No. 649,945.

Patented May 22, 1900.

S. NARKINSKY.

FAN.

(Application filed Feb. 8, 1900.)

(No Model.)

Fig. 1.

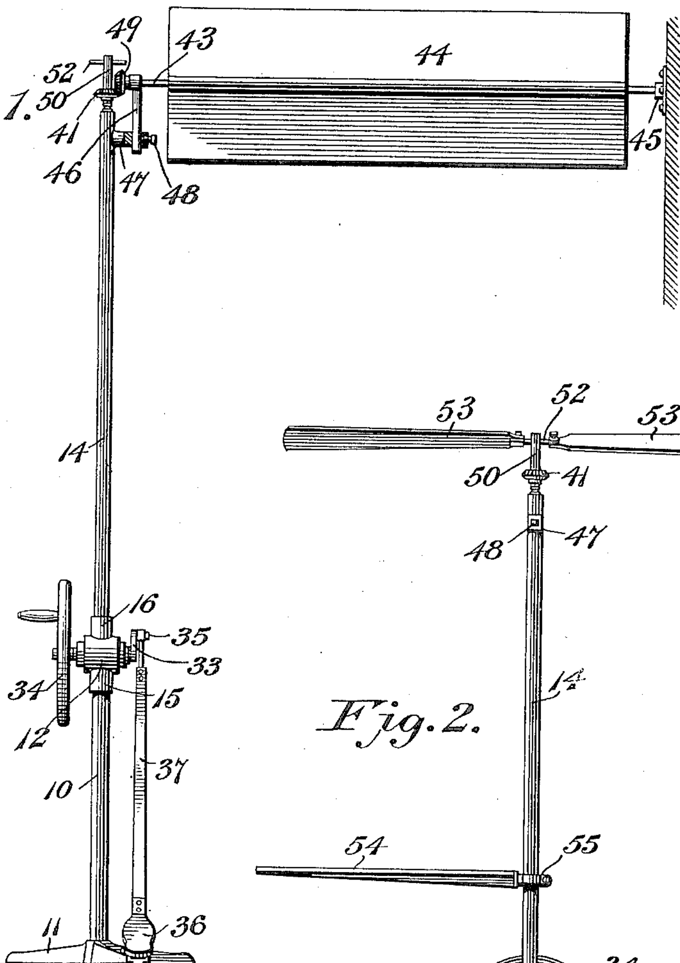


Fig. 2.

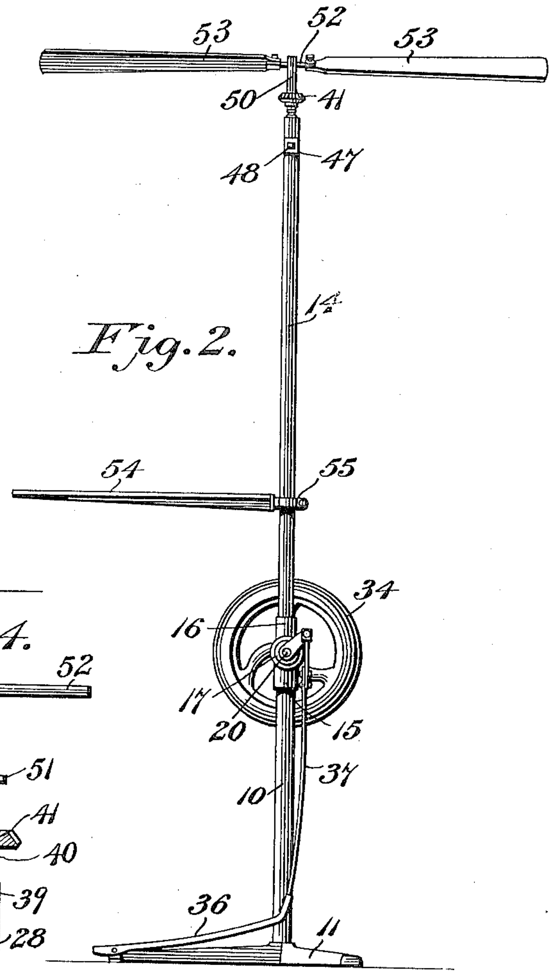


Fig. 3.

