Nov. 14, 1950 J. M. DORTON 2,529,726

FOLDING CHAIR

Filed Aug. 23, 1946 2 Sheets-Sheet 1

FIG. 1.

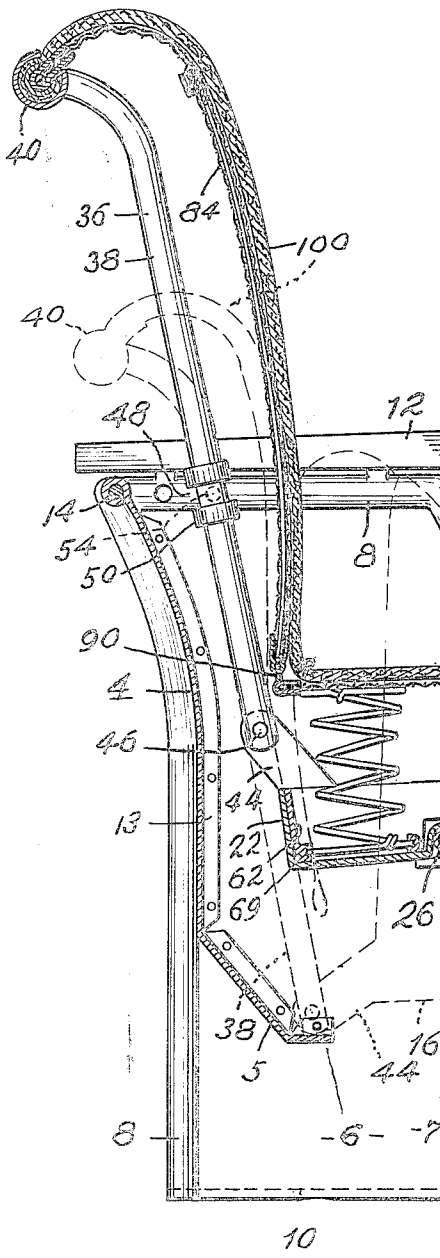
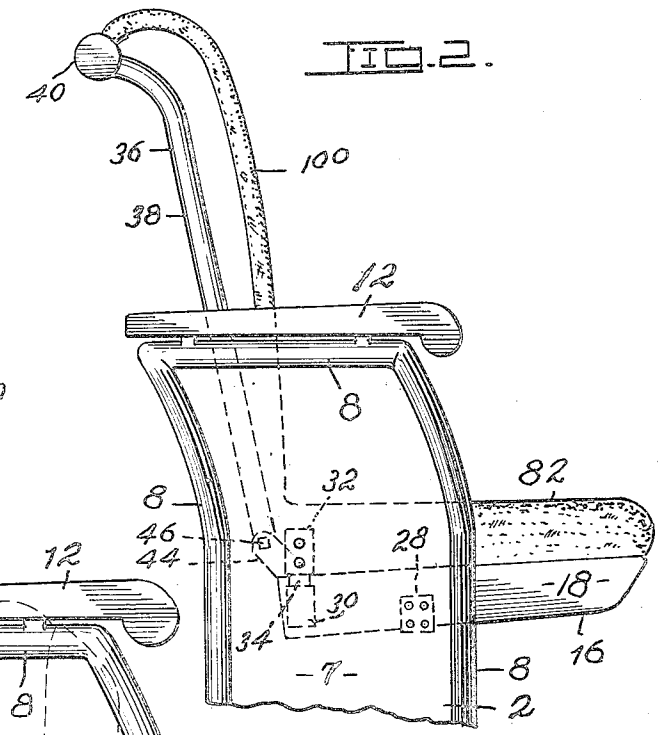
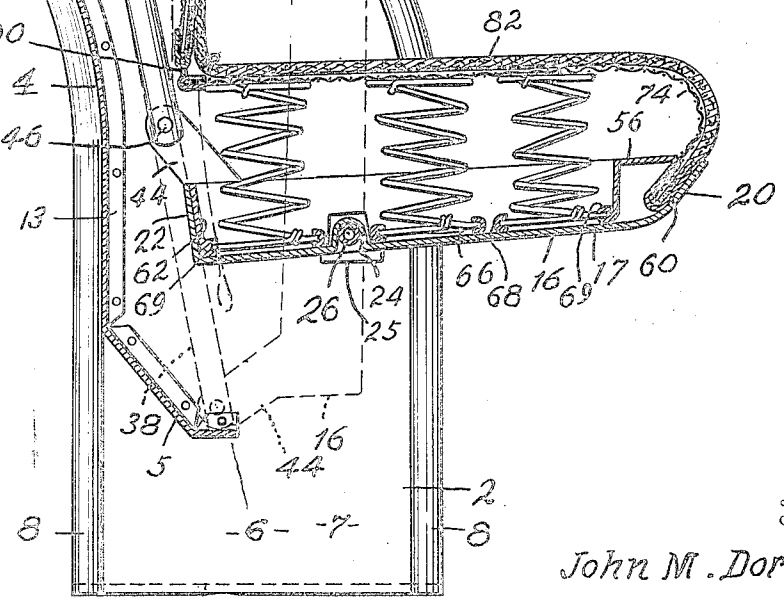


FIG. 2.





