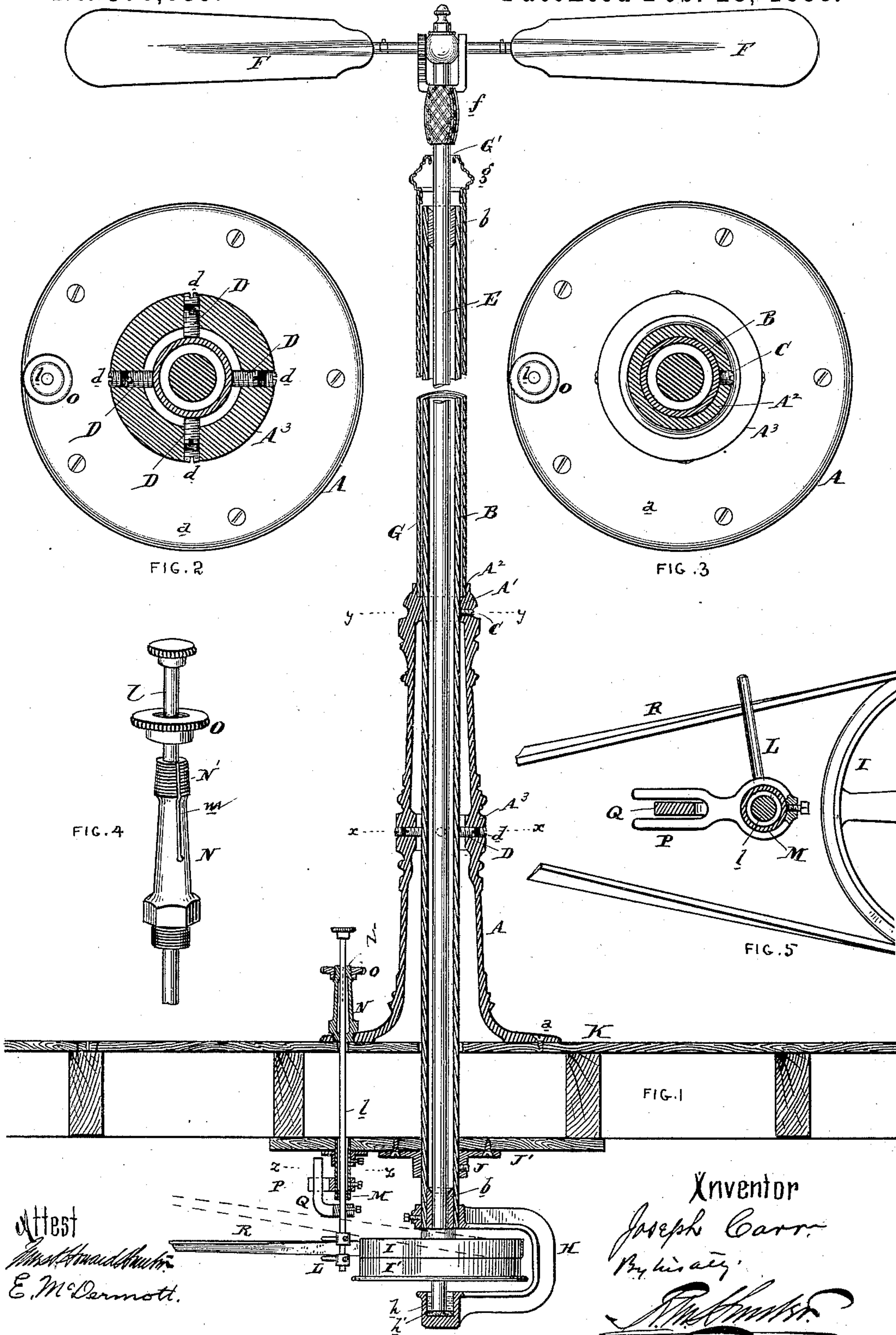


(No Model.)

J. CARR.
POWER FAN.

No. 378,659.

Patented Feb. 28, 1888.



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JOSEPH CARR, OF PHILADELPHIA, PENNSYLVANIA.

