July 28, 1953 T. W. MARSICO 2,646,580

COMBUSTION MATTRESS AND SPRING

Filed Jan. 27, 1949

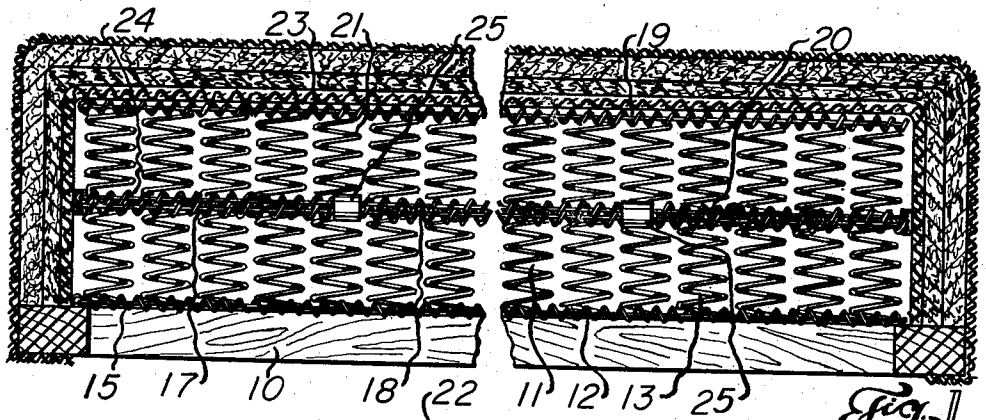


Fig. 1

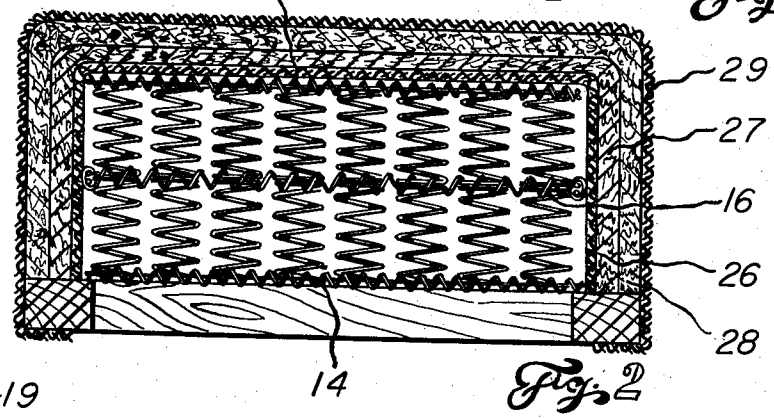


Fig. 2

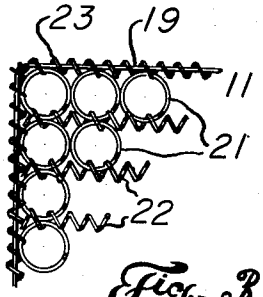


Fig. 3

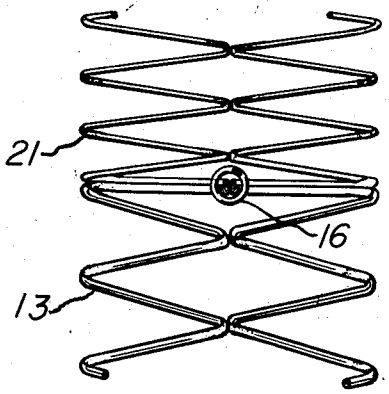


Fig. 4

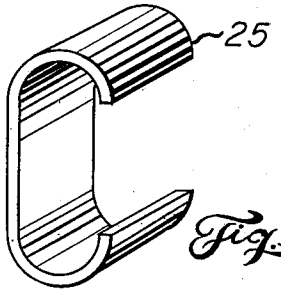


Fig. 5

Inventor

Theodore W. Marsico

By Ackley & Ackley

Attorneys

Patented July 28, 1953

2,646,580

UNITED STATES PATENT OFFICE

2,646,580

COMBINATION MATTRESS AND SPRING

Theodore W. Marsico, Denison, Tex.

