G. H. E. VON WRANAU.

FOLDING SEAT.

APPLICATION FILED JUNE 17, 1912.

1,106,693.

Patented Aug. 11, 1914.

2 SHEETS—SHEET 1.

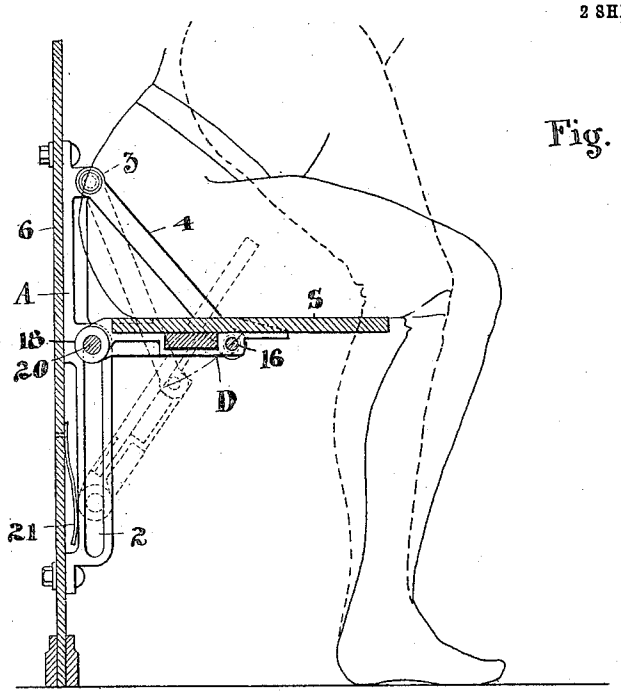


Fig. 1.

