Sept. 21, 1937. J. M. KNIGHT 2,093,455

FOLDING FOOTREST

Filed April 27, 1935 4 Sheets-Sheet 1

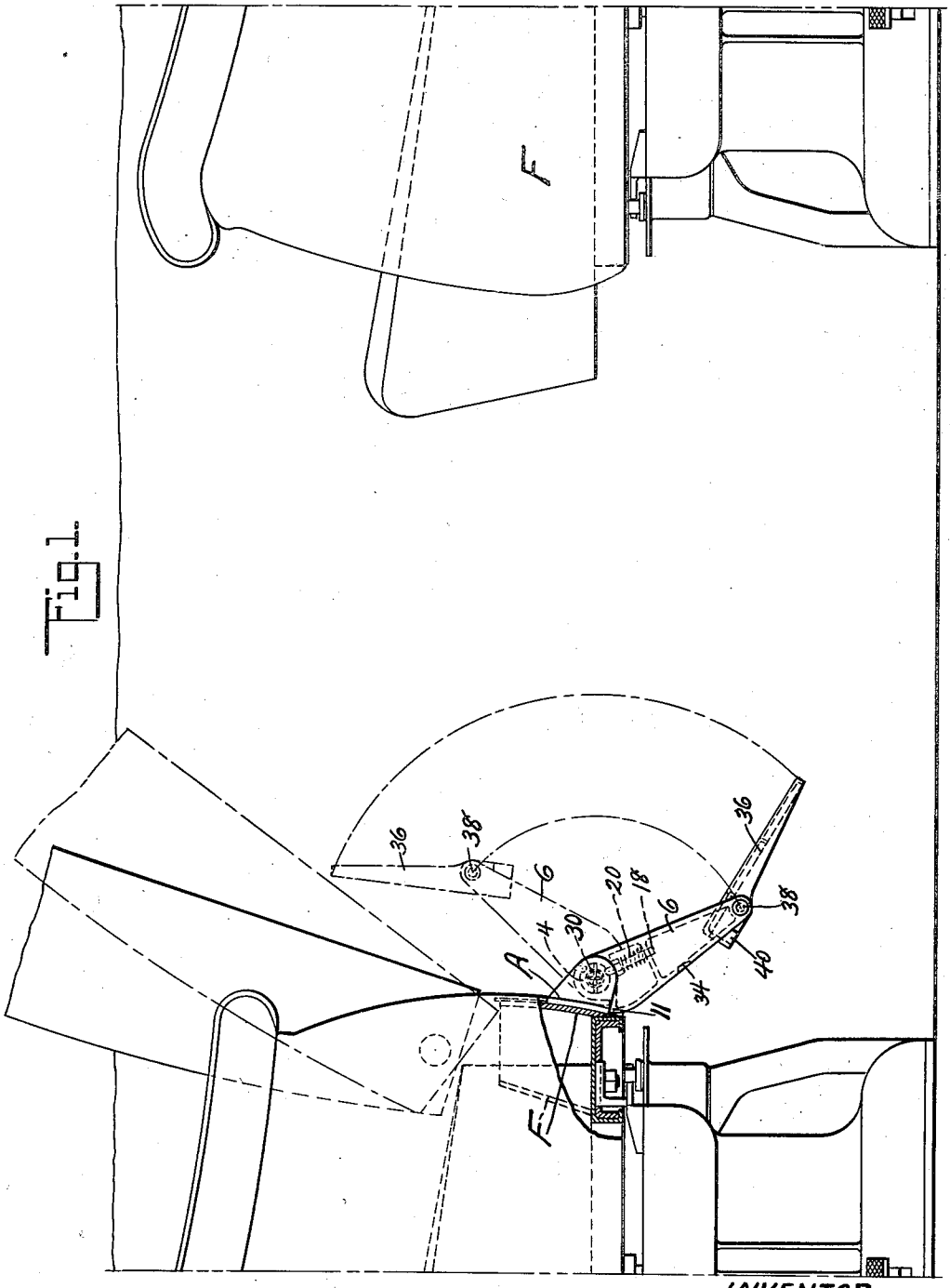

Fig. 1.

