Feb. 28, 1933. S. RUSNAK 1,899,726

SEAT CONSTRUCTION

Filed Jan. 29, 1931

Fig. 1

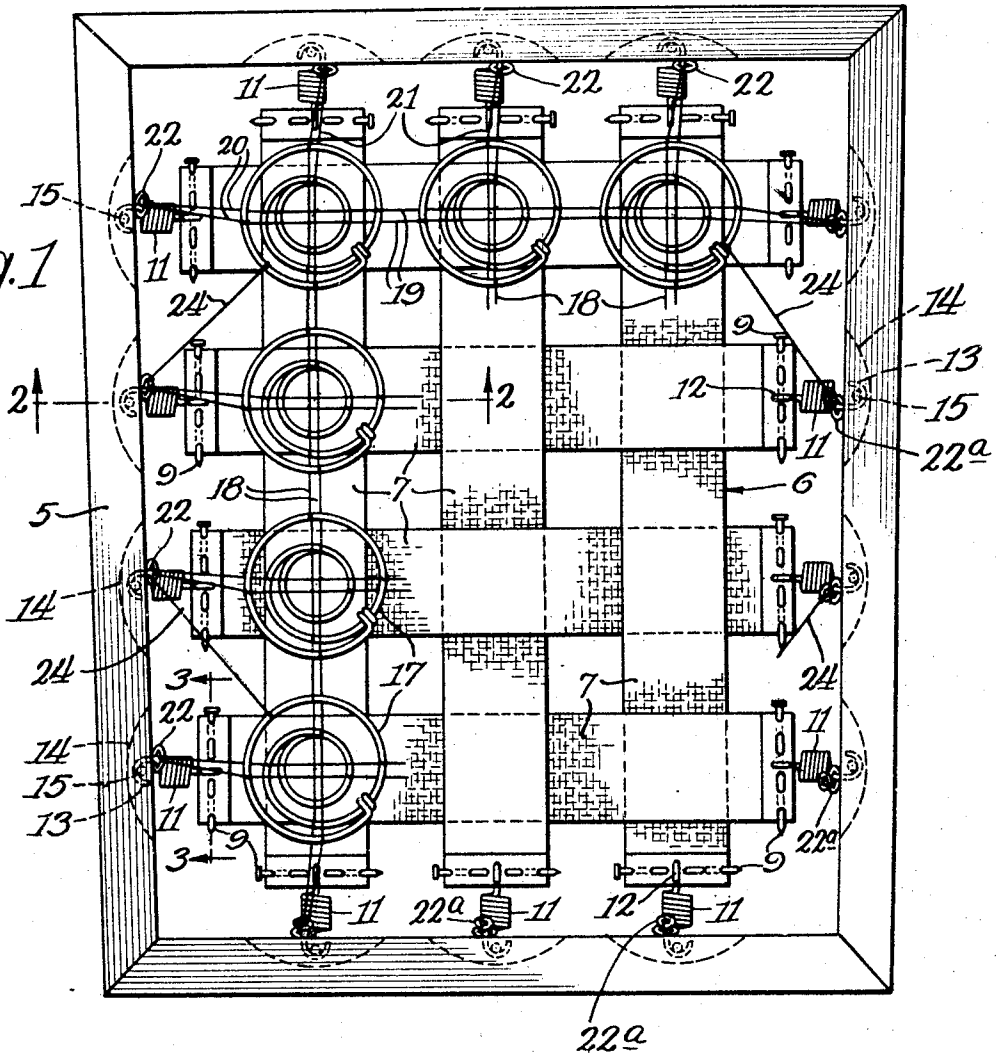


Fig. 2

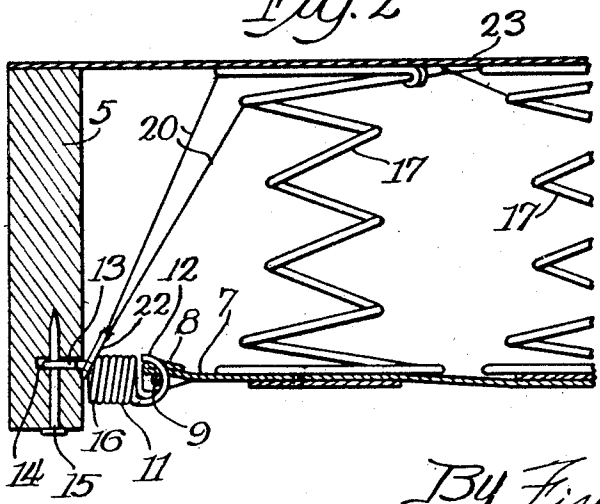
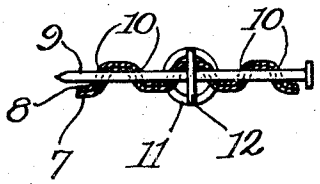


Fig. 3



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SEAT CONSTRUCTION

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This invention relates to an improved seat construction, such as used for chair seats, davenport seats and the like.

