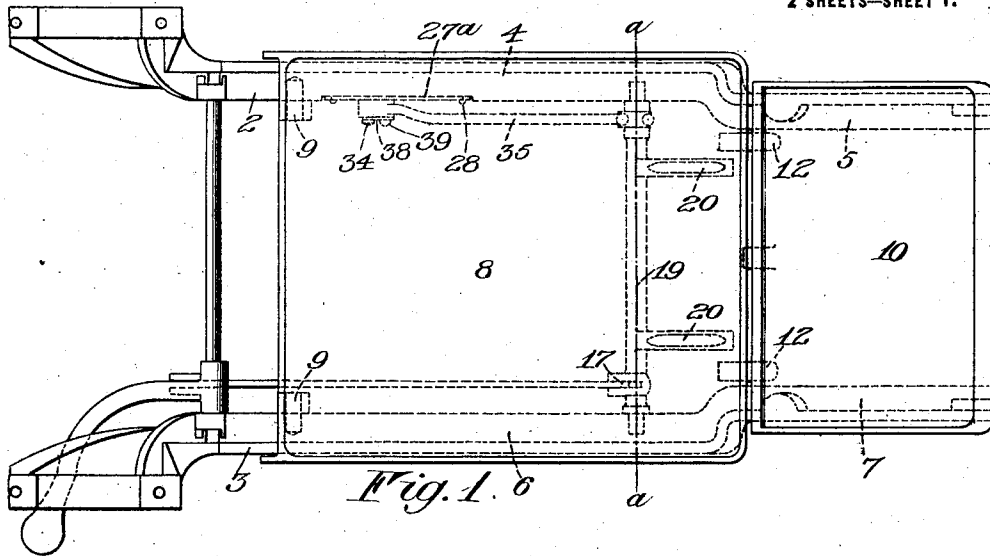
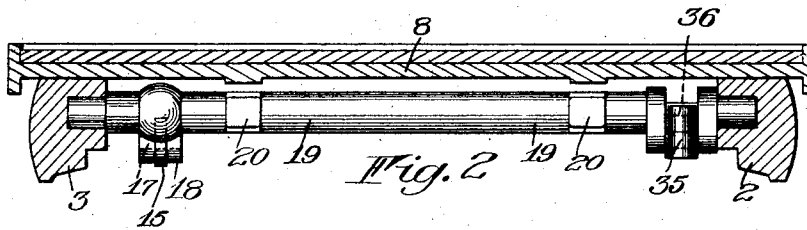


C. W. FERTIG & A. J. MAY.
RETARDING MECHANISM FOR MOVABLE RESTS,
APPLICATION FILED MAY 16, 1916.

1,259,972.

Patented Mar. 19, 1918.
2 SHEETS—SHEET 1.