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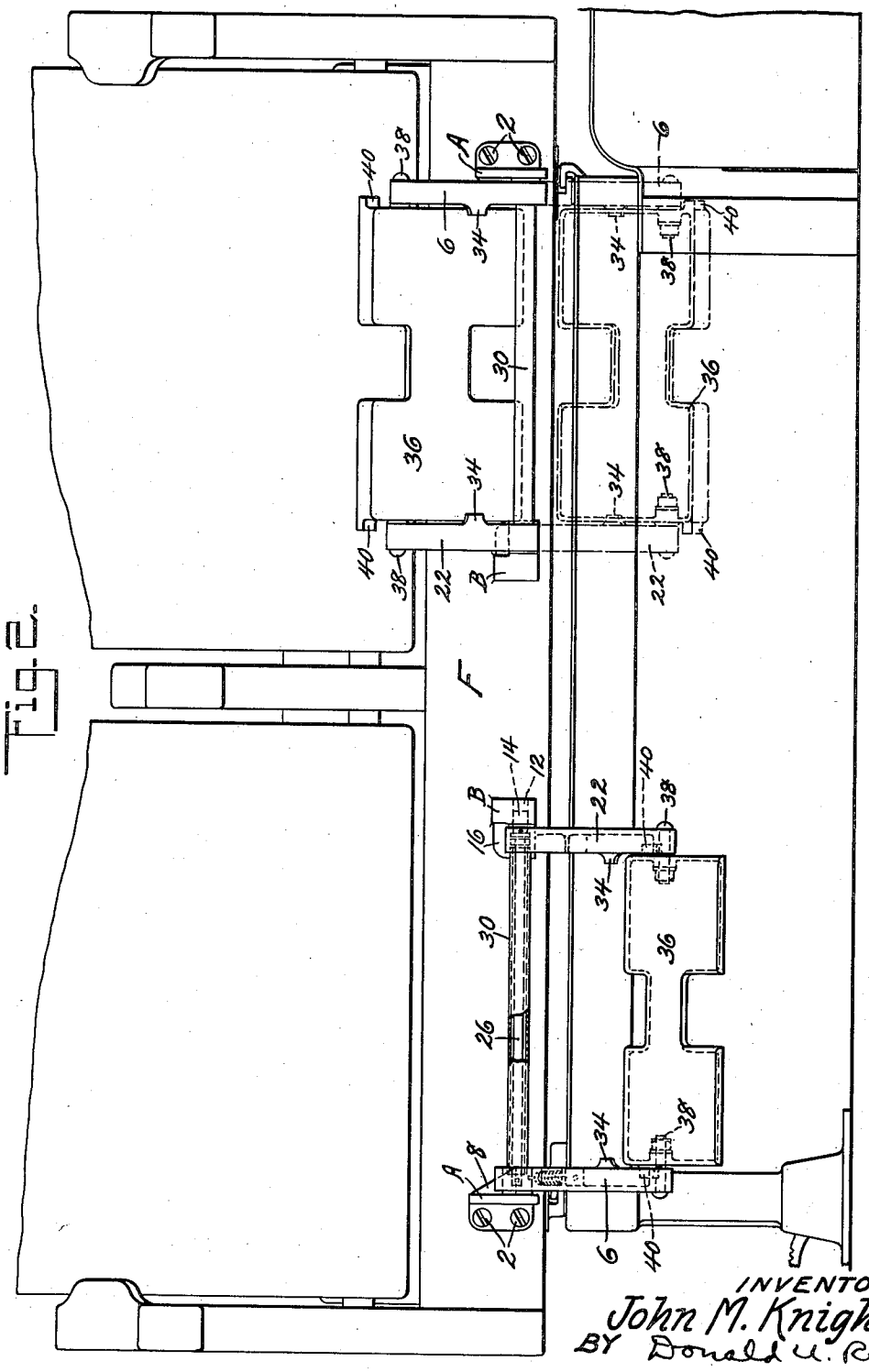

Fig. 2.

