H. C. NOLAN.

FOLDING DEVICE FOR THEATER CHAIRS.

APPLICATION FILED SEPT. 27, 1915.

1,210,518. Patented Jan. 2, 1917.

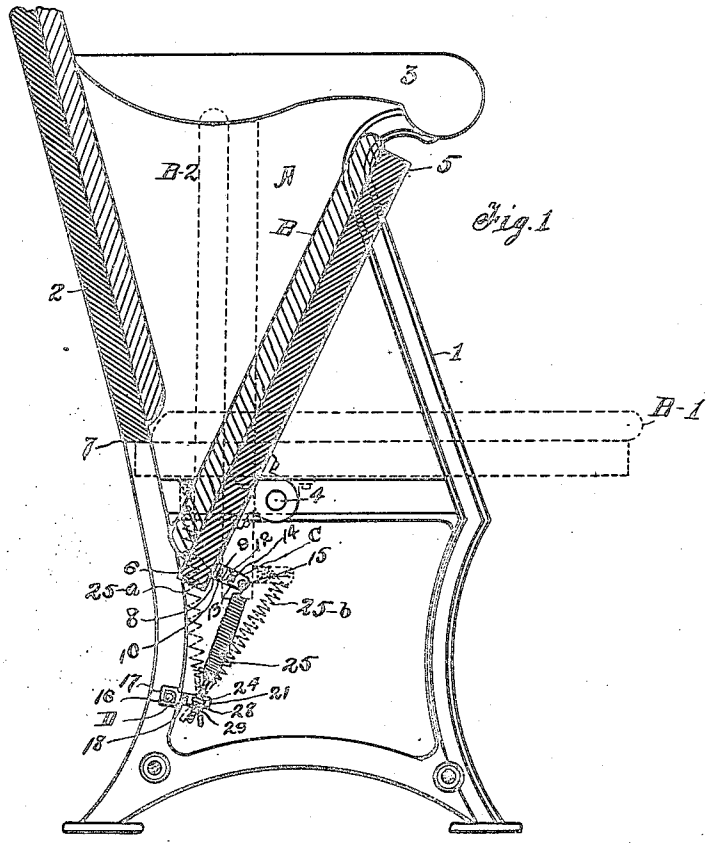


Fig. 1

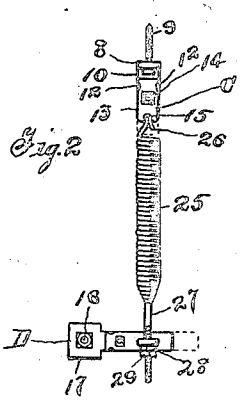


Fig. 2

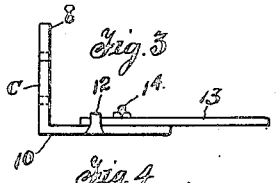


Fig. 3

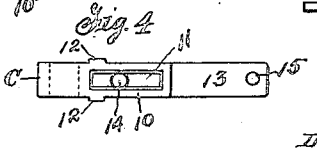


Fig. 4

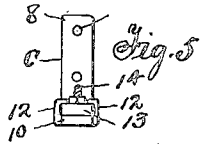


Fig. 5

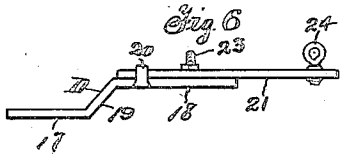


Fig. 6

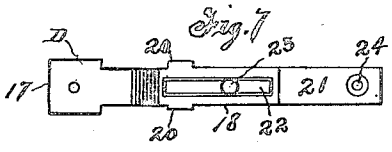


Fig. 7

Witnesses

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UNITED STATES PATENT OFFICE.

HERBERT CLAYTON NOLAN, OF WINNIPEG, MANITOBA, CANADA.

FOLDING DEVICE FOR THEATER-CHAIRS.

1,210,518. Specification of Letters Patent. Patented Jan. 2, 1917.

Application filed September 27, 1915. Serial No. 52,882.

To all whom it may concern:

Be it known that I, HERBERT CLAYTON NOLAN, citizen of the United States of America, residing at the city of Winnipeg, in the Province of Manitoba, in the Dominion of Canada, have invented certain new and useful Improvements in Folding Devices for Theater-Chairs and the like, of which the following is a specification.

My invention relates particularly to devices for folding up the seats of chairs in theaters, churches and places of public assembly where economy of space is desirable and the safety of the public of paramount importance.

The object of the invention is to provide a device of this character both simple and inexpensive and which may be easily attached to chairs of existing models to cause the seat of the same to rise up to an unobtrusive position when vacated, thus leaving an unobstructed passage between the rows of seats.

A further object of the invention is to provide means which while effectually folding the seat in an upward direction will at the same time prevent the slamming of the seat against the back of the chair, as is usually attendant upon this operation.

I accomplish these objects by the means hereinafter fully described in the specification and particularly pointed out in the appended claims, reference also being had to the accompanying drawings which form a part hereof, wherein—

Figure 1 is a sectional view through the center of a theater chair showing my device connected therewith. Fig. 2 is an elevation of the device apart from its connection with the chair. Fig. 3 is an edge view of the clip by which the device is connected to the seat of the chair. Fig. 4 is a view of the rear side of the same clip. Fig. 5 is an end view of the same clip. Fig. 6 is an edge view of the clip by means of which the device is secured to the leg of the chair, and Fig. 7 is a bottom view of the latter clip.

Similar characters of reference indicate similar parts throughout the different views.

Referring to these A indicates a theater chair of any preferred design having a frame 1, a back 2 rigidly secured to the frame, arms 3 and a seat B pivotally connected to the frame at the points 4 on each side.

