Aug. 1, 1939. M. MARSACK 2,168,037

MATTRESS

Filed Oct. 21, 1937 3 Sheets-Sheet 1

Fig. 1

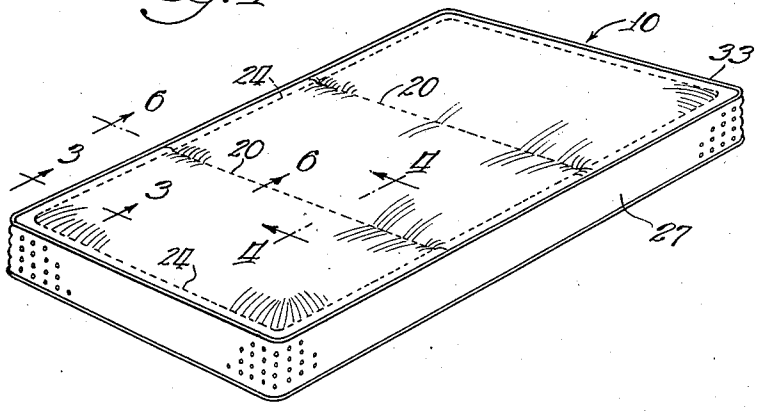
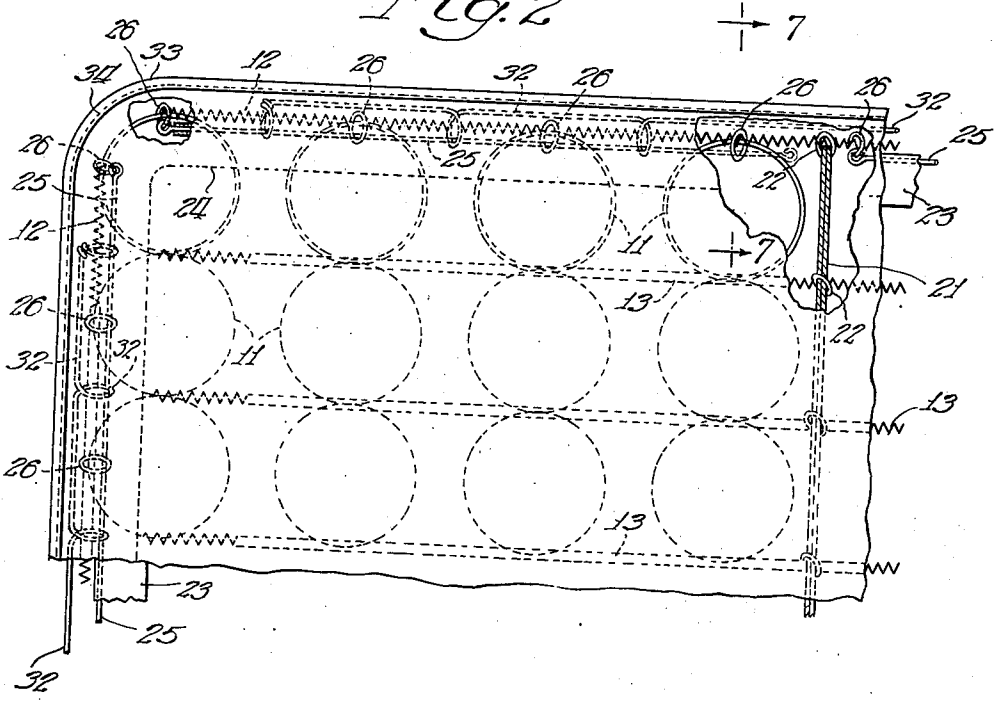


Fig. 2



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Aug. 1, 1939. M. MARSACK 2,168,037

