

Sept. 18, 1934.

W. B. FOSTER

1,974,044

SPRING FILLED MATTRESS OR CUSHION

Filed July 25, 1932

2 Sheets-Sheet 1

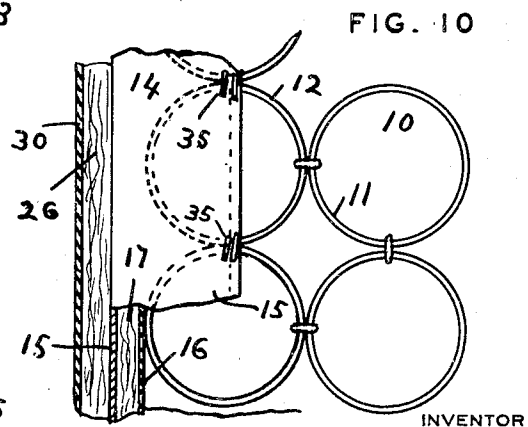
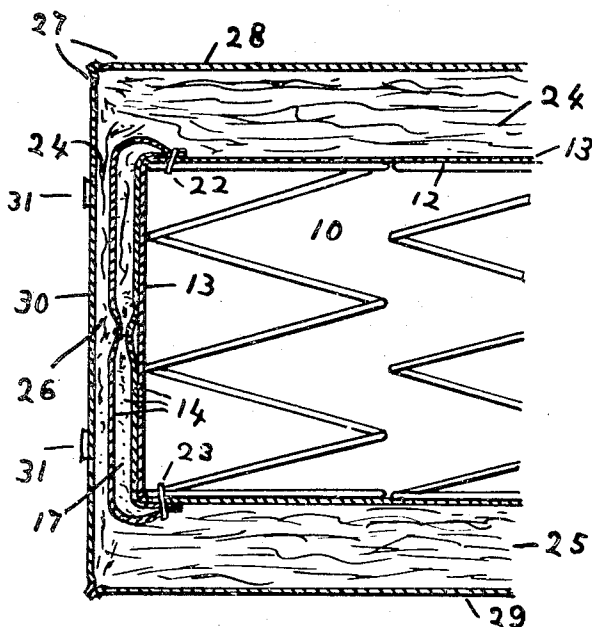
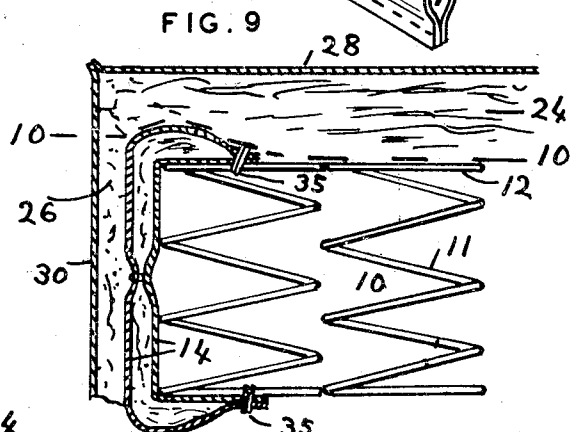
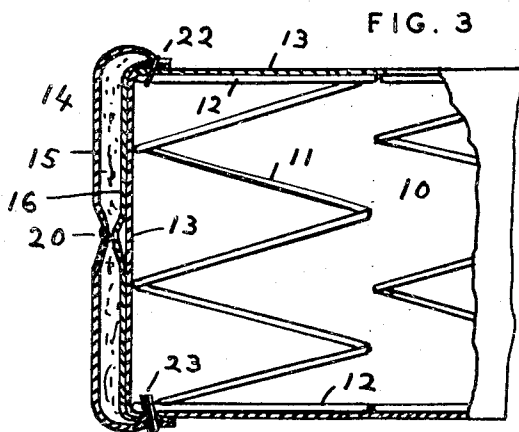
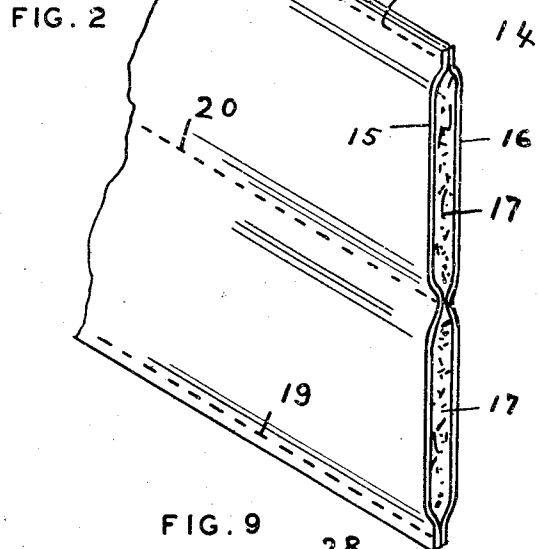
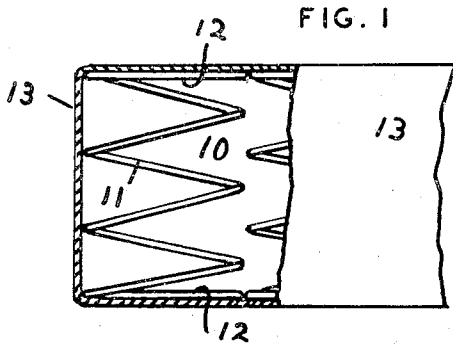


