

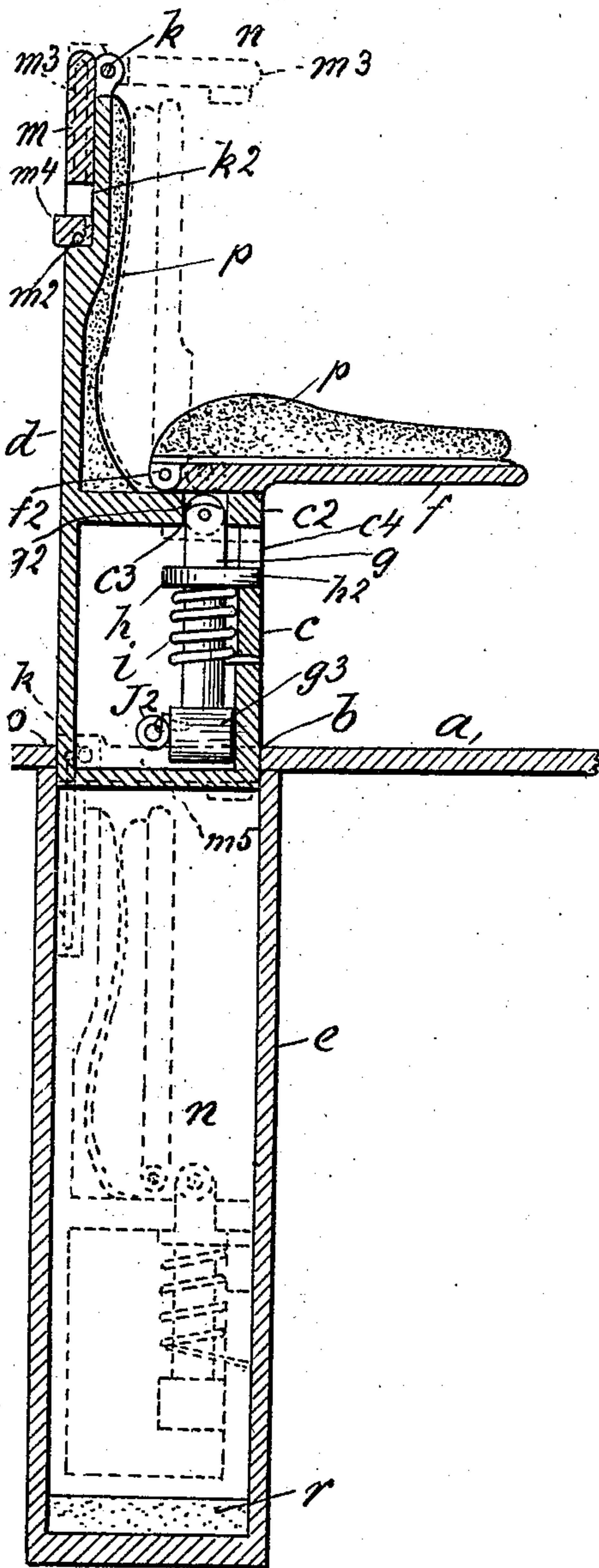
No. 842,660.

PATENTED JAN. 29, 1907.

F. HARVEY.  
DISAPPEARING THEATER CHAIR.

APPLICATION FILED JULY 28, 1906.