Application January 27, 1949, Serial No. 73,043

4 Claims. (Cl. 5—351)

1

This invention relates to new and useful improvements in combination mattresses and springs.

A particular object of the invention is to provide an improved combination innerspring mattress and boxspring assembled as a unit and forming a convenient, easily handled structure.

Another object of the invention is to provide a unitary mattress and spring structure in which the heavier springs of the bedspring structure are vertically alined with the lighter springs of the innerspring mattress structure to provide increased stability and sturdiness of construction.

A still further object of the invention is to provide a combination innerspring mattress and boxspring structure formed in a single unit and carrying the felting or padding and the ticking only on the upper side of the mattress structure whereby a conservation of materials is had.

Yet another object of the invention is to provide an improved combination mattress and spring structure as described, in which the padding or felting and the ticking are extended downwardly over the marginal edges or walls of the combination spring and mattress structure to enclose both elements as a unit and provide a neat and attractive combination unit.

A further object of the invention is to provide an improved mattress and spring structure having novel and desirable means for securing together the springs of the mattress element and the springs of the bedspring element.

A construction designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing, wherein an example of the invention is shown, and wherein:

Fig. 1 is a longitudinal, vertical, sectional view of a mattress constructed in accordance with this invention, the view being broken away at its center to conserve space on the drawing,

Fig. 2 is a vertical, transverse, sectional view of the mattress,

Fig. 3 is a fragmentary plan view of one corner of the spring structure,

Fig. 4 is an enlarged fragmentary view of two adjoining pairs of the mattress springs and the springs of the bedspring, illustrating the helical wire connector, and

Fig. 5 is an enlarged isometric view of one of the connecting clips.

In the drawing, the numeral 10 designates an

2

open rectangular base frame which may be formed of wood, metal, or any other suitable material. Well seasoned hard or semi-hard wood is the preferred material of construction, but it is obvious that other materials may be employed for forming this element. The rectangular base frame 10 is, of course, of the proper dimenisons to outline mattresses of the various standard or special sizes.

A bedspring structure, indicated generally by the numeral 11, rests upon and is supported by the base frame 10, the spring unit 11 including the usual heavy border or marginal wire 12 of lesser dimensions than the frame 10 but resting upon and being secured to the latter by stapling or by any other suitable methods or means. A plurality of moderately heavy, wire, coiled or helical springs 13 are disposed within the border wire 12, the helical springs 13 having their axes vertically disposed and being arranged in contiguous rows and columns within the outlines of the wire 12 so as to fill completely the space therein. This is the usual and customary arrangement of bedsprings and further explanation is not essential to one skilled in this art. The rows of springs 12 are joined into a unit by transverse helical joining wires 14, shown in Fig. 2, one of the wires 14 extending between each adjacent transverse row of the springs 13 and having its convolutions passing through the lowermost coils of the springs 13 in each row. This structure is further illustrated in Fig. 3 which may be taken as exemplary of the joining wire structure as used at several levels throughout this mattress and spring construction.

Thus, all vertical loads are reflected in vertical compression of the springs 13. However, the lower ends of the spring are not held by a rigid structure, but rather by being joined together by the transverse, helical joining wires 14. Thus, transverse or lateral thrusts are withstood largely by said wires 14, and because of their helical configuration, a degree of springiness or resilience is imparted to the mounting of the springs 13.

For securing the springs to the border wire 12, an elongate, helical, securing wire 15 extends marginally around the lower portion of the bedspring structure and is positioned concentrically around the border wire 12 as shown in Fig. 1. The convolutions of the wire 15 also pass over and around the lowermost coils of those of the springs 13 which are disposed along the outside of the bedspring structure along the sides and at the ends thereof. The entire bedspring unit

is thus held together at its lower end by the transverse wires 14 which join the springs into a unit, and by the marginal or peripheral wire 15 which secures the spring unit to the border wire 12 and facilitates the securing of the bedspring unit to the base spring 10.