POWER-FAN.

SPECIFICATION forming part of Letters Patent No. 378,659, dated February 28, 1888.

Application filed March 22, 1887. Serial No. 231,904. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CARR, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Power-Fans, of which the following is a specification.

My invention has reference to power-fans; and it consists in certain improvements, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

Heretofore it has been customary to make column-fans for ventilating of a cast-iron column, which rests upon the floor, combined with a vertical rotating shaft journaled in said column and provided on the top with a fan and on the bottom below the floor with suitable belt-pulleys, the lower portion of the shaft being journaled in a separate bearing bolted to the joists below the floor. The great defect in this construction was due to the fact that it was very difficult to adjust the fan vertically, so that it was plumb, owing to the warping and twisting in the castings and the irregularity in the level of the floor. In running fans of this construction it is necessary that the fan shall rotate in a perfectly horizontal plane, and to attain this object it becomes necessary to support the rotating shaft in a perfectly vertical line. In the old form of column it was impossible to vary the height of the fan from the floor unless the shaft was extended above, and unsupported it was impracticable. These defects are entirely overcome in my present construction.

In carrying out my invention I construct the column in two parts—a lower or pedestal portion, which rests upon the floor, and the upper or tubular portion, which is supported by said pedestal portion and extends above the same, and, if desired, also below the same. The pedestal portion is preferably made of cast-iron and the tubular portion made of wrought-iron tube, having bearings at each end, through which the shaft passes and in which it is journaled, carrying the fan at the top and the pulleys at the bottom. This tubular portion is supported within the pedestal and is capable of adjustment either up or down or so as to be perfectly vertical. As a means of imparting a finish to the column, I provide a light sheet-metal casing of brass, which may

be nickel-plated to surround the upper portion of the tubular part and adapted to rest upon the pedestal portion. The belt-shifter passes down through the floor and is provided with suitable means of adjustment secured to the base of the pedestal portion, whence the belt may be shifted from the room above from that in which the pulleys and said belt are located.

The details of construction are fully described hereinafter.

In the drawings, Figure 1 is a sectional elevation of my improved power-fan and supporting-floor. Fig. 2 is a sectional plan view of same on line *x x*. Fig. 3 is a sectional plan view of same on line *y y*. Fig. 4 is a perspective view of the upper portion of the belt-shifter, and Fig. 5 is a sectional plan view of the belt-shifter on line *z z*.

A is the pedestal portion of the column and is provided at the base with the wide flange *a*, by which it is secured to the floor K.

B is a vertical tubular portion formed of a wrought-iron tube, and is provided at each end with bearings *b*, through which the shaft E passes and in which it rotates. These bearings *b* are cup-shaped at the top, so as to direct any oil toward the shaft, and the bottom part of the upper bearing is made conical to prevent any of the oil passing through the bearing from reaching the sides of the tube B. By this means the shaft and its bearings are easily oiled. The tubular portion B extends above the pedestal and also below the same, preferably passing entirely through it, fitting a hole, A', at the top, in which it is clamped by a set-screw, C, and being adjusted at a point below said support by said screws D, which pass through suitable screw-holes in the thickened part A' of the pedestal. This is clearly shown in Figs. 1 and 2. By this means, no matter how irregular the cast-iron pedestal portion may be or how unlevel the floor may be, the shaft and the tube B may be adjusted so as to be perfectly vertical. To give the desired finish, the screws D are made sufficiently short that the outer ends of the screw-holes are left unobstructed, and into these holes small nickel-plated plugs *d* are screwed, whereby any irregularity in the depth to which the screws D are made to enter is not perceptible from the outside. The tubular part B is

rough tubing. To give a finish to the column I surround that portion of it which extends above the pedestal part with a brass tube, G, which fits down into a recess, A², on the top of the pedestal, and at the top is finished off with a spun cap, g, having oiling-entrances G' around the shaft. By squirting oil upon the shaft, it runs down and lubricates both top and bottom bearings, and also the idler-pulley at the bottom.

f is the regulator for changing the angles of the fan-blades, and may be made of any construction.