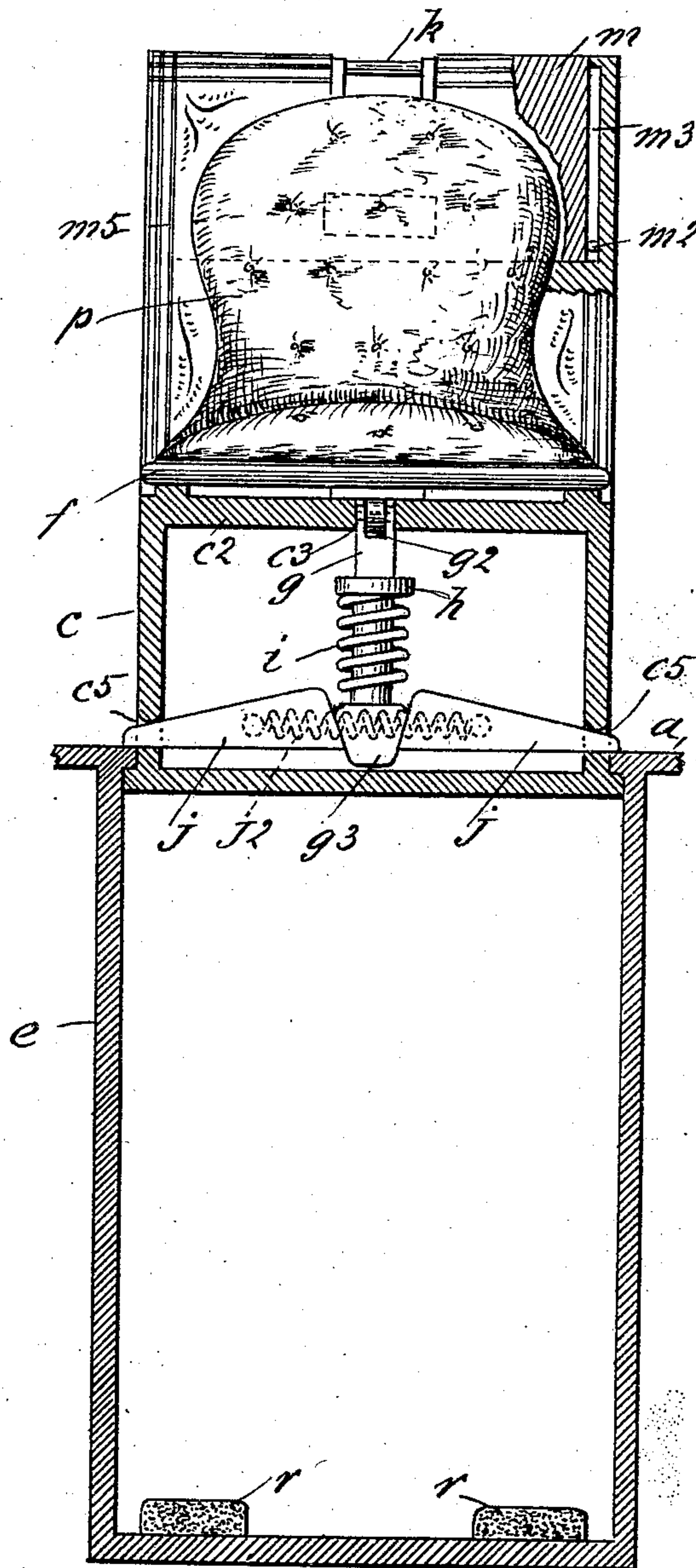
Fig: 1.



WITNESSES

Edgar Mayer  
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Fig: 2,



INVENTOR

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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

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## DISAPPEARING THEATER-CHAIR.

No. 842,660.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed July 28, 1906. Serial No. 328,249.

*To all whom it may concern:*

Be it known that I, FREDERICK HARVEY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Disappearing Theater-Chairs, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same..

The object of this invention is to provide theaters, opera-houses, and similar places with seats or chairs which will disappear beneath the floor when the people sitting thereon rise from their seats, and thus leave a smooth floor-surface to facilitate the egress from the theater, opera-house, or similar place in case of fire.

The invention consists in forming the seats or chairs used in places of the class specified in such manner that when desired for use they are raised and supported above the floor and remain in this position as long as they are occupied; but as soon as the parties sitting thereon rise from their seats the said seats or chairs automatically disappear beneath the floor, and the opening through which they disappear is closed by a member connected with the seat or chair.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a sectional side view showing a seat or chair constructed according to my invention and showing the method of its operation, and Fig. 2 a sectional front view thereof.

In the drawings forming part of this specification I have indicated at *a* the floor of a theater, opera-house, or similar place, and in the practice of my invention I form therein at each point where a chair is placed an opening *b*, through which the chairs are movable.

My improved chair comprises a bottom box-shaped member *c*, having a back *d*, and beneath the opening *b* in the floor *a* is placed a casing, frame, or other receiver *e*, adapted to receive the chair when it sinks beneath the floor.

The bottom box-shaped portion *c* of the chair is provided with a horizontal top mem-

ber *c*<sup>2</sup>, to which the seat member *f* of the chair is hinged, as shown at *f*<sup>2</sup>, and formed in the top part *c*<sup>2</sup> of the box-shaped member *c* and forwardly of the hinge of the seat member *f* is an opening *c*<sup>3</sup>, beneath which is placed a vertically-movable plunger *g*, adapted to pass through said opening and the upper end of which normally fits therein. The upper end of the plunger *g* is provided in the form of construction shown with an antifriction-roller *g*<sup>2</sup>, and secured thereto is a collar *h*, having a forwardly-projecting pin *h*<sup>2</sup>, which passes through a vertically-arranged slot *c*<sup>4</sup> in the front wall of the box-shaped casing *c*, and below the collar *h* is placed a strong spiral spring *i*, through which said plunger *g* passes, and said spring is secured in the form of construction shown to the front wall of the box-shaped casing *c* and normally serves to hold the plunger in a raised position.

The lower end of the plunger *g* is provided with a wedge-shaped head *g*<sup>3</sup>, and mounted on the opposite sides thereof are laterally-movable wedge-shaped chair-supporting devices *j*, to which are secured, on the inner side thereof, a contractile spring *j*<sup>2</sup>, which normally serves to draw said wedge-shaped chair-supporting devices together, and the inner ends of said wedge-shaped chair-supporting devices *j* are inclined inwardly and downwardly, while the outer narrower ends thereof pass through openings *c*<sup>5</sup> in the opposite sides of the box-shaped casing *c*.