At the upper ends of the spring 13, a similar structure is had, transverse, helical, joining wires 16 extending transversely of the mattress and spring structure between adjacent transverse rows of the springs 13 and connecting the upper portions of said springs into a unit. An extra heavy border wire 17, similar to the wire 12, is also provided at the upper ends of the springs 13 and is secured to said springs by a marginal or peripheral, helical securing wire 18, similar to the wire 15 and securing the border wire 17 to the springs 13 in the same manner.

The innerspring portion of the mattress part of this new structure is constructed similarly to the bedspring just described, having an upper border wire 19, a lower border 20 with a multitude of helically coiled springs 21 disposed therebetween and therewithin. The springs 21 are of somewhat lighter construction than the springs 13 and hence yield much more readily. The springs 21 are joined at their upper ends by transverse helical binding wires 22 similar to the wires 14 and 16. Also, marginal or peripheral securing wires 23 and 24 are employed at the upper and lower ends, respectively, of the springs 21 for joining the same to the border wires 19 and 20.

A separate set of the transverse joining wires is not employed at the lower ends of the spring 21, but rather the wires 16 are employed for this purpose. As shown in Fig. 4, the convolutions of the wires 16 join together not only adjacent transverse rows of the lower springs 13 and the upper springs 21 but also join the upper and lower sets of springs together. With this structure, each of the upper springs 21 is held in vertical alinement with the lower springs 13, and since the two springs are substantially the same diameter, a dependable and secure supporting of the upper springs by the lower springs is achieved. At the same time, a marked degree of flexibility is imparted to the mattress because of the inherent resiliency of the securing wires 16 which permit limited movement of the columns of springs with respect to one another.

For further securing together the mattress innerspring unit and the bedspring unit, the heavy border wires 17 and 20 at the upper end of the said spring unit and at the lower end of the mattress innerspring unit, respectively, are joined together at intervals by wide, substantially C-shaped clips 25 which are deformed into clipping engagement as shown in Fig. 1 and lock the two border wires together in vertical alinement and superposed relation.

The upper surface of the mattress innerspring unit as well as the side and end walls of both spring units are covered with a layer of sisal fabric 26, or other suitable material which will constitute a bearing surface for the mattress padding or felting. Over the layer of sisal is placed preferably a relatively thick layer 27 of padding material known in the trade as "hair latex." This is an extremely resilient and non-packing pad formed of hair or suitable fibers to which additional resiliency has been imparted and which is loosely bound together in a springy fashion by a coating of latex or other elastic material. This pad 27 is in turn covered by

a pad 28 of similar dimensions and thickness composed of any suitable felt formed from vegetable or animal fiber. This layer 28 of felting is preferably cotton felting, but it is obvious to persons skilled in this art that other materials or felts may be employed. It is to be noted that the two pads or felts 27 and 28 cover the upper surface of the mattress innerspring unit and extend downwardly around the side and end walls or marginal portions of both the upper and the lower spring units, but terminate at the upper surface of the base frame 10. Since this mattress and spring structure is not adapted to be turned, as is necessary with the usual type of mattress, there is no need for padding on the underside of the structure and a material saving may be effected by omission of this padding which is not required. The pads are covered and held in place by the usual ticking 29 which overlies the upper surface of the mattress structure and extends downwardly around the sides thereof, the lower edge of the ticking being turned under the base frame 10 and secured thereto as by tacking, or any other suitable manner. Also, a dust cloth or cover (not shown) may be secured to the underside of the frame 10, if desired, to close off the same and to prevent the entry of dust into the interior of the mattress and spring structure.