FIG. 4

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2 Sheets-Sheet 2

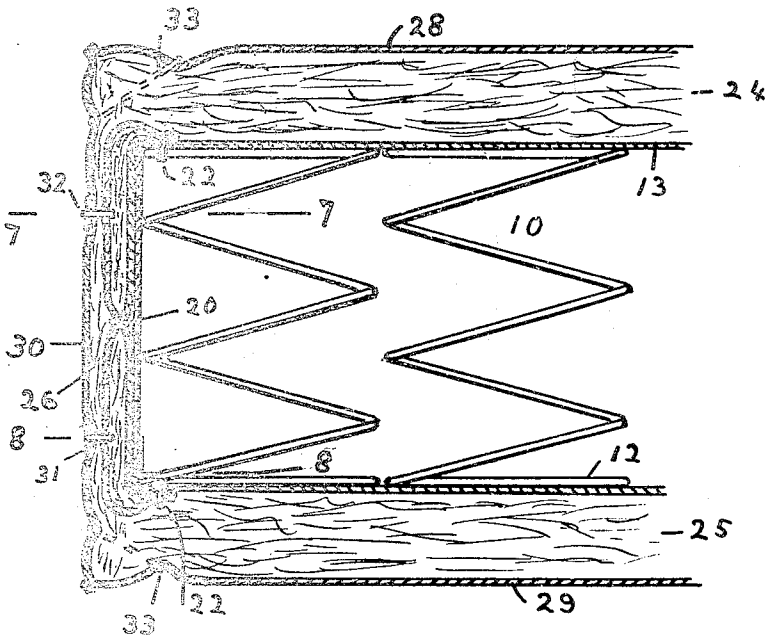


FIG. 5

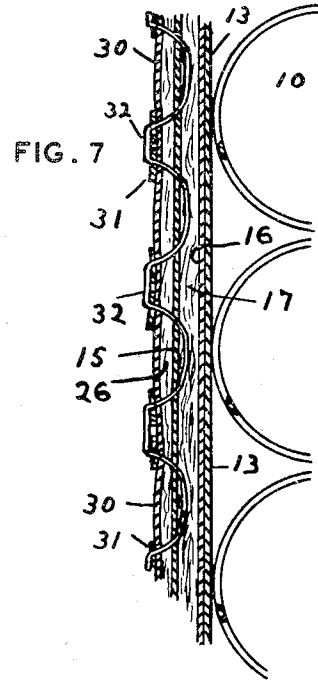


FIG. 7

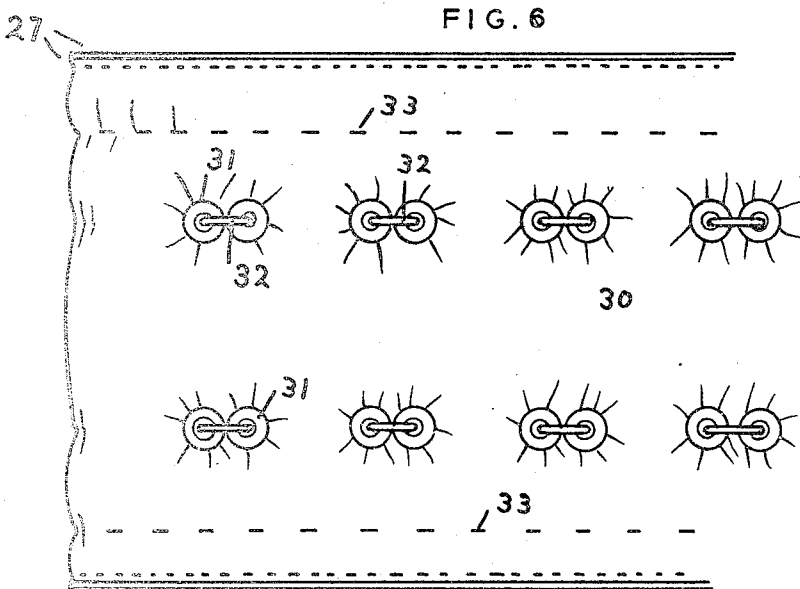


FIG. 6

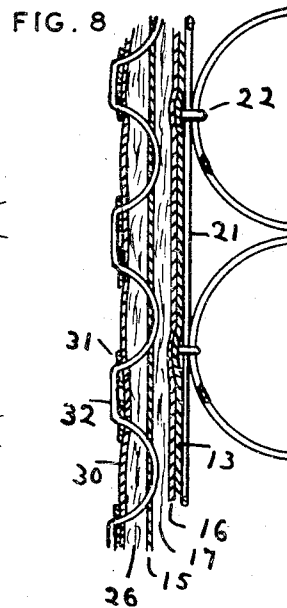


FIG. 8

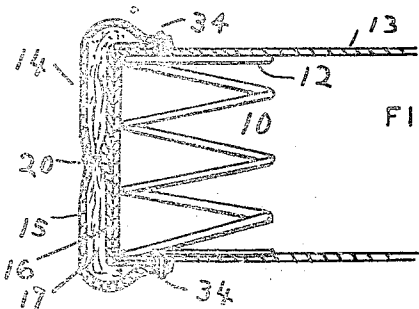


FIG. 11

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## UNITED STATES PATENT OFFICE

1,974,044

## SPRING FILLED MATTRESS OR CUSHION

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Application July 25, 1932, Serial No. 624,383

2 Claims. (Cl. 5—360)

This invention relates to a spring-filled mattress or cushion and to the process of making the same.

The chief purpose of my present invention is to provide a spring-filled mattress or cushion which is of novel and improved construction and to show the process of manufacturing the same.

Another purpose is to provide an article of the class described which is economical and strong in construction and durable and efficient in use and particularly well-adapted to maintain the boxing along the narrow sides of the mattress or cushion in a neat and permanent condition.

Another purpose is to provide a construction having positive but yielding means for maintaining the boxing of the cushion or mattress in vertical position by securely anchoring the same to parts such as a pad along the narrow sides of the mattress or cushion which pad in turn in my preferred construction is positively connected as by stitches of sewing to the spring-filling.

Further purposes of my present invention will appear from the specification and claims herein.

Fig. 1 is a view partly in vertical section and partly in side elevation of part of an encased spring-filling that may be used in this construction.

Fig. 2 is an isometric projection of a short length of a pad used in this construction. Fig. 3 is a view partly in vertical section and partly in side elevation of the spring-filling showing in vertical section the pad placed upon and secured to the narrow sides or edges of the encased spring-filling. Fig. 4 is a view similar to Figs. 1 and 3 after the top, bottom and edge layers of fibrous filling have been added to the structure shown in Fig. 3 and the whole encased in the tick. Fig. 5 is a view similar to Fig. 4 of the parts therein shown, but after the tie tapes or similar members have been inserted in the narrow sides of the tick through the layer of fibrous filling adjacent thereto and into the outer fabric layer of the pad and after the roll edge stitching has been made. Fig. 6 is a side elevation of part of a spring-filled mattress or cushion embodying this invention. Fig. 7 is a horizontal sectional view on line 7—7 of Fig. 5. Fig. 8 is a horizontal sectional view as on line 8—8 of Fig. 5 but showing a spring-filling where a border rod is used. Fig. 9 is a sectional view similar to Fig. 4, but showing a modified construction of my invention where no fabric casing is placed directly about the spring filling and also where the pad overlaps the top and bottom of the edge springs to a somewhat greater extent. Fig. 10 is a view of the construction shown in Fig. 9 mostly

on line 10—10 of Fig. 9. Fig. 11 is a vertical cross sectional view similar to Fig. 3 of a still further modified form of my invention where the pad is attached to the casing of the spring filling, but not directly to the spring filling.

Referring to the illustrations in a more detailed description, it will be obvious that the spring-filling unit 10 consists of the proper number of vertically arranged coiled springs 11 of general cylindrical shape and secured together usually in transverse and longitudinal rows by having the end coils 12 of the adjacent springs fastened together by clips or other tie members the form of which is not material to this invention.

This unit 10 is enclosed in a complete fabric casing 13 commonly of burlap and formed to enclose the broad top and bottom surfaces of the spring unit and also the four narrow sides or edges of the spring unit as suggested in Fig. 1.

