May 19, 1925.

E. H. TALBERT

1,538,601

PORCH SWING

Filed April 22, 1921

2 Sheets-Sheet 1

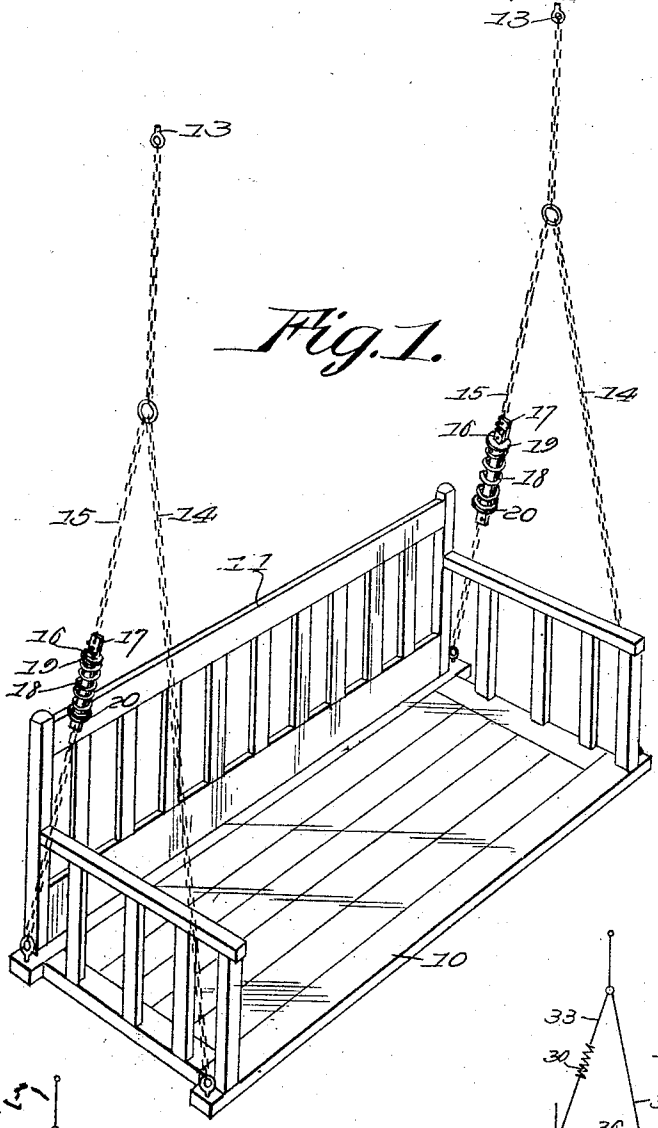


Fig. 1.

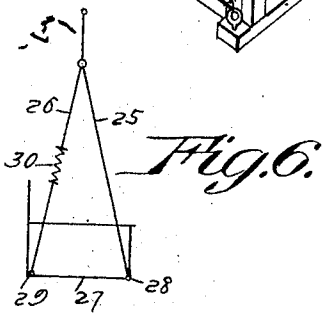


Fig. 6.

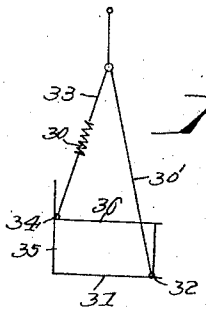


Fig. 7.

Inventor

E. H. Talbert

May 19, 1925.

E. H. TALBERT

1,538,601

PORCH SWING

Filed April 22, 1921

2 Sheets-Sheet 2

Fig. 2.

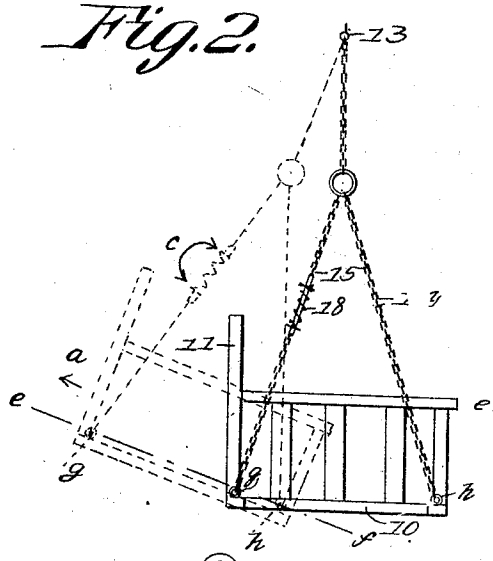


Fig. 3.

