Oct. 31, 1950 A. B. BELL 2,528,331

TILTABLY ADJUSTABLE FOOT AND LEG REST

Filed Dec. 24, 1948 2 Sheets-Sheet 1

FIG_1_

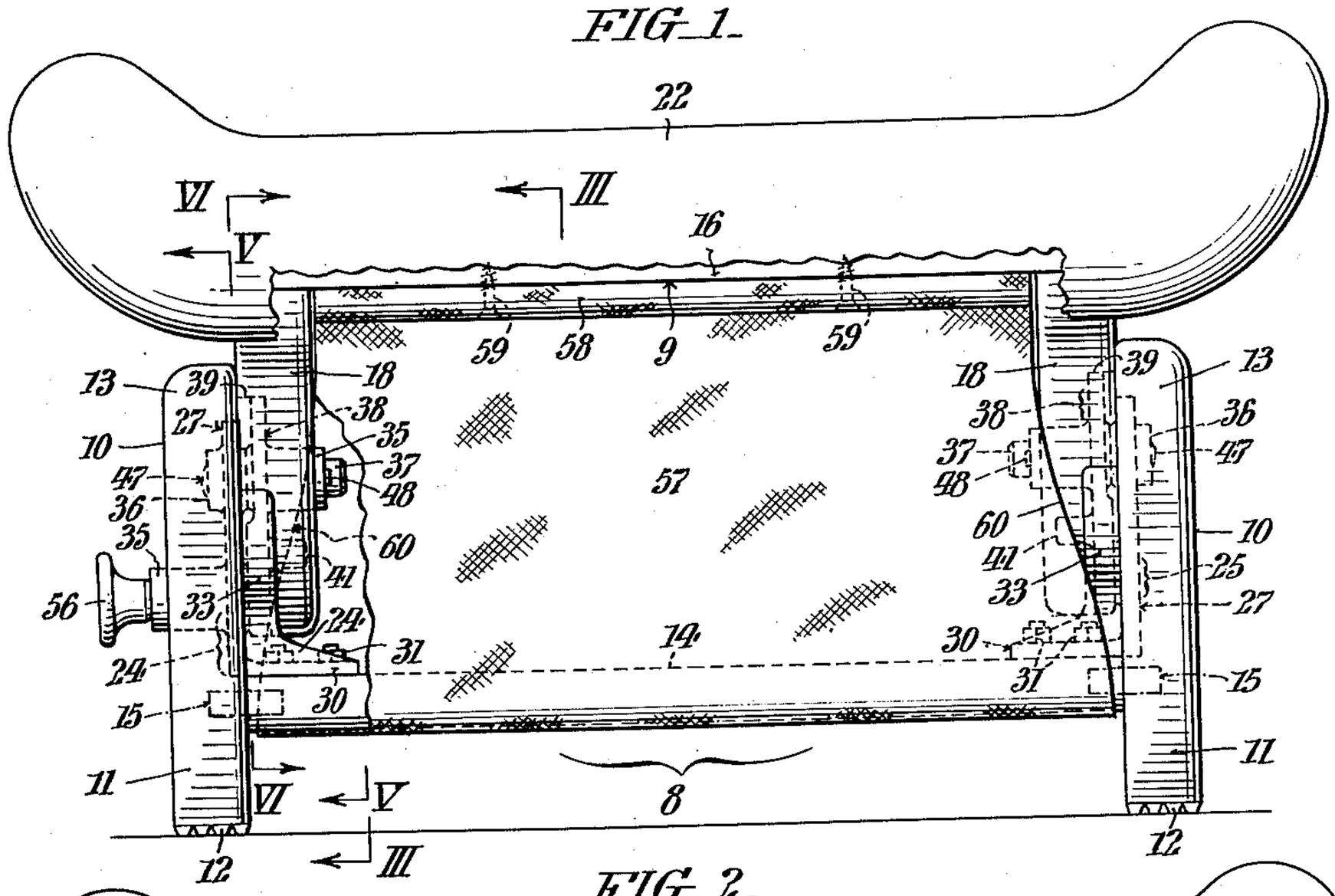