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Fig. 3.

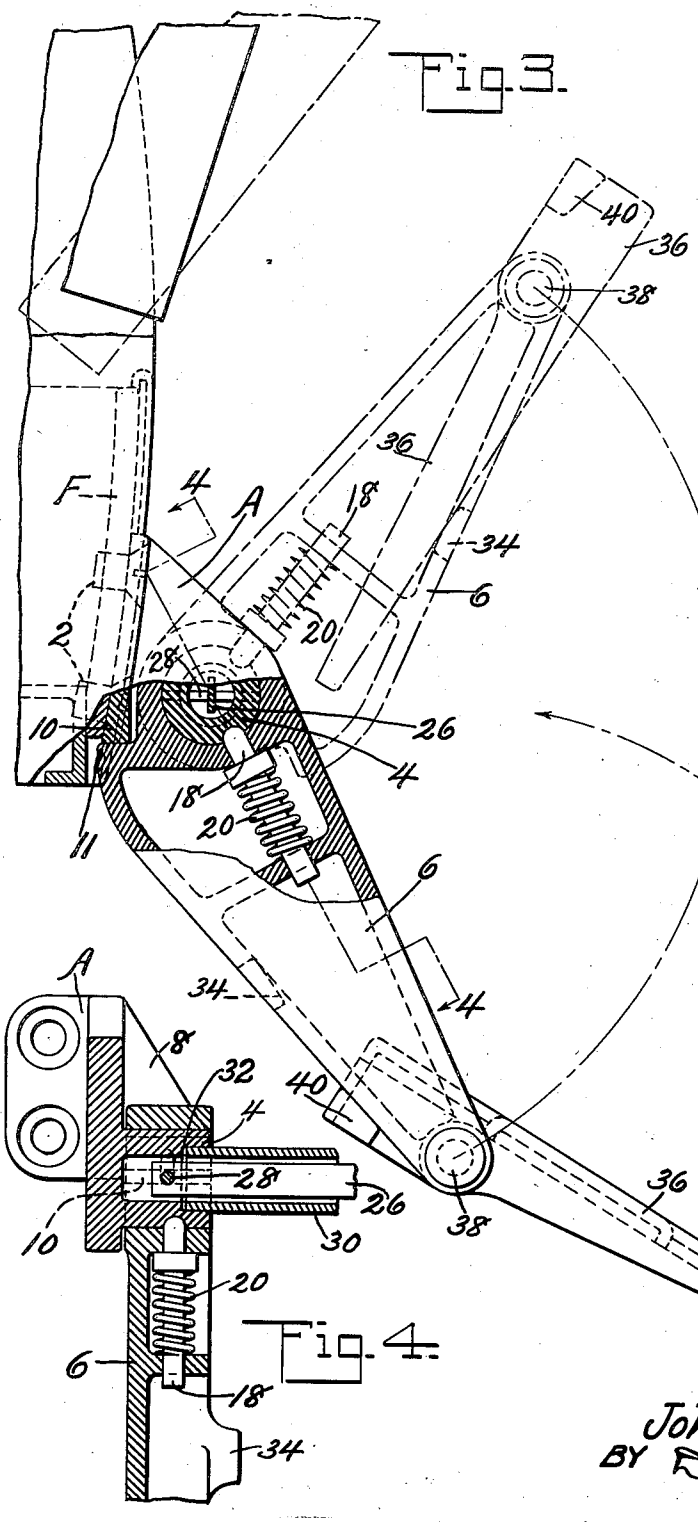

Fig. 5.