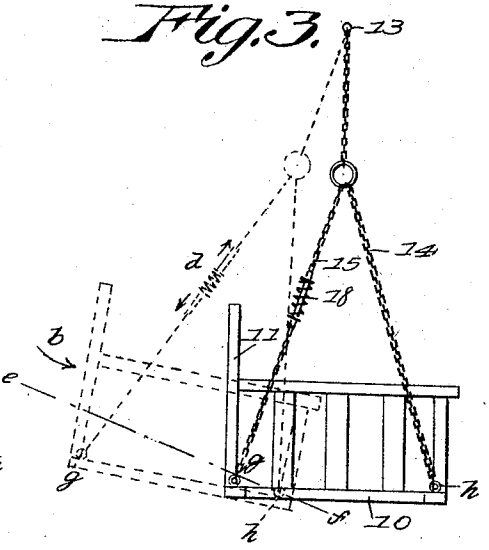


Fig. 4.

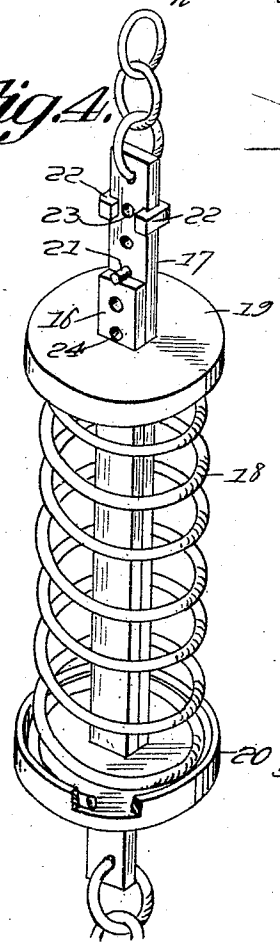


Fig. 5.

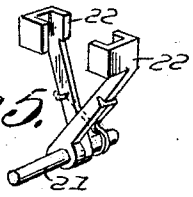


Fig. 6.

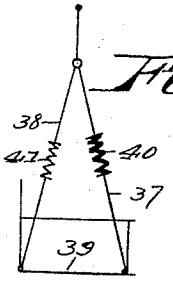


Fig. 9.

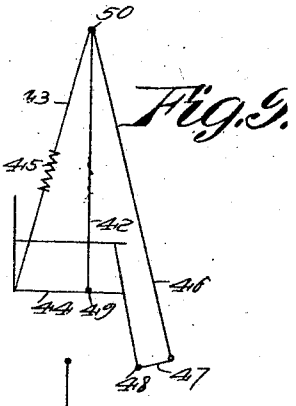


Fig. 10.

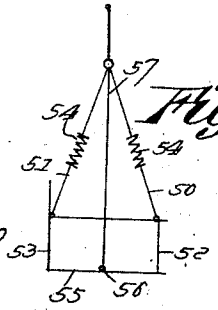
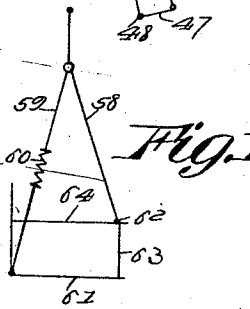


Fig. 11.



Inventor

E. H. Talbert

Patented May 19, 1925. 1,538,601

UNITED STATES PATENT OFFICE.

EDGAR HUME TALBERT, OF CHEVY CHASE, MARYLAND.

PORCH SWING.

Application filed April 22, 1921. Serial No. 463,634.

To all whom it may concern:

Be it known that EDGAR HUME TALBERT, a citizen of the United States of America, residing at Chevy Chase, in the county of Montgomery and State of Maryland, has invented new and useful Improvements in Porch Swings, of which the following is a specification.

The object of the invention is to provide a porch swing or like object with suspending means whereby the seat member thereof is adapted for a rhythmic rocking or oscillatory movement having a cushioning or jar relieving effect in addition to the oscillatory or swinging movement which is incident to the bodily suspension of the seat, whether the latter is supported from an overhead or an under-foot axis, and which auxiliary rocking or oscillatory movement will be incident to the change in the direction of swinging movement of the device as a unit, or to the shifting of the center of gravity of the load imposed upon the seat, or both, and wherein the sensitiveness or responsiveness of the seat in its rocking or supplemental oscillatory movement may be regulated or adjusted to correspond with the load imposed upon the seat or to suit the preference of the occupant of the swing, to the end that the ratio of amplitudes of main or bodily oscillatory and supplemental oscillatory movements may be modified at the will of the operator; and with these objects in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:

Figure 1 is a view of a porch swing of the type having an overhead support provided with suspending means constructed in accordance with the invention.

Figure 2 is a side view showing diagrammatically the elements of the swing and indicating in dotted lines the relation of the parts as the swing seat approaches the limit of its rearward movement.

Figure 3 is a similar view showing in dotted lines the parts of the swing at the end of the rearward movement and as it starts on the return or forward movement.

Figure 4 is a detail view of one of the compensating units.

Figure 5 is a similar view of one of the locking devices by which the elements of the suspending unit are secured in their adjusted positions.

Figure 6 to 11 inclusive are diagrammatic views showing modifications in the rearwardly points of connection of the suspending elements to the swing seat or related elements of the load supporting structure.

The type of swing which has been selected as a means of illustrating the invention is that wherein the seat 10 is provided with a back 11 and is supported for oscillatory or swinging movement from an overhead axis 13, relatively remote from the plane of the seat, by means of front and rear downwardly divergent suspending elements 14 and 15 consisting of chains, ropes, cables, rods or the equivalent thereof, said suspending elements being disposed in radial relation with the axis of oscillatory movement, and being connected at their lower ends with the seat respectively near the front and rear edges thereof, and the invention consists essentially in providing the rear suspending elements with means for permitting a yielding extension thereof or a yielding movement of the rear or back carrying edge of the seat with relation to the front edge of the seat, to effect a tilting movement of the seat or an oscillatory movement of the seat with relation to an axis disposed at or near the front edge of the seat, such tilting, rocking or oscillatory movement being independent of and supplemental to the bodily swinging movement of the seat about the supporting axis represented at 13.

There is, however, in operation a relation between the rocking, tilting or supplemental oscillatory movement and the main swinging or bodily oscillation, in the fact that the means used for permitting the former should be of such tension as to provide for the yielding of the rear or back edge of the seat as the swing reaches the limit of its rearward bodily swinging movement or as the direction of swinging movement changes from rearward to forward, dependent upon the weight which is imposed upon the seat, and which therefore must be variable to correspond with the weight of the occupant of the swing.

To this end the rear suspending elements of the swing seat may be provided as illustrated with compensating units each of which consists of relatively adjustable elements 16 and 17 terminally connected respectively with members of the suspending element and yieldingly connected by a coil spring 18 of which the terminals are seated

upon disks 19 and 20 carried by the elements 16 and 17, the tension of the spring and the amplitude of movement of the spring connected elements being regulated by a stop 21 consisting in the construction illustrated of a pin carried by a clamp 22 of which the jaws are yieldingly held in engagement with the opposite edges of the element 17, and which pin is adapted for selective engagement with a series of openings 23. The element 16 may also be provided with a perforation 24 for engagement by the locking pin when fitted in either of the perforations of the element 17, when it is desired to dispense with the rocking or tilting movement of the seat.

In operation the bodily swinging or oscillatory movement of the seat about the remote supporting axis 13 is accompanied by a rocking, tilting or oscillatory movement about an axis adjacent to or in the plane of the seat at its forward edge defined by the line of connection of the front suspending elements with the seat, the maximum oscillatory movement of the seat about the axis adjacent to its plane being noticeable at the limit of the rearward bodily swinging movement of the seat incident to the change in the direction of swinging movement and to the fact that as the swing changes its movement from rearward to forward the center of gravity of the load represented by the occupant of the seat and which center of gravity is above the plane of the seat is shifted rearwardly with relation to the seat, with the effect that the seat during the forward swinging movement is tilted upward toward its front edge at a greater angle than during the rearward swinging movement and gradually approaches the normal position as the swing approaches the limit of its forward movement due to the resistance offered by the springs of the compensating units.

The operation indicated serves to relieve or cushion jar at the limit of the rearward swinging movement of the seat and at the same time to afford a pleasurable sensation of security in that the forward pitch of the body of the occupant of the swing is eliminated. The occupant in other words has a feeling of settling in preparation for the forward swinging movement which is absent when no provision is made for an equivalent of the tilting movement indicated, or when there is an absence of a definite yielding relation between the front and rear suspending means for the seat.

Referring particularly to Figures 2 and 3 in which the arrows *a* and *b* indicate respectively the directions of movement of the seat structure as it approaches and leaves the limit of rearward swinging movement, and in which the arrows *c* and *d* represent respectively the contracted and extended relation of the parts of the yielding members of the rear supporting elements, it will be observed that the seat maintains a normal or uniform relation, so far as its plane is concerned with reference to the overhead axis of movement, until the swing reaches the limit of its rearward swinging movement or as long as the center of gravity of the load maintains a fixed relation to the seat, but as the direction of movement of the swing shifts from rearward to forward, at the end of the rearward movement, and the center of gravity of the load tends to continue in the direction of rearward swinging movement and thus is shifted rearwardly with relation to the seat, additional strain is placed upon the rear suspending elements which causes an extension of the compensating means or members represented in the construction illustrated by springs 18 and bars 16 and 17, with a resultant depression relatively of the rear edge of the seat from the plane indicated by the dotted line *e—f* in Figures 2 and 3 to the dotted line position *g* in Figure 3, such movement occurring with reference to the supplemental or secondary axis *h* representing the connection of the front suspending elements with the seat, and hence a forward progress of the seat in a position assuring a more comfortable posture of the occupant of the swing.

