E. CATTINARI.

COMBINED CHAIR AND FAN.

APPLICATION FILED FEB. 8, 1918.

1,302,010.

Patented Apr. 29, 1919.

2 SHEETS—SHEET 1.

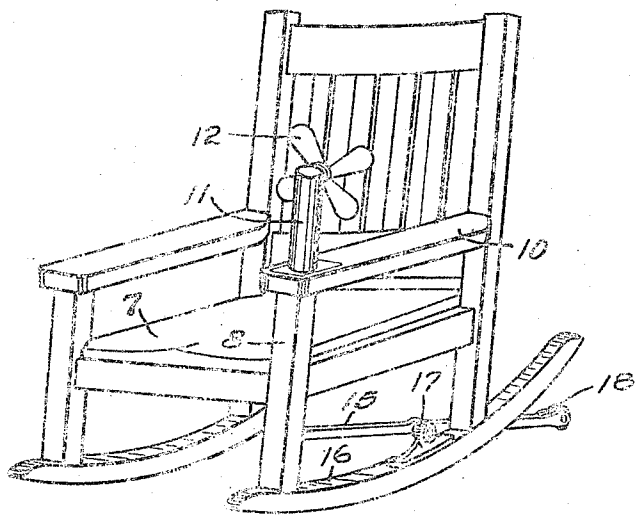


FIG. 1

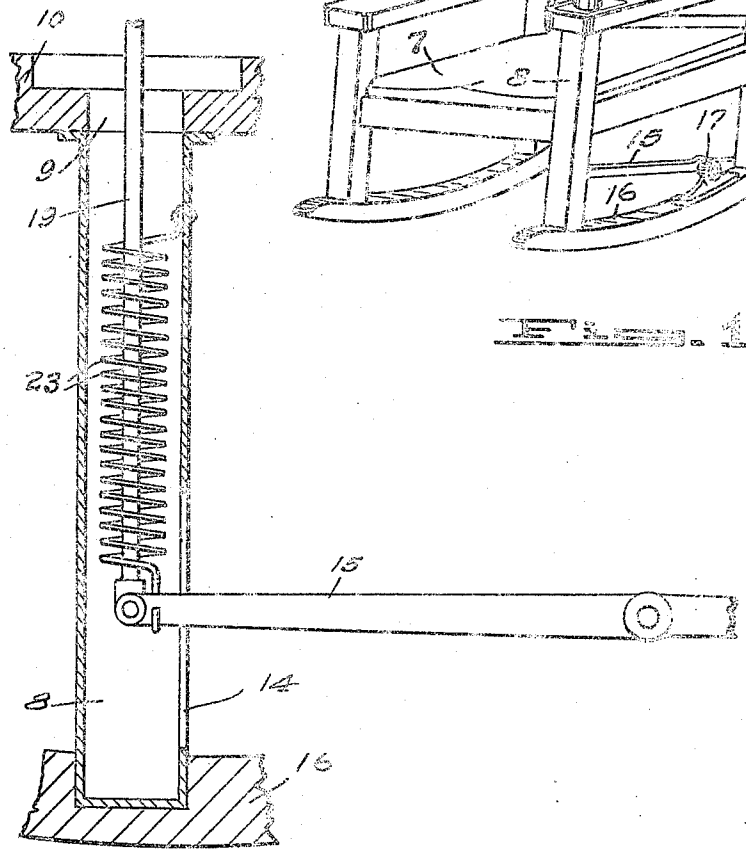


FIG. 2

INVENTOR

ERNEST CATTINARI

BY C. A. Hastings

ATTORNEY

E. CATTINARI.

COMBINED CHAIR AND FAN.

APPLICATION FILED FEB. 8, 1918.

1,302,010.

Patented Apr. 29, 1919.

