March 5, 1935. S. E. SCHAFFER 1,993,530

THEATER SEAT

Filed June 13, 1931 2 Sheets-Sheet 1

Fig. 1.

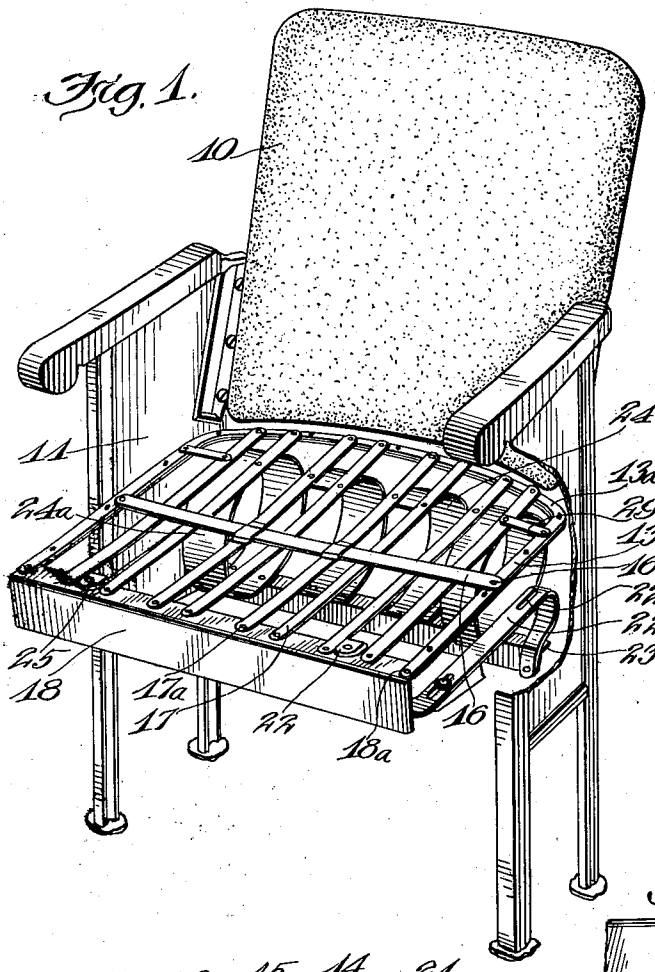


Fig. 5.

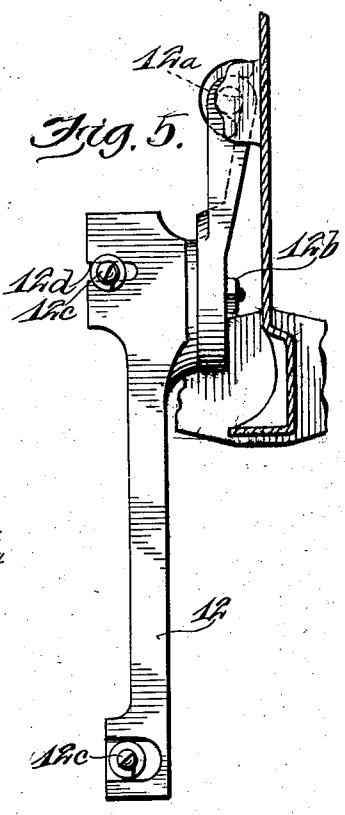


Fig. 2.

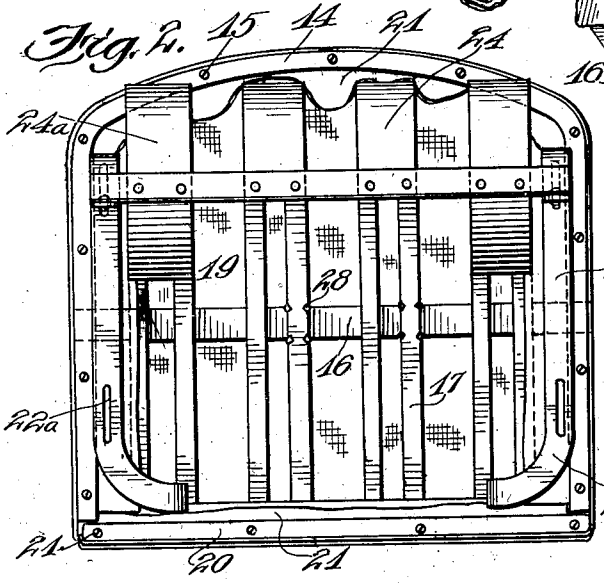
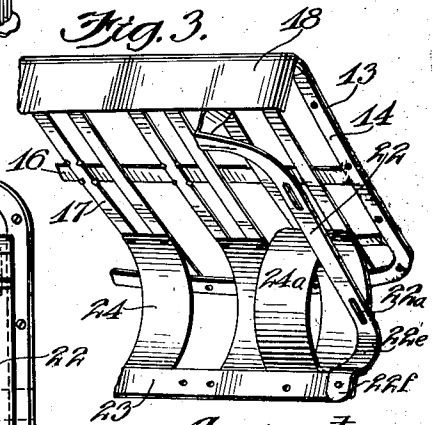


Fig. 3.