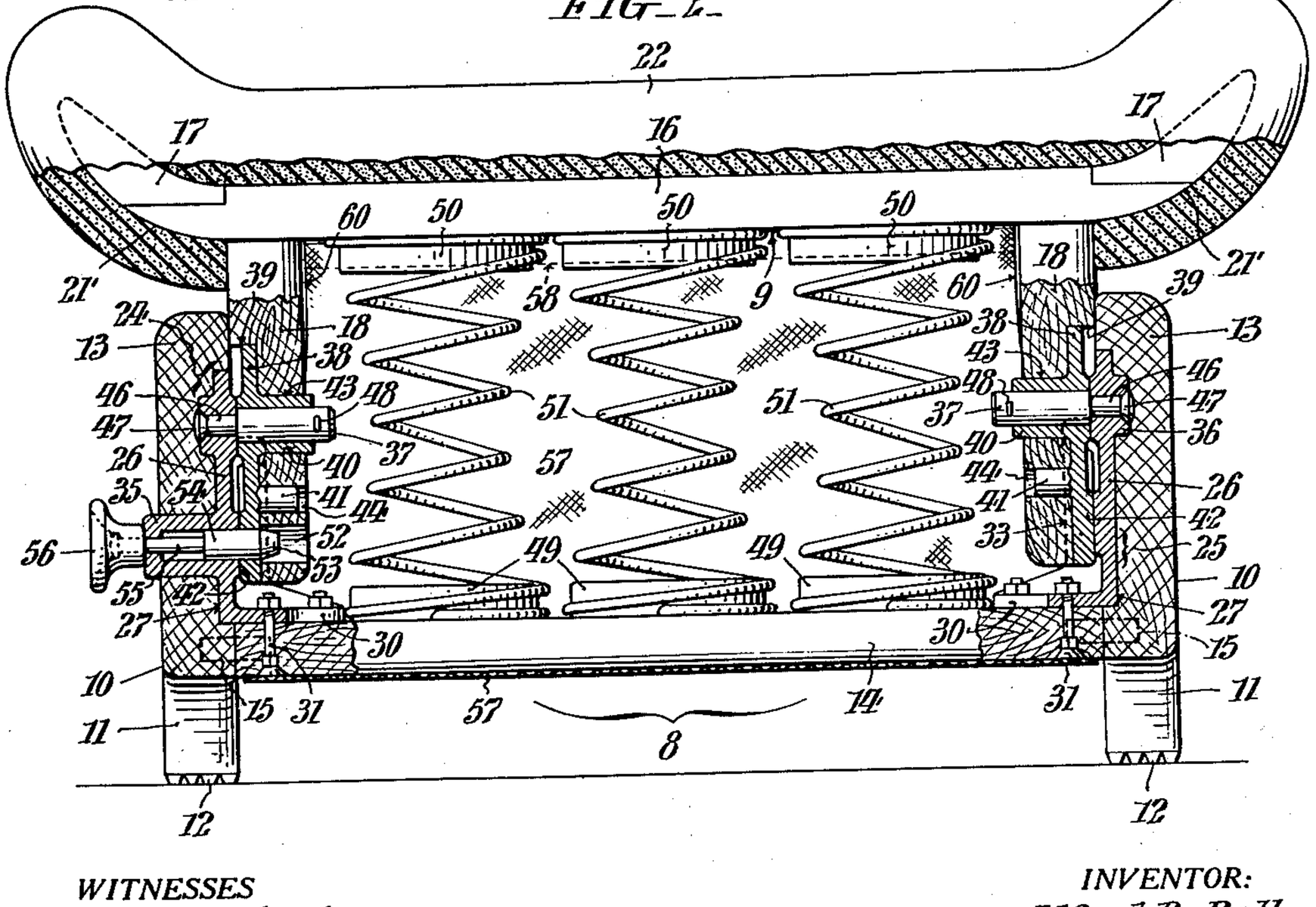


FIG_2_



WITNESSES
Hubert Fuchs
Thomas W. Kerr, Jr.

INVENTOR:
Alfred B. Bell,
BY Paul & Paul
ATTORNEYS.

