Oct. 8, 1940. E. T. TODD ET AL 2,217,352

ELEVATING DEVICE

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Fig. 1

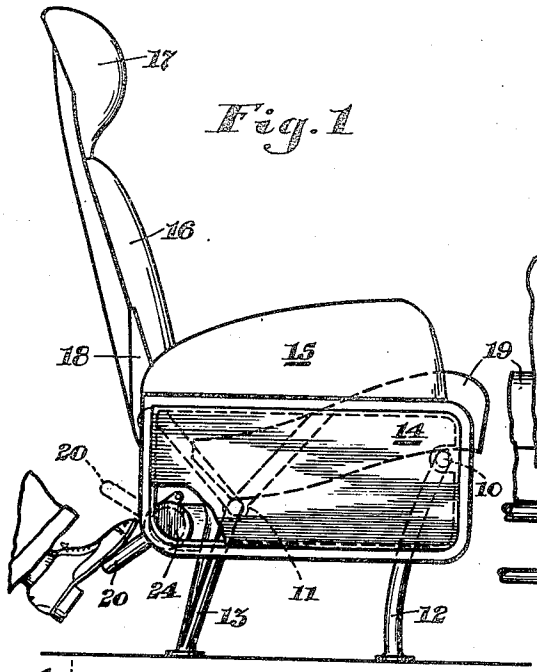
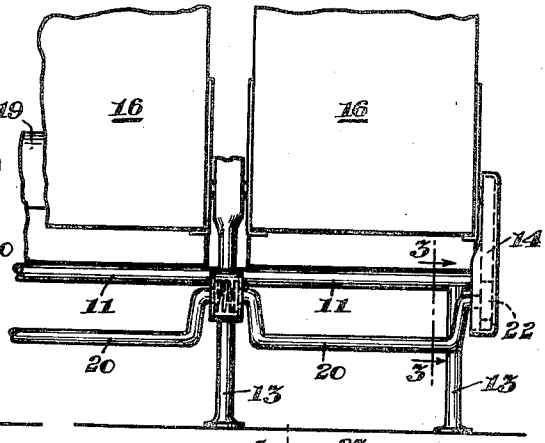