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March 5, 1935. S. E. SCHAFFER 1,993,530

THEATER SEAT

Filed June 13, 1931 2 Sheets-Sheet 2

Fig. 4.

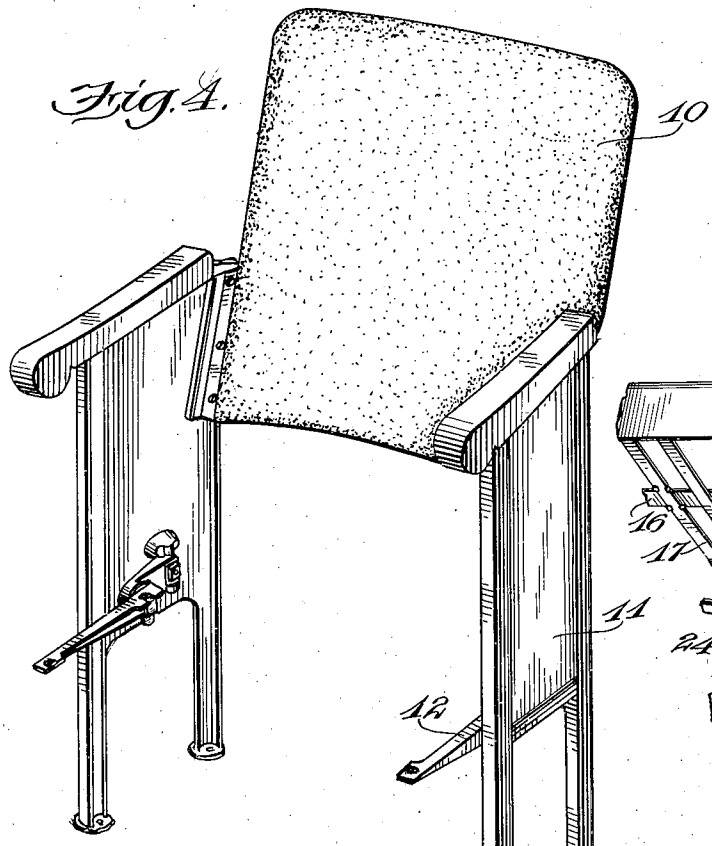


Fig. 7.

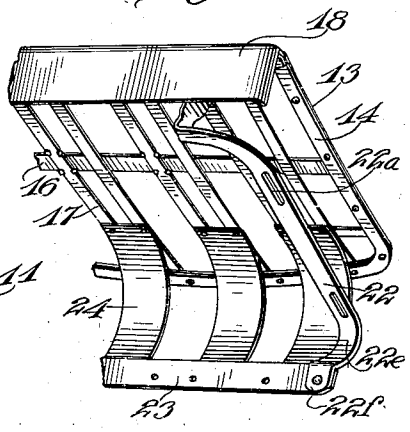
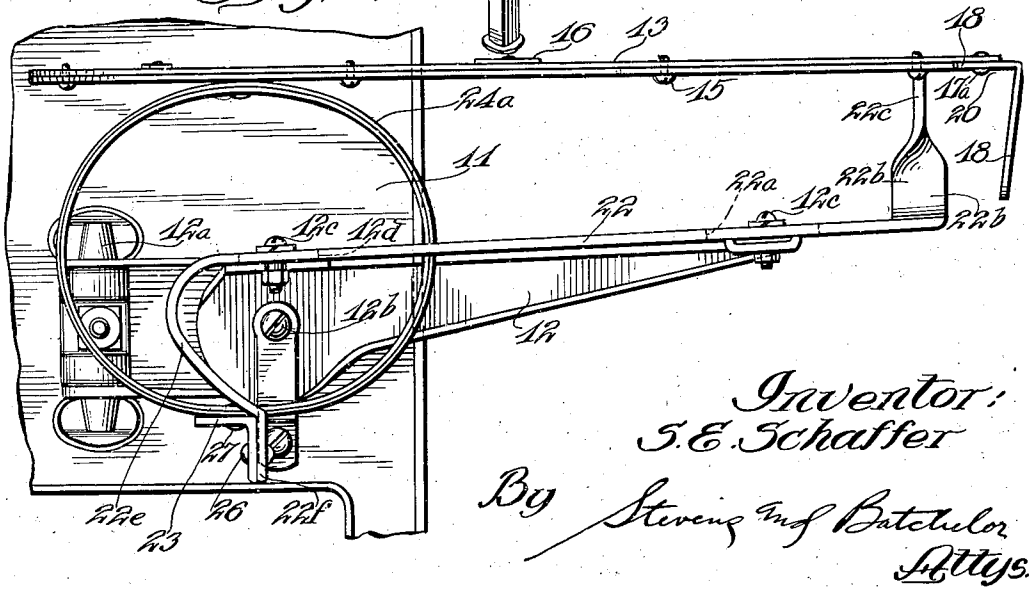


Fig. 6.



