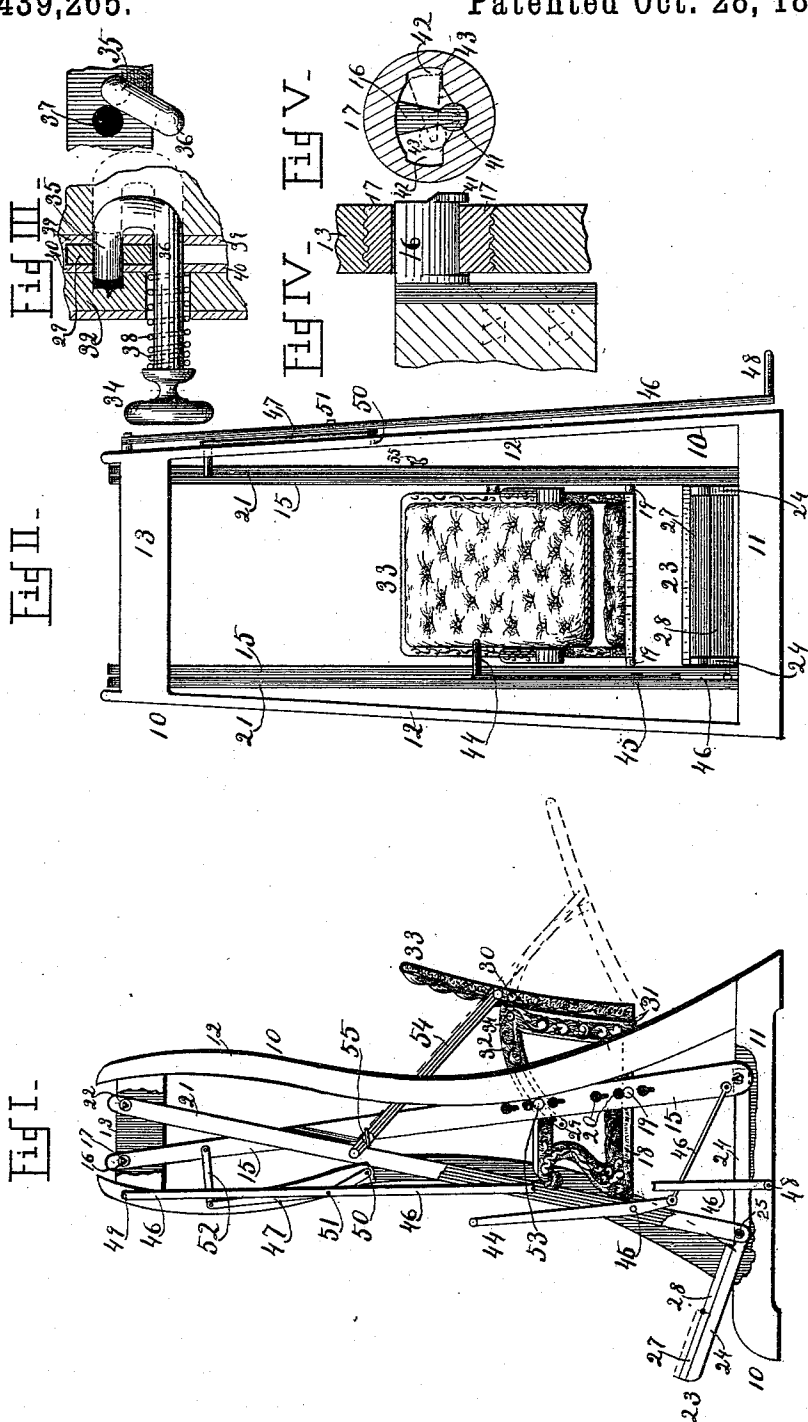


(No Model.)

J. P. AUVIL.
SWING.

No. 439,265.

Patented Oct. 28, 1890.



WITNESSES,
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SWING.

SPECIFICATION forming part of Letters Patent No. 439,265, dated October 28, 1890.

Application filed July 11, 1890. Serial No. 358,449. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. AUUIL, a citizen of the United States, residing at Gaudeeville, in the county of Roane and State of West Virginia, have invented certain new and useful Improvements in Oscillating Chairs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of implements for comfort by means of which either invalids or persons in health may receive mild exercise; and its object is to provide means whereby a person while either sitting up or reclining at his ease may swing himself or be swung by another.

To this end my invention consists in the construction and combination of parts forming an oscillating chair, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure I is a side elevation of an oscillating chair according to my invention with certain parts broken away. Fig. II is a front view of the same, as seen from the left of Fig. I. Fig. III represents a stop-pin in side view at the left and inner end view at the right. Fig. IV is a side view, partly in section, and Fig. V is an end view, partly in section, of one of my knife-edge hangers.

10 represents the frame comprising the sills 11, the curved uprights 12, and the beams 13, rigidly secured together.

15 represents the main swing-rods hung upon the side beams 13 by means of knife-edged hangers 16, which oscillate in suitable bearings 17.

18 is the chair provided with studs 19, fixed in the sides of its bottom to engage any pair of a series of holes 20 in the main swing-rods 15, whereby the chair may be raised or lowered to suit tall or short persons. The holes 20 are key-hole shaped, and the studs 19 are necked to engage the small ends thereof as journal-bearings whereon the chair may rock, and yet from which bearings the studs can only be removed after raising the chair and by springing the rods 15 outward.

21 represents the treadle-rods, also hung upon the side beams 13 by means of knife-

edged hangers 22, like 16 17, but located to the rear of the hangers 16.