The seat B is mounted in lever style the front end 5 representing the long arm of the lever, the pivot 4 the fulcrum and the rear end 6 the short arm, the latter passing under the lower end 7 of the back 2 which thus represents the load, the weight of the occupant of the seat representing the power and being opposed thereto. It will be noted that this describes the ordinary theater chair, the seat being adapted to be raised by hand when unoccupied.

The folding means includes an attachment C comprising a portion 8 which is secured to the under side of the part 6 of the chair seat preferably by wood screws 9, a depending portion 10 having a slot 11 therethrough and clips 12 at each side which are turned up and over in the manner shown to receive in sliding relation a portion 13 having an aperture for a bolt 14 by which it is secured to the portion 10 of the attachment and a further aperture 15 adjacent the end thereof.

An attachment D is rigidly secured to the leg of the chair below the seat preferably by a bolt 16 which passes through the leg and the portion 17 of the attachment, the portions 17 and 18 of the attachment being offset from each other as at 19 in Fig. 6 to bring the portion 18 out to a position to properly function. The part 18 is provided with clips 20 turned up and over in a manner similar to those 12 previously described in relation to the attachment C, to receive the part 21 in sliding relation thereto, and is further provided with a slot 22 therethrough to receive a bolt 23 by which the parts 18 and 21 are secured together. The part 21 is provided with a swivel eye 24 extending out from the side thereof for a purpose hereinafter set out.

A coiled spring 25 is preferably provided with a hook 26 at one end which may be passed through the aperture 15 in the attachment C to secure it thereto, and a bolt 27 at the opposite end to pass through the swivel eye 24 on the attachment, D, the bolt 27 being screw threaded to receive the nuts 28 and 29 the latter acting as a jam nut. Thus the spring 25 extends from the attachment C on the rear end 6 of the seat to the attachment D on the leg of the chair, to each of which it is secured, and each of the said attachments is adjustable as to its length by means of its slidable portion 13 or 21 as the case may be, while the tension of the spring 25 is adjustable by movement of the nuts 28 and 29 on the bolt 27.

Owing to its pivotal mounting the front end 5 of the chair seat, as is clearly apparent, may be positioned horizontally as indicated by the dotted line B^1, to be occupied, or it may be made to describe an upward and rearward circle till it comes into contact with the back 2, the rear end 6 at the same time describing a similar but smaller downward circle and with it the attachment C.

The spring 25 is of the tension variety and its force is exerted in a direct line running through the swivel eye 24, the aperture 15 in the attachment C and the center of the pivot 4. Thus when the seat is in the position indicated as B, and the three points mentioned are in line, the spring is at its lowest degree of tension, which should in any case be sufficient to maintain the seat in the position B which as previously mentioned may be arranged by movement of the nuts 28 and 29 on the bolt 27. If the seat be pushed down to the horizontal position indicated as B^1 the upward circular movement of the attachment C will carry the spring out rearwardly from the direct line of force to the position indicated by the dotted lines 25^a, and place it under increased tension. Should the seat be now released the power of the spring will be exerted to bring the aperture 15 in the attachment C again into line with points 24 in the part 2 and the center of the pivot 4, but owing to the momentum acquired by the seat during this movement, it will carry past the desired point to the approximate position indicated by the dotted lines B^2, the spring being thus carried to the approximate position indicated by the dotted lines 25^b and under a constant increase of tension after passing the direct line of force. This increase of tension will operate to bring the seat back to the position B where it will ultimately come to rest.

The position shown as B in Fig. 1 is a desirable one for the seat when not in use as it is all within the lines of the arms and legs of the chair, and therefore does not encroach upon the passage between the chairs, but this position is not arbitrary and the adjustability of the attachments C and D is provided so that changes of the folded position within reasonable limits may be secured. Thus if the attachment C were lengthened as provided for, the seat would stand when raised at a less degree of inclination from the horizontal, and again if clip D were lengthened the seat would stand at a greater inclination from the horizontal. The value of these adjustments will readily occur to those familiar with the art.

From the foregoing description it will be seen that by securing the spring in the peculiar manner shown it first operates to maintain the seat in raised position, then, under the increased tension imparted to it by a downward movement of the seat, it operates to fold it up, and next it operates to check the momentum of the seat due to its folding movement, and thus prevents slamming.

Having thus fully described my said invention what I claim is:—

1. A chair having a back, a frame and a seat pivoted to the frame to fold against the back, a clip secured to the seat at the rear of its pivotal point, said clip having a portion adjustable as to the length of its projection below the seat, a second clip secured to the frame below the seat, and a spring secured to the adjustable portion of the first clip and having adjustable connection with the second clip whereby its tension may be regulated, the force of the spring being exerted to maintain the seat normally elevated at an angle above the horizontal and movement of the seat in either direction therefrom serving to increase the energy of the spring to return the seat to normal position.

2. A chair having a back, a seat pivoted to the frame to fold against the back, a clip secured to the seat at the rear of its pivotal point and projecting therebelow, a second clip secured to the frame below the seat and adjustable as to its projection therefrom, a spring extending between the clips on the seat and frame, and means to regulate the tension of the spring.

3. A chair having a back, a frame, a seat pivoted to fold against the back, a clip secured to the seat at the rear of its pivotal point and having a portion adjustable as to its projection below the seat, a second clip secured to the frame below the seat and having a portion adjustable as to its projection from the frame, and a spring secured to the first clip and having adjustable connection with the second clip whereby its tension may be regulated.

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

HERBERT CLAYTON NOLAN.

Witnesses:

G. S. VAN HALLEN,

W. G. CONKLIN.