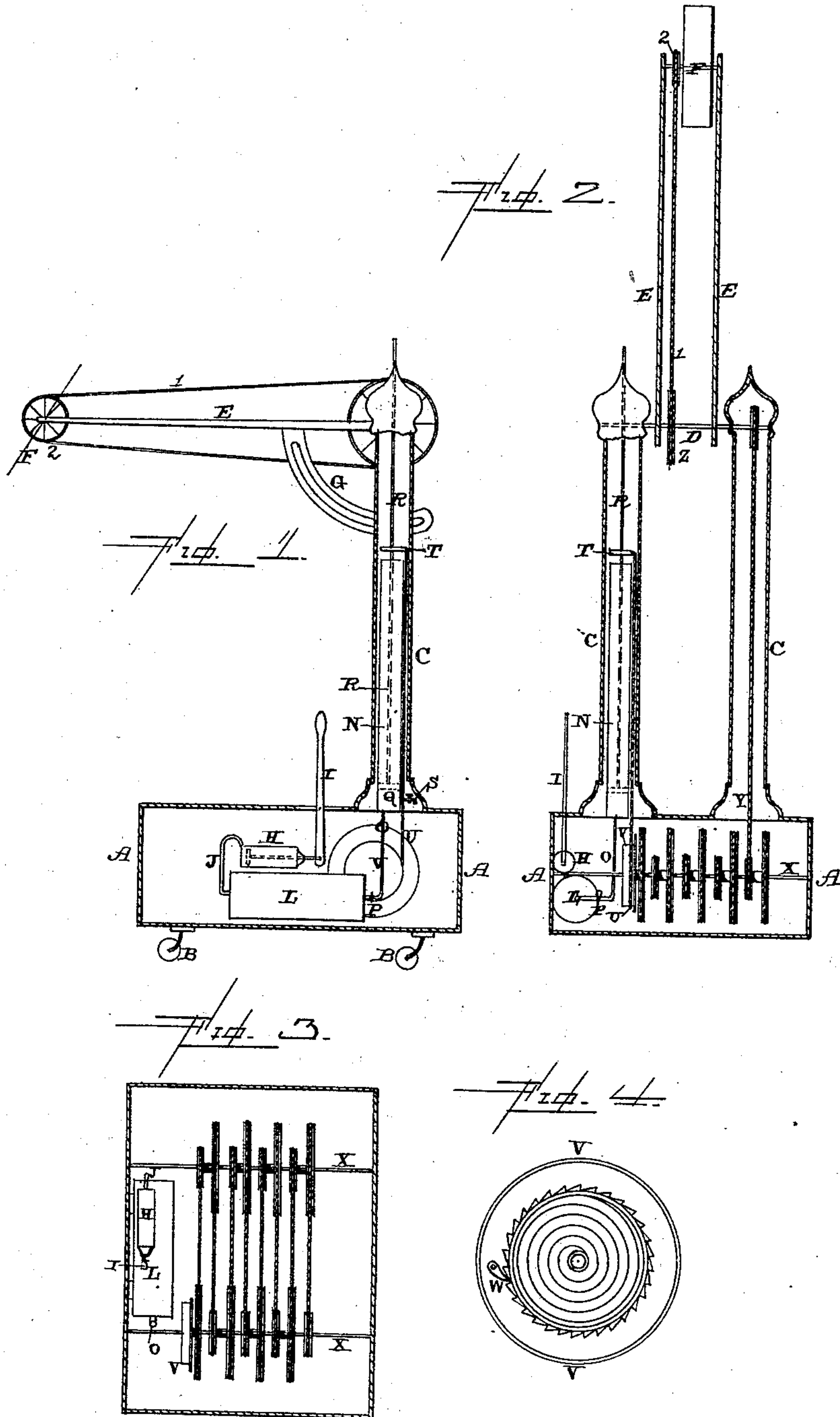


(No Model.)

D. W. PORTER.
AUTOMATIC FAN.

No. 347,255.

Patented Aug. 10, 1886.



Witnesses.
L. J. Gardner
A. W. Brecht.

Inventor.
D. W. Porter,
per E. A. Lehmann, atty.

UNITED STATES PATENT OFFICE.

DAVID W. PORTER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHAS. PRILL, OF SAME PLACE.

AUTOMATIC FAN.

SPECIFICATION forming part of Letters Patent No. 347,255, dated August 10, 1886.

Application filed March 24, 1886. Serial No. 196,499. (No model.)

To all whom it may concern:

Be it known that I, DAVID W. PORTER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Motors for Fans; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in motors for fans; and it consists in the combination of an air-pump or other suitable compressor, a tank into which the air is pressed, a cylinder, a piston and piston-rod placed therein, a connection with the piston-rod, a spring, a series of large and small pulleys which are connected together, a shaft carrying the driving-pulley for the fan, and the arms in which the fan is journaled, all of which will be more fully described hereinafter.

The object of my invention is to produce a motor for a fan, which, together with the fan, can be moved freely around from one place to another, the fan adjusted into any desired position, and then set in motion.

Figure 1 is a side elevation, partly in section, of a motor embodying my invention. Fig. 2 is a vertical cross-section taken at right angles to Fig. 1. Fig. 3 is a horizontal section taken through the top of the base. