No. 839,295. PATENTED DEC. 25, 1906.

S. A. JONES.

ROCKING DEVICE.

APPLICATION FILED AUG. 16, 1906.

Fig. 1.

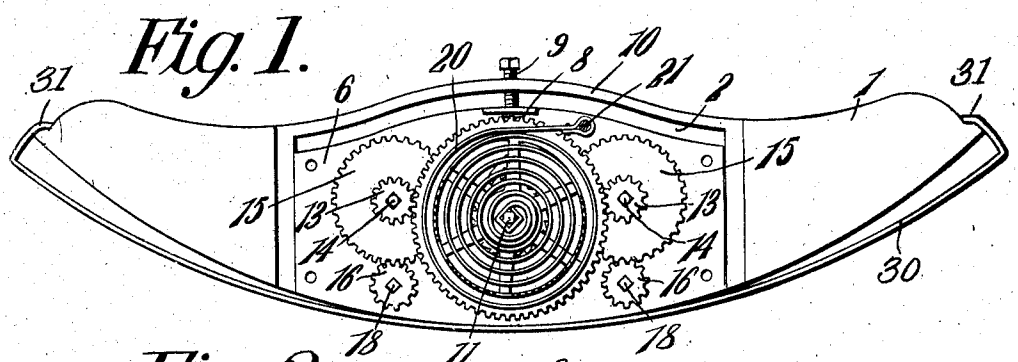


Fig. 2.

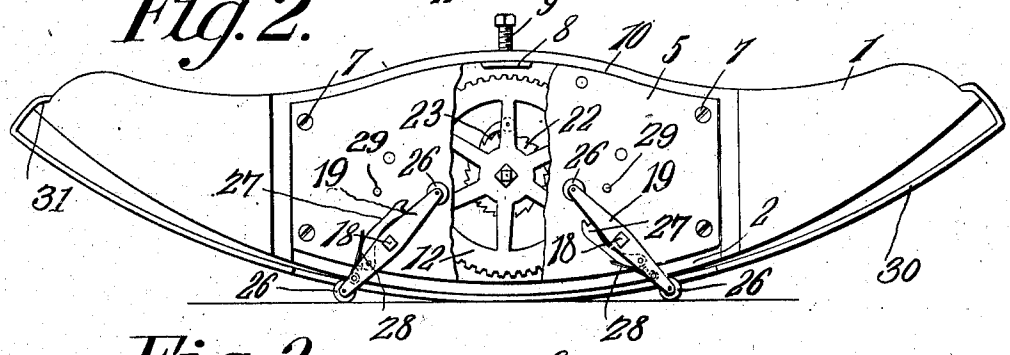


Fig. 3.

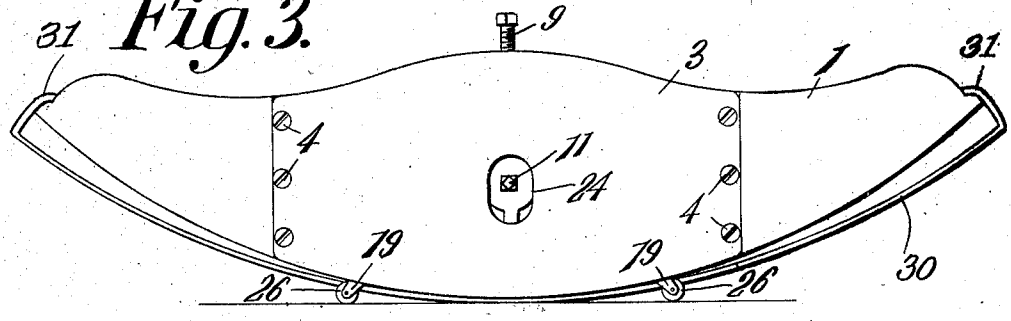
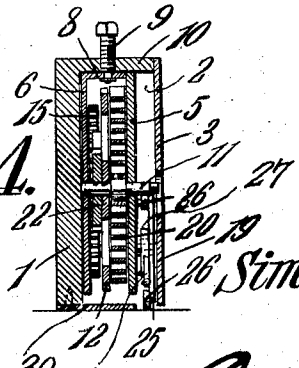


Fig. 4.