The main objects of the invention are to provide a simplified and consequently inexpensive construction which will nevertheless constitute a durable and efficient structure affording the maximum comfort to the occupant of the seat; to provide such a construction which does not require special machinery or special skill for economical production thereof; and, in general, it is the object of the invention to provide an improved construction of the class described.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawing in which the invention is illustrated as embodied in a chair seat.

In the drawing:

Fig. 1 is a plan; and

Figs. 2 and 3 are sections on the line 2—2 and 3—3, respectively, of Fig. 1.

Referring now to the drawing, the chair seat construction illustrated includes a main wood frame 5 and a seat bottom designated 6, the seat bottom being anchored to the frame sides.

The seat bottom illustrated in this instance is formed of a plurality of strips of webbing 7 of suitable textile material, these strips extending transversely of each other and being interwoven substantially as illustrated. At their ends, the webbing strips 7 are provided with rebent or folded-back end portions 8 to form two-ply reinforced end portions for the respective strips. A suitable pin, for instance, a nail, indicated at 9, extends transversely of each reinforced end portion and penetrates the same at a plurality of transversely spaced points, designated 10, for anchoring the pin in the end of the webbing strip.

The opposite ends of each of the webbing strips which are treated as above described are respectively connected to the adjacent side of the main frame 5 by means of helical coil springs 11. The connecting springs 11 are provided at their opposite ends with eyes or hooks such as indicated at 12 and 13, the inner-end hook 12 being passed through the reinforced end portion 8 of the webbing strip and engaged around the pin 9 to securely anchor the connecting spring to the webbing strip. The hook member 13 at the outer end of the connecting spring 11 is received in a slot 14 provided in the inner face of the adjacent side of the frame 5, and a suitable pin, such as a nail, 15, is driven into the frame side and transversely through the slot 14 inside of the hook 13 to anchor the hook in the slot.

If desired, the slots 14 and the hooks 13 received therein may be so arranged that the hook may be applied around the anchoring pin or nail 15 after the latter is driven into place, but I prefer to make the arrangement such that the springs cannot be disconnected from the frame except by withdrawal of the locking pin 15. In the structure illustrated, the arrangement is such that the outer end coil designated 16 of the connecting spring 11 is disposed closely adjacent the inside face of the side frame so that the spring cannot be turned or moved sufficiently to unhook the spring from the pin 15 even if the hook be open so that such unhooking would otherwise be possible. Of course, the hooks 13 may be made closed so as to constitute closed eyes, in which case the spacing between the end coil 16 of the spring 11 and face of the frame would be unimportant. However, I prefer the described arrangement, in that the closeness of the outer end coil of the spring to the face of the frame side results in a secondary support for the connecting spring when a load is placed on the seat, which causes the spring to be stretched and to swing downwardly about its connection with the frame as a fulcrum. From an inspection of Fig. 2, it will be seen that if the connecting spring 11 is swung in the described manner, the outer end coil 16 will engage the adjacent face of the frame side and be thereby supported so as to relieve some of the strain on the hook 13 and pin 15.

A plurality of cushion springs 17 are seated on the seat bottom 6, one spring being preferably disposed at each intersection of the interwoven webbing strips 7, substantially as

indicated in Fig. 1. The lower ends of the springs may be secured to the webbing strips by tying or in any other suitable manner (not shown), and the upper portions of the springs are preferably connected to each other by means of cord ties designated 18 and 19 which extend longitudinally, i. e., front to back, and transversely, respectively, of the chair seat. The upper portions of the springs in the outer rows are also preferably anchored to the adjacent side of the frame either by independent ties or by extensions designated 20 and 21 of the cord ties 18 and 19, respectively. As most clearly shown in Fig. 2, the ties 20 are anchored at their outer ends to the connecting springs 11 through the agency of links, for instance, metallic rings, such as shown at 22, or substantially S-shaped members such as shown at 22ª. Such links may be positioned around the respective hook portions of the connecting springs 11 intermediate the outer end coil of the spring and the hook portion which is received in the slot 14. By thus securing the cord ties to the spring, the cords are kept out of contact with the spring coils so that there is no danger of pinching and possibly breaking the cords as an incident to stretching and contraction of the connecting springs 11. The elongated S-shaped links are desirable in that they space the cord further from the spring and thus insure the ties against damage in the manner just mentioned. Also, by the described arrangement, the cord ties 20, which extend downwardly from the upper portions of the cushion springs, are not subjected to any strain as an incident to the occupancy of the seat. It will be seen that the tie cords thus described serve to hold the upper portions of the cushion springs substantially in predetermined spaced relation relative to each other, and also in predetermined position relative to the sides of the main frame 5.