The lower part of the tube B is provided with a bracket, H, terminating in an oil-cup, h, having a rawhide washer in the bottom and adapted to receive the bottom of the shaft E, supporting it against longitudinal movement.

I is the loose pulley, and I' the fast pulley, said pulleys being supported on the shaft between the bottom bearings, b, and the lower end of the shaft E, and thereby preventing any upward movement of the shaft. As shown, the lower part of the tube B is supported against lateral strain by a collar, J, secured to a board, J', fastened to the bottom of the floor-joists, though this is not necessary.

It is evident that the lower portion of the tube B, below the screws D, might be dispensed with, and the lower journal, b, supported by the collar J. This would be in effect the removal of that portion of the tube between the board J and the part A³ of the pedestal.

R is the belt, and L are the shifting-arms of the belt-shifter, which arms are secured to the vertical shifter-rod l, which passes up through a guide-tube, M, secured to the board J' at a point above the floor K. To prevent the shifting-arms L turning around, I secure to the rod l the vertical arm Q, which is guided between the fork P, secured to the guide M. The upper portion of the rod l passes through the spring-column N, secured to the base of the pedestal A, and having the conical screw N' at the top and the lateral slits m. The rod l is clamped in the upper part, N, by screwing down the hand-nut O upon the conical part N'. By this means the belt-shifter may be operated and retained in position to cause the belt to run upon the loose or fast pulley, as desired.

I do not limit myself to the particular means of adjustment here shown for plumbing the tube B and its shaft, or to the minor details of construction, as it is evident that they may be modified in various ways without departing from the spirit of the invention.

I am aware of the Patent No. 44,553 to Powell, and claim nothing therein set out or claimed.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a power-fan, the combination of the lower or pedestal part of the column, having a broad flange to rest upon the floor, the up-

per or tubular part of the column passing down into and through the pedestal portion and secured therein and extending entirely through the pedestal portion and provided with suitable bearings, a rotating shaft passing up through said tubular portion and extending from both ends thereof, a fan supported upon the upper part of said shaft, and a belt-pulley upon the lower end of said shaft and below the pedestal, whereby the shaft, fan, and pulley may be raised and lowered without disturbing the pedestal.

2. In a power-fan, the combination of the lower or pedestal part of the column, having a broad flange to rest upon the floor, the upper or tubular part of the column passing down into and through the pedestal portion, and secured therein, extending entirely through the pedestal portion, provided with suitable bearings, a rotating shaft passing up through said tubular portion and extending from both ends thereof, a fan supported upon the upper part of said shaft, a belt-pulley upon the lower end of said shaft and below the pedestal, whereby the shaft, fan, and pulley may be raised and lowered without disturbing the pedestal, and a thrust-bearing for said shaft supported upon, and movable with the tubular portion of the column.

3. In a power-fan, the combination of the lower or pedestal part of the column, the upper or tubular part of the column passing down into and through the pedestal portion and secured therein, and provided with suitable bearings, a rotating shaft passing up through said tubular portion, a fan supported upon the upper part of said shaft, a belt-pulley upon the lower end of said shaft, and a belt-shifter secured to the pedestal part of the column and extending down below the same.

4. In a fan-column, the combination of the pedestal part A, having the bearing A' at the top, with the tubular portion B, having one or more bearings for the fan-shaft, and adjusting-screws D, substantially as and for the purpose specified.

5. In a fan-column, the combination of the pedestal part A, having the bearing A' at the top, with the tubular portion B, having one or more bearings for the fan-shaft, clamping-screw C, and adjusting-screws D, substantially as and for the purpose specified.

6. The combination of the pedestal or base portion of the column, the tubular portion secured to and extending above said pedestal portion, two bearings in said tubular portion having cup-shaped tops, and the lower part of the upper bearing being made conical to guide the flow of oil to the shaft, the fan-shaft, and a fan upon said shaft.

In testimony of which invention I hereunto set my hand.

JOSEPH CARR.

Witnesses:

R. M. HUNTER,
RICH'D. S. CHILD, Jr.