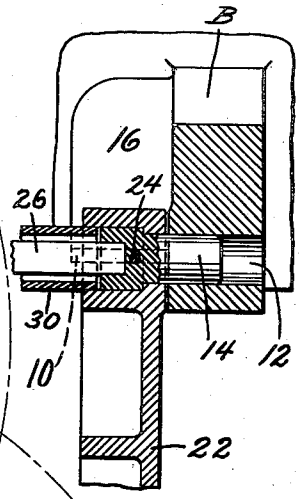

Fig. 4.

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Fig. 6.

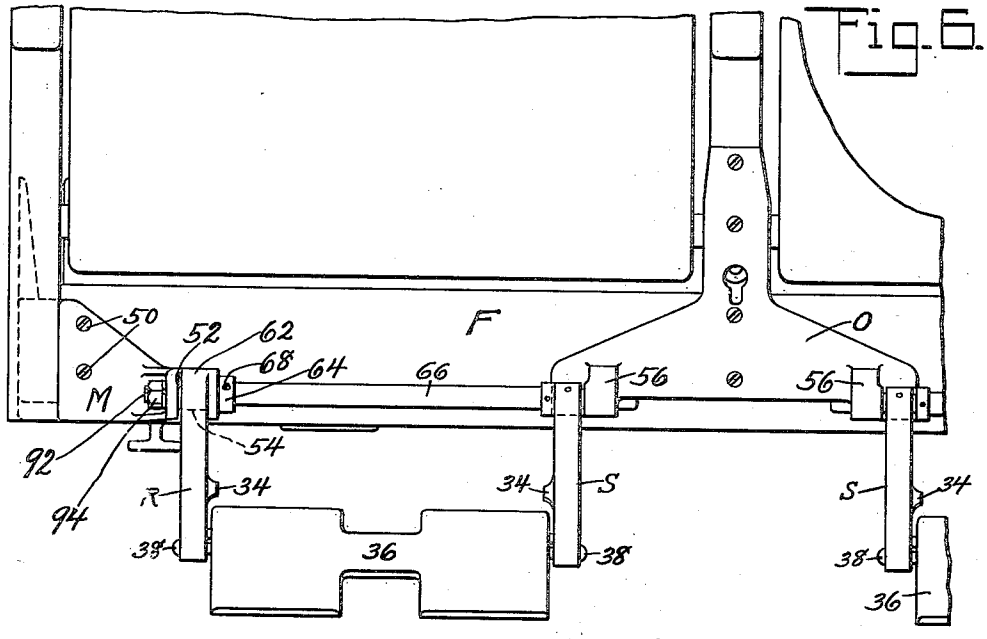
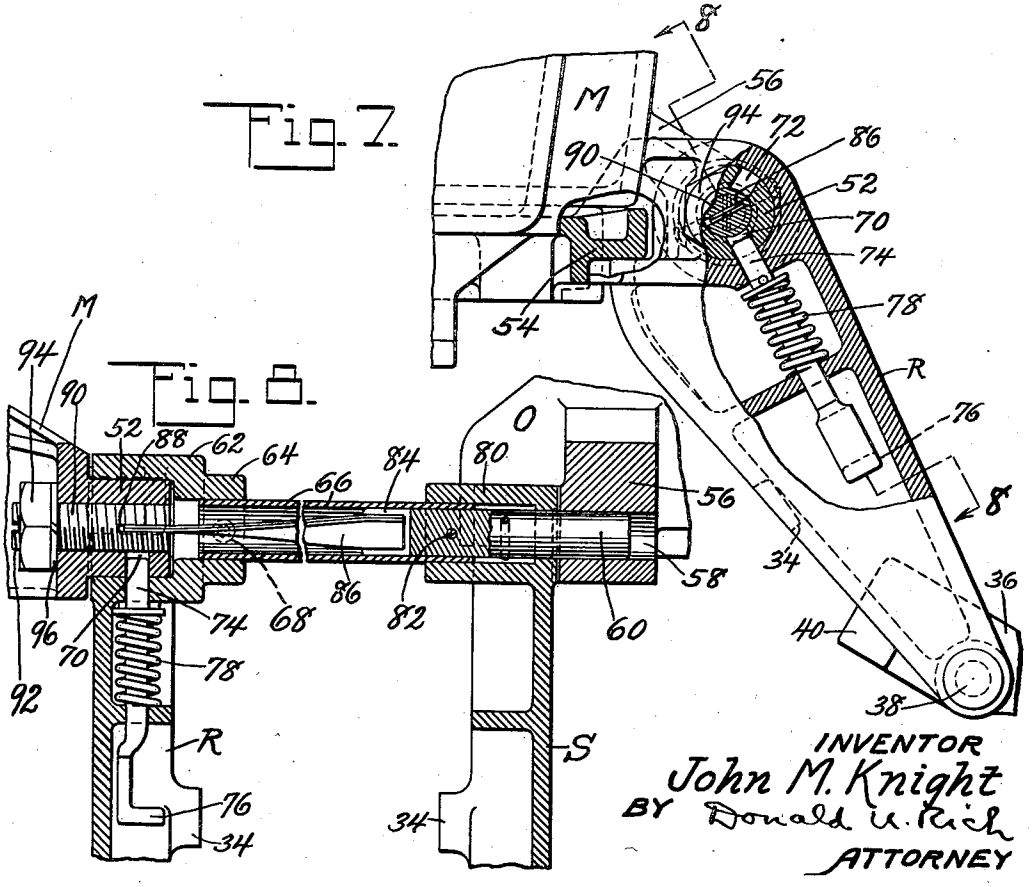