MATTRESS

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Fig. 4

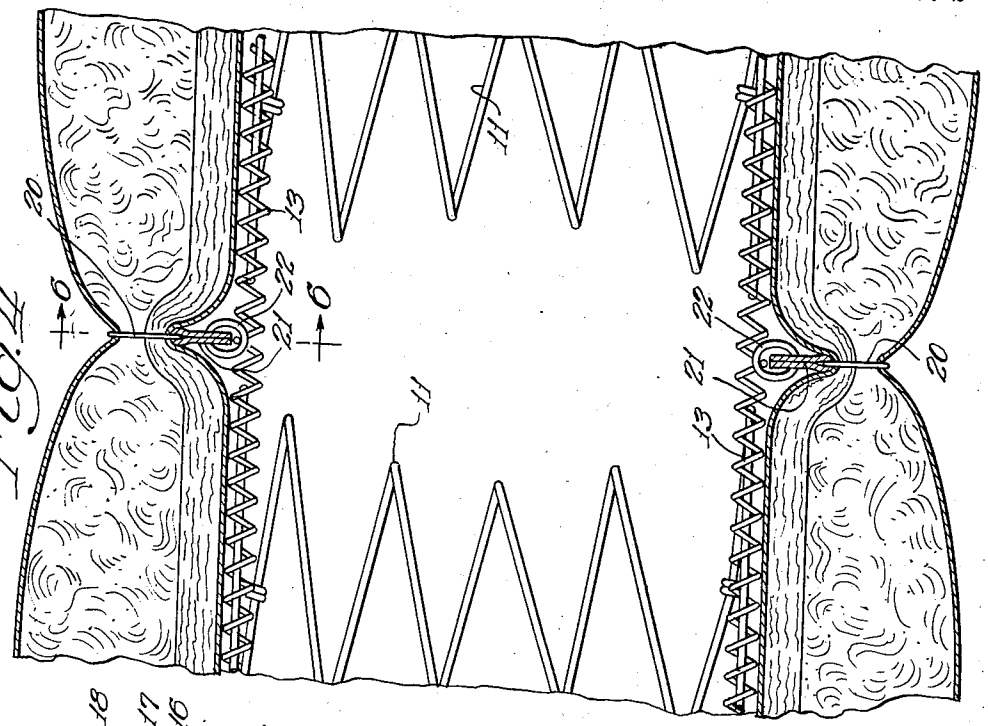
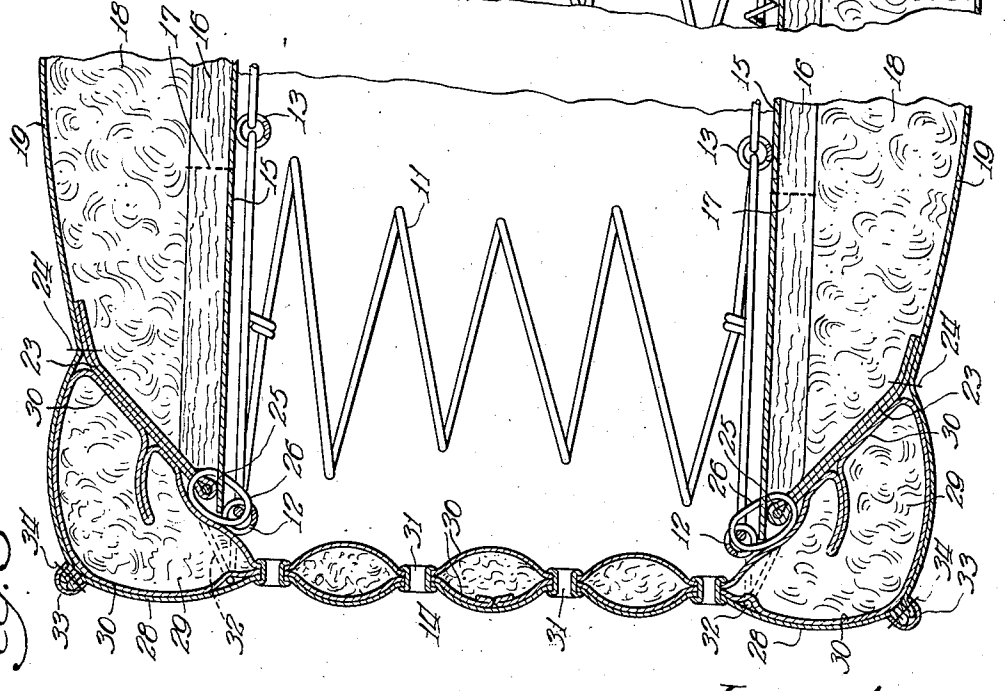