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Nov. 14, 1950 J. M. DORTON 2,529,726

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Filed Aug. 23, 1946 2 Sheets-Sheet 2

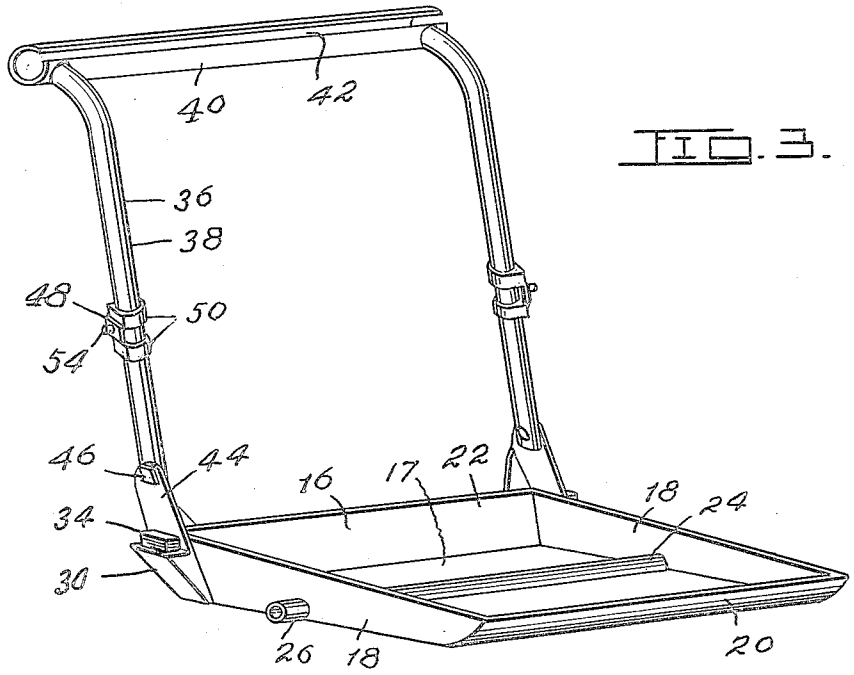


FIG. 3.

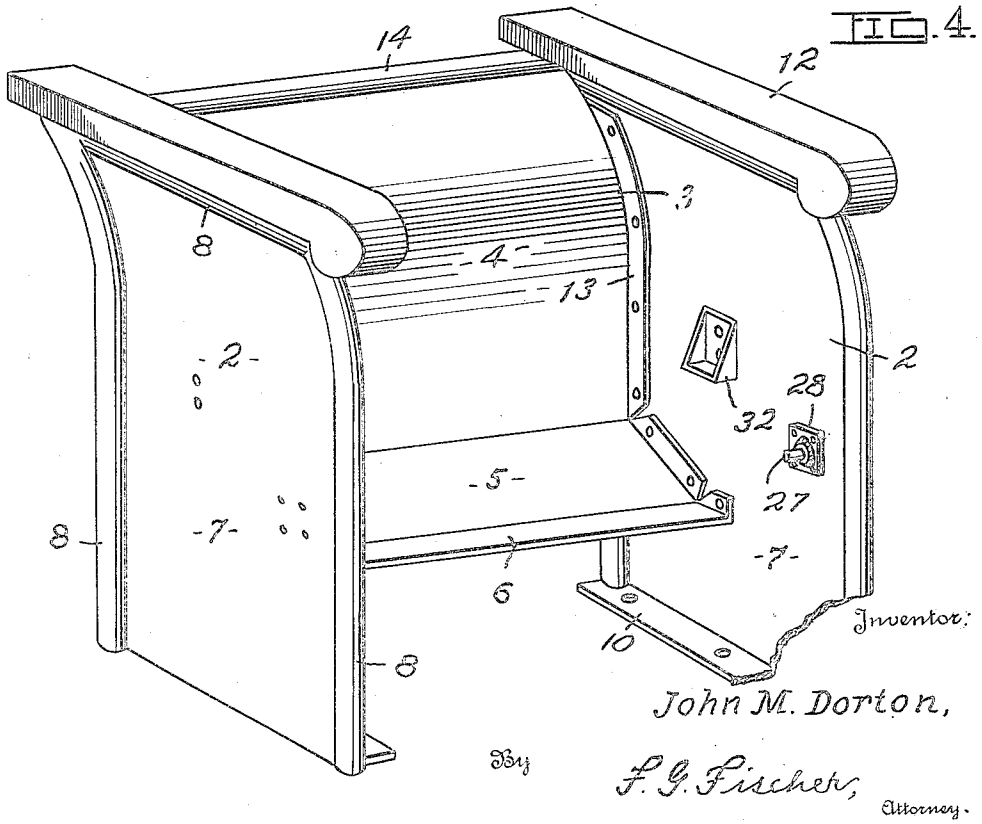


FIG. 4.

