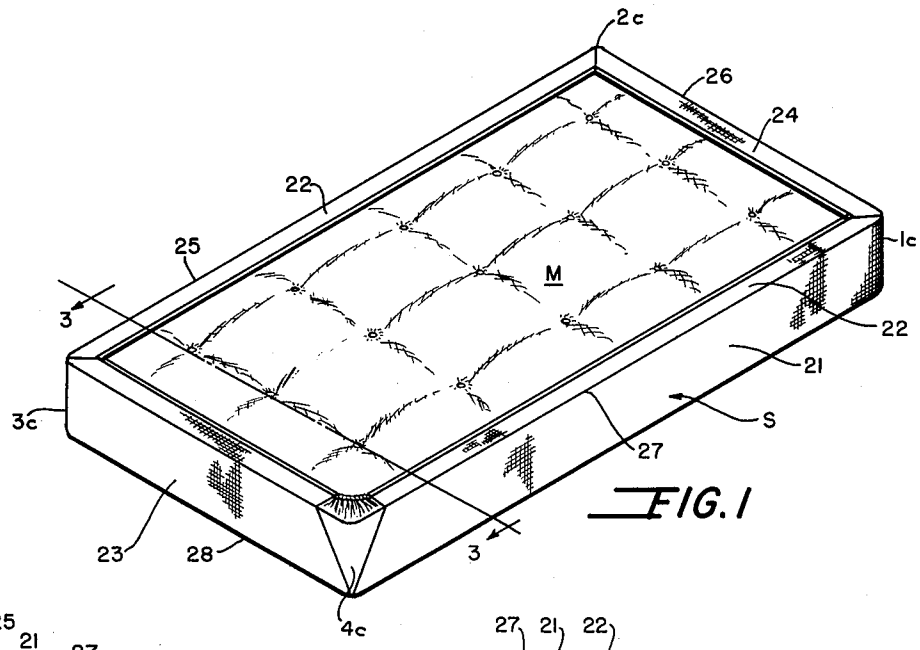


FIG. 1

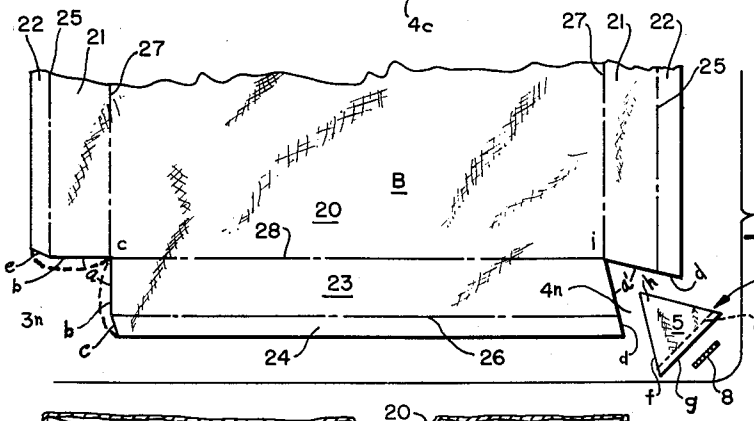


FIG. 2

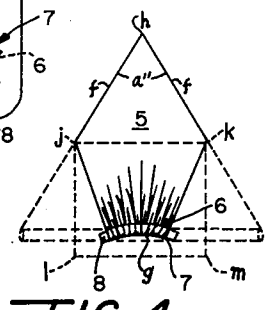


FIG. 4

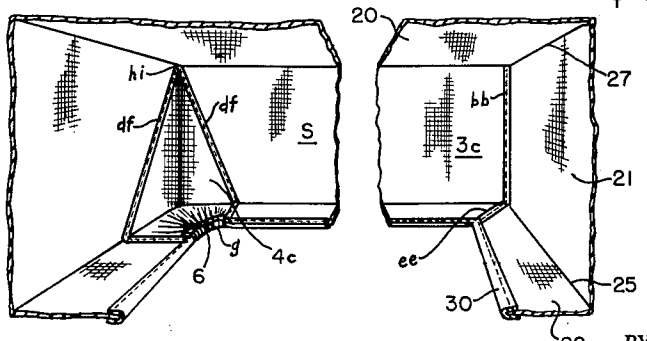


FIG. 3

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This invention relates to bed sheets. More specifically, the invention relates to bed sheets designed for use as bottom bed sheets on a mattress to form a snug, wrinkle free fit thereon.