Witnesses:
E. K. Stewart.
C. Bradway.

Inventor
Simeon A. Jones,
By C. A. Snow & Co
Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SIMEON A. JONES, OF CEDAR RAPIDS, IOWA, ASSIGNOR OF ONE-THIRD TO LOUIS WOKOUN, OF CEDAR RAPIDS, IOWA.

ROCKING DEVICE.

No. 839,295. Specification of Letters Patent. Patented Dec. 25, 1906.

Application filed August 16, 1906. Serial No. 330,896.

To all whom it may concern:

Be it known that I, SIMEON A. JONES, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Rocking Device, of which the following is a specification.

This invention relates to mechanisms for rocking cradles and other devices; and it relates more particularly to a mechanism of this character in which a pair of propellers are employed to alternately engage the floor and exert an upward thrust, so that the article to which they are applied will rock back and forth in a regular continuous manner.

The invention has for one of its objects to provide a rocking device of this character in which two rotary propellers are employed in connection with a suitable driving mechanism for simultaneously rotating the propellers.

A further object of the invention is to adjustably mount the device on a rocker, so that the effective range of rocking may be adjusted at will.

Another object of the invention is the employment of a means, such as a bowed spring, on the under side of the rocker for assisting in preventing the cradle, chair, or other device from being upset.

With these objects in view and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a side elevation of a rocker with parts of the mechanism removed to show the interior thereof. Fig. 2 is a similar view showing the cover-plate removed and part of one of the plates of the supporting-frame broken away. Fig. 3 is a side elevation of the rocker complete. Fig. 4 is a central transverse section of Fig. 3.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

Referring to the drawings, 1 designates a rocker, such as may be used on a cradle, chair, or other suitable article of furniture or apparatus to be rocked. The rocking device may be mounted on the rocker in any suitable manner. By preference, however, the rocker is recessed at one side and the mechanism set in. The recess 2 is centrally located, and the open side thereof is closed by a cover-plate 3, secured in any suitable manner, as by screws 4. Located within the recess 2, so as to move vertically therein, is the frame of the propelling mechanism, the same comprising a front plate 5, a rear plate 6, and screws or bolts 7, securely holding the plates spaced apart. The rear plate 6 is provided with a lug 8 or other suitable means, on which is swiveled an adjusting-screw 9, that screws up and down through the top walls 10 of the recess, whereby the frame and the motor mechanism thereon can be raised or lowered to vary the effective thrust produced by the propellers. The motor mechanism is of the clockwork type and comprises a central arbor 11, carrying a large gear-wheel 12, which drives corresponding trains of gears located on opposite sides thereof. Each train of gears consists of a pinion 13, meshing with the main gear-wheel and keyed to a shaft 14, on which is rigidly secured the second gear-wheel 15. The gear-wheel 15 meshes with a pinion 16 on the shaft 18, to which the propeller is attached. The front end of the lower shaft 18 is squared, so as to receive the propeller 19. The propeller-carrying shafts are rotated on the frame at a point suitably close to the floor, so that the propellers 19 may be comparatively short and at the same time be in proper relation to the floor.

The arbor 11 is driven by a stiff coil-spring 20, that is anchored at its outer end on the post 21, while its inner end is rigidly secured to the arbor. The outer end of the arbor is squared, so as to receive a key or crank for turning the arbor to wind the spring. The usual ratchet-wheel 22 and pawl 23 are employed between the main gear-wheel 12 and its arbor for facilitating the winding of the spring. The ends of the arbor 11 and shafts 14 and 18 are mounted in apertures in the front and rear plates of the supporting-frame. The front end of the arbor is accessible

through an opening 24 in the cover-plate 3, said opening being elongated in a vertical direction, so as to provide for the vertical adjustment of the motor-mechanism-supporting frame.

