

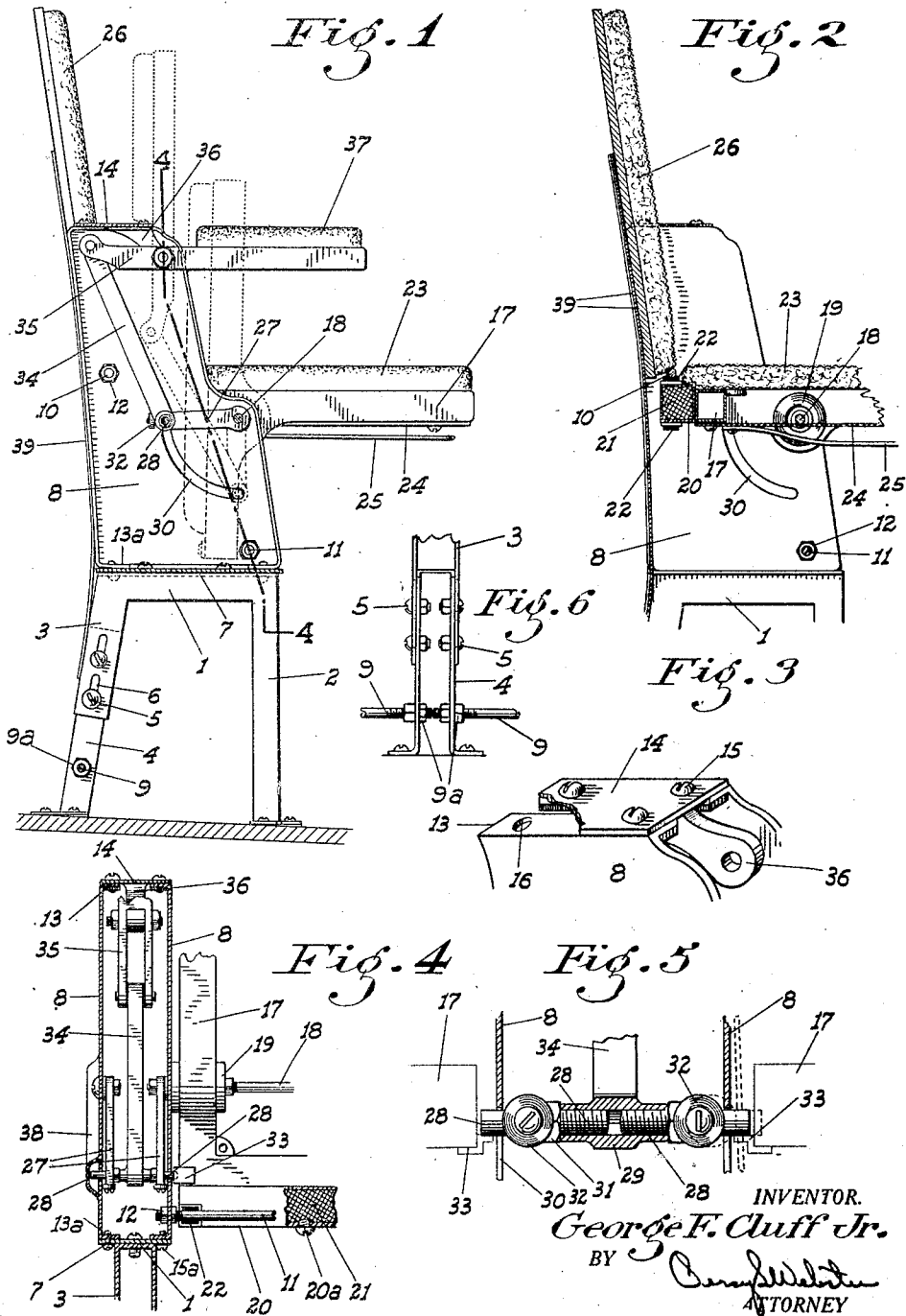
G. F. CLUFF, Jr.

CHAIR.

APPLICATION FILED MAR. 15, 1920.

1,364,181.

Patented Jan. 4, 1921.



UNITED STATES PATENT OFFICE.

GEORGE F. CLUFF, JR., OF SACRAMENTO, CALIFORNIA.

CHAIR.

1,364,181.

Specification of Letters Patent.

Patented Jan. 4, 1921.

Application filed March 15, 1920. Serial No. 365,739.

To all whom it may concern:

Be it known that I, GEORGE F. CLUFF, JR., a citizen of the United States, residing at 2316 N street, Sacramento, county of Sacramento, State of California, have invented certain new and useful Improvements in Chairs; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to chairs and particularly to that type commonly used in theaters, auditoriums, and public gathering places of like character, being intended to show certain features of improvements over the type of chair shown in my Letters Patent No. 1,231,129, dated June 26th, 1917, and No. 1,291,413, dated January 14th, 1919.