In the past, there have been various efforts to provide fitted sheets of special contour for application to a mattress so that the sheet will be engaged in sung, wrinkle free relationship with the mattress. These sheets are provided with a pocket at each corner. Each pocket is adapted to receive the corresponding corner of the mattress to which it is to be applied. These fitted sheets have proven quite satisfactory with small and relatively flexible mattresses. However, with large or inflexible mattresses, as for example, the orthopedic type, considerable difficulty has been encountered in fitting sheets thereon. No appreciable difficulty is encountered in engaging one end of the sheet to the corresponding end of the mattress. A very little more difficulty is encountered in engaging the third corner of the sheet. However, in order to fit the fourth corner of the sheet to a large and rigid mattress as for example, a double bed mattress, considerable effort is required. It is usually necessary, for example, to raise the fourth corner of the mattress and engage it with the knee while using both hands to pull the fourth corner of the sheet over the corner of the mattress. If the mattress is large and relatively inflexible, a considerable expenditure of effort is required, which sometimes creates sufficient stress in the material as to develop a rip or a tear in it.

It is an object of the present invention to avoid and overcome the difficulties, above enumerated, and to provide a fitted sheet which is easy to place onto and to remove from a mattress.

It is a further object of this invention to provide a fitted contour sheet which may be fitted onto a mattress without requiring the corner of the mattress to be lifted, and which, when tucked under the mattress, will hold the adjacent corner in a snug and neatly fitted position.

Still another object of this invention is to provide a fitted bed sheet which has a fourth corner pocket of such construction that it may be easily applied to or removed from various types of mattresses, including relatively large and stiff mattresses.

With the foregoing and other objects in view, my invention consists of certain novel features of construction and arrangement of the fourth corner pocket of a fitted sheet. These novel features will be hereinafter more fully described and illustrated in the accompanying drawings in which:

FIG. 1 is a view in perspective of the sheet of my invention, applied onto a mattress which has been turned over to show more clearly the fit of the various corner pockets therein.

FIG. 2 is a plan view of a fragmentary portion of a one piece blank from which the sheet shown in the other drawings is made.

FIG. 3 is a broken away sectional view taken along lines 3—3 of FIG. 1 which shows various features of the corner pocket, of the sheet of this invention from the inside.

FIG. 4 is an enlarged view, partly diagrammatical of the triangular insert of this invention, which shows in dotted lines the original shape of said insert.

Referring now to the drawings, in which like numerals

denote corresponding parts throughout the several views, a fitted sheet constructed in accordance with this invention is generally indicated by S. As is best shown in FIG. 1, the sheet is adapted to be placed on a mattress M, and forms a snug fit thereon. The sheet is characterized by fitted pockets at each corner designated 1*c* through 4*c* and a continuous peripheral face covering the sides and end of the mattress, and a turned in continuous bottom flange covering a continuous marginal portion of the bottom face of the mattress. The side peripheral face is indicated by numeral 21 whereas the end peripheral face is indicated by numeral 23. The side portion forming the flange is indicated by numeral 22 whereas the end portion forming the marginal flange is indicated by numeral 24.

The sheet is formed from a rectangular blank by cutting away corner portions of the sheet to form notches. In FIG. 2 these notches are indicated as 3*n* and 4*n* respectively. Notch 3*n* has marginal edges *b* which intersect at point *c*. The angle formed by the marginal edges *b* of notch 3*n* is slightly less than 90°. At the outer edge of the marginal portion *b* of said notch is outer rectilinear portion *e* which begins at the fold line 25 and 26 respectively and extends to the outer edge of the sheet. The dotted lines illustrate a modification in which extra material may be used to form a seam at this corner. As shown in FIG. 3, marginal edges *b* of notch 3*n* are sewn together to form a seam *bb* and rectilinear portions *e* are sewn together to form a seam *ee*. This forms a fitted pocket 3*c* in the finished sheet. Notch 4*n* consists of two marginal edges, each denoted by the numeral *d*, which intersect at point 1. Edges *d* define an angle *a'* which is in the neighborhood of 60°. A triangular fabric insert 5 fits into the notch 4*n*. Said triangular insert consists of two legs *f* and *f*, and base *g*. The apex of the triangle is denoted by letter *h*. A hollow tape 7 is stitched on at line 6 and an elastic member 8 is inserted therein. Elastic member 8 is anchored at the corner of the notch 4*n*, and forms with the fabric tape 7 a continuous reinforcing member 30 around the marginal flanges 22 and 24 of sheet S.

