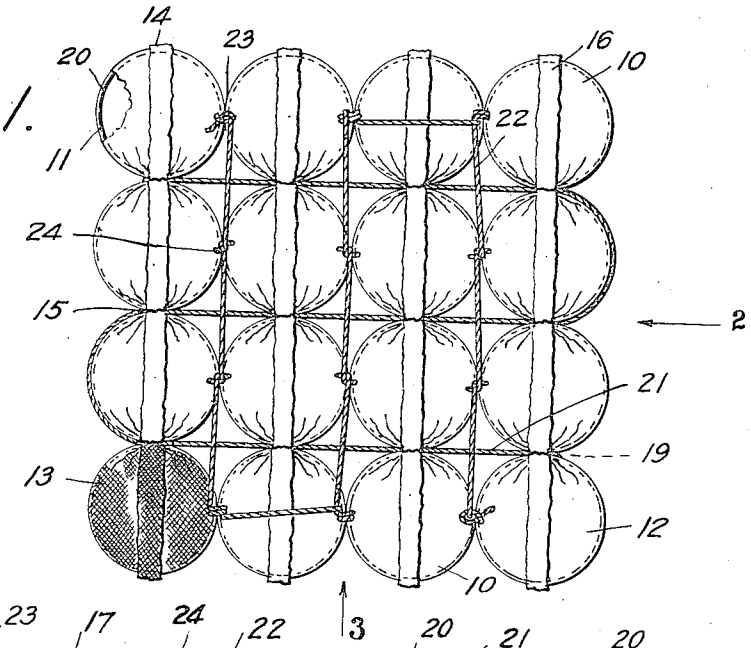
Aug. 21, 1923. 1,465,766

P. KRAKAUER

SPRING PAD

Filed June 15, 1922

Fig. 1.



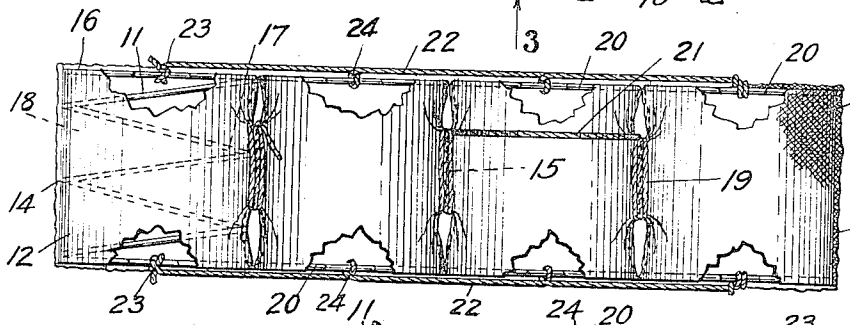
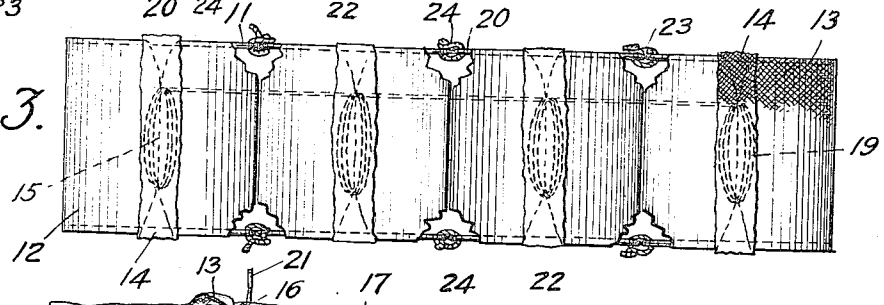


Fig. 2.

Fig. 3.



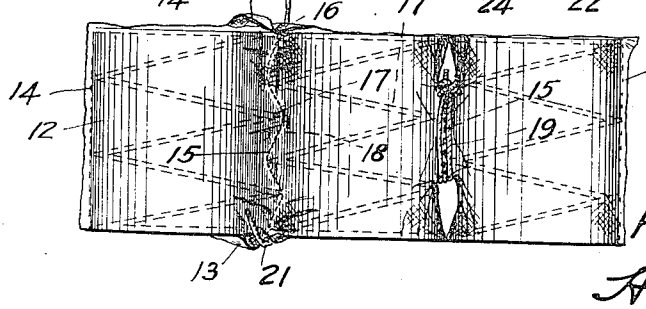


Fig. 4.