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FIG. 3.

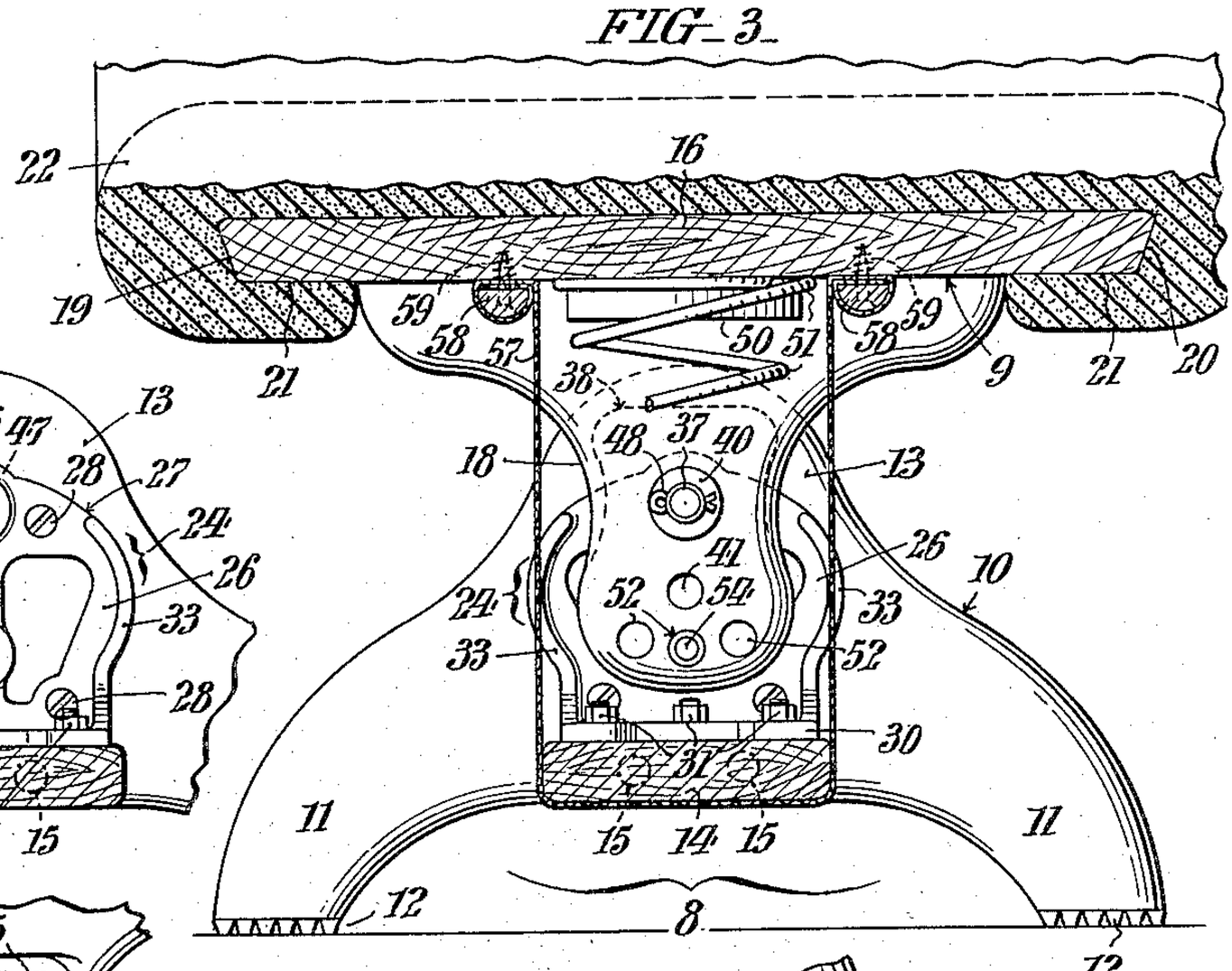


FIG. 5.