Referring now to FIG. 4, it is seen that the function of the elastic member 8 is to gather excess material in the lower portion of the triangle. The angle defined by the legs *f* of the triangular insert, angle *a''* is approximately 60°. Now if a line *j–k* is drawn about midway of the height of said triangle, this line will register with the lower edge of the mattress when the sheet is placed thereon. Since the elastic member 8 will stretch from 2 or 3 times its normal length, each end of member 8 will, when stretched to its maximum, be at a point approximately equivalent to point *l–m*. Thus, as the fourth corner of the sheet is drawn over the corresponding corner of the mattress, the elastic member 8 stretches to facilitate slipping the lower portion of the triangular insert over the bottom margin of the mattress. Then, as the sheet is pulled tautly into position, the elastic member contracts, gathering excess fabric underneath the corner of the mattress, and forms a neat and snug corner at the outer peripheral wall.

Normally, I have had good results utilizing triangular fabric inserts of about 12 inches in length on each side. However, the angle *a''* at the apex *h* may vary from about 55°–65° and still be quite suitable. The depth of the standard innerspring mattress is in the neighborhood of 6–7 inches so that maximum strain is placed on the fitted sheet at the time that the bottom edge of the fourth corner pocket is pulled over the bottom edge of the fourth corner of the mattress. I have had good results in utilizing a ¼ inch elastic member of between 2 and 3 inches in length. I prefer an elastic member of about 2½ inches in length. Thus, this member is capable of

repeated stretching without breaking or losing its elasticity. The length of the elastic member is approximately ½ of the length of the imaginary line *j–k* drawn across the triangular member 5 at about the middle of the height thereof. Thus, there appears to be a relationship of about one to two between the length of the elastic member and the width of the triangle at its middle portion. Secondly, since the elastic member will easily stretch double, the bottom portion of member 5 forms in effect a square member running from lines *j–k* in its lower half from *l* to *m*. This relationship is discussed since there are variations in mattresses which accounts for some variation in depth. As mentioned before, however, the normal depth of an innerspring mattress is between 6 and 7 inches in depth in a new condition. With wear, mattresses tend to settle and may be ultimately in the neighborhood of 5–6 inches in depth at each of the corners. Nevertheless, the sheet prepared according to the method of my invention will fit nicely over any of these mattresses without the necessity of lifting the fourth corner or without putting undue stress on the sheet itself. I have found that the corners are smooth and wrinkle free all the way around, presenting a neat, made up appearance.

Many modifications will occur to those skilled in the art embodying changes in size, form and construction of the various parts of my improved bedsheet without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In a fitted bottom bedsheet, having pockets at its corners, suitable for insertion of the corners of the mattress to which it is to be applied, said pockets being formed from triangular notches, made by cutting corner portions from a rectangular piece of sheeting and joining the marginal edges of three of said notches together;

the fourth corner pocket comprising a triangular insert of non-elastic sheeting material in the form of an acute isosceles triangle, which fits into the fourth triangular notch, said fourth notch having a configuration identical to said insert, the apex and legs of said insert being joined with the marginal edges of the corresponding portion of said notch, and the base of said insert containing an elastic member, anchored at each end to the corner portion of said notch, whereby said elastic member stretches to facilitate fitting the sheet onto the mattress and thereafter contracts to gather excess material beneath said mattress corner to form a neatly fitted corner.

2. A bedsheet as defined in claim 1 in which the legs of the triangular insert, at the apex thereof, form an angle in the range of from 55° to 65°.

3. A bedsheet as defined in claim 1 in which the triangular insert is in the form of an equilateral triangle.

4. A bedsheet as defined in claim 1 in which the elastic member is contained in an open hem at the base of said triangular insert.

5. A bedsheet as defined in claim 1 in which the elastic member is contained in a hollow fabric tape which is sewn to the base of the triangular insert.

6. A bedsheet as defined in claim 1 in which three of the notches in said rectangular piece of sheeting form angles at their apex in excess of 85° and in which the fourth notch forms an angle at its apex in the range of from 55° to 65°.

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