Fig. 3



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MATTRESS

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Fig. 5

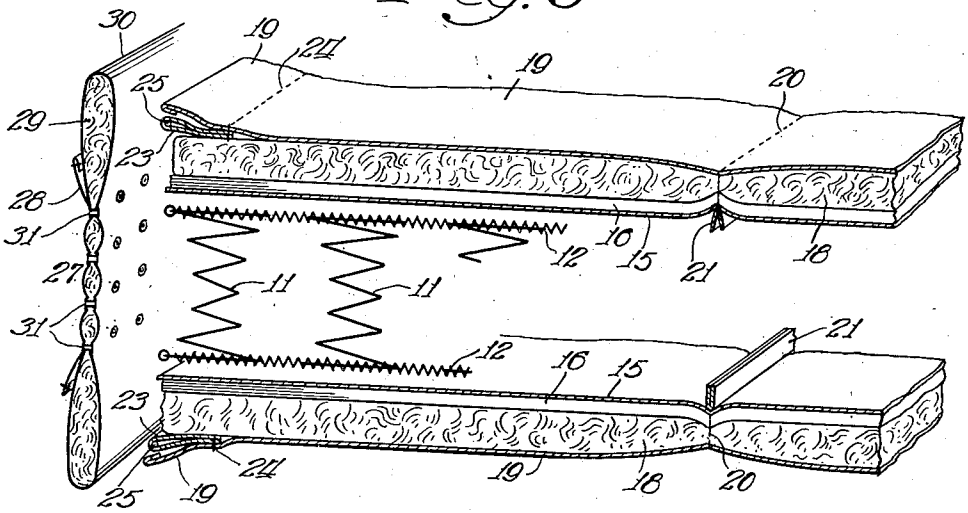


Fig. 6

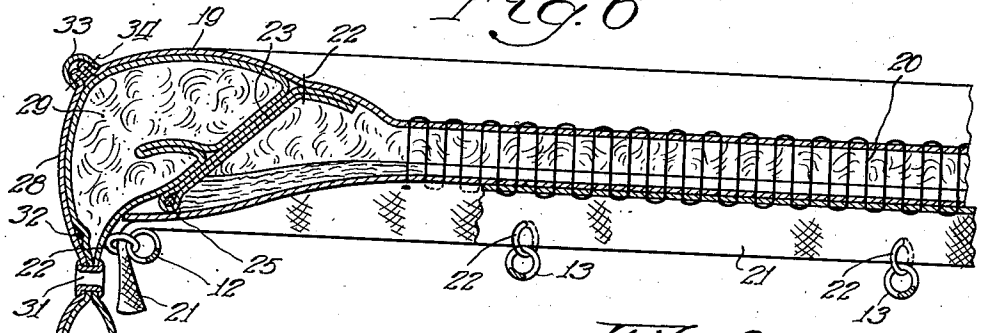


Fig. 7

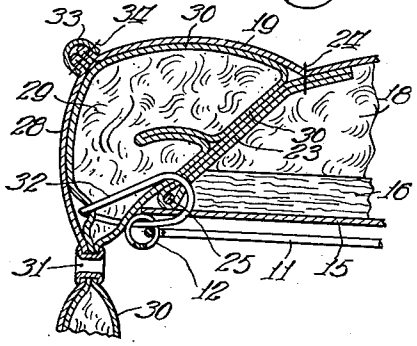
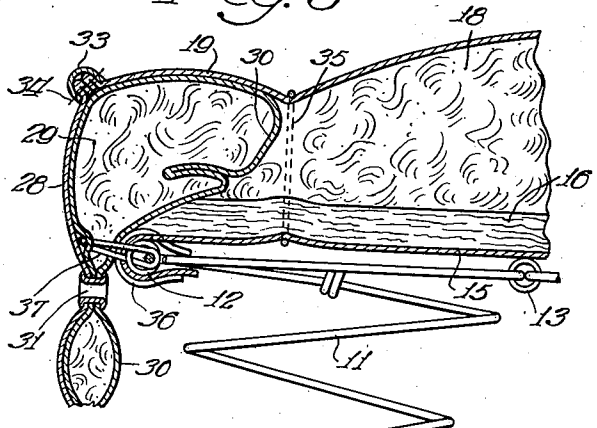


Fig. 8



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Patented Aug. 1, 1939 2,168,037

UNITED STATES PATENT OFFICE

2,168,037

MATTRESS

Max Marsack, Milwaukee, Wis., assignor, by mesne assignments, to Marsack Patents Corporation, Milwaukee, Wis., a corporation of Delaware

Application October 21, 1937, Serial No. 170,205

8 Claims. (Cl. 5—351)

The invention relates to mattresses of the class comprising an inner resilient construction and more particularly it relates to mattresses having top and bottom covers and filling material connected with the resilient construction in a manner to provide a multi-cushion effect and to prevent the filling material and covers from shifting relative to the resilient construction.