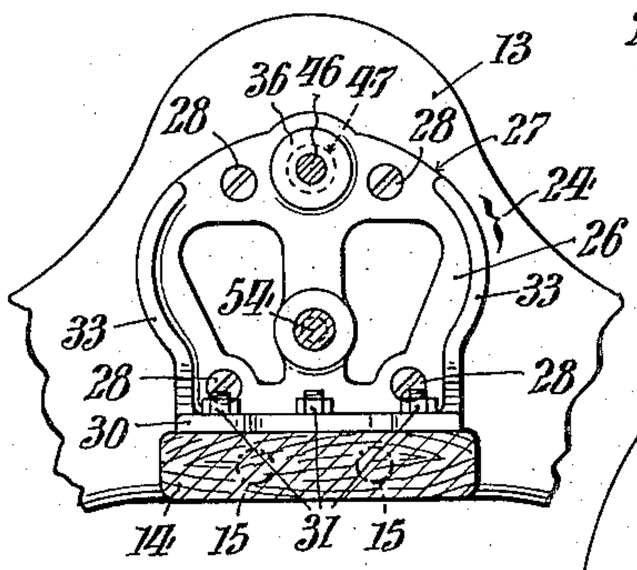


FIG. 6.

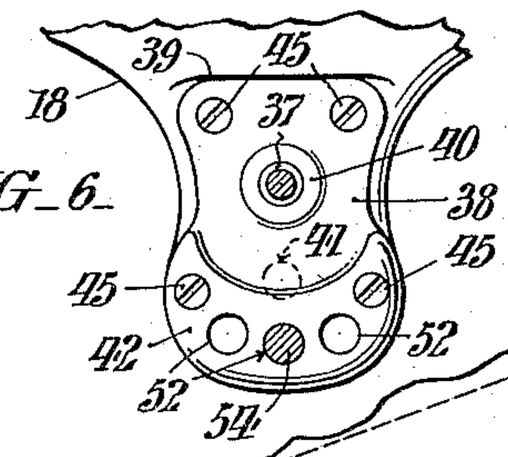


FIG. 4.