Fig. 2



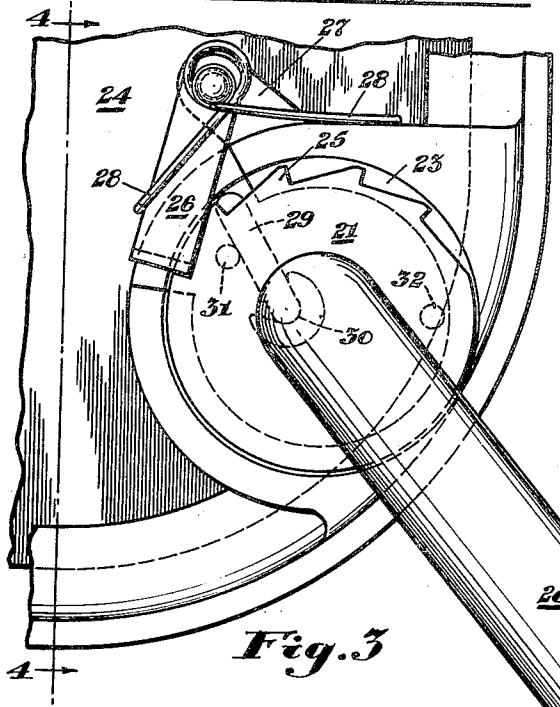


Fig. 3

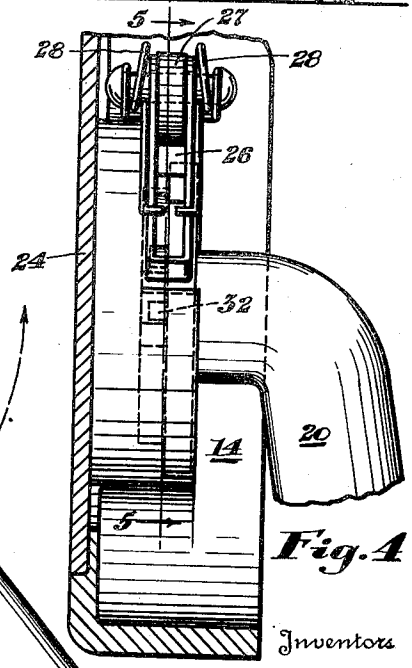


Fig. 4

Witness:—
John S. Braddock

Inventors
Edwin T. Todd
Roland G. Wilsted
By Rice & Rice
Attorneys

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Fig. 5

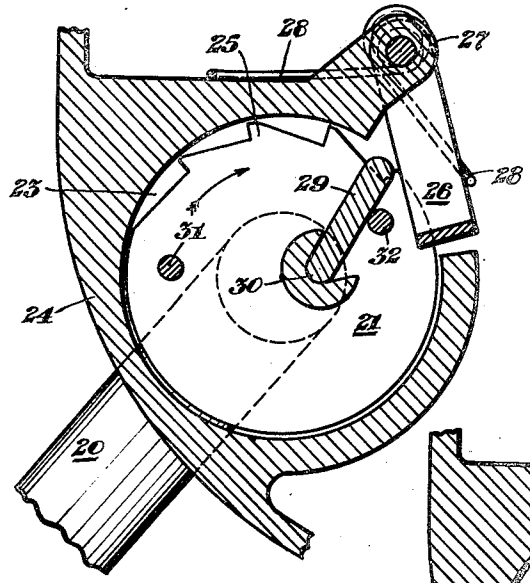


Fig. 6

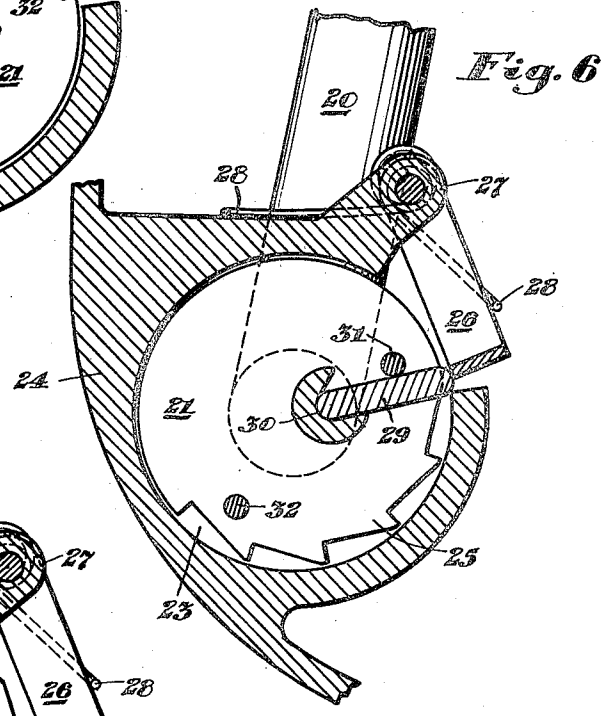
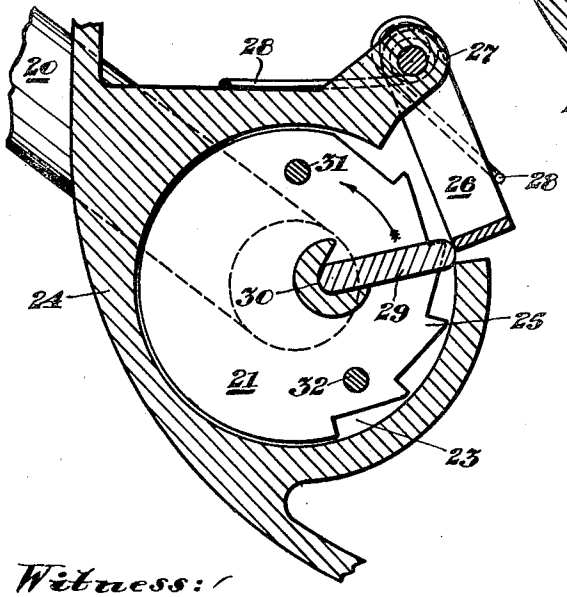