In the modified relations of connection between the suspending elements and the seat structure suggested in Figures 6 to 12 inclusive, it will be observed that whereas in Figure 6 said elements represented respectively at 25 and 26 are connected directly to the seat 27 at its front and rear edges as shown at 28 and 29 the spring or cushioning member 30 being introduced only into the rear suspending elements, the form which is shown in Figure 7 indicates the connection of the front suspending elements 30 directly with the seat 31 at its front edge as shown at 32 but shows the rear suspending elements 33 connected with the seat indirectly by attachment as at 34 to the juncture between the back 35 and the arm 36. Again in Figure 8 while the connection of front and rear suspending elements 37 and 38 is directly with the seat element 39 at its front and rear edges, the spring members 40 and 41 of said front and rear suspending elements are respectively of different tensions, the latter being of less tension than the former to provide for a more sensitive or responsive yielding movement,—the front springs having merely a cushioning effect to relieve jar without interfering with the proposed rocking or tilting movement of the seat about its front edge as an axis; whereas in the form shown in Figure 9 the arrangement contemplates front and rear suspending elements 42 and 43 connected directly with the seat 44, and the cushioning mem-

ber 45 in the rear element, together with a supplemental suspending element 46 connected with a foot rest 47 which is pivoted for swinging movement at 48. In this form the same rocking or tilting movement of the seat is secured by reason of oscillation about an axis adjacent to the plane of the seat and represented by the line of connection 49 of the lower ends of the front suspending elements 42, in addition to the oscillation about the overhead axis 50, but at the same time the occupant of the swing by pressure at intervals upon the foot rest 47 may cause the required swinging movement of the seat.

In the form illustrated in Figure 10 the connection of the front and rear suspending elements 50 and 51 with the seat is effected indirectly through the front and rear standards 52 and 53, both of which may be provided with spring members 54, while the axis of the supplemental oscillatory movement of the seat 55 is represented by the line of connection 56 of the lower ends of intermediate suspension elements 57 having direct connection with the seat at an intermediate portion of the distance between the front and rear edges thereof but providing as in the forms previously described for the proposed rocking or supplemental oscillatory movement. Again in the form shown in Figure 11 the front and rear suspending elements 58 and 59, of which the latter include the spring member 60, are respectively connected indirectly and directly with the seat 61, the former being attached as at 62 to the upper ends of the front standards 63 of the arms 64 while the rear suspending elements are connected directly with the seat at its rear edge.

The invention having been described, what is claimed as new and useful is:—

1. A porch swing comprising a seat, downwardly diverging front and rear tensile supporting elements having a single overhead axis of oscillation, said supporting elements being connected with said seat, certain of said elements being yieldingly extensible for elongation relative to the remainder to afford tilting vibration of the seat about a contained axis.

2. A porch swing having a seat, downwardly divergent front and rear tensile supporting elements connected with the seat and suspended for pendulous movement relative to a single overhead axis, and means contained in said elements to provide for the resilient depression of the rear edge of the seat in response to a superimposed load to effect a rocking movement on an axis parallel with that of suspension and adjacent to the plane of the seat.

3. A porch swing comprising a seat, suspension elements having a single overhead axis of oscillation, said suspension elements being connected with the seat at remote points on the latter, certain of said elements being yieldingly extensible for elongation relative to the remainder to afford tilting movement of the seat about a contained axis.

4. A swing having front and rear supporting elements suspended from a common overhead axis and connected with the seat respectively near its front and rear edges, the rear suspending elements being connected with the seat through a back rising from the plane of the seat at its rear edge and including a yielding member to provide for oscillatory movement of the seat about an axis represented by the connection with the front edge of the seat of the front suspending elements.

5. A porch swing having a seat, forward and rear suspending means for the same swung for pendulous movement on a common axis, and adjustable resilient means included in one of said suspending means to provide for varying the intensity of vibratory movement of one edge of the seat during its pendulous movement.

6. A porch swing having a seat, front and rear suspending means for the same swung from a common axis for pendulous or oscillatory movement, resilient means contained in certain of said suspending means, and adjustable means for varying the intensity of said resilient means to provide for varying the character of vibratory movement at that edge of the swing adjacent said resilient means.

In testimony whereof he affixes his signature.

EDGAR HUME TALBERT.