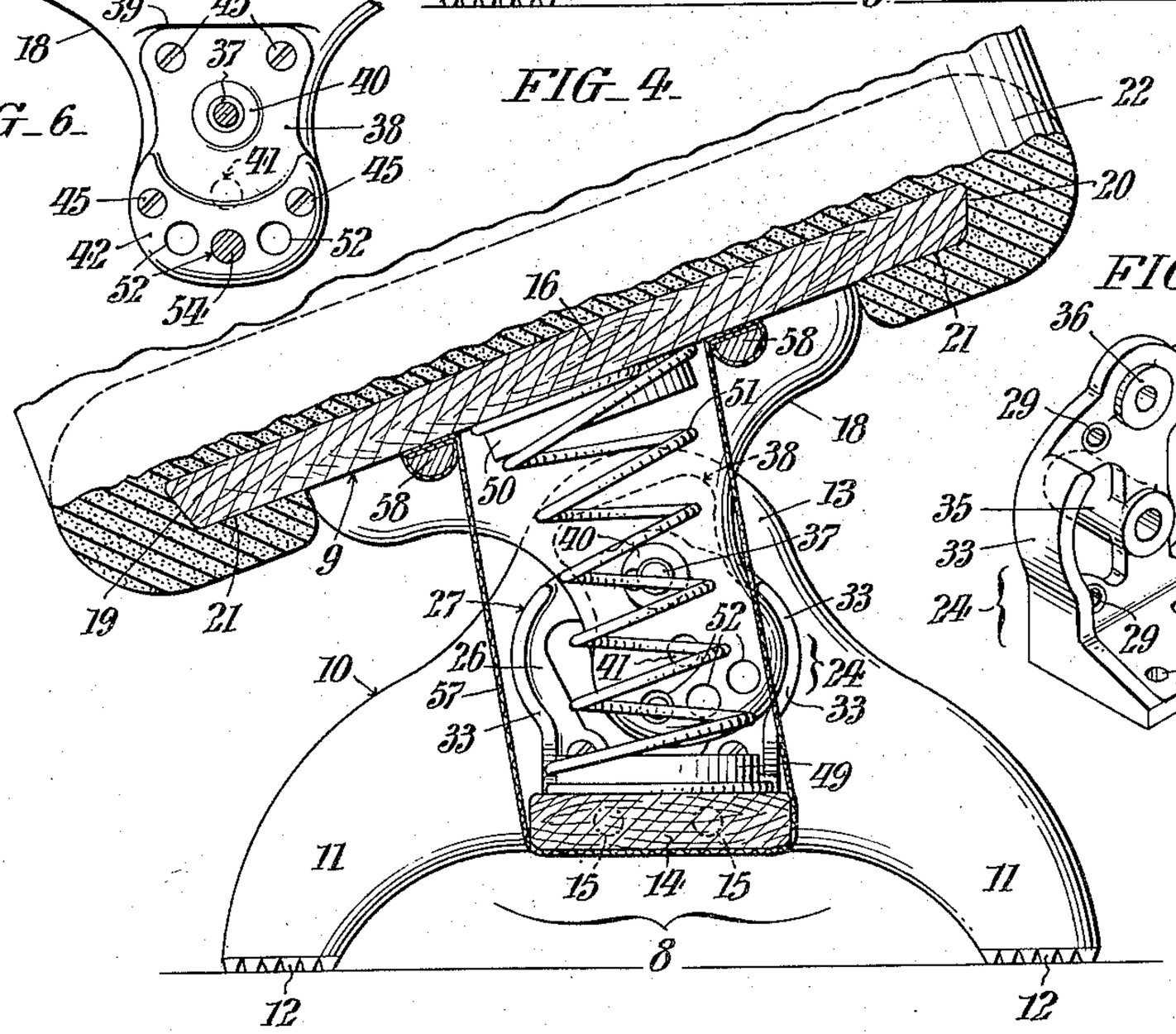
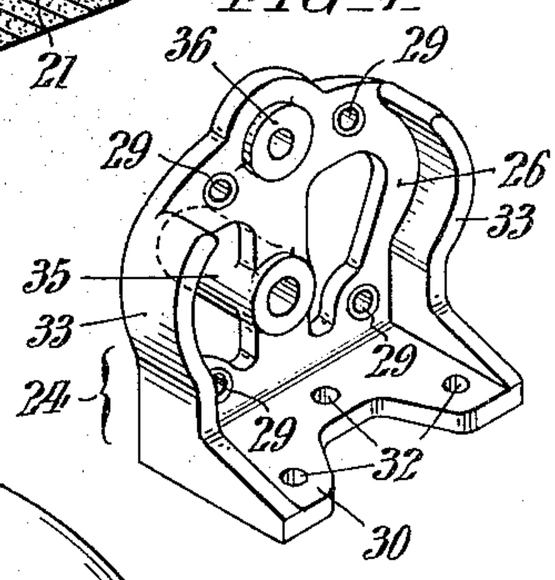


FIG. 7.



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Hubert Fuchs
Thomas W. Kerr Jr.

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UNITED STATES PATENT OFFICE

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TILTABLY ADJUSTABLE FOOT AND LEG REST

Alfred B. Bell, Philadelphia, Pa.

Application December 24, 1948, Serial No. 67,178

10 Claims. (Cl. 155—169)

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This invention has general reference to devices primarily designed to afford comfortable support for the lower limbs and feet of persons when seated, reclining or wholly recumbent; while it relates, more particularly, to the species or form thereof capable of being adjusted to accommodate different limb positions, as well as for use with varying types of chairs, lounges or other conventional resting supports for human beings.

The primary object of my invention is to provide an improved foot and leg rest including novel counteractively-influential means which jointly cooperate for automatic inclination of the limb supporting portion of said rest to the most restful position and thereby conducing to the comfort of the user when sitting up or partly recumbent.

Another object of my invention is to provide a foot and leg rest of the type indicated in the preceding paragraph including means whereby the angle of inclination of said rest can be variably adjusted relative to the horizontal for the purpose of eliminating discomforting leg strain.

A further object of my invention is to provide a foot and leg rest of the species above indicated including a novel type of spring means in compression and having capacity for oscillation, in combination with a fabric protective element, capable of lengthwise movement, and stop means limiting the angle of oscillation of the rest portion of my improved device.