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FOLDING CHAIR

John M. Dorton, Bonner Springs, Kans.

Application August 23, 1946, Serial No. 692,432

4 Claims. (Cl. 155—84)

1

My invention relates to chairs and while it is designed more particularly for use in theaters, churches and other public institutions it can be used to advantage in railway cars, airplanes, automotive vehicles, or wherever a chair of this character may be desired.

One object of the invention is to provide a chair that may be folded into compact form so that when arranged in a plurality of rows in public buildings the seats can be folded compactly against the backs of the chairs and thus leave ample room whereby any chair in a row can be easily reached.

Another object is to provide a chair in which the seat, the back and the supporting structures are so constructed and arranged that they can be readily assembled or taken apart.

A further object is to provide a chair with resilient seat and back cushioning means which will readily adapt itself to the form of the occupant and whereby a floating support is obtained.

Other objects will hereinafter appear and in order that the invention may be fully understood, reference will now be had to the accompanying drawings, in which:

Fig. 1 is a vertical sectional view of the chair.

Fig. 2 is a broken side elevation of the chair.

Fig. 3 is a perspective view of parts of the seat and back structure of the chair.

Fig. 4 is a perspective view of the main supporting structure of the chair.

Referring in detail to the various parts of the chair structure, 2 designates a pair of standards spaced apart and united by a transverse rear member 4 consisting preferably of a sheet metal plate inclined downwardly and forwardly at its lower portion 5 which terminates in a forwardly extending ledge 6 to assist in supporting the back of the chair, as will presently appear. The transverse member 4 is curved rearwardly at its upper portion 3 to reinforce said member and cause it to conform to the rearward curvature of the upper rear portion of the standards 2.

The standards 2 constitute the main supports of the chair and each preferably consists of a sheet metal side plate 7 reinforced at its top, front and rear margins with a rod or tubular member 8. Each side plate 7 is bent inward at right angles at its lower end to provide a foot 10 whereby it may be secured to the floor (not shown) if so desired.

The top portion of each reinforcing member 8 is provided with an arm rest 12 to render it more comfortable to the occupant of the chair.

2

The arm rests 12 consist of wood or other suitable material. The side margins 13 of the rear member 4 are bent forwardly and riveted or otherwise fixed to the rear portions of the side plates 7. The upper end of the rear plate 4 is reinforced by a transverse member 14 fixed at its ends to the upper rear corners of the reinforcing members 8. From the foregoing it will be readily understood that the main supporting means of the chair, clearly shown by Fig. 4, is of substantial and durable construction. A structure of light weight, easily handled when the chair is being assembled, is also obtained as cast iron and other heavy materials have been dispensed with.

Referring now more particularly to the seat supporting structure of the chair, Figs. 1, 2 and 3, 16 designates a rectangular pan-like receptacle consisting preferably of sheet metal comprising a bottom portion 17 having two oppositely disposed upturned side flanges 18, and transverse upturned front and rear flanges 20 and 22, respectively. The bottom portion 17 is reinforced by forming its intermediate portion into a transverse semitubular portion 24 through which a tubular shaft 26 extends. The shaft 26 is held in place by one or more members 25 secured to the bottom of the receptacle 16 in any approved manner. The ends of the shaft 26 project laterally beyond the side flanges 18 of the receptacle 16 and are operably mounted upon stub shafts 27 projecting from brackets 28 bolted or otherwise removably secured to the side plates 7 of the standards 2. The semitubular portion 24 is so disposed with reference to the front and rear flanges 20 and 22 that the receptacle 16 will remain in the lowered or raised position disclosed by full and dotted lines, respectively, Fig. 1, until manually moved from either position. When the receptacle 16 is swung downward to the full line position it is checked by stops 30 and abutments 32 secured to the rear portions of the side flanges 18 and the standards 2, respectively. The stops 30 are provided with rubber or equivalent bumpers 34 to silence any noise that otherwise would likely occur on contacting with the abutments 32.