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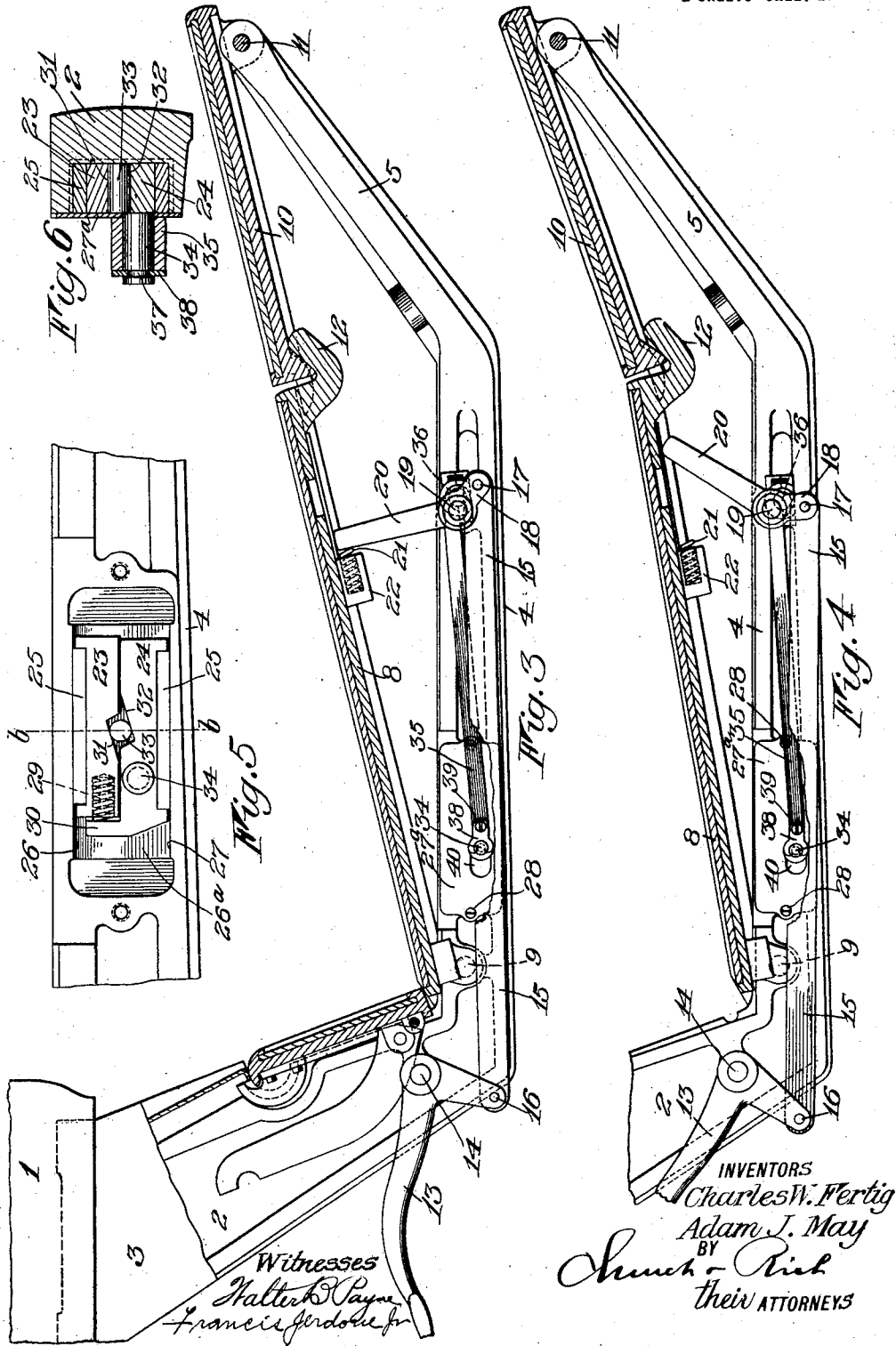
BY

Shuch & Rich
their ATTORNEYS

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UNITED STATES PATENT OFFICE.

CHARLES W. FERTIG AND ADAM J. MAY, OF ROCHESTER, NEW YORK, ASSIGNORS TO
ADELINA RITTER SHUMWAY AND LAURA A. RITTER, TRADING AS THE RITTER
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RETARDING MECHANISM FOR MOVABLE RESTS.

1,259,972.

Specification of Letters Patent.

Patented Mar. 19, 1918.

Application filed May 16, 1916. Serial No. 97,930.

To all whom it may concern:

Be it known that we, CHARLES W. FERTIG and ADAM J. MAY, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Retarding Mechanism for Movable Rests; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference characters marked thereon.

Our invention relates to a retarding mechanism for movable rests and particularly for foot rests of the type used upon dental chairs. One of the objects of the invention is to provide a retarding mechanism for a movable chair rest arranged to be operated by the downward movement of the rest when the latter is released from a predetermined elevated position. A further object of the invention is to provide means for frictionally retarding certain movable portions of a chair free to be acted upon by gravity. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a plan view of a portion of a dental chair constructed in accordance with the invention;

Fig. 2 is a sectional view taken on line *a-a* of Fig. 1;

Fig. 3 is a longitudinal sectional view through the foot rests showing the same in extreme elevated position;

Fig. 4 is a similar sectional view with the foot rests shown in partially elevated position;

Fig. 5 is an enlarged detail elevational view illustrating a portion of the retarding mechanism, and

Fig. 6 is a sectional view taken on line *b-b* of Fig. 5.

Similar reference characters throughout the several views indicate the same parts.