Fig. 7



Witness:
John S. Braddock

Inventors
Edwin T. Todd
Roland G. Wilsted
By Rice & Rice
Attorneys

Patented Oct. 8, 1940 2,217,352

UNITED STATES PATENT OFFICE

2,217,352

ELEVATING DEVICE

Edwin T. Todd and Roland G. Wilsted, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey

Application February 9, 1939, Serial No. 255,487

2 Claims. (Cl. 155—171)

The present invention relates to elevating devices and more particularly to foot rests for chairs of a character particularly adapted for installation in motor buses, railway coaches and airplanes.

The primary objects of the instant invention are to provide an adjustable foot rest which is especially well adapted for use with chairs of the character shown in the co-pending applications for patents, Serial Nos. 253,063 and 254,357, respectively, filed January 27 and February 3, 1939; to provide such a foot rest which is pedally adjustable as to height; and, to provide such a foot rest which is convenient in use, simple in construction, efficient in operation and economical in manufacture.

An illustrative embodiment of the invention is shown in the accompanying drawings, wherein:

Figure 1 is a side elevational view of a chair of the character above indicated and showing in full lines the foot rest in one of its adjusted positions and in dotted lines the foot rest is shown in another of its adjusted positions;

Figure 2 is a fragmentary rear elevational view of a pair of such chairs disposed side by side and each provided with a foot rest pivotally suspended from the chair frame beneath each seat and its back;

Figure 3 is an enlarged sectional view on line 3—3 of Figure 2;

Figure 4 is a sectional view on line 4—4 of Figure 3;

Figure 5 is a sectional view on line 5—5 of Figure 4;

Figure 6 is a sectional view similar to that shown in Figure 5 but showing the foot rest adjusting mechanism in another position; and

Figure 7 is another sectional view showing the foot rest adjusting mechanism in still another position.

Referring then to the drawings wherein like parts of the chair structure shown are designated by the same numerals in the several views, the frame thereof is here shown as comprising a pair of spaced horizontally disposed members 10, 11 of tubular stock to provide for strength and rigidity at light weight.

The frame members 10, 11 are spacedly supported above the floor by front legs 12 and rear legs 13, likewise of tubular stock and secured near the ends of the front and rear members 10, 11. A pair of spaced transversely disposed members 14, preferably of stamped sheet metal, are each secured to a front frame member 10 and to a rear frame member 11 at their respective ends and in any suitable manner, the member 14 on the aisle side of the structure supporting the upholstered arm rest 15 of the chair to which it is fixed.

Upholstered backs 16 having head rests 17 are each secured in any suitable manner between their back supports 18 and upholstered seats 19 are carried by the front and rear frame members 10, 11 to which they are fixed in any convenient way.

A foot rest for the occupant of a chair seated rearwardly of one of the dual chairs shown comprises the horizontally disposed hangar 20 whose oppositely disposed ends are each provided with a transversely disposed disc portion 21, 22 seated within a circular bearing recess or well 23 within the inner face of vertically disposed castings 24 secured rearwardly of each rear member 11.

The disc portion 21 is provided with a plurality of ratchet teeth 25 along a portion of its periphery and a pawl 26 pivotally suspended from a boss 27 on the casting 24 is normally actuated into engagement with the ratchet teeth 25 by the tension spring 28 and as best shown in Figure 5.