There is next placed entirely about the narrow sides or edges of encased spring unit a long pad 14. This pad as clearly illustrated in Fig. 2 may conveniently be formed of an outer fabric layer 15 of fairly substantial cloth and an inner fabric layer 16 which may be of less substantial cloth. Between these fabric layers there is placed and secured a considerable layer 17 of fibrous filling such as cotton, cotton felting or the like with the fibrous filling held in place by the upper and lower seams of stitches 18 and 19 fastening the edges of the outer and inner fabric layers 15 and 16 together and also by an intermediate series of stitches 20 preferably extending lengthwise of the pad and going through not only the outer and inner fabric layers 15 and 16 but also through all the intervening fibrous filling 17 and contracting that filling closely together along the line of the stitches 20. This pad may be conveniently made in lengths at least long enough to entirely encircle a mattress or cushion or may be made of indefinite lengths several times the perimeter of the ordinary mattress or cushion.

The pad 14 is then arranged along all four narrow sides or edges of the encased spring-filling and the edges of the pad are turned over at the top and bottom to some extent along the top and bottom surfaces of the encased spring-filling so as to form that much more protection over the top and bottom edges of the encased spring-filling. In some of the illustrations a border wire 21 is shown at the outer edge of the top and bottom end coils 12 so as to maintain a definite straight edge for the spring-filling and so as also to provide in that embodiment of my

invention a more substantial and durable construction.

Then the said pad 14 is sewed to the spring-filling by upper and lower rows of stitches 22 and 23 extending through the spring casing 13 and through the different layers of the pad near its edges and preferably but not necessarily encircling the upper and lower coils respectively of the edge springs of the spring-filling where the stitches come close to such an end coil. In constructions where a spring-filling is provided with the border wires 21 these tie stitches will encircle such border wire not only opposite the springs, but in the spaces between the springs. In constructions where for one reason or another it is not desirable to use a border wire 21 the row of stitches 22 and 23 will enclose some of the fabric casing 13. It will be seen that preferably the tie stitches 22 and 23 will not only fasten the pad 14 to the spring-filling but will also fasten the burlap or other fabric casing 13 to the spring-filling at the top and bottom of each edge spring. The parts so far assembled are shown in Fig. 3.

The next steps in the making of the construction are to place a top layer 24 of fibrous filling over the top of the pad-bound spring unit and another similar fibrous layer 25 below the bottom of the unit and to place about all four narrow sides of the unit outside the pad 14 a layer 26 of fibrous filling. It will be noted that the fibrous filling layer 26 does not need to be as thick as the top and bottom layers 24 and 25. In fact the total thickness of the pad 14 and the fibrous edge layer 26 may be appreciably less than the height or thickness of the top and bottom layers 24 and 25.

The next step is to enclose the structure so far described in a tick 27 consisting of a top 28 and bottom 29 of the full length and width of the mattress or cushion being made and a narrow side or edge portion 30 in width equalling the height of the mattress or cushion and preferably made in a length long enough to go about the four narrow sides of the mattress or cushion. Commonly this tick will be pre-made to the extent of being made up into an open-ended box form, that is with the top 28 and bottom 29 sewed to the adjacent edges of the narrow side or edge piece 30 along two long sides and one end of the mattress or cushion, but with one end not sewn into place but left as an open flap. In the preferred form of my construction this narrow side portion 30 is provided before being assembled on a mattress with rows of eyelets 31. The eyelets of each row are arranged in pairs, that is with two relatively close together and with the next pair spaced therefrom say about one-half to two-thirds the diameter of the springs being used in the spring filling. Preferably also as shown in Figs. 5 and 6 there will be two rows of such spaced pairs of eyelets preferably with each row in from the edge of the narrow side a little less than one-third the width of the narrow side. These eyelets are for the purpose of strengthening the fabric of the tick when the tie tapes 32 are placed through the narrow sides of the tick to the outer fabric layer 15 of the pad. The eyelets may be formed in any convenient way such as by the use of a special button-hole machine which makes a ring of radially arranged inter-connected stitches.

The assembling of the tick and the spring filling with its attached pad 14 and the upper and lower layers 24 and 25 of fibrous filling and the outer edge layer of the fibrous filling 26 is most conveniently performed with the aid of a mat-

tress-filling machine or device which holds the layers of fibrous fillings in place about the spring filling while the tick 27 is bodily drawn over the other parts or what is the same while the said other parts are moved into the expanded but open ended tick. The partly connected loose end of the tick is then connected at the rest of its edges to the tick by seams of stitches.