The invention has among its objects the provision of an improved method and means for securing the top and bottom covers and filling material to the edges of the resilient construction and to the border boxing or covering material whereby temporary distortions of the edges of the resilient construction under concentrated loads are minimized and permanent distortions thereof are prevented, and whereby loads on the mattress inside of the border tend to maintain verticality of the border boxing by exerting a pull thereon.

Another object of the invention is the provision of improved means for fastening the top and the bottom covers and filling material to the spring construction to provide intermediate zones of depression giving a tuftless multi-cushion effect to the body of the mattress and preventing shifting of the filling material and covers relative to the spring construction.

Still another object of the invention is the provision of a unitary multi-cushion mattress so constructed that all bending of the mattress in handling occurs at the connecting lines of the cushions where the filling material is compressed and is prevented from pulling apart or buckling by the folding of the mattress.

A further object of the invention is the provision of an improved mattress comprising a main body portion and a border boxing wherein both the body portion and boxing are adapted to be separately constructed as complete units before attaching the boxing, the body portion comprising top and bottom covers and filling material, an inner spring construction having border and intermediate reinforcing members, and novel means connecting the reinforcing members with the covers and filling material to provide zones of depression producing a multi-cushion effect.

Still another object of the invention is the provision of a novel method of construction and assembly of a mattress comprising an inner spring construction having border and intermediate reinforcing members, top and bottom covers and filling material, and an edge boxing.

A still further object of the invention is the provision of an easily assembled, durable multi-cushion mattress of the kind described providing border reinforcing elements adapted to distribute loads and to maintain the edge boxing taut.

Many other advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

To this end the invention consists in the novel construction, arrangement, and combination of parts herein shown and the novel method of assembly as described and more particularly pointed out in the claims.

Referring now to the drawings forming part of the specification and representing preferred embodiments of the invention:

Fig. 1 is a perspective view of a triple-cushion mattress embodying the principles of the invention;

Fig. 2 is a plan view of a fragmentary portion of the mattress shown in Fig. 1, the inner spring construction and reinforcing members being in general shown in dotted lines;

Figs. 3 and 4 are respectively enlarged sectional views along the lines 3—3 and 4—4 of Fig. 1;

Fig. 5 is a perspective view showing various elements of the mattress in contiguous partially assembled relation;

Fig. 6 is a view along the lines 6—6 of Fig. 1 and Fig. 4;

Fig. 7 is a view along the line 7—7 of Fig. 2; and

Fig. 8 is a fragmentary sectional view of an alternative construction embodying the principles of the invention.

Referring now more particularly to the drawings, the numeral 10 generally designates a triple-cushion mattress shown in perspective and embodying either the preferred or alternative forms of the invention.

The mattress comprises an inner unitary spring construction consisting of a plurality of vertical coils 11 preferably arranged in longitudinal and transverse rows, the border coils being connected at top and bottom by helicals 12 extending around the spring construction and the intermediate longitudinal rows of coils being connected by helicals 13 at their tops and bottoms with the contiguous coils arranged in adjoining longitudinal rows.

A partial longitudinal section of the completed mattress is shown in Fig. 3 as comprising a border boxing 14 fastened to the main body of the mattress in a manner hereinafter more particularly described. The main body of the mattress is

adapted to be assembled and completed as a unit before attaching the boxing 14, the various components of the mattress being shown in assembled and partially disconnected relation in Fig. 5. The top and the bottom of the mattress each comprises a lining 15 contiguous to the spring construction, a layer 16 of sisal or similar material fastened to the lining by stitches 17, a layer of filling material 18, and a fabric cover 19. In some cases the sisal 16 may be omitted and if so, the thickness of the filling material is correspondingly increased. The lining 15, sisal 16, filling material 18, and cover 19 are pre-built and assembled to provide top and bottom pads respectively for the spring construction, the elements comprising each pad being connected by lines of stitches 20. The stitches 20 extend across the pads and also fasten strips 21 of cloth or other suitable material to the linings 15, the stitches being so formed as to more or less compress the filling material 18 and the sisal 16 as shown in Figs. 4, 5, and 6. The lines of stitches 20 are preferably connected with the middle of the strips 21 and the strips are then folded along the lines of stitches as shown.