2 SHEETS—SHEET 2.

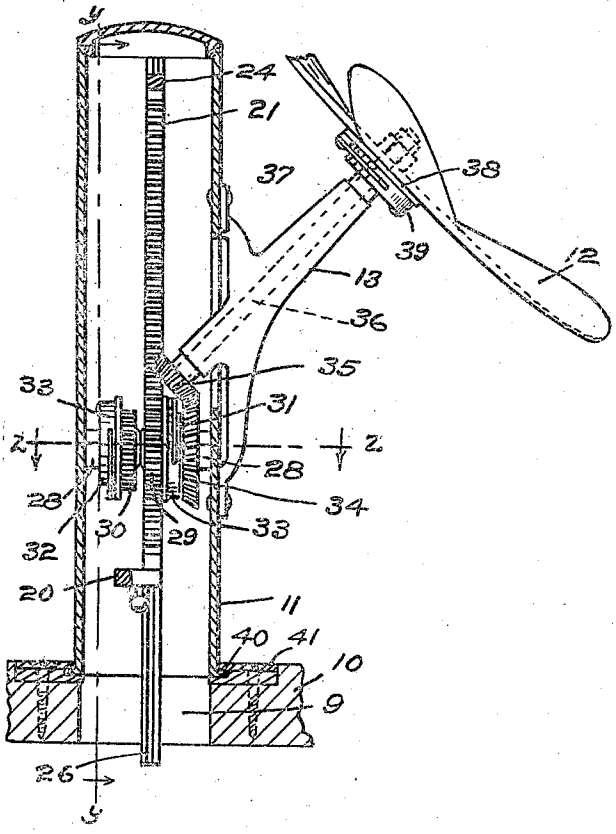


FIG. 3

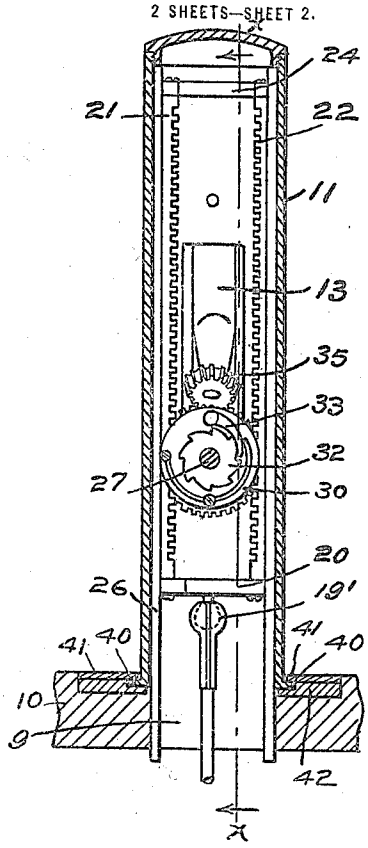


FIG. 4

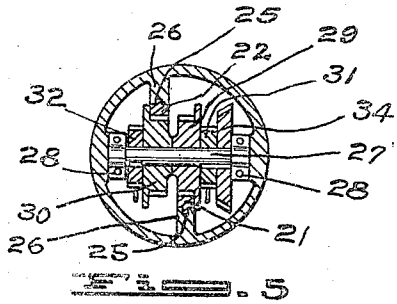


FIG. 5

INVENTOR

ERNEST CATTINARI

BY

C. D. Haskins

ATTORNEY

MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ERNEST CATTINARI, OF SEATTLE, WASHINGTON.

COMBINED CHAIR AND FAN.

1,302,010. Specification of Letters Patent. Patented Apr. 29, 1919.

Application filed February 8, 1918. Serial No. 216,132.

To all whom it may concern:

Be it known that I, ERNEST CATTINARI, citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Combined Chairs and Fans, of which the following is a specification.

My invention relates to improvements in a combined chair and fan, and the object of my invention is to provide simple and efficient mechanism for associating a rotary fan with a rocking chair whereby the rocking motion of the chair may be utilized to produce rotary motion to drive the fan.

A further object of my invention is to mount the fan so that it may easily be turned around on the arm of the chair to cause it to deliver a draft of air in any desired direction.

I accomplish these objects by devices illustrated in the accompanying drawings, wherein—

Figure 1 is a view in perspective of a structure embodying my invention;

Fig. 2 is a view in vertical section of a hollow chair leg showing a fragment of the chair arm and parts of the actuating mechanism;

Fig. 3 is a view in vertical section of a hollow casing that is disposed to project above the chair arm, showing portions of the fan and actuating mechanism in elevation;

Fig. 4 is a view in vertical section on broken line y, y of Fig. 3; and

Fig. 5 is a view in horizontal section on broken line z, z of Fig. 3.