23 represents the treadle comprising two sidebars 24, hung upon downward-faced knife-edges 25, in bearings in the treadle-rods 21, and bearing upward with knife-edges 26 in bearings in the rods 15, and a step 27, rigidly fixed between the side bars 24, and having a movable portion 28 hinged to the rear edge of the fixed portion to be folded over forward thereon in order that a person may step on the floor in front of the chair in taking his seat, because if he were to step on the treadle it would cause the chair to swing before he got seated.

33 is the chair-back hinged at 31 to the bottom, and provided with braces 29, fixed to it at points 30.

The brace 29 is a segment of a circle concentric with the hinge 31, and the arm of the chair at 32 is a similar segment and hollow to receive and conceal the brace 29 when the back 33 is upright. The segmental brace is provided with a series of pin-holes, into which a stop-pin 34 is adapted to spring to secure the back upright at any angle of inclination desired by the occupant. This stop-pin is U-shaped, its point 35 being adapted to swing sidewise with the body 36 as a pivot to carry it out of range of the pin-holes 37 in the brace.

38 is a spring acting constantly to press the pin outward into engagement with the brace.

39 40 are plates beside the brace, perforated to serve as bearings for the pin, the plate 39 acting also to prevent the pin from bearing on the brace and being pulled into service unintentionally. I make the bearing 17 cylindrical and screw-threaded outside to be screwed into a hole bored into the side beam 13. On the outer end of the knife-edged hanger 16 I provide a small head 41 to hang over the end of the bearing 17 to keep the hanger in its bearing when in service, and I shape the hole in the bearing with recesses 42 at its sides to permit the hanger to be removed by lifting the swing farther to one side than it naturally swings. (See knife-edge in dotted lines 43 ready for passage either way through the hanger.) The upper side of the opening in the hanger is on an arc of a circle from the bearing-point of the knife-edge to

keep the hanger from being lifted out of its bearing when in service.

44 represents a hand-lever pivoted at 45 to the rod 21 and connected by a rod 46 with the rod 15. The rods 15 and 21, crossing each other, form with the side bar 24 a triangle, whose upper angle not being secured the angle may be varied either by bearing on the treadle-lever 23 or by working the hand-lever 44. If a person sitting with his body back in the chair were to bear his feet directly upon the point 25, the swing would not be moved; but if he bends his body forward to aid the downward pressure the swing will move backward to right itself under his weight. Then if he straightens up the swing returns, and by repeating this bending of his body the swing gradually acquires an oscillating motion; but with this swing the operator may recline at ease in the chair, and by pressing his feet upon the treadle a direct leverage is produced upon the triangle of the supporting-rods to change its form and thereby mechanically push the swing to oscillating. The same effect may be produced also by working the hand-lever 44, so that an invalid may use either foot or hand, according to his ability, and in case he is too weak to operate the swing I provide an outside attachment of levers 46 47, whereby an attendant may exercise the invalid. The lever 46 has a pedal 48 for the attendant's foot, and is pivoted to the frame at 49. The lever 47 is pivoted to the frame at 50, and is connected by a pivot 51 with the lever 46 and by a rod 52 with the swing-rod 15. A short motion of the attendant's foot will move the swing through its whole arc. When it is desired that the chair be fixed rigidly to swing with the rods 15, I provide a stud 53, attaching the arm of the chair to the rod in the same manner as the stud 19 attaches the bottom to the rod, but when it is desired to keep the chair in an upright position throughout the swinging movement I remove the stud 53 and attach a compensating rod 54 to the back and to the treadle-rod 21. One portion of this rod 54 is slotted and the other portion has a stud end fitting the slot and provided with a thumb-nut 55, whereby the two parts of the rod may be bound rigidly together to act as one after being set at the length required to give the chair the desired inclination, whether the chair-back be vertical or inclined.

Having fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

1. The combination of a frame, a pair of chair-rods hung pivotally near the top thereof, a pair of treadle-rods also hung pivotally near the top thereof but to the rear of the chair-rod hangings and crossing the said chair-rods, a treadle pivotally connected with both sets of the said rods at their lower ends and provided with a step 27, located at a considerable distance forward of the treadle-rods, whereby the treadle acts as a lever, and a rod 54, pivotally connecting the back of the chair with a treadle-rod 21, substantially as described.

2. The combination of the frame 10, the rods 15 21, pivotally hung thereon and crossing each other, a chair hung upon the said rods, a treadle pivotally hung upon the lower ends of the said rods and provided with the step 27 at a material distance forward of the rods 21, and a movable portion 28, hinged to the rear edge of the step to fold forward thereon, substantially as described.

3. The combination of a frame 10, two rods 15 21, hung thereon and crossing each other, a treadle pivotally attached to the lower ends of the said rods, a chair having one pivotal connection 19 with the rod 15 and further having a removable connection 53 with the same rod, and a pivoted rod-connection 54 with the rod 21, the connections 53 and 54 being interchangeable, as described.

4. The combination of the hollow chair-arm 32, the perforated brace 29, fitted to slide therein, the U-shaped pin 34, having one short arm 35, a spring 38, acting upon said pin, and a plate 39, perforated to register with the perforations in the said brace, the short arm 35 being adapted to swing to one side of the said perforation in the plate or to register therewith, substantially as described.

5. The combination of a chair, two pairs of hanging rods therefor, a frame, knife-edged hangers 16 for the said rods, bearings 17 upon the frame to receive the hangers, the hangers having each a head 41, projecting at its knife-edge, and the bearings being externally-threaded cylinders having broad V-shaped bearings for the said knife-edged hangers, and recesses 42 at the sides, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. AUVIL.

Witnesses:

W. X. STEVENS,
WM. H. DELACY.