The tops of the cushion springs 17 may be covered with a suitable fabric 23, and any desired seat cushion (not shown) may be mounted thereover in any approved manner. When the seat is occupied and the spring 17 compressed, the cord tie portions 20 and 21 are obviously relieved of their cushion spring expansion-limiting function and become slackened so that their effectiveness in preventing side sway of the cushion springs is impaired. For further resisting side sway of the cushion springs, I provide auxiliary ties designated 24, 24, which extend diagonally in opposite directions from the respective end coils of the springs in the outer rows of springs to an intermediate point in the length of the adjacent side of the frame 5. These auxiliary ties 24 may be provided on all four sides of the seat construction or on any selected sides, for instance, the opposite sides, to the exclusion of the front and back sides or ends. The auxiliary ties 24, being of greater length than the ties which extend approximately perpendicularly from the frame sides to the respective coils, serve to prevent excessive side sway of the springs inasmuch as the arc which must be described by the outer ends of such ties would constitute a path of travel not greatly divergent from the vertical straight line. These auxiliary ties 24 may conveniently be anchored at their outer ends to the annular members 22 as indicated, or they may be secured independently to the frame side at any desired point in the vertical width thereof.

The above described seat construction involves the use of elements which are more or less standard products obtainable on the open market and hence avoids the necessity of manufacturing special parts. Also, the work of assembling the parts involves no special skill and may be quickly and easily accomplished. Economy of construction is thus obtained. Also, there are no weak elements which are apt to break and thus disable the structure, and hence durability is attained.

I am aware that changes may be made in the described structure, which is merely illustrative of one embodiment of the invention; wherefore, the scope of the invention should be determined by reference to the following claims, which should be construed as broadly as possible consistent with the state of the art.

I claim as my invention:

1. In a seat construction of the class described, the combination of a main frame, a seat bottom embodying a strip of webbing anchored to said frame, and means for anchoring said strip to said frame comprising a pin extending transversely of the webbing strip adjacent its ends and penetrating the strip at a plurality of transversely spaced points to anchor the pin in the strip, and a connector having means at one end engaged around said pin and its opposite end attached to said frame.

2. In a seat construction of the class described, the combination of a main frame, a seat bottom embodying a strip of webbing anchored to said frame, and means for anchoring said strip to said frame comprising a pin extending transversely of the webbing strip adjacent its end and penetrating the strip at a plurality of transversely spaced points to anchor the pin in the strip, and a helical coil spring having a hook at one end penetrating said webbing strip and engaged around said pin, the opposite end of said spring being connected to said frame.

3. In a seat construction of the class described, the combination of a main frame, a seat bottom embodying a strip of webbing anchored to said frame, and means for anchoring said strip to said frame comprising a pin extending transversely of the webbing strip adjacent its end penetrating the strip at a plurality of transversely spaced points to

anchor the pin in the strip, the webbing strip having an end portion folded back to form a two-ply reinforced end portion through which said pin is passed, and a connector having means at one end engaged around said pin and its opposite end attached to said frame.

4. In a seat construction of the class described, the combination of a main frame, a seat bottom embodying a strip of webbing anchored to said frame, and means for anchoring said strip to the frame comprising a pin extending transversely of the webbing strip adjacent its end and penetrating the strip at a plurality of transversely spaced points to anchor the pin in the strip, and a helical coil spring having hooks at its opposite ends, one of the hooks being engaged around said pin to thereby connect said spring to said strip, the frame having a slot adjacent one edge for receiving the hook at the other end of said coil, and means penetrating said frame and extending transversely through said slot inside of the hook received therein for locking said hook in the slot.

5. In a seat construction of the class described, the combination of a main frame, a seat bottom having an edge portion spaced from said frame, a helical coil spring extending between said edge portion and main frame for connecting said bottom to said frame, a cushion spring seated on said bottom and extending upwardly therefrom, a tie extending between the upper portion of said cushion spring and said connecting spring for limiting expansion of the cushion spring, and a metallic link secured to one end of said connecting spring and extending laterally therefrom beyond the area of the coils thereof for receiving the adjacent end of said tie.

6. In a seat construction of the class described, the combination of a main frame, a seat bottom having an edge portion spaced from said frame, a helical coil spring extending between said edge portion and main frame for connecting said bottom to said frame, a cushion spring seated on said bottom and extending upwardly therefrom, a tie extending between the upper portion of said cushion spring and said connecting spring for limiting expansion of the cushion spring, an annular member embracing a portion of said connecting spring intermediate its outer end and the main frame and extending laterally upwardly therefrom to one side of the area of the coils of said connecting spring for receiving the adjacent end of said tie.

7. In a seat construction of the class described, the combination of a main frame, a seat bottom anchored to said main frame, means for so anchoring said seat bottom comprising a helical coil spring connected at one end to said seat bottom and provided at its opposite end with a hook, the frame having a slot in its inside face adjacent one edge for receiving said hook, means penetrating said frame and extending transversely through said slot inside of the hook received thereby for locking said hook in the slot, a cushion spring seated on said bottom and extending upwardly therefrom, and means for limiting expansion of said cushion spring comprising a tie cord secured to the upper portion of said cushion spring, and an annular member embracing the hook portion of said spring intermediate the inside face of the main frame and the adjacent coil of said connecting spring, said tie cord being connected at its lower end to said annular member substantially as described.

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