Fig. 7.



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Patented Sept. 21, 1937 2,093,455

UNITED STATES PATENT OFFICE

2,093,455

FOLDING FOOTREST

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Application April 27, 1935, Serial No. 18,645

5 Claims. (Cl. 155—171)

This invention relates to folding foot rests in general and in particular to foot rests intended for use on car seats which revolve as a unit on a pedestal or base frame.

In previous railway seat construction foot rests have been provided which were either rigid with the base frame or where the seat was to be bodily revolved the foot rests have likewise been rigid but carried by the seat frame in such a position as to clear the base frame. Neither of these constructions are desirable since it is almost impossible to make the foot rest comfortable or attractive and they are extremely troublesome to those people who desire to completely relax and rest by reclining the seat back and stretching out their legs.

It is an object of this invention to provide a single foot rest which is attached to the seat frame and foldable to an out of the way position.

It is another object of this invention to provide a foot rest attached to the seat frame and foldable to a position permitting rotation of the entire seat frame assembly relative to the base.

Another object of this invention is to provide a folding foot rest with a spring device which will lessen the shock when lowering the rest.

A further object of this invention is the provision of a folding foot rest having a spring shock absorbing device in which the tension of the spring may be readily varied.

A still further object of this invention is the provision of a folding foot rest which will be retained automatically in either its operative or inoperative position.

These and other objects will be apparent to one skilled in the art from a study of the accompanying description taken in conjunction with the drawings in which:

Figure 1 is a side elevation showing the invention applied to one seat and its relation to the adjacent seat;

Fig. 2 is a rear elevation of a seat showing the device applied thereto and in raised and lowered positions;

Fig. 3 is a partial sectional view showing the means for retaining the rest in either raised or lowered positions;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3 and showing one hinge bracket;

Fig. 5 is a sectional view taken on line 4—4 of Fig. 3 showing the other hinge bracket;

Fig. 6 is a rear elevation of a modified form of the device;

Fig. 7 is a partial sectional view of the device shown in Fig. 6, and

Fig. 8 is a sectional view taken on line 8—8 of Fig. 7 and showing details of the modified device.

Referring now to the drawings in which like numerals refer to like parts throughout the various views, the device is shown as attached to the seat frame F by means of brackets A and B. The seat is of the type shown and fully described in applications of Victor Willoughby, Serial No. 13,588 filed March 29, 1935, and Clifford Bittner, Serial No. 12,559, filed March 23, 1935, and it will suffice for the present description to state that the seat is provided with an adjustable angle back and with a rotating mechanism which permits rotation of the entire seat frame assembly in a longitudinal plane while causing lateral osciilation thereof.