Referring to the drawings throughout which like reference numerals indicate like parts.

In a general way my invention consists in a rotary fan that is adapted to be pivotally mounted on the arm of a rocking chair so that it may be turned in any desired direction and that is connected by means of rack and pinion connections with a fulcrumed rear end bearing on the floor and to derive its power from the rearward rocking movement of the chair thus utilizing the weight of the occupant to propel the fan.

7 indicates an ordinary rocking chair that is provided with a hollow front leg 8, which leg 8 is preferably formed of metal and is adapted to communicate through an opening 9 in the chair arm 10, with a hollow cylindrical casing 11, that is pivotally secured to the top face of the chair arm 10 and is disposed to project upwardly therefrom, the hollow chair leg 8 and the hollow casing 11 serving to inclose driving mechanism that is provided to actuate a fan 12 which is journaled in an angularly disposed bracket 13 that is secured to the hollow casing 11.

A longitudinal slot 14 is provided in the rear side of the leg 8 and a lever arm 15 is pivotally secured to the adjacent chair rocker 16, approximately midway of its length, by a bearing bracket 17, and is provided with a roller 18 of soft material, as rubber, on its outer end that is adapted to bear on the floor, said lever arm 15 having its forward end projected through the slot 14 and being adapted to move longitudinally of such slot 14 as the chair is rocked.

A vertical shaft 19, disposed lengthwise within the leg 8 and the casing 11 has its lower end articulated with the forward end of the lower arm 15, and its upper end connected by a ball and socket joint 19′ with a cross-head 20, that is secured to vertically movable toothed rack bars 21 and 22, the forward end of the lever arm 15 and the shaft 19 being adapted to move downwardly with respect to the leg 8, in response to the upward movement of the forward portion of the chair and to move upwardly with respect to such leg 8 in response to the action of a helical tension spring 23 which has its upper end secured to the upper portion of the chair leg 8 while its lower end is secured to the forward end of the lever arm 15, such spring being extended by the downward movement of the forward end of the lever arm 15 within the leg 8, when the chair is rocked backward, and reacting to move the forward end of the lever arm 15 and the shaft 19 upwardly with respect to the leg 8 when the chair is rocked forward, thus serving at all times to keep the backward end of the lever arm 15 in contact with the floor.

The rack bars 21 and 22 have their top ends rigidly connected and spaced apart by a cross-bar 24 and are each formed with outwardly projecting guide tongues 25, which extend lengthwise of the rack bars 21 and 22 and are adapted to move vertically in guideways 26 provided on the inside surface of the casing 11 to guide the rack bars 21 and 22 as they move up and down within said casing 11.

A shaft 27 centrally disposed crosswise of the casing 11 intermediate of its length, is

journaled in bearings 28, provided on the inside surface of such casing 11 and gear-wheels 29 and 30 are mounted freely to rotate on such shaft, the gear wheel 29 being adapted to mesh with the rack bar 21 and the gear wheel 30 being adapted to mesh with the rack bar 22 in such manner that when the rack bars 21 and 22 are moved up and down with respect to the casing 11 they may act to rotate the gear wheels 29 and 30 first in one direction and then in another direction, and in order to transform such rotary motion of the gear wheels 29 and 30 into a continuous rotary motion in a predetermined direction and transmit such rotary motion to the shaft 27 I have provided ratchet wheels 31 and 32 that are fixedly mounted on the shaft 27 and that are adapted to be moved in one direction only by spring pressed pawls 33 that are provided on the outside surface of each of the gear wheels 29 and 30.

Thus referring to Fig. 4 if the rack bar 22 be made to engage the gear wheel 30 to rotate said gear wheel 30 and the ratchet wheel 32 in a clockwise direction during the downward movement of such rack bar with respect to such gear wheel then the rack bar 21 will engage the gear wheel 29 to rotate such gear wheel together with the ratchet wheel 32 in a like clockwise direction on the upward movement of such rack bar with respect to such gear wheel, the pawls 33 riding over the teeth of their respective ratchet wheels during the rotation of their gear wheels in one direction, and such engagement with the teeth of such ratchet wheels will turn the shaft always in the same direction during their rotation in the opposite direction.