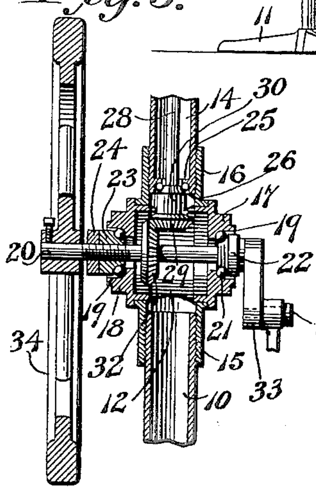
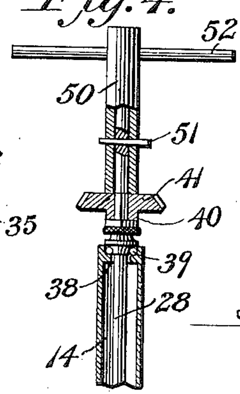


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL NARKINSKY, OF LITTLE ROCK, ARKANSAS.

FAN.

SPECIFICATION forming part of Letters Patent No. 649,945, dated May 22, 1900.

Application filed February 8, 1900. Serial No. 4,547. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL NARKINSKY, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented a new and useful Fan, of which the following is a specification.

My invention relates to improvements in fans which may be operated by hand or by foot-power; and one object in view is the provision of means by which an elongated fan revoluble on a horizontal axis may be supported in part by the means employed for driving the same, said fan-driving means being also adapted for use in connection with a fan revoluble on a vertical axis.

A further object is to provide a novel type of driving mechanism in which the gearing is housed or contained in a closed boxing and the intergeared shafts are supported by ball-bearings to reduce the friction and insure easy working of the parts.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novel features of construction and arrangement of parts will be pointed out in the claims.

In the drawings, Figure 1 is an elevation of a fan mechanism embodying my invention and adapted to support and drive a fan which is revoluble on a horizontal axis. Fig. 2 is an elevation of another type of fan embodying the features of this invention. Fig. 3 is an enlarged sectional view taken vertically through the gear-boxing and the parts associated therewith. Fig. 4 is another vertical sectional elevation through the upper end of the standard and one fan-head, showing in detail the means for removably fastening said fan-head to the upper end of the driven shaft. The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

In carrying my invention into practice I employ a pedestal 10, which may be tubular, as shown, or of solid metal. This pedestal is held in a vertical position by a base 11, of any suitable form, adapted to rest upon the floor and to support the fan mechanism in position for operation over a table or other object. A gear-boxing 12 is arranged between the pedestal and a tubular standard 14, so as to operatively connect these parts, and this gear-boxing is constructed to support a horizontal crank-shaft 20 and the driving-gear by which motion is communicated from said crank-shaft to a vertical driven shaft 28, which extends through the tubular standard 14. At its lower side the gear-boxing is provided with a nipple 15, into which is screwed the upper end of the pedestal 10. Another nipple 16 is provided on the upper side of the gear-boxing to receive the lower threaded end of the tubular standard 14, whereby the boxing is united to the pedestal and the standard. The ends of the boxing are open for the reception of the horizontally-alined bearing-caps 17 18, which are provided with the central ball-races 19, and through these ball-races of the two bearing-caps pass the horizontal crank-shaft 20, the latter being free to rotate within the two annular series of bearing-balls 21, which are fitted in the ball-races of the caps. The series of bearing-balls in the cap 17 are confined in place by a cone 22, which is fast with the shaft, and on a threaded part of the shaft is screwed the adjustable cone 23, which is operatively related to the bearing-balls in the other cap 18, so as to hold the same therein, this adjusting-cone being held to its position by a check-nut 24, which is also screwed on the shaft.

The tubular standard 14 is provided within its lower end, which is received without the coupling 16, with a partition 25, having a central opening for the passage of the vertical shaft 28, and the lower face of said partition has a ball-race 26, adapted to receive a series of bearing-balls 27. A gear 29 is made fast with the lower extremity of this vertical shaft, said gear extending into the central chamber of the gear-boxing 12. The hub 30 of this wheel is provided with a groove or ball-race in opposing relation to the race of the partition 25, and thus the hub of the gear, with the vertical shaft, is adapted to turn freely in a ball-bearing provided at the foot of the standard. A bevel-gear 32 is made fast with the crank-shaft, so as to be contained within the boxing, and this gear intermeshes with the gear 29 for the transmission of motion from the crank-shaft to the vertical fan-driving shaft 28. The ends of the crank-shaft are extended beyond the ball-bearings in the caps 17 18, which close the ends of the boxing, and

on one end of this shaft 20 is made fast a crank 33, while a balance-wheel 34 is secured firmly to the other end of the crank-shaft, said crank 33 having a wrist-pin 35. A treadle is shown by the drawings as the means for driving the crank-shaft by foot-power; but it is evident that hand-operated means of any suitable nature may be connected with the wrist of the crank-shaft for rotating the same. Said treadle 36 is pivoted at one end on the base, and to the other end of the treadle is secured the lower end of a spring-pitman 37, the upper end of which pitman is fitted loosely on the wrist-pin of the crank-shaft. The employment of this spring-pitman is advantageous, because it holds the crank off center and the treadle in elevated position, which on the application of foot-pressure insures the prompt starting of the shaft and its rotation in the proper direction.