A still further object of my invention is to provide a foot and leg rest, of the species above specified, including a novel form of pivot means effective to rigidify the rest as a unit.

Additional objects of my invention, with more or less ancillary or subsidiary advantages to those above indicated, will hereinafter appear or be readily understood from the following disclosure considered in conjunction with the accompanying two sheets of illustrative drawings; while the subjoined claims more particularly define the features of novelty deemed patentable.

With the foregoing objects in view my invention essentially consists in the provision of a strong, durable and compact foot and leg rest of the character above indicated which is relatively inexpensive to manufacture, that is durable and positive in action, and furthermore is practical and efficient to a high degree in use.

In the drawings—

Fig. 1, Sheet 1, is a front elevation of a convenient embodiment of my invention, with portions broken out or removed for a clearer showing of otherwise obscured details.

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Fig. 2 is an approximately central vertical section in the same plane of viewing as Fig. 1.

Fig. 3, Sheet 2, is a cross-section taken on the staggered plane III—III of Fig. 1.

Fig. 4 is a similar cross-section to the preceding figure but showing the limb supporting component in tilted position.

Fig. 5 is a fragmentary staggered detail view taken as indicated by the arrows V—V in Fig. 1.

Fig. 6 is a cross-section taken approximately on the plane VI—VI of Fig. 1; and

Fig. 7 is a perspective view of one of the pivot bearings, hereinafter fully described.

In describing the form of my invention exemplified by the two sheets of illustrative drawings herewith, specific terms will be employed for the sake of clarity but it is to be understood the scope of said invention is not thereby limited; each such term being intended to embrace all equivalents which perform the same function for an analagous purpose.

Referring more in detail to the drawings my improved foot and leg rest, as typically shown by the accompanying drawings, includes a base comprehensively designated by the reference character **8** and a pivotally related limb-rest similarly indicated by the numeral **9**. The base **8** comprises spaced side members **10** conveniently, although not essentially, made of hard wood and each of which embodies opposed divergent or arcuate legs **11**, equipped at their floor engaging ends with non-slip treads or pads **12**, and a mergingly related upper convexity or, hereinafter termed, bearing section **13**; while the side members **10** are maintained in spacial relation by aid of an intervening brace or spring-supporting connector member **14** rigidly inter-engaged to said side members by dowels **15**, for example, as typically indicated by dot-and-dash lines in Figs. 1, 3 and 5; or, as hereinafter further set forth.

The limb rest **9** preferably consists of a rectangular body member **16** of hard wood, or other suitable material, with flanking upturned taper-section or guard attachments **17**, Fig. 2 only, serviceable to prevent the user's leg or legs from rolling thereof, and spaced dependent side members or rockers **18** having somewhat orbicularly shaped lower ends, by means of which said rest **9** is pivoted snugly intermediate the side members **10** of the base **8**. It is to be observed that the front and rear edges **19**, **20**, Figs. 3 and 4, of the seat body member **16** are opposingly beveled for snug engagement within groove-like pockets **21**

provided in the underside of a suitable cushion 22 while said cushion includes somewhat similar pockets 21', Fig. 2 that underlap the taper attachment 17 whereby the cushion 22 is snugly, but removably, mounted and held on said body member 16, in an obvious manner. The cushion 22 may include springs or be made up from rubber or foam rubber, rubberized padding, or other suitable filler, to ensure maximum comfort; while the covering thereof may be of soft leather, plush or plastic, and of pleated, tufted or smooth character. Furthermore the cushion covering may be made of material and appearance corresponding with the upholstery of the furniture with which the foot and leg rest of my invention is to be associated or used.