A bevel gear wheel 34 is fixedly mounted on the shaft 27 and is adapted to be engaged by a smaller bevel gear wheel 35 that is fixedly secured to the shaft 36 on which the fan is mounted, said shaft 36 passing through the journal bracket 13 and being provided with a fixedly mounted ratchet wheel 37 near its outer end.

The fan 12 is freely mounted to rotate on the shaft 36 and is provided with a flat disk or hub 38, which is disposed on its rear side adjacent the ratchet wheel 37, said hub 38 being provided with a spring pressed pawl 39 that is adapted to engage with the teeth of the ratchet wheel 37 to turn the fan when the ratchet wheel is rotated in one direction and which pawl is further adapted to ride over the teeth of ratchet wheel 37 when the speed of rotation of such ratchet wheel is slackened or when the rotation of such wheel is entirely stopped thus to permit the fan to continue its rotary motion due to its own momentum.

The lower end of the casing 11 is turned outwardly in the form of an annular flange 40 that is disposed between two plates 41 and 42 on the arm of the chair and forms a bearing that will securely hold the casing and at the same time permit it to be rotated about its axis to turn the fan at any desired angle.

The ball and socket joint not only permits the casing 11 to be rotated without turning the rod 19 but also affords the desired pivotal connection between the rod 19 and yoke 20 that permits the rod to be moved out of alinement with the housing 11 a slight amount as the end of the lever arm 15 moves up and down with respect to the chair.

The operation of my rocking chair fan is simple and effective, the occupant of the chair by rocking backward and forward in the usual manner operates the fan with ease.

When the chair is rocked backwardly the roller 18 on the rear end of the lever arm 15 is made to bear downwardly on the floor while such lever arm oscillates on the pivot bearing 17 the effect of this action being to hold the forward end of the lever arm nearly stationary with respect to the floor, while the front portion of the chair moves upwardly with respect to the forward end of the lever arm, thus causing the gear-wheels 29 and 30 to roll upwardly along the rack bars 21 and 22 to be rotated thereby and to transmit rotary motion through the intercommunicating mechanism to the fan.

When the front portion of the chair moves downwardly or the chair is rocked forwardly the tension spring 23 contracts thus keeping the roller 18 in contact with the floor, and maintains such lever arm very nearly stationary with respect to the floor the only vertical movement of said lever arm 15 being due to the slight vertical movement of the pivot bearing 17, thus causing the gear-wheels 29 and 30 to roll downwardly over the rack bars 21 and 22 thus to act through the intercommunicating mechanism to rotate the fan.

The downward and upward movement of the front portion of the chair, when the chair is rocked, produces the same result that would be produced by grasping the rear end of the lever arm and moving it up and down if the chair were held in a fixed position.

Obviously changes in the details of construction of my device may be made without departing from the spirit of my invention.

What I claim is:

1. The combination with a rocking chair, of an upright elongated casing having its lower end rotatably secured to the top face of an arm of said chair, a rotatable fan carried by said casing, a lever fulcrumed on a rocker of said chair, a rod connected at its lower end with the forward end of said lever, means to normally hold the rear end

of said lever in contact with the floor, rack bars mounted for longitudinal movement within said casing, a ball and socket joint connecting said rack bars with the upper end of said rod whereby said rack bars will be reciprocated by the rocking movement of said chair and whereby said casing may be turned about its longitudinal axis so as to adjust the fan to deliver a draft of air in a desired direction, and mechanism in said casing for converting the reciprocatory motion of said rack bars to rotatably drive said fan.

2. The combination with a rocking chair having a hollow leg provided with a longitudinal elongated slot, of an upright casing secured to the top face of an arm of said chair and interiorly communicating with the interior of said leg, a rotary fan carried by said casing, a lever fulcrumed on a rocker of said chair and having its forward end extended into said hollow leg through said slot, a rod connected at its lower end with the forward end of said lever and arranged within said leg, a spring within said leg to hold the forward end of said lever normally raised with the rear end thereof in contact with the floor, rack bars mounted for longitudinal movement within said casing and pivotally connected to the upper end of said rod whereby the rack bars will be reciprocated by the rocking movement of said chair, and mechanism in said casing for converting the reciprocatory motion of said rack bars to rotatably drive said fan.

In witness whereof, I hereunto subscribe my name this 25th day of January A. D. 1918.

ERNEST CATTINARI.

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