The principal object of the present invention is to so construct the framework of the chairs and coacting mechanism between any two chairs of the type shown in the above mentioned patents, that with the same stock design of chair, any reasonable degree of curvature in the arrangement of a row of chairs may be had without altering in any way the fundamental construction of the chairs to suit different conditions, or they may equally well be placed in a straight line.

By incorporating the improved features in my chairs, a quantity of the same of a single standard design may be sold for installation in a theater or elsewhere, without it being necessary for the buyer to specify the degree of curvature which some of the rows of chairs will follow.

Of course it will be evident that a somewhat different construction of chair standard will have to be used for the right and left hand end or aisle chair since there will naturally be no chairs beyond the ends to coact therewith, and consequently the outside frames must cover, for the sake of neatness of appearance, whatever mechanism ordinarily protrudes therefrom.

A further object is to provide a means to enable the chairs to be secured to floors having different degrees of slope.

Another object of the invention is to produce a simple and inexpensive device, and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of

such structure and relative arrangement of parts as will fully appear in the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of one of my improved chairs, with one of the upper frame-plates removed.

Fig. 2 is a fragmentary sectional view substantially central of the chair.

Fig. 3 is a fragmentary perspective plan of the upper part of the frames of two adjacent chairs, showing a chair-arm hanger, adjustably mounted relative to the frames.

Fig. 4 is a fragmentary section taken on a line 4—4 of Fig. 1, showing the seat and arm raised.

Fig. 5 is an enlarged fragmentary sectional view showing the adjustable chair-arm lift-pins.

Fig. 6 is a fragmentary front view of a rear chair standard leg, showing the construction to permit vertical adjustment.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 represents chair standards preferably channel shaped in cross section of pressed steel; having front legs 2 fixed to the floor and rear legs 3 terminating short thereof, in which rear legs slide the extensions 4, said extensions being fixed to the floor. The extensions are held to the legs 3 and adjustable therewith in a vertical direction by means of bolts 5 fixed to the extensions and slidable in vertical slots 6 in the legs 3. By this means, the vertical positioning of a chair may be adjusted for varying slopes of floor.

One of such standards is between each seat, and so forms a common support for the adjacent ends of any two seats. A plate 7 is fixed on top of each standard and projects over the sides thereof, on which plate is mounted a pair of spaced and vertical seat frames 8.

These frames are both adjustable on the plate 7 for angular movement in the transverse plane of the chair-rows.

A rod 9 extends between each pair of rear lower leg-extensions, the ends being threaded, and having lock nuts 9^a at each end on both sides of each wall of the leg member, so that the distance between the standards, particularly at the rear, may be altered for a purpose as will appear; and serve as a brace,

and also as a foot rest for the person in the chair behind.

Between corresponding frames 8 on adjacent seat standards, extend rods 10 and 11, rigidly secured to the frames to hold the same in permanent spaced relation, by means of locknuts 12.

The upper and lower ends of adjacent frames have horizontal flanges 13 and 13^a respectively projecting toward each other, there being a plate 14 over these upper flanges and the space therebetween, being adjustably secured thereto by means of bolts 15 passing through transverse slots 16 in the flanges, the nuts of said bolts being under the flanges. This plate therefore serves as a binder to hold the upper ends of the frames firmly together, but allows the frames to be adjusted relative thereto. This same method of adjustment is carried out at the lower ends of the frames, where they rest on the plates 7 by adjustment of the bolts 15^a.

It will thus be evident from the above described construction, that any pair of seat standards may be so angled relative to each other that a row of chairs will substantially follow a circle of large radius, such as is usually found in theaters, etc.

It will also be evident that the degree of curvature thus obtained depends on the adjustments made with the nuts 9^a on the rods 9, before securing the standards to the floor. When so adjusting the standards the bolts 15 and 15^a in the plates 14 and 7 are merely loosened so as to allow relative freedom of movement, and then tightened up when the adjusting is completed. In this manner, nothing of rigidity in any unit row of chairs is sacrificed on account of the adjustable features.

The construction and operation of the co-acting seat and arm mechanism of the chair is substantially the same as that described in Patent No. 1,291,413, previously referred to, but certain changes have been made therein to adapt the same to the adjustable feature of the chairs now incorporated therein and to simplify the construction. I will therefore describe the said mechanism, when the changes made will be seen.

The seat frame 17, preferably a hollow metal structure, is pivotally mounted on a shaft 18 extending between and secured to a pair of corresponding frames 8, and projecting therethrough. There is of course an individual shaft for each seat frame, which preferably has ball bearing mounting on the shaft, as shown at 19.

The back of the seat frame is provided with a hollow member 20 running across the width thereof and filled with lead 21 or some similar material through a plug 20^a to act as a counterbalance.

By removing this plug, the amount of the

counterbalancing material may be altered at any time, should the occasion arise to remodel the upholstery with material of a different weight.

The movement of the seat frame about the shaft is limited in one direction—that is when the seat is in horizontal position—by the rod 10 against which the frame then abuts, and when in a vertical or raised position, by the rod 11. Thus these rods serve not only as tie-rods but as limiting stops for the seats.