The strips 21 of the top and bottom assemblies or pads are then successively fastened to the adjacent helicals 13 of the spring construction preferably by curved metal rods or wires having pointed ends forced together to form links or rings 22 more or less similar in construction to hog rings. The strips 21 are pulled down to a position wherein their inner edges are contiguous to the helicals 13, as shown in Figs. 4 and 6, and are fastened by piercing the strips with and inserting the open rings 22 through adjacent helicals, the rings being then closed by pressing their ends together by pliers or other suitable instruments. The ends of the strips 21 extend over and are respectively fastened to the border helicals 12 by the rings 22 as shown in Fig. 6 to maintain the strips taut longitudinally as well as vertically. The strips 21 compress the pads equally against adjacent coils and prevent tilting of the adjacent coils. The metal rings 22 are inflexible, simple, and easily manipulated and are preferably used as fastening means although cords or stitches may be substituted if desired.

The top and bottom pads, fastened as described to the spring construction, form three tuftless cushions separated by transverse zones of depression coinciding with the lines of stitches 20, as shown in Fig. 1. By providing unitary pads consisting of three cushions, it will be observed that the positions of the cushions respectively correspond to the positions of the shoulders, hips and feet of an occupant whereby the maximum cushioning effect is obtained and the body does not contact with the compressed portions of the pads. The middle cushion carries the maximum body weight and is preferably provided with filling material of greater thickness than the end cushions to increase the resiliency.

The construction and assembly of the main body of the mattress is completed by fastening the covers 19 to the contiguous edges of the spring construction by means of flaps 23 extending around and previously connected with the covers by a line of stitches 24 spaced at a suitable distance from the margins of the covers. The flaps 23 consist of fabric sheets folded upon themselves with the line of fold contiguous to the border of the spring construction and enclosing a reinforcing wire or rod 25. The flaps 23 are drawn taut and are fastened to the ends of the adjacent border coils 11 and to the lining 15 preferably by means of metal rings or links 26 respectively engaging the coils and piercing the flaps to encircle the reinforcing wires or rod 25, although it is understood that loops or cords may be used instead of the rings if desired. The rings 26 are similar in construction and are manipulated for fastening the flaps 23 to the coils 11 in the same manner as described for the rings 22 in fastening the strips 21 to the helicals 12 and 13. The flaps 23, fastened as described to the spring construction, maintain the covers 19 taut and thereby contribute to provide smooth billowing expansive surfaces for the cushions comprising the top and bottom pads. The wires or rods 25 carried by the flaps 23 reinforce the borders of the mattress and prevent excessive yielding of the spring construction and the adjacent boxing under concentrated loads applied to the border since the wires tend to distribute such loads over larger areas and as a result temporary distortions of the boxing and marginal coils by such loads are minimized and permanent distortions of the edge of the mattress are prevented by reason of the pull exerted on the coils by the flaps. The use of metal rings 26 for connecting the flaps 23 with the spring construction instead of looped cords, or stitches increases the utility of the wires or rods 25 as reinforcement for the border of the mattress since the rings are unyielding under tension transmitted from the flaps and wires 25 to the spring construction and are more durable than lacings of fibrous material. Obviously loads applied to the mattress inside of the border tension the cover sheet 19 and flaps 23 and thereby maintain verticality of the edge coils connected as described with the flaps and reinforcing rods 25. The edge reinforcement also tends to prevent unequal sagging of the mattress when occupied by two persons of unequal weight.

The reinforced pads and spring construction comprising the main body of the mattress having been completed as described, its edges are then enclosed by any suitable boxing material to provide a finishing mattress. The edge material used is illustrated as comprising a pre-built continuous strip of boxing 27 consisting of an outer ply 28 of a width substantially equal to the depth of the completed mattress, a ply of filling material 29 of substantially greater width than the depth of the mattress and a fabric sheet 30 enclosing the filling material, all fastened together preferably by eyelets 31 as shown to form a quilted boxing.