The narrow sides 30 of the tick are then permanently but flexibly connected to the pad 14 and particularly to the outer fabric layer 15 of the pad by loops of tie tapes or string 32. These tie tapes or strings 32 are sewed or led into the structure preferably with the aid of a circular mattress-making needle so that as shown particularly in Figs. 7 and 8 the tape goes inwardly through one eyelet and through the narrow side layer 30 of the tick and then in a slanting or curved direction generally horizontally through the outer side layer of fibrous filling 26 and into and through the outer and relatively strong fabric layer 15 of the pad 14 and then outwardly again through this fabric layer 15 and again through the outer fibrous filling 26 toward the nearest eyelets of an adjacent pair of eyelets in the same row. After the tape is drawn up a proper amount a new stitch or loop is taken in a similar way through the other eyelet of the pair where the tape came out and through the parts already mentioned and out again into the first eyelet of the next or second succeeding pair of eyelets in a row. These tie strings 32 will preferably be fastened from time to time and particularly will have their meeting ends tied to each other when a series of loops or stitches is completed about the mattress.

It will now be seen that the intermediate portions of the side of the mattress or cushion are thoroughly and permanently anchored to the spring filling by means of these tie tapes fastening the outer and narrow sides of the ticking to the outer layer of the stuffed pad 14 which pad in turn is fastened at its top and bottom at frequent intervals to the spring filling. The appearance is more or less that shown in Fig. 5 and the parts will be retained in this position after long and hard usage by reason of the positive connection of the pad to the spring filling and the yielding but positive connection between the pad and the narrow sides of the tick. The construction so far described is entirely usable and is preferred in many cases. In Fig. 5, however, I have shown the manner in which the usual roll edge may be produced in this construction by the use of stitches 33 extending diagonally on the slant from the narrow side of the tick to the upper side of the top 28 of the tick in one series and in another series to the outer surface of the bottom 29 of the tick. By drawing these strings or stitches in to the proper extent the engaged portions of the ticking are drawn in and the desired bulged or roll edge effect is produced without interference with any of the features which particularly distinguish my invention.

The modified form of my invention illustrated in Figs. 9 and 10 is different from the construction already described in detail in that in this modification no fabric casing is used directly about the spring-filling, but the pad 14 is placed directly against the edge or narrow sides of the spring filling and the side extremities of the pad are sewed to the spring filling as by stitches 35. This construction also shows another modified feature in that the pad 14 is made preferably wider than the height of

the spring filling so that the two edges of the pad over-lap the top and bottom of the spring filling to a much greater extent than is shown in Figs. 3, 4 and 5. In fact, in this modification the pad 5 is made wide enough so that the side extremities of the pad will come a little inside of the center of the end coils of the edge springs of the spring-filling. This allows each set or group of 10 stitches or tie threads 35 fastening the pad to the spring filling to go about the end coils of two adjacent edge springs where the said end coils closely approach or touch each other. It will be seen that 15 stitches or tie threads so placed cannot slide around on the end coils and so the side edges of the pad are securely held in desired position as will be particularly apparent from an inspection of Fig. 10.

The modification shown in Fig. 11 consists in having the side edges of the inner pad fastened 20 to the casing as by stitches 34 which go into adjacent portions of the fabric casing 13 of the spring filling, but without the said stitches 34 going about any part of the spring filling.

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

1. In a spring-filled mattress or cushion, the combination of a filling of vertically-arranged

coiled springs, a fabric casing therefor, a pre-made pad of inner and outer layers of fabric enclosing a fibrous filling and extending along the narrow sides and over the adjacent edges 80 of the spring filling and sewed thereto near the upper and lower edges of the pad, layers of fibrous filling about the top and bottom of the spring filling and a vertical layer opposite the said pad, a tick enclosing said parts and tie tapes in loops 85 passing from the outside of the tick inwardly only to, and engaging the inside of the outer fabric layer of the pad.

2. In a spring-filled mattress or cushion, the combination of a filling of vertically-arranged 90 coiled springs, a pre-made pad of inner and outer layers of fabric enclosing a fibrous filling and at least as wide as the spring filling and extending along the narrow sides of the spring filling and 95 sewed thereto near the upper and lower edges of the pad, layers of fibrous filling about the top and bottom of the spring filling and a vertical layer opposite the said pad, a tick enclosing said parts and tie tapes in loops passing from the outside of the tick inwardly only to, and engaging the 100 inside of the outer fabric layer of the pad.

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| 35 | 110 |
| 40 | 115 |
| 45 | 120 |
| 50 | 125 |
| 55 | 130 |
| 60 | 135 |
| 65 | 140 |
| 70 | 145 |
| 75 | 150 |