The propellers 19 each comprises a straight lever mounted at its center upon its respective shaft 18, and the ends thereof are provided with antifriction-rollers 26. The propellers are arranged so that their major axes will always be at an angle of ninety degrees with respect to each other, and they are rotated simultaneously in the same direction. By this arrangement one end of one propeller will be just engaging the floor when the corresponding end of the other propeller is leaving the floor, so that the propellers act alternately to give the rocker an impulse.

In order to prevent the propellers from revolving when the rocker is raised bodily off the floor and the motor from thereby needlessly running down, the propellers are each provided with a centrifugally-acting dog 27, normally held in an inoperative position by a spring 28 on the propeller, as clearly shown in Fig. 2. On the motor-frame at a point adjacent each propeller is a stop 29, with which the outer end of the dog is adapted to engage when the speed reaches a certain point, so as to thereby arrest the motion of the propellers.

Suitably secured on the bottom of the rocker is a leaf-spring 30, that is bowed on an arch slightly greater than the convexity of the rocker, so that the outer end portions of the spring are normally spaced a suitable distance away from the under side of the rocker when the latter is in a central position. The spring is secured at its center to the center of the rocker, and the free ends thereof are compressible toward the rocker when the weight thereof bears upon them. To hold the spring under tension and to prevent the spring from unbowing, the extremities are formed into hooks 31, which engage the ends of the rocker, as shown. By this arrangement as the rocker moves back and forth from one side to the other the ends of the spring 30 yield as the weight of the rocker and attached parts is brought to bear thereon, and the tension of the spring acts to prevent the rocker from tilting too far.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily appreciated. In operation the spring 20 is first wound, so as to simultaneously drive the two trains of gears for rotating the propellers 19. The propellers are so arranged that as they rotate their corresponding ends are brought alternately into engagement with the floor, so that the rocker is first tilted to one side by one propeller and then to the opposite side by the other propeller. In this way the rocker will be oscillated back and forth continuously until the energy of the spring is expended. The amplitude of oscillation of the rocker can be varied by adjusting the motor-mechanism frame to different heights by means of the adjusting-screw 9. By so adjusting the frame the centers about which the propellers rotate will be moved closer to or farther from the floor, thereby varying the effective propelling relation between the floor and propellers.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof; but I desire to have it understood that the apparatus shown is merely illustrative and that various changes may be made when desired as are within the scope of the invention.

What is claimed is—

1. The combination with a rocker, of a plurality of rotary floor-engaging propellers mounted thereon, and a mechanism arranged on the rocker to rotate the propellers continuously in one direction.

2. The combination with a rocker, of a plurality of rotatable floor-engaging propellers on the rocker each arranged to alternately engage the floor with its extremities for oscillating the rocker, a mechanism supported on the rocker for actuating the propellers, and means arranged to vertically adjust the position of the propellers for varying the rocking effect thereof.

3. The combination with a rocker, of a pair of rotary propellers having antifriction-rollers at opposite ends, a pair of shafts for rotating in the same direction for driving the propellers, and mechanism for rotating said shafts simultaneously.

4. The combination with a rocker, of a motor mechanism thereon, means for adjusting the said mechanism vertically with respect to the rocker, propellers connected with and actuated by the said mechanism and associated therewith for vertical adjustment.

5. The combination with a rocker recessed at one side, of a motor mechanism adjustably mounted in the recess, propellers driven by the said mechanism, and a cover secured to the rocker for closing the open side of the recess.

6. The combination with a rocker, of propellers, a mechanism for actuating the propellers, and a spring located under the rocker and attached thereto with its end portions normally spaced apart from the rocker.

7. The combination with a rocker, of propellers, a mechanism for actuating the propellers, a spring located under the rocker and attached thereto with its end portions normally spaced apart from the rocker, and a device at the extremities of the spring which

engage the rocker to hold the spring normally under tension.

8. The combination with a rocker, of a pair of propellers rotatably mounted thereon, a mechanism on the rocker for rotating the propellers, and devices on the propellers for limiting the speed of rotation thereof.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SIMEON A. JONES.

Witnesses:

ERNEST R. MOORE,

GEORGE W. SWAB.