Bracket A attached by screws 2 to the seat frame is provided with a laterally projecting hollow trunnion 4 on which is rotatably mounted the side piece 6, and with a portion 8 forming a stop 10 for the lug 11 on the side piece. The bracket B, which may be integral with the seat frame, is provided with an opening 12 adapted to form a bearing for trunnion 14 and a portion 16 having a shouldered stop portion similar to that on bracket A.

The side piece 6 is provided with a spring catch 18, the rounded tip of which is yieldably held by spring 20 in suitably formed pockets in the trunnion 4. Side piece 22 of somewhat similar outline has the head portion of trunnion member 14 non-rotatably fastened thereto by pin 24 and this trunnion head portion rigidly supports one end of torsion spring 26 which in the instance shown is formed of a flat strip of spring steel or other material. The other end of the torsion spring is fastened by a short pin 28 to the trunnion 4. The spring 26 is enclosed within a tube 30 and one end of said tube is carried in the bore of the side piece 22, while the other end is carried in the hollow trunnion 4 and abuts a shoulder 32 provided therein. The tube thus acts as a protector or cover for the torsion spring as well as a means to retain the side piece 22 in its operative position.

Side pieces 6 and 22 are each provided with projections 34 adjacent the lower edge thereof adapted to engage foot rest pad 36 when the foot rest is in the folded position relative to the side pieces as shown in dot and dash position Fig. 3. The foot rest pad is eccentrically mounted on suitable pintles 38 carried at one end of the side pieces and is provided on the ends thereof with lugs 40 each adapted to engage a flange of the side pieces to support the

pad in the operative position. The lugs **40**, or the flanges of the side pieces, or both, may be provided with rubber or other buffer means to lessen the shock when the foot rest pad is lowered.

The operation of the device will now be explained, assuming the device to be in the position shown by full lines in Fig. 3 and it is desired to fold the assembly to an out of the way position. A slight upward pressure applied to the extremity of **36** by the toe of a person's foot will rotate the foot rest pad until it will drop by gravity on to stops **34**, then pressure again being applied in an upward direction to the then lower portion of the foot rest will cause the spring catch to release and the entire unit aided by the torsion spring to be rotated to the position shown in dot and dash outline of Fig. 3 and in full line at the right of Fig. 2. The assembly is held in this position not only by the spring catch again engaging a pocket but by the torsion spring which may have a slight initial strain therein. In lowering the device, the action is reversed with the torsion spring resisting the lowering and lessening the shock, when stops **11** engage the shoulders **10**.

Referring now to the modification of the device shown in Figs. 6–8 inclusive it is seen that the bracket M, which may be a casting forming part of the seat frame to which it is fastened by bolts, rivets or screws **50** is provided with a suitably braced trunnion **52** and a tsop **54**. The bracket O is shown as a single cast member suitably attached to the central portion of the seat frame and provided with two outstanding lugs **56** having a bore **58** to receive trunnion pin **60**. This central bracket is also provided with suitable stops similar to the stop **54** carried by bracket M.

The side piece R is provided with hub portion **62** adapted to pivot on trunnion **52** and this hub portion is extended to provide a portion **64** in which tube **66** is positioned and secured by screw **68**. The trunnion **52** is provided with two holes **70** and **72** adapted to be engaged by catch **74** carried by the side piece. The catch is provided with a projection **76** by which it may be manually retracted from the trunnion holes in which it is normally held by compression spring **78**.

The side piece S is provided with a portion **80** within which is non-rotatably fastened the trunnion pin **60**. The portion **80** likewise carries one end of the tube **66** which is secured in place by the pin or rivet **82**. The inner end of the pin **60** is slotted as at **84** to non-rotatably engage the torsion spring **86**, the other end of which is carried in a similar slot **88** provided in bolt **90**. The bolt **90** has threaded engagement with the trunnion **52** and is provided with a head **92** which may be slotted or otherwise finished to allow of turning the bolt. Lock nut **94** and lock washer **96** are provided in order that the bolt may be securely held in any desired position. It is thus seen that the torsion of the spring may be readily adjusted by simply turning the bolt **90**.