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Patented Aug. 21, 1923. 1,465,766

UNITED STATES PATENT OFFICE.

PHILLIP KRAKAUER, OF NEW YORK, N. Y.

SPRING PAD.

Application filed June 15, 1922. Serial No. 568,416.

To all whom it may concern:

Be it known that I, PHILLIP KRAKAUER, a citizen of the United States, and resident of the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Spring Pads, of which the following is a specification.

This invention relates to spring pads, cushions, and seats, and particularly to that type formed of a series of rows of coil springs, each enclosed in a fabric pocket.

My invention is designed primarily for use in a cushion in which the pockets for the helical wire springs are formed by making a series of seams spaced at suitable intervals, across a doubled piece of fabric, the edges of the piece being seamed together after the springs have been inserted into the pockets, this construction being well known in the art.

It has been found, however, that in cushions of the type described, it becomes necessary to fasten the encased springs firmly together to prevent disarrangement of the springs, and the consequent distortion in the shape and size of the cushion. On compression of the cushion sidewise, one enclosed spring tends to be forced and to move into the space between the coils of the adjacent spring, carrying the casing material with it, unless such movement is prevented; furthermore, in handling, the encased springs tend to become separated one from the other unless this tendency is also prevented. The means heretofore employed for maintaining the springs in the proper positions necessitates the use of a comparatively large amount of material, is slow and tedious to manufacture and is consequently expensive.

It is one of the objects of this invention to provide means requiring only a minimum of material and of labor for so fastening the encased springs that they are incapable of relative movement.

A further object of this invention is the provision of a simple, efficient, economical and rapidly manufactured construction, silent in operation, for holding together the component encased springs of a cushion, against distortion.

A still further object of this invention is the provision of means for reinforcing the pocket forming stitches of a spring casing, whereby the encased springs are maintained in permanent axial relation.

For the attainment of the aforesaid and other objects, which will appear from the description which follows, I employ the devices shown in their preferred forms in the accompanying drawings, in which,

Fig. 1 is a top plan view of a cushion embodying my invention. Fig. 2 is a side elevational view of the same taken in the direction of the arrow 2 of Fig. 1. Fig. 3 is a front elevational view taken in the direction of the arrow 3 of Fig. 1, and Fig. 4 is a front view of a row comprising several encased springs, one pair being shown reinforced at the seams forming the pockets, and the other pair as it appears before reinforcing and tying, as such springs are usually made, the thickness of the tying means being exaggerated in all the views for the sake of clearness.

In the cushion to which the illustrated embodiment of my invention is applied, a number of independent rows as 10, of wire coil springs 11 are suitably joined together. Each of the springs 11 is held in a pocket 12, formed in the usual manner by doubling over a piece of fabric 13, seaming the ends thereof as at 14, making a series of seams 15 spaced apart sufficiently to allow one of the springs 11 to be inserted between adjacent seams, and finally, seaming the top edges together to complete the spring casing.

In this type of construction, it is obvious that the pockets cannot be conveniently or readily made the exact size to receive the spring without some material remaining loose or slack about it. There will, therefore, be sufficient play to allow the fabric to be stretched to some extent, whereby the springs may become separated from each other and the cushion become distorted. Similarly, on compressing a row 10, it becomes possible for one coil or turn as 17 of the spring 11 to enter the space 18 between turns of the adjacent spring, unless such movement is prevented. A further disadvantage of this type of construction is that unless the cross stitches 15 reach the extreme upper edge of the piece of fabric, and sometimes in spite of this, the end coils 20 of the adjacent springs 11 may come into direct contact and slide over each other thereby creating unpleasant noises when the cushion is put into use.

In my improved construction, I interpose a comparatively rigid wall between adjacent pockets by winding several turns of suitable strong tying material such as cord, string or twine, tightly between the pockets at the points where the seams 15 occur, whereby said seams or stitching are reinforced by the loops 19, which, being under tension, serve to resist effectively, the entrance of a coil 17 into the adjacent spring space 18. On tightening the loop 19, the material of the two adjacent pockets is drawn taut over the spring, and the slack material at the ends of the seam 15 is drawn together toward the center, whereby all of the loose material of the casing near the adjacent springs is drawn together near the center of the seam by the loops 19, and a tight fitting casing is provided. Furthermore, the end coils 20 of the springs 11 have two layers of fabric interposed therebetween by the above described gathering-in operation, whereby one spring may move downwardly when the cushion is in use, without noise, since any sound which might result from the rubbing together of the end coil 20 is effectively deadened.