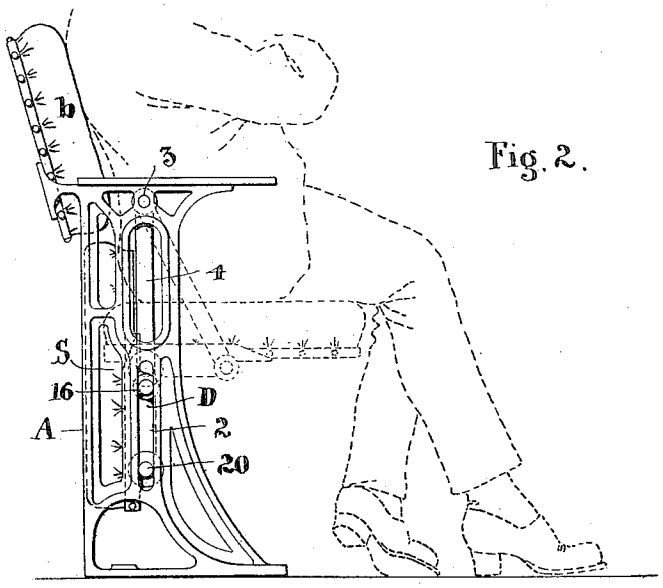


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

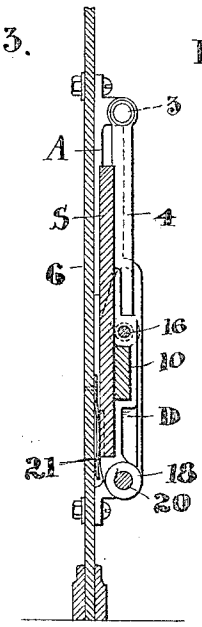


Fig. 4

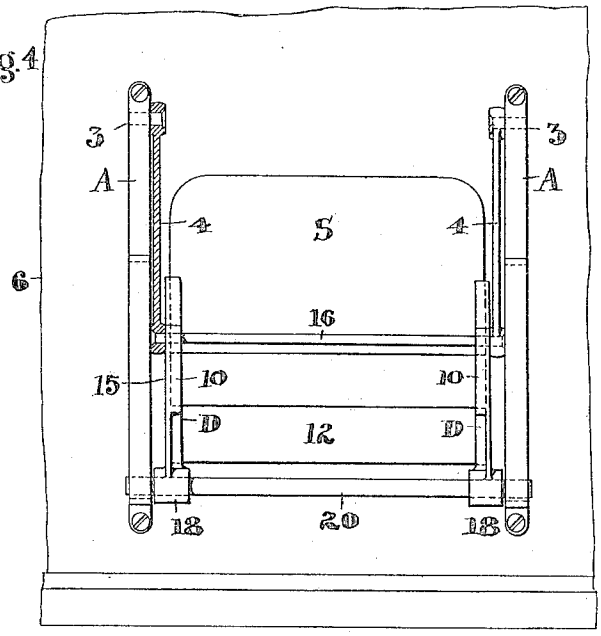


Fig. 5.

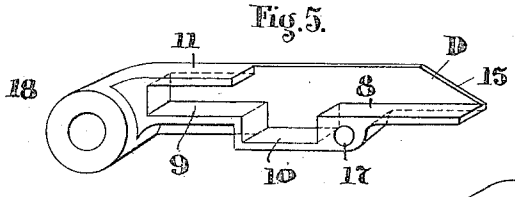
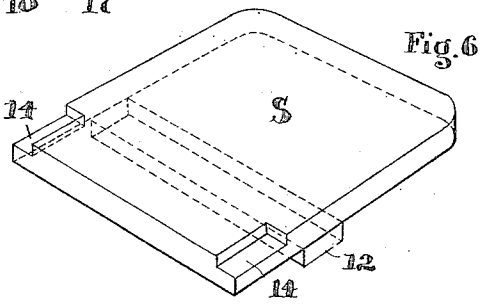


Fig. 6.



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UNITED STATES PATENT OFFICE.

GOTTLIEB HAASE EDLER VON WRANAU, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO JAMES C. WORKMAN, OF CLEVELAND, OHIO, AND ONE-THIRD TO LOUIS SEBASTIAN, OF TOLEDO, OHIO.

FOLDING SEAT.

1,106,693. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed June 17, 1912. Serial No. 704,109.

To all whom it may concern:

Be it known that I, GOTTLIEB HAASE EDLER VON WRANAU, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Folding Seats, of which the following is a specification.

This invention has reference to folding seats, and particularly the class of seats used in audience rooms and other places where, for obvious reasons, it is desirable to have the seat fold automatically when the occupant rises and leaves the seat free to be closed.

In the accompanying drawings, Figure 1 is a sectional elevation of my new and improved seat structure showing the seat in full lines as down and occupied, and in dotted lines in the act of folding. Fig. 2 is a side elevation of the seat structure with the seat folded in full lines and open in dotted lines, but the seat itself is modified as to Fig. 1 and adapted especially to opera houses and other places of popular entertainment, while the style shown in Fig. 1 is adapted to state rooms in seagoing vessels where at the best the room is very cramped. Fig. 3 is a sectional elevation of the seat structure shown in Fig. 1 as folded, and Fig. 4 is a front view of Fig. 3. Fig. 5 is a perspective view of one of the side arms supporting the seat, and Fig. 6 is a perspective view of the seat proper showing the bottom thereof.

The invention as thus shown is essentially automatic in its folding operations, and as such is especially distinguished from the large variety of folding seats found in school rooms and audience rooms but none of which possess the distinguishing characteristics of the present invention, as will presently be seen. Thus, the complete structure comprises two side frames or parts A, featured with vertical slots 2 in their lower portions and pivot holes 3 at their top from which suspensory links 4 engage the seat S at about its middle and sides. Whether the frames or supports A be constructed to fasten to a wall, as in Fig. 1, or to rest upon the floor as in Fig. 2, is immaterial since the sole function of the said parts A is to support the seat, and in the case of Fig. 2 to afford a rest for the back *b*. In Figs. 1, 3 and 4 the wall or partition 6 of the state room serves as the back for the seat as well as the immediate support of the two frames or parts A and against which the seat S is adapted to fold out of the way of the occupant of the room.