Turning now to the means for pivotally attaching the limb rest 9 to the base bearing sections 13, said sections are fitted with substantially similar special angle-brackets 24, 25 respectively, Figs. 5 and 7, the major or vertical flange portions 26 whereof are inset in complementally shaped recesses 27, formed in the side members 10, and said brackets are secured in place as by attaching screws 28, Fig. 5, engaged through holes 29 in the flange portions 26, see Figs. 5 and 7 to best advantage; whereas the minor or horizontal flange portions 30 of the brackets 24, 25 seat on the confronting end sections of the spring-supporting member 14 and are rigidly attached thereto by carriage bolts 31 engaged through the ends of said member 14 and holes 32 in the flange portions 30, see Fig. 2, to best advantage. The respective brackets 24, 25 are formed with undulated side flanges 33 whereby said brackets are materially strengthened, while it is to be particularly remarked that said flanges 33 define motion limiting stops controlling the angular pivotal movement of the limb-rest 9, as later on herein further amplified.

It is to be further observed that the vertical flange 26 of the angle bracket 24 is provided with a lateral socket projection 35, Figs. 2 and 7, which extends outwardly beyond the associated base side member 10, see Figs. 1 and 2, for a purpose later on hereinafter explained; while 36 indicates the bearing portions for the pivot elements or studs 37 supporting the limb-rest 9.

Secured to each of the dependent rockers 18 of the limb rest 9, for coaction with the confronting face of the respective angle-brackets 24, 25 is a plate element 38 embodying an orbicular lower portion or conveniently of the shape best shown in Fig. 6, and inset in a complementally configured recess 39 provided for its reception in the associated rocker 18. Each plate element 38 embodies a tubular bearing portion 40, a round section dowel projection 41 on the inner face of said element 38, and an arcuate pad 42 on the outer face thereof. It is to be noted the lower portion of the plate element 38 registers with that of the associated rocker end portion, and that the bearing portion 40 engages in an orifice 43 bored through the rocker 18; whereas the dowel projection 41 seats in a boring 44 whereby said plate element 38 is positively restrained from lateral movement relative to the associated rocker 18, and that it is conveniently secured in position by appropriate screws 45.

Referring again to the pivot studs 37, it will be observed that each such stud embodies a relatively reduced extension 46, for snug engagement in the bore of the bearing portion 36 of the associated angle bracket 24 or 25, and that it is peened over or riveted at 47 to effect its rigid attachment thereto in an obvious manner. Cotter pins 48 are passed through suitable diametric holes at the outer ends of the pivot studs 37 to prevent any lateral shifting of the limb-rest 9 with respect to the base 8, as well as to positively maintain the coactive parts of the respective brackets 24, 25 in contact with the confronting portions of the plate elements 38.

In order that the limb rest 9 may normally return to the horizontal with respect to the base 8, when limb weight is removed therefrom, while positively retaining its intended capacity for oscillatory movement on the pivot studs 37, I provide the member 14, and the underside of the limb-rest body member 16, with spaced and axially aligned pads or seating elements 49, 50, respectively for reception of the outer ends of double helico-volute compression springs 51 having capacity for oscillation relative to their respective longitudinal axes.

To maintain or lock the limb rest 9 horizontal or at a definite inclination I provide the arcuate pad 42 of one or both of said limb rest dependent rockers 18 with spaced apertures 52, three for example only, with the middle one directly and spacedly well below the pivot stud 37, for reception of the frusto-conical end 53 of a plunger latch 54 that is axially slidable in the socket projection 35 of the associated angle-bracket 24 and/or 25; said latch 54 including a stem 55 and knob 56 whereby it is manipulated in an obvious manner. Thus it will be readily understood that by retraction of the plunger latch 54 and rocking the limb-rest 9 to the right or left-hand, said rest can be set at a definite inclination dependent only upon which of the outer apertures 52 has the plunger latch 54 pushed thereinto; also that, when the said plunger latch is moved into the central aperture 52, it will be self evident the limb-rest 9 is locked horizontal, whereupon the device may be used as a hassock or stool. A suitable fabric protective or cover-in element 5 is passed below the spring supporting member 14 and attached to the underside of the limb rest body member 16 as by clamp strips 58 and securing means 59. Incidentally the cover-in element 57 is free to ride under the spring-supporting member 14, and it may be of any desirable material and have the side edges undulated as indicated at 60 in Fig. 1 for esthetic reasons; while it is to be particularly remarked said cover-in elements 57 serves to protect the springs from becoming unduly flexed outwardly in either a forward or rearward direction.