An arm 29 is pivotally supported at one end within the trough 30 integrally formed with the casting 24 and the free end of the arm is adapted to engage with the inner side of the pawl 26 adjacent its ratchet tooth engaging end for the purpose of effecting disengagement of the pawl from its ratchet teeth and as best shown in Figures 6 and 7.

A pair of spaced pins 31, 32 project outwardly from the face of the disc 21, one at each end of the ratchet toothed portion thereof and each pin is adapted to engage an opposite side of the arm 29 during opposite rotary movements of the toothed disc, all as shown in Figures 5 and 6, permitting engagement of the pawl 26 with the ratchet teeth 25 when the toothed disc 21 is rotated in one direction and effecting disengagement of the pawl from the ratchet teeth when the disc is rotated in the opposite direction.

Operation

In operation, when it is desired to elevate the foot rest 20 from its position shown in full lines in Figure 1 to its position shown in dotted lines in the same view, or to a selected position therebetween, the hangar may be pedally lifted from its position shown in Figure 5 to any position short of the position of the foot rest as it is shown in Figure 6. During this elevational movement of the hangar, the toothed disc 21 is caused to be

rotated in the direction of the arrow, permitting the pawl 26 to engage with one of the ratchet teeth 25. The arm 29 is of such length and angular disposition that after pin 32 has been moved out of engagement therewith, said arm 29 bears loosely against the pawl 26 and oscillates with said pawl as the same rides over the ratchet teeth 25.

Continued lifting of the foot rest to its position shown in Figure 6, causes the pin 31 to engage the arm 29 whose free end is caused to forcibly engage the side of the pawl 26 near its ratchet tooth engaging end which engagement effects a disengagement of the spring actuated pawl 26 from the ratchet teeth 25.

The foot rest is then permitted to fall from its position shown in Figure 6, through its position shown in Figure 7 to its position shown in Figure 5 where the pin 32 is caused to move the frictionally pivoted arm 29 to the position there shown and in which position the foot rest may again be adjustably fixed as to height since the pawl is again free to be caused to selectively engage with one of the ratchet teeth.

It will thus be seen that the foot rest herein shown and described is readily pedally adjustable as to height, is convenient in use and is simple in construction and while but one specific embodiment of the invention has been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted without departing from the spirit of this invention as the same is defined by the following claims.

We claim:

1. A chair frame having a pair of spaced vertically disposed side portions, each provided with a circular recess within its inner face and forming a disc bearing, a foot rest disposed transversely between the frame side portions comprising a hangar whose opposite ends are each provided with a transversely disposed disc portion seated within a circular recess, one of said discs having a plurality of ratchet teeth along a portion of its periphery, a spring actuated pawl pivotally mounted on the frame adapted to normally engage with said ratchet teeth, an arm pivotally supported on the frame whose free end is adapted to engage the pawl, and a pair of spaced pins projecting from the face of disc, each adapted to engage an opposite side of the arm during rotary movements of the toothed disc, permitting engagement of the pawl with said ratchet teeth when the disc is rotated in one direction and effecting disengagement of the pawl from said ratchet teeth when the disc is rotated in the opposite direction.

2. A chair frame having a pair of spaced vertically disposed side portions each provided with a bearing, a foot rest having its opposite ends turnably disposed in said bearings respectively and provided at one end thereof with a transversely disposed disc having a plurality of ratchet teeth along a portion of its periphery, a spring actuated pawl pivotally mounted on the frame adapted to normally engage with said ratchet teeth, an arm pivotally supported on the frame whose free end is adapted to engage the pawl, and a pair of spaced pins projecting from the face of the disc, one of said pins being adapted to engage said arm during turning movement of the disc in one direction for moving the arm into engagement with the pawl and the pawl out of engagement with the ratchet teeth, and the other of said pins being adapted to engage said arm during turning movement of the disc in the opposite direction for moving the arm out of engagement with the pawl.

EDWIN T. TODD.
ROLAND G. WILSTED