Rubber or felt bumpers 22 are mounted at each end of the frame 17 on top and bottom of the same, in alinement with said rods, so that the rods will abut against the bumpers instead of the frame direct, and so deaden the sound of contact.

Upholstery 23 of any standard quality may be made separately from the seat frame and attached at any time.

On the under side of said frame is a plate 24 having a wire hat rack 25 of the usual form, secured to the back of the plate beyond the frame-shaft 18, so that the weight of a hat placed in the rack will aid the counterbalance in raising the seat instead of being a detriment. This plate also is made separately from the frame, and may be secured thereto by any desired means.

An upholstered back 26 is also provided for the width of each seat, being secured to the corresponding side frames.

On each end of each seat-frame shaft 18 is pivoted a guide-arm 27, so that between each adjacent pair of frames 8 there is a pair of such arms. The inner ends of these arms are pivoted on stub pins 28 threaded into a common sleeve 29, and which project through the frames 8 through slots 30 therein radial from shaft 18. The pins 28 are adjustable in the sleeve and are held in any set position by locknuts 31. Small rollers 32 on the inner ends of the arms 27 and mounted in the transverse plane thereof bear against the sides of the frames.

The ends of the pins 28 which project through the slots are adapted to be engaged by lugs 33 on each seat frame.

The pins are adjustable in the sleeve, so that when any adjacent pair of frames 8 are separated by the adjusting of a row of chairs to follow a certain curvature, as hereinbefore described, they may still project through the frames the necessary distance to properly engage the lugs 33.

Integral with the sleeve 29 and central thereof is a bar 34 projecting upwardly to a pivotal connection with the inner end of an arm 35 which is pivoted to a boss 36 fixed to the plate 14 and depending therefrom between the frames 8. The outer end of said arm is upholstered as at 37, and forms the usual arm rest, there being one of such arms between each pair of seats.

It will therefore be seen that when any chair is lowered, the lugs 33 thereon bear against the corresponding pins 28 and force the arms 35 upwardly lowering a pair of seat arms for that seat. The raising of that seat of course frees the lugs from contact with the pins, and the arms are raised, being counterbalanced as in the previously mentioned patents.

If however adjacent seats are still down and occupied, the raising of the one will not effect the position of the side-arms, since the lugs on the adjacent seats are still engaging the controlling pins.

In an aisle seat, the slot 30 in the outer frame 8 is covered as shown at 38, and this frame may be non-adjustable on its standard.

Back plates 39 are secured to the frames of each chair, and extend down to the adjustable leg extensions overlapping somewhat between adjacent frames to allow of the adjustment thereof without opening apart.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:—

1. In a chair for theaters and the like, a pair of end standards, a foot at the front of each standard adapted to rest on the floor, the back of the standards being spaced from the floor, and feet adjustably mounted on the back for vertical movement, whereby the chairs may be suitably secured to the floor irrespective of the slope thereof.

2. In combination with a plurality of folding chairs, each having a pair of spaced and rigidly connected frames, there being a common arm between each two adjacent chairs, said arm being adapted to be raised when the seats are vacated and lowered when either seat is occupied, a common floor-mounted standard for each adjacent pair of frames, and means whereby the frames may be angled relative to each other and to the standard in a vertical plane.

3. In combination with a plurality of

folding chairs, each having a pair of spaced and rigidly connected frames, there being a common arm between each two adjacent chairs, said arm being adapted to be raised when the seats are vacated and lowered when either seat is occupied, a plate on the upper horizontal edge of adjacent frames adjustably secured thereto to permit of angling of the chairs, and an arm projecting downwardly from the plate and to which the common chair arm is pivoted, whereby the central position of the arm relative to adjacent chairs may be maintained irrespective of the angled relative position of the latter.

4. In combination with a plurality of folding chairs, each having a pair of spaced and rigidly connected frames, there being a common arm between each two adjacent chairs, said arm being adapted to be raised when the seats are vacated and lowered when either seat is occupied, pins operatively connected to said arm and projecting through slots provided in the frames, and lugs on the seats adapted to engage the pins.

5. In combination with a plurality of folding chairs, each having a pair of spaced and rigidly connected frames, there being a common arm between each two adjacent chairs, said arm being adapted to be raised when the seats are vacated and lowered when either seat is occupied, means for adjusting the frames so that the chairs may be arranged in circular formation, pins operatively connected to the chair arm positioned between adjacent frames and projecting through slots therein, and adapted to be engaged by the seats, and means for allowing the pins to project through the frames a predetermined distance irrespective of the spaced setting of adjacent frames relative to each other.

6. In combination with a plurality of folding chairs, each having a pair of spaced and rigidly connected frames, there being a common arm between each two adjacent chairs, said arm being adapted to be raised when the seats are vacated and lowered when either seat is occupied, pins operatively connected to said arm projecting through slots provided in the frames and adapted to be engaged by the seats, and means for adjusting the pins lengthwise relative to a row of chairs.

In testimony whereof I affix my signature.

GEORGE F. CLUFF, Jr.