The back *d* of the chair in the form of construction shown is thickened and provided at the top thereof and centrally thereof with a handle *k*, by which it may be raised into the position shown in Figs. 1 and 2, and said back is provided in the top portion thereof with a transverse recess *k*<sup>2</sup>, in which is placed a vertically-movable transverse member *m*, having opposite side pins *m*<sup>2</sup>, adapted to move in vertical grooves *m*<sup>3</sup>, formed in the end walls of the recess *k*<sup>2</sup>, and the bottom part of the member *m* is provided with a thickened or projecting portion *m*<sup>4</sup>, above which is a transverse opening *m*<sup>5</sup>.

The member *m*<sup>3</sup> consists of a plate or board set into the back part of the top portion of the back *d* of the chair, and the normal position of the chair when not in use is that shown in dotted lines at *n* in Fig. 1, in which it rests in the casing or receiver *e* be-



neath the floor. In this position of the chair the opening *b* in the floor is closed by the plate or board *m*, which is swung into the position shown in dotted lines at *m*<sup>5</sup>, and in this position of the parts the handle *k* of the chair may be reached, and also in this position of the parts the seat member *f* of the chair is folded up, as shown in dotted lines in Fig. 1, and when the chair is desired for use the handle *k* is grasped and the chair is raised above the floor, as indicated in Figs. 1 and 2, and while held in this position the seat member *f* is also lowered, as shown in full lines in Fig. 1, and the party desiring to use the chair sits thereon and the chair is firmly supported above the floor as long as the seat member *f* is occupied or pressure is applied thereto. When the party sitting on the seat member *f* rises, the spring *i* forces the plunger *g* upwardly and folds the seat member *f* upwardly into the position shown in dotted lines in Fig. 1, the spring *j*<sup>2</sup> draws the supports *j* inwardly, and the chair drops into the box, casing, or receiver *e*, and in this operation the thickened part *m*<sup>4</sup> at the bottom of the plate *m* also strikes the floor at *o* in Fig. 1 and is raised and folded forwardly into the position shown in dotted lines at *m*<sup>5</sup> in Fig. 5 and closes the opening *b* in the floor. It will be understood that when the chair is raised above the floor for use the member *m*<sup>5</sup> is folded backwardly and drops into the position shown in full lines in Fig. 1.

In the drawings forming part of this application the back *d* and seat member *f* of the chair are upholstered, as shown at *p*, and this necessitates the hinging of the seat member *f* at *f*<sup>2</sup> farther forward than would otherwise be necessary; but it will be understood that this upholstering of the back and seat member of the chair is not an essential feature.

The frame, casing, or receiver *e* is preferably provided in the bottom thereof with cushions *r*, on which the chair strikes when it drops through the floor, and said cushions may be formed in any desired manner.

By means of this construction it will be seen that a theater, opera-house, or other public building may be provided with chairs which in case of necessity are lowered beneath the floor, so as to permit an audience to move freely over the floor in an effort to escape from the building, and while I have shown and described a specific means for accomplishing this result my invention is not limited thereto, and I reserve the right to make all such alterations in the construction described as fairly come within the scope of the invention.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A chair for theaters adapted to disappear beneath the floor, above which it is placed when not in use, said floor being provided with an opening, and said chair being provided with a hinged seat member adapted to be folded vertically when not in use and to be lowered into a horizontal position when in use, the back of the chair being provided with means for closing the opening in the floor when the chair disappears therethrough and the bottom portion of the chair being provided with devices which automatically operate to hold the chair above the floor when the seat member is lowered for use, and which automatically operate to release the chair and allow it to drop through the floor when the seat member is raised.

2. A theater-chair adapted to pass through an opening in the floor, above which it is placed, said chair being composed of a base member and a back member, and being provided with a hinged seat member adapted to be folded into a vertical position and to be lowered into a horizontal position for use, and devices operated by the seat member when lowered for use to hold the chair above the floor and operating when the seat member is raised to allow the chair to pass through the floor, the back of the chair being also provided with automatic devices for closing the opening in the floor when the chair passes therethrough.

3. A chair for theaters and similar structures adapted to disappear beneath the floor, above which it is placed when not in use, said floor being provided with an opening beneath which is a receiver for said chair, said chair being provided with a hinged seat member adapted to be folded vertically when not in use and to be lowered into a horizontal position when in use, and devices operated by pressure applied on the seat member to hold the chair above the floor and automatically released to permit the chair to drop through the floor when the pressure is relieved from the said member, the back of the chair being also provided with a pivoted plate member automatically operated when the chair passes beneath the floor to close the opening in the floor.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 27th day of July, 1906.

FREDERICK HARVEY.

Witnesses:

F. A. STEWART,  
C. J. KLEIN.