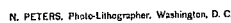


P. MURRAY, Jr.

No. 344,980.

Patented July 6, 1886.



UNITED STATES PATENT OFFICE.

PETER MURRAY, JR., OF NEWARK, N. J., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE BACKUS MANUFACTURING COMPANY.

FAN.

SPECIFICATION forming part of Letters Patent No. 344,980, dated July 6, 1886.

Application filed January 13, 1886. Serial No. 188,439. (No model.)

To all whom it may concern:

Be it known that I, PETER MURRAY, JR., of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Fans, of which the following is a specification.

This invention relates to an improved automatic fan of that class which is suspended from the ceilings of offices and other rooms, so as to agitate the air in warm weather and thereby keep the room cool.

The invention consists of a hollow tubular fan-shaft having a fan at the lower end and a horizontal friction-disk at the upper end, an interior slide-rod passing through the tubular fan-shaft; a continuously-rotating friction-disk and a fulcrumed elbow-lever, by which a grooved collar of the driving-disk is connected with the interior slide-rod, so that the driving-disk may be shifted on a fixed supporting-shaft toward or away from the center of the horizontal friction-disk, whereby the speed of the fan-shaft is regulated. The tubular fan-shaft is supported by a hanger-frame having a sleeve-shaped tubular extension, the lower end of which is connected to the hanger-frame by brace-rods attached to lugs of the hanger-frame at the lower end of the sleeve.

In the accompanying drawings, Figure 1 represents a vertical central section of my improved automatic fan, and Fig. 2 is a detail side view of the setting device at the lower end of the fan-shaft.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a hollow tubular shaft, and B a fan, the hub of which is rigidly attached to the lower end of the shaft. To the upper end of the tubular shaft is applied a horizontal friction-disk, *a*, having a central depression, *a'*. Through the tubular fan-shaft A extends a slide-rod, C, that is guided by a central socket, *d*, of a "crab" or frame, D, by which the supporting hanger-frame E of the fan-shaft is attached to the ceiling. A friction-disk, *b*, turns loosely on a short horizontal shaft, *b'*, that is rigidly attached to a sleeve, *e*, of the hanger-frame E, and extended inwardly toward the slide-rod C. At one side of the friction-disk *b* is arranged a pulley, *b''*, to which continuous rotary

motion is imparted by a belt. The friction-disk *b* has at the other side a grooved collar, *b''*, which is engaged by an anti-friction roller at the end of one arm of an elbow-lever, F, that is fulcrumed to a bracket-arm, *e'*, of the hanger-frame E, as shown in Fig. 1. The other arm of the elbow-lever F is forked and engages a pin, *f*, of the slide-rod C. The lower end of the slide-rod C projects below the lower end of the tubular fan-shaft A, and rests on a screw-socket, B', having a button-shaped end, said screw-socket turning on an exterior screw-thread of the fan-shaft and being adapted to be adjusted higher or lower thereon, so as to raise or lower the slide-rod C.

The shifting of the slide-rod C oscillates the elbow-lever F, and shifts thereby the friction-disk *b* on the fixed shaft *b'*, so as to move the same on the friction-disk *a* toward the center or toward the circumference of the same, according as the slide-rod C is raised or lowered. By thus changing the position of the driving friction-disk *b* on the horizontal disk *a* the speed of the fan-shaft A is correspondingly changed, the same being rotated at greater speed when the driving friction-disk *b* forms contact with the disk *a* near the central depression, *a'*, of the same, while the fan-shaft A is rotated at slower speed when the driving friction-disk *b* is at or near the circumference of the friction-disk *a*. The fan is entirely stopped when the friction-disk *b* is moved inwardly, so as to be vertically above the central depression, *a'*, of the disk *a*, as thereby the contact with the friction-disk *a* is entirely interrupted.

When the screw-socket at the lower end of the slide-rod C has been adjusted, it is retained in position by a loosely-sliding sleeve, *g*, that is guided by a slot, *g'*, on a fixed pin, *g''*, of the fan-shaft A. The sleeve *g* is provided with a beveled tooth, *g''*, that engages one of the notches *g'* of the screw-socket, so as to prevent the latter from unscrewing and changing its position on the fan-shaft.

By taking hold of the screw-socket while the fan-shaft is in motion the socket is screwed upon the fan-shaft, and thereby the slide-rod C raised, so as to shift the driving-disk *b* inwardly and increase the speed of the fan. By moving the friction-disk *b* over the depressed

portion a' the fan is entirely stopped. By turning the screw-socket quickly in a direction opposite to the motion of the fan-shaft, the screw-socket is lowered, together with the slide-rod, and the friction-disk b moved outwardly on the horizontal disk a , so as to decrease the speed of the fan-shaft.

The tubular fan-shaft A is supported in bearings of the hanger-frame E , which has a downwardly-extending tubular extension, E' , at its lower end, which extension is of such a length as to furnish the "drop" or distance at which the fan is to be suspended below the ceiling. The extension E' is provided at the lower end with a flanged collar, e^2 , that is connected by brace-rods E^2 with lugs e^3 of the hanger-frame E , whereby the sleeve is held rigidly in position, so as form a steady bearing for the fan-shaft.

The fan may be arranged at any desired drop or distance from the ceiling by using an extension, E' , of greater or smaller length, and

brace-rods, E^2 , corresponding in length to the length of the extension E' .

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

The combination of a rotary tubular shaft, a fan attached thereto, a friction-disk also attached to the fan-shaft and having a central depression, an interior slide-rod passing through the fan-shaft, a continuously-rotating friction-disk turning loosely on a fixed supporting-shaft, and a fulcrumed elbow-lever connecting the slide-rod with a collar of the rotary friction-disk, so as to shift the same by the slide-rod according to the motion to be imparted to the fan, substantially as set forth.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

PETER MURRAY, JR.

Witnesses:

PAUL GOEPEL,
SIDNEY MANN.