An Inventor, residing at Ambridge, in the county of Beaver, and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Rocking-Chair Fans, of which improvements the following is a specification.

The object of my invention is to provide a fan attachment for rocking-chairs, which will be simple and compact in construction, which may be readily attached to and detached from a chair, and whereby the rocking movement of the chair may be utilized to effect the continuous rotation of a fan.

In the accompanying sheets of drawings, which form part of my specification, the preferred embodiment of my invention is illustrated. Figure 1 is a perspective view of a rocking chair and the fan attachment applied thereto; Fig. 2 a side view to enlarged scale of the fan attachment; Fig. 3 a vertical sectional view taken on the line III—III; Fig. 2; and Figs. 4 and 5 detached views of details of construction referred to more particularly hereinafter.

In the practice of my invention in its preferred form, I provide a shaft to which a fan is operatively connected for continuous rotation, and for effecting the rotation of such shaft I provide mechanism suitably supported upon a frame adapted to be detachably connected to the rocker of a chair, such mechanism including an oscillatory pinion and means for converting the oscillatory movements of the pinion into a continuous rotation of the shaft.

In the preferred embodiment of my invention the shaft 1 is rotatably mounted within a tubular casing 2 provided with the bracket 3 for attachment to the arm 4 of a rocking chair, as by means of a set screw 5. The upper end of the shaft is provided with a bevel pinion 7 which meshes with a second pinion 10 secured to the end of a shaft 9, to the opposite end of which the fan is attached. The shaft 9 may, as shown, be rotatably mounted in a suitable bracket 6 secured to the casing 2.

The mechanism for effecting the continuous rotation of the shaft 1 is mounted upon a frame, preferably constructed of two main parts, adapted to be connected to each other in various relative positions. In the illustrative embodiment of my invention these frame parts comprise a bar 11 provided with set screw clamps 12 for attaching it to the rocker 13 of a chair, and a housing 14.

As indicated in Figs. 2 and 4, the adjacent connecting faces of the bar and housing are provided with cooperating detents 15 so that, when the housing and frame are arranged in a given relative position and the nut tightened upon the connecting bolt 16, these frame parts will, during the operation of the mechanism, remain in their pre-adjusted relative positions.

Pivoting mounted on the frame member 14 there is a horizontally disposed lever 17 provided at one end with a rack 18. At the other end of this lever there is pivotally connected a vertically disposed rod or bar 19 adapted to reciprocate in a bracket 20 secured to the frame bar 11. This bracket is preferably provided with suitable anti-friction rollers 21. The lower end of the bar 19 is held yieldingly downwardly by means of a leaf spring 22 secured to the frame bar 11, and adapted to have its effective tension adjusted by means of a set screw 23.

It will be manifest from the foregoing description that, during one rocking movement of the chair, the bar 19 will be pressed upwardly by the motion of the chair, and that during the opposite rocking movement it will be pressed downwardly by the spring 22, these movements, through the pivoted lever 17, imparting an oscillatory movement to the rack 18.

Within the housing member 14 of the frame, suitable mechanism is provided to convert this oscillatory movement of the rack into a continuous rotary movement adapted to be imparted to the shaft 1. While various means may be used to this end, there is preferably provided a pair of oppositely acting clutches. As shown herein, the housing 14 is provided with a rotary shaft 24 having at one end a spur gear 25 adapted to mesh with the oscillatory rack 18, and having at its other end a plane faced gear 26.

Dispensed at right angles to the shaft 24 and rotatably mounted in the housing 14, there is a second shaft 27. Rotatably mounted upon and at the upper and lower ends of the shaft 27 there are pinions 28 and 29 which mesh with the face gear 26 at opposite sides of its axis of rotation.

Referring particularly to Fig. 5, the upper horizontal face of the pinion 29 is provided with a tooth or detent 30, adapted, when the pinion is turned in one direction, to engage
one of a series of ratchet teeth 31 formed on the lower end of a sleeve 32, which sleeve is longitudinally slideable upon but rotatable with the shaft 27. For thus connecting the sleeve to the shaft, the sleeve is provided with a slot 34 and the shaft with a pin 33 projecting through the slot. Thus, while the detent 30 of the pinion 29 will, when such pinion is rotated in one direction, engage a tooth of the sleeve 32 and turn such sleeve, and hence the shaft 27, the opposite rotation of this pinion will cause the detent 30 to raise the sleeve 32 so that such opposite rotation becomes ineffective to turn the shaft 27.

A second similarly constructed clutch, including a vertically movable ratchet-faced sleeve 35, is coordinated with the pinion 28, the entire construction being such that, when the face pinion 26 is rotated in one direction, the shaft 27 will be driven through the pinion 28, and that when the face pinion is rotated in the opposite direction such shaft will, through pinion 29, be rotated in the same direction in which it was previously rotated by pinion 28. Thus the oscillatory movement of the pinion 18 and face gear 26 is converted into a continuous rotation of the shaft 27.

To the end that the frame attachment may be applied to chairs of different sizes, the shaft 27 is connected to the shaft 1 by means of a flexible shaft 36. Also, it is for the purpose of adjusting the mechanism to chairs of different size and shape that the frame is constructed of two parts adapted to be connected to each other in various relative positions.

It will be observed of the fan attachment which I have provided that it is compact in construction and neat in appearance, and that, merely by the manipulation of three set screws, it may be readily attached to or detached from chairs of different sizes and shapes. Furthermore, the mechanism is direct and positive in action, and may, by properly proportioning the gear ratios, be made effective to impart high rotary speed to the fan. Finally, the driving connections between the oscillatory rack 18 and rotary 50 shaft 1 are such that this shaft may continue to rotate after the rocking motion of the chair has ceased.

According to the provisions of the patent statutes, I have described the principle and operation of my invention, together with the mechanism which I now consider to represent the best embodiment thereof. However, I desire to have it understood that, within the scope of the appended claims, my invention may be practised by other forms of mechanism than that specifically shown and described.

I claim as my invention:
1. In a fan attachment for a rocking chair, the combination of a rotary shaft, a fan operatively connected thereto, a two-part frame adapted to be connected to a chair, adjustable means for connecting said frame parts in different relative positions, a lever pivotally mounted on one of said frame parts and provided at one end with a rack, a spring secured to the other of said frame parts and acting on the other end of said lever, and a pair of oppositely acting clutches between said rack and shaft, said clutches being carried by the frame part on which said lever is pivoted.

2. In a fan attachment for a rocking chair, the combination of a rotary shaft, a fan operatively connected thereto, a frame provided with means for clamping it to the rocker of a chair, a horizontally disposed lever pivotally mounted on said frame and provided at one end with a rack, a vertically disposed rod pivotally connected to the other end of said lever, a spring carried by said frame and pressing said rod downwardly, and means carried by said frame and coordinated with said shaft and rack to convert the oscillatory movement of the rack into a continuous rotation of said shaft.

In testimony whereof I have hereunto set my hand.

AARON ROSENSON.

Witness:
FRANCIS J. TOMASSON.

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