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UNITED STATES PATENT OFFICE

1,993,530

THEATER SEAT

Samuel E. Schaffer, Chicago, Ill.

Application June 13, 1931, Serial No. 544,190

5 Claims. (Cl. 155—85)

My invention relates to theater seats, and more particularly to the structural make-up thereof, my main object being to provide a seat of this kind which is thoroughly ventilated and vermin proof.

A further object of the invention is to build the novel seat with means for adapting it to the supporting element in the conventional theater chair.

A still further object of the invention is to build the novel seat with a leaf-spring suspension, and also with means to prevent its collapse upon being weighted.

A significant object of the invention is to construct the novel seat entirely of metal and without the need of the usual wood base for the seat pad.

Another object of the invention is to construct the novel seat with a double frame for the proper fastening and neat disposal of the upholstering which covers the seat pad.

An additional object of the invention is to form the same with the frontal apron which serves as a rest for the limbs of the occupant.

With the above objects in view and any others that may suggest themselves from the specification and claims to follow, a better understanding of the invention may be had by reference to the accompanying drawings, in which—

Fig. 1 is a perspective view, partly cut away, showing the novel seat installed in a typical theater chair;

Fig. 2 is a bottom plan view of the seat;

Fig. 3 is a partial perspective view thereof showing it from underneath;

Fig. 4 is a perspective view of a typical theater chair, showing the brackets which serve to support the seat;

Fig. 5 is an enlarged plan view of the right hand bracket shown in Fig. 4 to make its construction clear;

Fig. 6 is an enlarged side view of the seat and its remotely located supporting bracket; and

Fig. 7 is a partial perspective view similar to Fig. 3 and showing a modification of the seat.

Referring specifically to the drawings, I have shown particularly in Fig. 4, a typical theater chair to which the novel seat applies. While chairs of this kind are made in many designs, they all embody a back 10, sides 11, and supporting brackets 12 inside of the latter to receive the seat. These brackets are pivoted for horizontal adjustment at 12*a*, as more clearly indicated in Fig. 5, to facilitate attachment, removal, and interchange of seats, and a pivotal mounting is provided at 12*b* to accommodate the usual tilting movements of the seat between normal and raised positions thereof. Each of the brackets is adapted to receive two seat-securing bolts 12*c*, the forward one of said bolts passing through a hole through the frontal portion of the bracket and the rear bolt passing through a lateral slot 12*d* cut in the rear portion of the bracket. Thus, the frontal portions of the brackets are adjustable to the seat by being laterally swung while the rear adjustment is made by moving the bolts 12*c* laterally in the slots 12*d*.

Relative to the novel seat, it involves mainly a top frame 13 of flat steel strip material, the same being in the form of a U, so that it may function properly with a chair back of any desired curvature. In my design the curvature of the rear section 13*a* of the seat top frame is of a radius sufficiently small to permit the seat to be used with a back of any desired curvature.

The top frame 13 is duplicated underneath by lining frame 14 of similar form, screws 15 being directed from the lining frame through the top frame at intervals. The top frame receives a transverse reinforcing bar 16 by means of rivets 16*a*; and it receives a series of longitudinal filler strips 17, the ends of these being riveted as indicated at 17*a* to the rear section 13*a* and to the top 18*a* of a frontal apron 18 extending in a transverse direction. The apron and its top are of L-section, and the apron is intended to supplement the front of the seat pad 19 whereby to provide a back rest for the limbs of the occupant. Under the top 18*a* of the apron 18 is disposed a strip 20 through which screws are directed upwardly into the apron top. The pad for the novel seat may be of any conventional construction. Usually, it is covered with leather or fabric upholstering, which is drawn along the sides of the seat and folded underneath. The lining frame 14 and strip 20 in the novel seat form receiving means for the folded portions of the upholstering, as the sides and back of the same are tucked in between the frame and the lining, while the front is brought down over the apron and up behind it to pass between the apron top and the strip 20. The emerging portions or edges of the tucked upholstering are indicated at 21 in Fig. 2.