From the foregoing it is felt that the merits and advantages inhering to my improved limb rest will be clearly apparent; and while I have shown and described a preferred construction, the same is by way of illustration only. Furthermore I consider as my own all such modifications in construction as fairly come within the scope of the following claims.

Having thus described my invention, I claim:

1. A foot and leg rest comprising a base with spaced uprights and an interengaged connector member; a limb-rest having side guards and dependent rockers for oscillatory engagement between the base uprights; bearing brackets embodying arcuate stops and inset in the opposed faces of the base uprights; plate elements similarly inset in the outer faces of the limb-rest rockers for oscillatory engagement with the confronting faces of the bearing brackets; means pivoting the plate elements to the bearing brackets and for substantial abutment against either

of the arcuate stops on said brackets; and means for holding the limb-rest at a desirable inclination, coincident with engagement against either of the stops, or in a horizontal neutral position.

2. A foot and leg rest comprising a base with spaced uprights and an interengaged connector member; a limb-rest having side guards and dependent rockers for oscillatory engagement between the base uprights; bearing brackets embodying arcuate stops and inset in the opposed faces of the base uprights; plate elements similarly inset in the outer faces of the limb-rest rockers for oscillatory engagement between the confronting faces of the bearing brackets; means pivoting the plate elements to the bearing brackets and for substantial abutment against either of the arcuate stops on said brackets; double helico-volute compression springs intermediate the base and the limb-rest; a suitable sheet-material cover-in element effective to prevent said compression springs against over flexure; and means for holding the limb-rest at a desirable inclination, coincident with engagement against either of the stops, or in a horizontal stationary position.

3. The invention of claim 2, wherein the rest comprises spaced uprights with an intervening dowel-attached connector member; wherein each said upright embodies divergent leg portions and a mergingly related convex bearing section; and wherein the floor engaging ends of the leg portions are equipped with non-slip elements.

4. The invention of claim 2, wherein the limb-rest comprises a flat body member having flanking upturned guard portions effective to prevent the user's leg from rolling thereof, and spaced dependent rockers having orbicular shaped ends for coaction with complementally shaped movement limiting stops on the confronting faces of the limb-rest uprights.

5. The invention of claim 2 wherein one of the bearing brackets embodies a vertical and a horizontal attaching flange, and opposed undulate side flanges with the upper portions of the latter defining arcuate movement limiting stops; and wherein the vertical flange embodies an apertured bearing section for a special form of pivot stud.

6. The invention of claim 2 wherein one of the bearing brackets embodies a vertical and a horizontal attaching flange as well as opposed side flanges defining arcuate movement limiting stops; wherein the vertical flange is secured in a conformatory recess of the confronting base upright, and the horizontal flange is secured to the

adjoining end of the connector member; wherein the vertical flange embodies an apertured bearing section for a special form of pivot stud; and wherein said vertical flange also includes a socket projection for housing holder means operative to control inclination of the limb-rest or to maintain the latter in horizontal position.

7. The invention of claim 2 wherein each plate element includes an orbicular lower portion; wherein said plate embodies a tubular bearing portion and a dowel projection on its inner face, as well as an arcuate pad on the outer face of the orbicular portion.

8. The invention of claim 2 wherein the means pivoting the plate elements to the bearing brackets each comprises a stud with a relatively reduced extension for rivet securement in the plate element; and wherein said stud is provided with cotter means for attaching it to the associated bracket tubular bearing portion.

9. The invention of claim 2 wherein the sheet material cover-in element consists of a length of fabric; and wherein said length of fabric is attached to the underside of the limb rest and has capacity for slidable coaction with the lower face of the base connector member to protect the helico-volute compression springs against undue axial flexure.

10. The invention of claim 2 wherein the means for holding the limb-rest at an inclination, or in horizontal position, consists of a plunger latch embodying a frusto-conical active end, a stem extension, and a manipulator knob; and wherein said plunger latch is engageable through a socket projection of the associated angle bracket for insertion into a selected retainer aperture of a series thereof, in the orbicular portion of the confronting plate element.

ALFRED B. BELL.

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