The suspensory members or links 4 are engaged with the frames A high enough to swing forward into inclined supporting position for the seat S when used and to hang vertically back out of the way when the seat is folded. The seat itself coöperates in these movements and is peculiar in this, that it rests upon two similar side arms D which are constructed to make permanent working engagement with seat S without fastening means of any kind except such as the peculiar construction of the said parts themselves afford. To these ends the said arms are each provided with a seat rest indicated by the flat surface 8 and a rearward extension of this surface upon the bottom of the open recess or slot 9 adapted to receive and confine the inner corners of the seat, and an angular recess 10 intervenes the ends of said rest surface 8 at each side as shown, while the seat itself is provided with a cross-bar 12 adapted to occupy said recess and has its inner corners provided with angular depressions 14 adapted to fit closely in the slots 9. Outer side flanges 15 on the arms D engage the edges of the seat, and it follows that when a seat is introduced to these conditions it is compelled to remain and cannot fall out nor become displaced. Obviously it will be held by cross-bar 12 from sliding forward or rearward and by the upper wall 11 of recess or slot 9 from being raised either rear or front. It follows that the seat must be originally inserted from the side of said arms when the parts are assembled. A rod 16 connects the side arms of the seat and the ends of the suspensory links 4 and is upset at its ends, preferably, to make a permanent connection.

Finally, the automatic closing of the seat is by gravity and excludes springs or other artificial means for this purpose. To these ends the suspensory point in and through the cross rod 16 and links 4 is forward of the center of gravity of the seat a sufficient distance to give the preponderance of weight to the rear thereof. Thus, in Fig. 5 it will be observed that the hole 17 for said rod or pivot is forward of recess 10 and of the

middle of said arm, and while the seat itself projects forward upon said arms more or less as shown in Fig. 1, the excess of weight notwithstanding is positively to the rear of said pivot. Hence it follows naturally when a person rises from the seat that it will at once tilt back out of the way and make clearance to leave the place without any effort or thought on the part of the person who vacates the seat. The respective arms D are accordingly counterweighted in their rear trunnion or bearings 18 by the cross rod 20 which is confined at its ends in the slots 2 and slidable up and down therein according as the seat is raised and lowered.

In the foregoing construction it is to be especially observed that in any event the seat folds flat against the wall behind, and that the rear of the seat runs down in the slots 2 while the suspensory links swing into line with said slot and fold back out of the way at the sides of the seat, the pivot 16 going down to a point just below the upper portions of said slots. To open the seat a comparatively easy pressure by the fingers inward at the top edge of the seat will swing it into position as in dotted lines, Fig. 1, but in which position it must be held until the person is seated. It is to be further observed that no nails nor screws are employed in assembling this structure, and that the seat is held absolutely fixed and rigid within side arms D without either screw or nail or kindred device. When placed in position laterally as to the arms D the rib or bar at its bottom prevents slipping out to the front or rear while the lip 11 over the slots or recesses 9 prevents the seat from being tilted out, and the rod 16 being riveted in place makes a permanent and rigid fixture of the seat. Furthermore the entire support of the seat is suspensory on the links or hangers 4, both when the seat is open and when folded, and slots 2 serve chiefly for confining the rod 2 upon which the arms of the seat are supported at their rear.

Loose play and objectionable noises in folding operations and under the rolling movements of the vessel or carrier are taken care of in a simple manner by a flat retarding and cushioning spring 21 or its equivalent, secured to the bulkhead or wall 6 at or near the bottom ends of the frame A and preferably opposite each arm D.

What I claim is:

In self-folding seats, a pair of side arms having each a flat surface on its inside for the seat to rest upon and a recess midway in said surface and a slot at the inner end thereof having a confining lip over its top parallel with said surface, a seat having a transverse rib on its bottom occupying said recess and constructed at its inner corners to enter said slots, and means binding the said arms tightly upon the seat across its middle.

In testimony whereof I affix my signature in presence of two witnesses.

GOTTLIEB HAASE EDLER VON WRANAU.

Witnesses:

R. B. MOSER,

F. C. MUSSUN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."