The operation of this modification is similar to that previously described in connection with Figs. 1–5 inclusive with the exception that the catch must be retracted manually and the foot rest must be manually raised before the seat can be turned.

Although two embodiments of the device have been shown and described it is obvious that various other combinations or modifications thereof will be apparent to one skilled in the art and may be made without departing from the scope of the invention as defined in the following claims.

What is claimed is:

1. A folding foot rest assembly comprising, spaced brackets, side pieces pivotally associated with said brackets, a tube extending between the side pieces, a torsion spring within the tube having one end in secured relation with one of said brackets and the other end in secured relation with one of said side pieces, catch means automatically retaining one of the side pieces in either raised or lowered position, a foot rest pad eccentrically pivoted to the side pieces to present a long and short portion, means projecting from said side pieces adapted to contact the long portion of the foot rest pad, means projecting from the short portion of the foot rest pad adapted to contact a portion of the side pieces, said means limiting relative rotation between said foot rest pad and side pieces.

2. A folding foot rest assembly comprising, spaced brackets, side pieces pivotally associated with said brackets, a tube extending between one end of the side pieces, a spring within the tube having one end in secured relation with one of said brackets and the other end in secured relation with one of said side pieces, means retaining the side pieces in either a raised or lowered position, a foot rest eccentrically pivoted to the side pieces to provide a long and short portion, means projecting from said side pieces adapted to contact the long portion of the foot rest pad, means projecting from the short portion of the foot rest pad adapted to contact a portion of the side pieces, said means limiting relative rotation between said foot rest pad and side pieces.

3. A folding foot rest assembly comprising spaced brackets having stop shoulders formed thereon, elongated side pieces pivotally supported by the brackets and having lug portions formed to engage the shoulder portions of the brackets to limit the movement of the side pieces in one direction, a spring catch means carried by a side piece and cooperating with the adjacent bracket to retain the side pieces in a predetermined position, upper and lower elongated spacing means for the side pieces, one of said spacing means comprising a foot rest pad eccentrically pivotally supported by the side pieces at one end thereof and the other spacing means comprising a housing member supported by the side pieces, and spring means within the housing member and connected to a bracket and to a side piece and tensioned to raise the assembly.

4. A folding foot rest assembly comprising spaced brackets, side pieces pivotally associated with said brackets, a tubular member extending between one end of the side pieces, said tubular member connecting the side pieces for maintaining the same in pivotal association with the spaced brackets, a spring within the tubular member having one end in secured relation with one of said brackets and the other end in secured relation with one of said side pieces, means retaining the side pieces in either a raised or lowered position, a foot rest eccentrically pivoted to the side pieces to provide a long and short portion, means projecting from said side pieces adapted to contact the long portion of the foot rest pad, means projecting from the short portion of the foot rest pad adapted to contact a portion of the side pieces, said means limiting

relative rotation between said foot rest pad and side pieces.

5. A folding foot rest assembly comprising, spaced brackets having stop shoulders formed thereon, side pieces pivotally associated with said brackets and having stop lugs formed thereon adapted to contact said stop shoulders, a tube extending between one end of the side pieces, a spring within the tube having one end in secured relation with one of said brackets and the other end in secured relation with one of said side pieces, means retaining the side pieces in either a raised or lowered position, a foot rest eccentrically pivoted to the side pieces to provide a long and short portion, means projecting from said side pieces adapted to contact the long portion of the foot rest pad, means projecting from the short portion of the foot rest pad adapted to contact a portion of the side pieces, said means limiting relative rotation between said foot rest pad and side pieces, and said stop shoulders and lugs limiting relative rotation between said side pieces and brackets.

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