The upper end of the tubular standard is provided with an internal partition 38, (see Fig. 4,) which is located within the extremity of the standard and which, furthermore, is provided with a central opening for the passage of the vertical shaft 38. The upper face of this partition constitutes a ball-race adapted to receive the bearing-balls 39, on which rests the hub 40 of a fan-driving gear 41, the latter being made fast with a part of the shaft 28 which projects above the tubular standard.

In the embodiment of the invention illustrated by Fig. 1, I have shown a fan which is revoluble on a horizontal axis and so arranged that it is supported partly by the standard and is driven from the vertical shaft. This fan comprises a shaft 43 and a series of radial blades 44. The fan is arranged in a horizontal position to one side of the standard 14, and one end of the shaft is journaled in a wall-bracket 45, which is secured firmly to the face of a wall, column, or other place. The other end of the shaft is journaled in a bearing provided in the upper extremity of a vertical bearing-arm 46, the lower end of which arm is received in a socket-arm 47, which is integral or fast with the upper part of the tubular standard 14. This bearing-arm is vertically adjustable in the socket, and it is held firmly in place by a binding-screw 48. A gear 49 is made fast with the fan-shaft and arranged to intermesh with the gear 41 on the vertical shaft, whereby the latter is adapted to operate the fan.

Although I prefer to employ a fan having the radial blades and revoluble on a horizontal axis, the vertical shaft 28 may be employed as the means for supporting and driving a fan which is revoluble on a vertical axis, as shown by Fig. 2. Such a fan comprises a tubular head 50, which iss lipped over the upper protruding end of the vertical shaft 28, and this head is secured detachably to the shaft by a transverse locking-pin 51, the latter serving to make the fan-head fast with the shaft, so that it will rotate therewith at all times. This fan-head is provided with a transverse spindle 52, on which the oblique blades 53 may be clamped for adjustment at any desired angle. It is evident that such a fan will rotate with the vertical shaft for the purpose of agitating the air and creating a circulation over a person sitting beneath the same; but at the same time the fan-head may be detached by removing the pin, so that the vertical shaft may be used in connection with the fan shown by Fig. 1.

By reference to Figs. 3 and 4 it will be noted that the tubular standard 14 is provided at its opposite ends with ball-bearings adapted to sustain the vertical shaft 28 in condition for easy and free rotation, and this is also provided for the crank-shaft, because the latter is journaled in ball-bearings which are carried by the boxing, whereby the driving mechanism may be easily operated. The intermeshing driving-gears are housed within the boxing, so as to prevent the same from catching in the clothing, and said gears are also protected from accumulations of dust and dirt. The standard 14 may also be utilized as the means for supporting a shelf 54, which is provided at one edge with a clamp 55, which embraces the standard and serves to fasten the shelf adjustably thereon, so that the shelf may be raised or lowered, or it may be turned on the standard to different positions. This shelf is adapted to support a book or other objects within convenient reach of a person.

Changes within the scope of the appended claims may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention is embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. The combination of a fan revoluble on a horizontal axis, a wall-bracket supporting one end of the fan-shaft, a bearing-arm supporting the other end of the fan-shaft, a pedestal carrying a motor mechanism, a tubular standard mounted on the pedestal, and a vertical shaft geared to the motor mechanism and to the fan-shaft, substantially as described.

2. The combination of a pedestal carrying a motor mechanism, a tubular standard mounted on the pedestal and provided with a laterally-extending socket-arm, a bearing-arm fitted in the socket-arm for vertical adjustment therein, a clamp for making the bearing-arm fast with the socket-arm, a horizontal fan having one end of the shaft journaled in the bearing-arm, another bearing for the fan-shaft, and a vertical shaft geared to the motor mechanism and to the fan-shaft, substantially as described.

3. The combination of a pedestal provided with a base, a tubular standard having at its upper and lower ends the partitions forming the ball-races, a boxing interposed between

the pedestal and standard and provided with couplings which unite the several parts together, the bearing-caps applied to the ends of the boxing and having the ball-races, a crank-shaft passing through said caps and provided with the cones and an intermediate gear, a vertical shaft mounted in the partitions of the standard, a gear fast with the lower end of the vertical shaft and adapted to one of the ball-bearings and intermeshing with the gear on the crank-shaft, a fan driven by the vertical shaft, and means for rotating the crank-shaft, substantially as described.

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

SAMUEL NARKINSKY.

Witnesses:

SAMUEL F. ETTINGER,

GUY H. BILHEIMER.