In dental and other chairs which are provided with movable rests capable of being raised or shifted to various elevations it is desirable to provide means for retarding the movement of said parts when re-

leased to be returned to lowered position by the action of gravity. The present invention comprises means for carrying out this idea and although we have shown the invention as applied to foot rests for dental chairs, it will be understood that it is applicable to other forms of rests or movable supports as well. In the embodiment shown one means for carrying out the invention is illustrated in which a chair seat 1 carries a pair of supporting brackets or arms 2 and 3 which extend in front of and upon opposite sides of the seat. The arm 2 is provided with a horizontally extending portion 4 from which projects an upwardly inclined portion 5. The arm 3 is provided with a horizontal portion 6 carrying an upwardly inclined portion 7. A rear foot section 8 is pivotally mounted upon the arms 2 and 3 as indicated at 9, said section being adapted to normally occupy a horizontal position upon the arms. A forward foot section 10 is pivotally mounted upon the inclined portions 5 and 7 as indicated at 11. The sections 8 and 10 are operatively connected at their meeting edges so that movement of the section 8 will transmit movement to the section 10 by means of the lugs 12 on the former in engagement with the under surface of the latter as shown in Figs. 3 and 4. Means for elevating the sections from normal position to that shown in Fig. 3 comprises a bell-crank lever 13 pivotally mounted upon a rod 14 carried by the arms 2 and 3. One end of a link 15 is pivotally connected at 16 to the lever 13 and the other end of the link is pivotally connected at 17 to a crank arm 18 carried by a shaft 19, the opposite ends of which are journaled in the horizontal portions of the arms 2 and 3. The shaft 19 is provided with a pair of lateral extensions 20 adapted to engage and elevate the foot rest 8 when the bell-crank lever 13 is depressed to insure the rotation of the shaft 19 through the medium of the link 15. The extensions 20 when moved to the position shown in Fig. 3 are adapted to strike a buffer spring 21 seated in a housing 22, whereby the movements of the extensions are limited when they reach a position substantially at right angles to the foot sections. The extensions remain in this position to support the sections until released by tripping the bell-crank lever 13.

The mechanism for retarding the fall of the sections comprises a pair of relatively movable brake heads or sliding blocks 23 and 24, each of which is provided with a brake shoe 25 preferably formed of leather and arranged to be moved into and out of frictional contact with the upper and lower walls 26 and 27 respectively of a pocket or recess formed in the horizontal portion 4 of the arm 2 as indicated in Fig. 5. The heads 23 and 24 and the shoes 25 are arranged to be guided at one side by a vertical wall 26^a of the arm 2 and at the other side by a cover plate 27^a for the recess, the cover plate being secured upon the arm by suitable screws 28. One end of the head 23 is provided with a recess in which is positioned a coil spring 29 which projects from the head into engagement with a lug 30 carried by the head 24. The heads 23 and 24 are provided with inclined or beveled surfaces 31 and 32 respectively, between which is positioned a roller 33 which serves to spread the heads apart when they are moved in a direction toward the seat 1 to force the shoes 25 into frictional engagement with the walls 26 and 27 for retarding the fall of the rests from their elevated positions in a manner which will be presently described. The head 24 is provided with a crank pin 34 positioned a little to one side of the center thereof which is adapted to receive one end of a connecting rod 35, the other end of which is mounted upon a crank 36 carried by the shaft 19. The outer end of the crank pin 34 is provided with a groove 37 in which is positioned the ends of a guard 38 secured to the connecting rod 35 by a suitable screw 39 to prevent displacement of said rod. The crank pin 34 is arranged to project through an opening 40 formed in the cover plate 27 to allow for the reciprocation of the pin and the head 24 to which it is connected. When the foot rests 8 and 10 are in their lowermost position and it is desired to elevate them to the position shown in Fig. 4 the operator forces down the bell-crank lever 13 which moves the link 15, the latter causing the shaft 19 to rotate thereby moving the extensions 20 to elevate the rests and at the same time moving the connecting rod 35 in a direction away from the seat 1 to cause the head 24 to move in the same direction. Movement of the head 24 in this direction causes a relative movement in the same direction of the head 23 by increasing the tension on the spring 29. In this way the inclined faces 31 and 33 are maintained in substantially the same relative positions with respect to each other and consequently the heads are not forced apart to throw the shoes into frictional contact with the walls 26 and 27. By reason of this fact the heads and shoes are free to slide without binding when moved

by the connecting rod 35 while the foot rests are being elevated. However, when it is desired to drop the rests by releasing or tripping the extensions 20 the head 24 will be moved toward the chair seat, at which time the tension on the spring 29 will be sufficient to hold or retard the movement of the head 23. Thus the inclined face 32 will tend to approach the face 31, thereby causing the roller 33 to lift the head 23 by which action the shoes 25 will be made to frictionally engage the surfaces 26 and 27 as shown in Fig. 5 and serve to retard the downwardly moving foot rests.

We claim as our invention:

1. In a retarding mechanism, the combination with a movable rest, of means for releasably supporting the rest in an elevated position, a movable member operatively connected with said supporting means, a second movable member, resilient means interposed between said members tending to move them in opposite directions, and contact surfaces for each of the movable members cooperating with the same to frictionally retard the movement of the rest when released.

2. In a retarding mechanism, the combination with a pivoted rest, of means for releasably supporting the rest in an elevated position, a movable member operatively connected with said supporting means, a second movable member, contact surfaces for each of the movable members, means cooperating with said movable member to force them into frictional engagement with said contact surfaces upon release of the rest and a spring tending to force the second mentioned movable member in an opposite direction from that in which the first is moved by the rest.

3. In a retarding mechanism, the combination with a movable rest, of means for releasably supporting the rest in an elevated position, a movable member operatively connected with said supporting means provided with a beveled face, a second movable member, fixed contact surfaces for each of the movable members and a roller between said beveled face and the second mentioned movable member cooperating with said members to force them apart into frictional contact with said fixed surfaces upon release of the rest.

4. In a retarding mechanism, the combination with a movable rest, of means for releasably supporting the rest in an elevated position, a movable member operatively connected with said supporting means provided with a beveled face, a wall adapted to form a contact surface for said movable member, a roller mounted upon said beveled face and means cooperating with said roller to force the movable member into frictional engagement with said contact surface upon release of said rest.

5. In a retarding mechanism, the combination with a movable rest, of means for releasably supporting the rest in an elevated position, a movable member operatively connected with said supporting means, a wall adapted to form a contact surface for said movable member, a roller mounted upon the movable member, a cooperating member for the movable member provided with a beveled surface engaging the roller and adapted to cause the roller to force the movable member into frictional engagement with said contact surface upon release of said rest.

6. In a retarding mechanism, the combination with a support, of a movable rest mounted upon the support, means for holding the rest in an elevated position, said means being movable to lower the rest, spaced walls carried by the support, a pair of movable members mounted between said walls one of which is operatively connected with said holding means and movable relatively to the other, resilient means carried by said members for effecting the position of one with respect to the other, and means cooperating with the movable members to force them into frictional engagement with said walls upon the lowering of said rest.

7. In a retarding mechanism, the combination with a support, of a movable rest mounted upon the support, spaced walls carried by the support, a pair of relatively movable members mounted between said walls, each arranged to contact with one of the same, movable means engaging the rest operatively connected with one of said movable members, and means positioned between

the movable members for forcing them into frictional engagement with said walls upon movement of said rest engaging means.

8. A retarding mechanism comprising a support provided with spaced walls, a pair of movable members mounted between said walls having adjacent inclined faces, a roller mounted between said faces, a rest operatively connected with one of the movable members for actuating the same in one direction and means for actuating the other movable member in an opposite direction.

9. A retarding mechanism comprising a support provided with spaced walls, movable members mounted between said walls having adjacent inclined faces, a roller mounted between said faces, a yieldable member interposed between said movable members tending to move them in opposite directions and a rest operatively connected with one of said movable members.

10. A retarding mechanism comprising a support provided with spaced walls, movable members mounted between said walls, one of which is provided with an inclined surface, a roller mounted between said members upon said surface, means tending to actuate one of said movable members in one direction and a rest operatively connected with the other movable member and arranged to move the same in either direction.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."