Referring now more particularly to the back frame of the chair, Figs. 1, 2 and 3, 36 designates a skeleton frame of approximately inverted U-form and comprising a pair of spaced arms 38 and a transverse tubular member 40, which latter is fixed to the upper ends of the former. The arms 38 are inclined rearwardly towards their upper ends and their lower ends are operably and

removably connected to a pair of ears 44, as by pivots 46. The ears 44 are fixed to the rear ends of the side flanges 18 of the receptacle 16 so that the frame 36 will move up and down with the rear end of the receptacle 16 when the latter is manually operated. The frame 36 is directed in its up and down movements by guide members 48 provided with sleeves 50 through which the arms 38 slide. The guide members 48 are operably connected to the upper rear portions of the standards 2 by suitable means such as pivots 54 to permit the guide members to rock and thus prevent binding of the arms 38 therein during the upward and downward movements. When the receptacle 16 is swung upward to the dotted line position, Fig. 1, the skeleton frame 36 moves downward with the rear end of the receptacle until the lower ends of the arms 38 rest upon and are supported by the ledge 6.

Referring now more particularly to the seat proper of the chair, 56—58 designate a frame removably arranged in the receptacle 16 and provided with cushioning means 64—74 and 82. The seat cushioning means 74 is connected at its rear end by hinges 90, to the lower end of the back structure cushioning means 84—100 curved upwardly and rearwardly at its upper portion and secured to the transverse tubular member 40 of the back structure in any approved manner.

When the seat structure is swung downward to the full line position, Fig. 1, the weight of the seat and back structures is carried by the shaft 26 and stub shafts 27, but when the seat structure is swung up to the dotted line position the back structure moves downward until the arms 38 rest upon the ledge 6, as disclosed by dotted lines, Fig. 1. As the seat structure is raised or lowered its rear portion describes an arc which can be readily followed by the lower end of the arms 38, due to the swivel connections of the guide members 48 to the upper portions of the standards 2.

In the event that it becomes necessary to repair the seat cushioning means it may be readily removed to facilitate such repairs by lifting it from the receptacle 16. The back of the chair can also be removed by disconnecting the arms 38 from the ears 44 and slipping the arms upward through the sleeves 50.

By removably connecting different parts of the chair as above stated it is apparent that they can be quickly assembled or disassembled for repairs, storage or shipment in compact form.

From the foregoing description taken in connection with the accompanying drawings it is apparent that I have provided a chair possessing the advantages above pointed out, and while specific embodiments of the invention have been described in detail, it is understood that modifications in the form and arrangement of parts may be made within the scope of the invention as claimed.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. A chair comprising a pair of spaced standards, a sheet metal member uniting the standards and provided at its bottom portion with a supporting element, a seat structure extending between the standards and operably connected thereto intermediate its front and rear ends and adapted to be swung upward or downward, and a cushioned back structure operably connected to the standards and the rear portion of the seat structure adapted to move downward with the rear portion of the seat structure and rest upon the ledge when the front end of the seat structure is swung upward.

2. A chair comprising a pair of spaced standards, a seat structure swingably mounted intermediate its front and rear ends, respectively, on said standards to permit the rear end of the seat structure to swing in reverse directions to the front end when the latter is swung upward or downward, a back structure including a pair of arms pivotally connected at their lower portions to the rear part of the seat structure to be operated thereby when the seat structure is swung upward or downward, and guide means operably mounted on the standards and through which the arms freely extend.

3. A chair comprising a pair of spaced standards, a seat structure swingably mounted intermediate its front and rear ends, respectively, on said standards to permit the rear end of the seat structure to swing in reverse directions to the front end when the latter is swung upward or downward, a back structure including a pair of arms pivotally connected at their lower portions to the rear part of the seat structure to be operated thereby when the seat structure is swung upward or downward, and sleeves pivotally mounted on the standards and through which the arms freely extend.

4. A chair comprising supporting means, a seat structure swingably mounted intermediate its front and rear ends, respectively, on said supporting means to permit the rear end of the seat structure to swing in reverse directions to the front end when the latter is swung upward or downward, a back structure including a pair of arms pivotally connected at their lower portions to the rear part of the seat structure to be operated thereby when the seat structure is swung upward or downward, guide means mounted on the supporting means and through which the arms freely extend, and a transverse rear member secured to the supporting means and provided with a ledge extending forwardly beneath the arms to limit the downward movement of the latter.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
820,344	Brierley	May 8, 1906
1,048,306	Greilick	Dec. 24, 1912
1,382,084	Himes	June 21, 1921
1,677,434	Dorton	July 17, 1928
1,729,560	Stubnitz	Sept. 24, 1929
1,804,722	Van Hove	May 12, 1931
1,885,109	Burkart	Nov. 1, 1932

FOREIGN PATENTS

Number	Country	Date
214,099	Great Britain	of 1924