The top and bottom edges of the filling material 29 enclosed by the fiber sheet 30 are connected with the reinforcing rods 25 in the flaps 23 by means of cords 32 looped at intervals through the boxing and through the flaps 23 to engage the rods as best shown in Fig. 2. In connecting the boxing with the flap 23, the adjacent edge of the outer ply 28 is permitted to drop to avoid stitching of the cord 32 therethrough as such stitches would detract from the ornateness of the finished mattress. The projecting edges of the boxing filling material 29 encased by the sheet 30 are next successively folded as shown to engage the flaps 23 and to permit the adjacent marginal edges of the covers 19 and of the outer boxing ply 28 to be brought together and covered by a tape 33. The marginal edges of the covers 19 and of the boxing ply 28 are turned inwardly and the tape 33 folded over the borders and connected therewith by any suitable stitching 34.

The folding of the projecting edges of the boxing material produces a rolled edge effect, and the tension of the cover sheets 19 produced by loads on the mattress inside of the border will maintain the verticality of the boxing under all ordinary loads.

The alternative embodiment of the invention illustrated in Fig. 8 comprises a pre-built main body portion consisting of an inner spring construction and top and bottom pads or assemblies of material, enclosed by a border boxing 27, substantially similar in all respects to that described for the preferred embodiment except that the covers 19 have no border flaps or interior metal reinforcement corresponding to the wires 25. The pads comprising the top and bottom portions of the alternative embodiment are connected to the spring construction to provide zones of depression in the same manner as described for the preferred embodiment. Each assembly has a cord 35 stitched through the lining 15, sisal 16, filling material 18 and cover 19 adjacent its border. The marginal edges of the linings 15 extend around the adjacent border helicals 12 and are fastened to the spring construction by a plurality of spaced apart spring clips 36 each piercing the lining. A cord 37 similar to the cord 32, looped at intervals through the boxing filling material 29 and strip 30, and through the adjacent coils 11, fastens the boxing to the lining 15 and the spring construction. The projecting edges of the boxing are then successively folded over against the filling material 18 covering the top and the bottom of the spring construction. The marginal edges of the covers 19 and the outer boxing ply 28 are then brought together and connected by stitching 34 extending through the tape 33.

The division points of the cushions correspond to the spaces between the coils and in the first or preferred form each side flap is provided with three rods 25 stopping short of the division points of the cushions. All of the rods 25 have looped ends to prevent puncturing of the flaps. Longitudinal movement of the rods 25 is prevented by engaging a ring similar to the rings 26 with the looped ends. The side rods 25 confine the bending of the mattress to the compressed areas connecting the cushions.

By way of summary, the construction and assembly of a finished mattress embodying the principles of the invention are as follows:

A unitary spring construction comprising vertical coils 11 connected by border and intermediate helicals 12 and 13 respectively having been prepared, and a top and a bottom assembly each consisting of a lining strip 15 and a fabric cover 19 having layers of sisal 16 and of filling material 18 positioned therebetween and all connected together by lines of stitches 20 engaging fabric strips 21 arranged as described and shown in perspective in Fig. 5, one of the assemblies is positioned on the spring construction and its ends folded over to permit access to the strips 21. The strips 21 are in turn connected with the spring construction by successively pulling the strips into contiguity with the spring construction and fastening the strips to the helicals 12 and 13 by means of the rings 22 thereby depressing the assembly along the lines of stitches 20. The border of the assembly is then fastened to the spring construction by pulling taut the flaps 23 containing the reinforcing wires or rods 25 and successively inserting rings 26 through the flaps, the lining 15 and the adjacent coils 11. One side of the pre-built pad comprising the main body of the mattress having been completed as described, the spring construction is then turned over and the other assembly is positioned on and fastened thereto in the same manner, thereby completing the assembly and construction of the main body of the mattress.

The next and final steps in providing a finished mattress consist in positioning the boxing 27 around the edge of the completed body portion, connecting the adjacent edges of the boxing and flaps 23 by the cords 32, then folding the edge of the boxing over onto the flaps and fastening the margins of the cover 19 and of the boxing ply 29 together and to the tape 33 by means of stitches 34. The mattress is then turned over and the other edge of the boxing is similarly fastened to the adjacent flaps 23 and to the cover 19.