With the invention described, a combination mattress and spring unit is provided which need not be rotated upon the bed frame or stead as is usually required, and which does not require turning so as to present alternately the upper and lower surfaces of the mattress for reclining purposes. The vertical alinement of the upper and lower springs 13 and 21 and their securing together by the joining wires 16 cause the combination structure to be exceptionally stable and durable and not subject to deterioration or breaking down because of misalinement or improper supporting of the spring coils. At the same time, an undesirable rigidity and lack of resiliency normally occurring in structures of this type having adequate securing means for the spring coils, is entirely eliminated because of the springy and resilient nature of the helical joining wires which are employed throughout. These wires hold the springs in a proper fashion, but do so in a yielding or yieldable fashion so that undesirable stiffness in the mattress is eliminated.

Further, it is obvious that a combination mattress and spring constructed in accordance with this invention permits the manufacture of a high quality product at large saving and therefore the selling of such a product at an economical price. Unnecessary padding and ticking is eliminated and needless duplication of elements in the bed spring structure and in the mattress structure is completely avoided.

The foregoing description of the invention is explanatory thereof and various changes in the size, shape and materials, as well as in the details of the illustrated construction may be made, within the scope of the appended claims, without departing from the spirit of the invention.

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

1. In a combination mattress and spring, a supporting frame, a lower spring unit having an upper border wire and an upper spring unit having a lower border wire, a plurality of lower coil springs carried by said frame, a plurality of upper coil springs carried by the lower coil springs, the

upper springs being of less strength than the lower springs, means securing the upper portion of each border spring of the lower unit to said border wire of said lower unit, means securing the lower portion of each border spring of the upper unit to said border wire of said upper unit, means connected to the upper border wire of the lower unit and to the lower border wire of the upper unit connecting said wires together, padding covering the upper ends of the upper springs, and ticking secured to the frame and extending over the padding.

2. In a combination mattress and spring, a supporting frame, a lower spring unit having an upper border wire and a plurality of lower coil springs arranged in parallel rows carried by the frame, an upper spring unit having an upper and a lower border wire and a plurality of upper coil springs arranged in parallel rows carried by the lower springs and resting thereon, means securing the upper portion of each border spring of the lower unit to said border wire of said lower spring unit, means securing the lower portion of each border spring of the upper unit to said lower border wire of said upper unit, means securing the upper portion of each border spring of the upper unit to said upper border wire of said upper unit, means connected to the upper border wire of the lower unit and to the lower border wire of the upper unit connecting said wires together, padding over the springs, and ticking over the padding.

3. In a combination spring and mattress, a supporting frame, a lower spring unit carried on the frame, an upper spring unit carried on the lower spring unit, said units each including a plurality of coiled springs and an upper and lower border wire, means securing the lower portion of each border spring of the lower unit to said lower border wire of said lower unit, means securing the upper portion of each border spring of the lower unit to said upper border wire of said

lower unit, means securing the lower portion of each border spring of the upper unit to said lower border wire of said upper unit, means securing the upper portion of each border spring of the upper unit to said upper border wire of said upper unit, means connected to the lower border wire of the upper unit and the upper border wire of the lower unit connecting said wires together, padding over the upper springs, and ticking secured to the frame and extending over the padding.

4. In a combination spring and mattress, a supporting frame, a lower spring unit carried on the frame, an upper spring unit carried on the lower spring, said units each including a plurality of coiled springs and an upper and lower border wire extending around the outer perimeter of the spring units, means securing the lower portion of each border spring of the lower unit to said lower border wire of said lower unit, means securing the upper portion of each border spring of the lower unit to said upper border wire of said lower unit, means securing the lower portion of each border spring of the upper unit to said lower border wire of said upper unit, means securing the upper portion of each border spring of the upper unit to said upper border wire of said upper unit, clips securing together the lower border wire of the upper unit and the upper border wire of the lower unit, padding over the springs, and ticking secured to the frame and extending over the padding.

THEODORE W. MARSICO.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,351,748	Freedman	Sept. 7, 1920
2,021,430	Platt	Nov. 19, 1935
2,348,897	Gladstone	May 16, 1944