While the string 21 on which the loops 19 are formed serves to hold the rows firmly against separation from each other and serves further to prevent compression of the springs in each row against each other, a second string 22 on the uppermost and lowermost coils 20 of the springs is used to maintain the rows in the proper relative positions, and to prevent relative movement of said rows. Said string 22 is suitably knotted as at 23 to the pair of end coils in the end springs of adjacent rows, is then carried to the next springs in the same rows and joined to the end coils thereof through the fabric by means of the chain stitch 24. On reaching the end of a row, a double stitch is preferably made for additional strength, the string or tying material 22 being then carried across the last spring of the row to the pair of springs in the next row and the chain stitch repeated in the direction of the row as above described until all the rows have been properly tied together.

It will be noted that the string 21 is disposed in one direction, while the string 22 is disposed substantially at right angles to the string 21, whereby that string usually employed in cushions of this type at the top and bottom of the cushion and disposed in the same direction as the string 21 is entirely dispensed with, while the cushion is even more firmly held against distortion.

It will be understood that one or more turns or loops 19, as is deemed necessary may be made between the pockets 12, instead of the three turns shown, and that any suitable tying material may be used for fastening the parts together without departing from the spirit of my invention.

It will also be understood that separate units comprising a single row of springs held in pockets may be manufactured in accordance with my invention, as shown in Fig. 4, for later assembly into a complete cushion, by drawing the covering material in between adjacent springs by means of suitable tying material, then carrying the tying material to the next adjacent pair of springs and repeating the operation to the end of the row, where the spring is knotted in place.

The above construction is capable of rapid manufacture, involves the use of a minimum of material for tying, and is nevertheless capable of withstanding the hard conditions of practical use.

I claim:

1. In a spring pad, a plurality of rows of wire springs, a fabric casing for each of said rows, and means independent of said casing for tightening said casing about each spring of a row.

2. In a spring pad, wire coil springs arranged in rows, a fabric casing of substantially uniform height for each of said rows, and means for drawing the fabric between adjacent springs of a row toward a point intermediate of the top and bottom of the springs.

3. In a spring pad, a fabric casing seamed at the ends and edges, spaced seams in said casing for forming pockets in said casing, wire coil springs in said pockets, and looped turns of twine wound under tension between springs in adjacent pockets for reinforcing said seams and for tightening the fabric pockets about the springs contained therein.

4. In a spring pad, a plurality of rows of units, each comprising a fabric casing seamed at the ends and edges, spaced seams in said casing for forming pockets in said casing, wire coil springs in said pockets, means independent of said casing for tightening said casing about said springs, and means for preventing separation of said rows comprising a length of twine chain-stitched to the end coils of adjacent springs of adjacent rows.

5. In a spring pad, a plurality of rows of units, each comprising a fabric casing seamed at the ends and edges, spaced seams in said casing for forming pockets in said casing, wire coil springs in said pockets, tying material wound under tension between springs of adjacent pockets and gripping the fabric of said pockets, and means for preventing the separation of said rows comprising a length of tying material chain-stitched to the end coils of adjacent springs of adjacent rows.

6. In a spring pad, wire coil springs ar-

ranged in rows, a fabric casing of substantially uniform height for each of said rows, and means wound under tension around said casing between adjacent springs of a row for preventing the entrance of the coils of one spring into the spaces of the adjacent spring of the row.

7. In a spring pad, wire coil springs arranged in rows, a fabric casing for each of said rows, means interposed between adjacent springs for preventing the entrance of the coils of one spring into the spaces of the adjacent spring of the row and for tensioning said casing about said adjacent springs, and chain stitching at the end coils of adjacent springs of adjacent rows for fastening said rows together.

8. In a spring pad, wire coil springs arranged in rows, a fabric casing having pockets therein for the springs of each row, and a turn of tying material drawn taut between adjacent pockets of a row, said turn and said pocket being under tension.

9. A spring pad unit comprising a row of springs, a single piece of fabric encasing all of said springs, and means independent of said casing for drawing together the slack portions of said fabric between adjacent springs.

10. A spring pad unit comprising a casing having a series of pockets formed therein, a spring inserted in each of said pockets, and means independent of said casing for tightening said casing about each of said springs.

Signed at New York, in the county of Kings and State of New York, this 14th day of June, 1922.

PHILLIP KRAKAUER.