The foregoing summary of the assembly and construction of the preferred embodiment also summarizes the various steps of assembling and construction of the alternative embodiment shown in Fig. 8 except that the layers or plies of the pad are fastened together adjacent their edges by means of cords 35 and the linings 15 are connected to the spring construction by clips 36. The final steps of connecting the boxing 27 with the pre-built body are substantially identical with those described in connection with the completion of the preferred embodiment.

Thus, it will be seen that the invention provides improvements in mattresses of the kind described whereby the spring construction and facing materials or bodies are suitably connected to provide a plurality of cushions and to provide reinforcement for the border of the mattress before attaching the boxing and that the invention provides a novel sequence of steps in the assembly and construction of the mattress and novel fastening means adapted to minimize temporary distortions of the mattress under concentrated loads and to prevent permanent distortions both of the body of the mattress and of the borders thereof.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence, I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. A mattress of the kind described comprising a resilient core, a prebuilt cover pad consisting of a plurality of plies of material secured together to substantially provide a plurality of associated well defined cushions, means securing said pads to said core along the line of securement of the plies at the juncture of the cushions, and means securing the peripheral edges of an inner ply of the pad to the resilient core.

2. In a mattress of the kind described, an inner spring construction, a fabric cover enclosing at least the top and edge portions of the spring construction, a layer of filling material positioned between the top of the spring construction and said fabric cover, a plurality of strips of material extending across the inner face of said filling material, lines of stitching respectively extending through said layer of filling material and connecting said fabric cover with said strips to form corresponding zones of depression in the cover and filling material, and a plurality of ties forming

taut connections between said strips and spring construction.

3. In a mattress of the kind described, an inner spring construction, layers of filling material covering the top and the bottom of the spring construction, top and bottom fabric sheets forming covers for the filling material, reinforcing members connected to and extending around said cover sheets adjacent their outer peripheries, ties providing taut connections between said reinforcing members and marginal edges of the spring construction, an edge boxing extending around the spring construction, said boxing comprising outer and inner plies of fabric and an intermediate layer of filling material, means connecting said boxing filling material with said reinforcing members, and means connecting the adjacent marginal edges of the cover sheets and outer boxing ply.

4. In a mattress of the kind described, an inner spring construction, layers of filling material covering the top and bottom of the spring construction, top and bottom fabric sheets forming covers for the filling material, a plurality of strips of material extending across the inner face of the layers of filling material, lines of stitches extending through said layers of filling material and respectively connecting said cover sheets with said strips to divide said cover sheets and adjacent filling material into a plurality of connected cushions, a plurality of ties forming taut connections between said strips and the spring construction adapted to maintain zones of depression between adjacent cushions, reinforcing members connected to and extending around said cover sheets adjacent their outer peripheries, ties providing taut connections between said reinforcing members and the marginal edges of the spring construction, an edge boxing extending around the spring construction, said boxing comprising outer and inner plies of fabric and an intermediate layer of filling material, means connecting said boxing filling material with said reinforcing members, and means connecting the adjacent marginal edges of the cover sheets and outer boxing ply.

5. A covering of the kind described in combination with a single unitary spring assembly, comprising a pre-built cover member divided laterally by transverse stitches into a plurality of individual parallel sections, attached to said spring assembly along the junctures of adjacent sections, means connecting the cover member adjacent the outer edges of said sections to said spring assembly, and individual stiffening members for each section adjacent the edges of said assembly extending transverse to the junctures of said sections and operative to restrict major bending of the assembly to areas adjacent said junctures.

6. A mattress comprising a unitary resilient body, a cover pad overlying said body and divided into a plurality of associated cushions, each of the latter being smaller in size than said resilient body, and individual reinforcing means for each cushion adjacent the edges of said resilient body operative to restrict major bending of the assembly to areas adjacent the junctures of the cushions.

7. A mattress comprising a unitary inner spring consisting of a plurality of connected coils, a cover pad providing a plurality of associated cushions, a flap extending around and secured to said cover member adjacent the edges thereof, individual reinforcing means for each cushion carried by said flap, and means connecting said flap and reinforcing means to said spring.

8. A mattress comprising a single unitary resilient body, a pre-built cover pad extending over the resilient body, consisting of a plurality of unitary plies of material secured together to substantially provide a plurality of associated well defined cushions, a relatively narrow strip extending across the inner face of the inner ply of the pad across the resilient body and means engaged with said strip for drawing the latter down towards the adjacent face of said resilient body.

MAX MARSACK.