The top frame assembly of the novel seat is supported by a sub-frame consisting of lateral arms 22, a cross angle bar 23 and intermediate leaf-springs 24. The arms 22 are of sturdy flat steel stock and contain longitudinal slots 22*a* which are adapted to receive the bolts 12*c*, as indicated in Fig. 1 for the application of the arms

to the chair brackets 12. It will be understood that the slots 22*a* are made of such length as to permit the seat to fit the brackets whatever the longitudinal spacing of the bolts may be. Thus, the seat is universally applicable to all theater chair installations.

The frontal portions of the seat arms 22 take inwardly curved bends 22*b* and are then twisted at 22*c* to form top hangers 22*d* which overlie the apron top as clearly indicated in Fig. 1 and receive rivets 25 to secure them thereto, so that a firm fastening is formed between the sub-frame and the rigid apron 18. At the rear the arms 22 take downward hook bends 22*e* which terminate with lugs 22*f* applied on the forward side of the angle bar 23 and are fastened thereto by rivets 26. This fastening is at the extremities of the angle bar and between the arms 22, the angle bar receives by means of rivets 27 a lateral succession of the bowed leaf springs 24. Four of these are ordinarily employed, the outer ones 24*a* being elliptical and the inner ones semi-elliptical. These are secured at the top to the reinforcing strips 17 by rivets 28. While stout single leaves may be satisfactory to form the springs 24 and 24*a*, I prefer to use thinner double leaves for more flexibility, although this is an optional consideration.

It will be seen that the double top frame 13, 14 of the novel seat is a distinctive departure from the convention wood bottom of the past. Instead of the usual stretching of the upholstering fabric upon the wood bottom and tacking the same on, I simply pull it between the main and lining frames, and when properly stretched clamp it between the frames by means of the screws 15 and 21, so that it becomes permanently secured. Thus, in doing away with the wood seat bottom and by having the present seat structure of skeleton or open construction, the seat pad is ventilated and keeps free of vermin.

The apron has a rounded top edge in order that the upholstering material may smoothly mount it and receive no strain or wear from within. The apron recedes somewhat in a downward direction—approximately ten degrees—to give it a convenient angle for limb comfort.

The relation of the sub-frame to the top frame is important. It will be understood that the frame arms 22 are generally rigid, as they are firmly secured to the chair brackets 12. However, the hook bends 22*e* of these arms are intended to constitute check and rebound springs as against the bow springs when these are suddenly or heavily weighted. As theater seats are inclined toward the back, it may be assumed that the greater part of the occupant's weight will bear upon the bow springs. The collapse thereof will, however, be resisted by the heavier and stiffer hook springs 22*e*, so that these will take the strain and act as check or rebound elements to restore the bow springs to the position for the normally weighted seat and then to that of the unweighted seat.

The bottom angle bar 23 is not only made as an angle for greater stiffness in supporting the spring array, but is also made in this form to present a vertical frontal edge for the lugs 22*f* of the hook springs 22*e*. The position of these lugs gives the hook springs a greater free length than were these fastened to the top section of the angle bar, such free length adding to the resiliency and value of the hook springs.

In making the terminal bow springs of full elliptical form I add a factor of safety to resist tendencies to collapse the bow spring array from a sudden or excessive weight. However, all the bow springs may be made only semi-elliptical, as indicated in Fig. 7, where this design is preferred. It is advisable to provide clips 28 in places between the cross bar 16 and the longitudinal strips 17 of the seat top; also, I provide extra reinforcing strips 29 between the sides of the top frame and the outermost strips 17 in the zone of the elliptical springs 24*a* in order to guard against distortional stresses affecting the connection between these springs and the seat top.

It will be seen that the novel seat is a structure of simplicity, strength and ready adaptability to theater chair construction. It makes for a sanitary, comfortable and durable theater seat without involving any complications or expensive materials.

I claim:—

1. The combination with a theater chair having hinge brackets for the support of a seat upon spaced standards and spaced bolts engaging the brackets to secure the seat in position, of a seat having a top, bottom arms below the latter supported by said brackets and having portions depending below said brackets, and resilient means supporting the top in part from the depending portions of said arms, said arms having elongated perforations therein to receive the said bolts and thereby to secure the seat to the brackets and to make the seat adjustable in position preparatory to the fastening of the arms to the brackets by means of the bolts.

2. A theater seat comprising a pair of laterally spaced bottom arms, adapted to be supported upon and secured to standard seat brackets, a seat top spaced above the same, said arms having upwardly extending frontal extensions secured to said top and depending rearward extremities, a rigid member connecting the depending rearward extremities of said arms, and resilient spacing means between said connecting member and the seat top.

3. The structure of claim 2, said spacing means being in the form of bow springs.

4. The structure of claim 2, said connecting member comprising an angle bar with the depending rearward extremities of the arms secured to a frontal side thereof and the spacing means secured to the top side thereof.

5. The structure of claim 2, the depending rearward extremities of the arms forming hook springs above said connecting member.

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