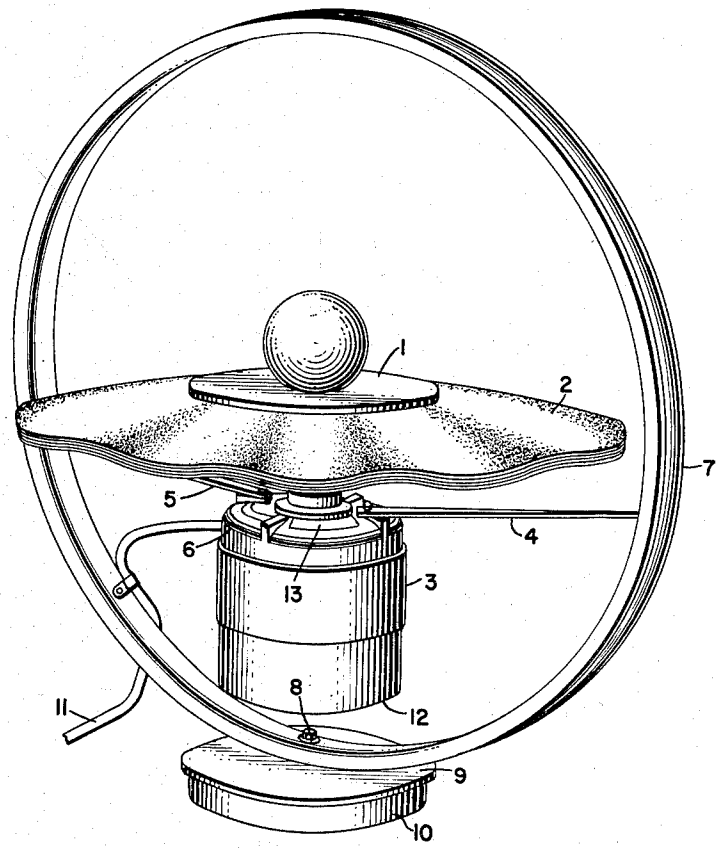
June 22, 1954 P. SCHLUMBOHM 2,681,761

GYRO-BALANCED ELECTRIC FAN

Filed March 18, 1953



INVENTOR

Peter Schlumbohm

BY

ATTORNEY

Patented June 22, 1954

2,681,761

UNITED STATES PATENT OFFICE

2,681,761

GYRO-BALANCED ELECTRIC FAN

Peter Schlumbohm, New York, N. Y.

Application March 18, 1953, Serial No. 343,133

1 Claim. (Cl. 230—259)

1

The present invention refers to fans and, more specifically, to an electric fan.

The present invention is a continuation in part of my application Serial No. 225,620, filed May 10, 1951, and, more specifically, is an improvement over a similar invention for which I have filed a patent Serial No. 285,350 on April 30, 1952.

The present invention improves the supporting and carrying means for a vertical-shaft-operated air blower, as described in the co-pending application Serial No. 285,350.

The invention is illustrated by way of example in the accompanying drawings in a perspective view. As in the co-pending application Serial No. 285,350, a ring-shaped frame is applied to fixate an electric motor to said frame.

In the drawing the rotor 1 with its centrifugal blower element 2 is mounted on the vertical shaft of an electric motor 3. This electric motor is hung by straps 4, 5. These straps are attached to the top of the casing 6. The points of attachment are above the center of gravity of the combined masses of rotor 1, blower 2 and motor 3. At the other end they are attached to the ring-shaped frame 7. The ring 7 is held by a bolt 8, attached to a base plate 9. This base is attached to a cork ring 10 on which the whole arrangement is resting on a table or on the floor. The friction coefficient of the cork 10 prevents the apparatus from being dislocated under the influence of the thrust of the air which leaves the centrifugal blower 2 tangentially.

As illustrated in the drawing, the straps 4 and 5 are fixated to the ring 7 below its center line. The motor 3 hangs freely in the air. The current is supplied by a cord 11. When running, the system of the rotor 1, the blower 2 and the motor 3 attains an additional stability by the gyro effect of the rotating masses. The nature of the rotor 1 and the blower 2 have been explained in my co-pending application Serial No. 225,620.

The arrangement as made possible by this invention is also beneficial to the air-cooling of the motor itself. Such a motor has a built-in blower which takes in air at the bottom 12 of the motor casing and exhausts the air through

2

openings 13 at the top 6 of the casing. The air which leaves the motor through those openings 13 is sucked into the fan 2 in a co-directional flow. This and the unimpeded air intake at the free-hanging bottom 12 of the casing, assure a good cooling of the electric motor. Still, such motors get hot, up to 55° C. above the temperature of the ambient air.

The arrangement as shown in the drawings makes the ring to be an ideal carrying handle for carrying the entire fan without a hand touching the hot motor.

The invention was borne out of the difficult task of eliminating vibrations and noise when operating an electric fan.

I found that hanging the motor in the manner discussed, and leaving the final stabilization to the gyro effect of the rotating masses, proved to be a good solution of the problem. To support the straps by the ring was of additional advantage in the attempt to eliminate vibrations.

Having disclosed the nature of my invention and having shown by way of example the manner in which it may be performed, I claim as my invention:

An electric fan comprising an electric motor having a casing and a rotary shaft and arranged in vertical shaft position with the shaft directed upward, a centrifugal rotor mounted on said shaft, a supporting means comprising a ring-shaped frame arranged in a vertical plane, elongated hanging means comprising straps, each having one end thereof attached to said motor casing at a level above the center of gravity of the combined masses of said rotor and said motor, and the other end thereof attached to said frame at a level below the center of said frame.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,133,027	Hewitt	Mar. 23, 1915
1,491,736	Polk	Apr. 22, 1924
1,501,201	Cates	July 15, 1924
1,646,578	Charavay	Oct. 25, 1927
2,010,809	Braine	Aug. 13, 1935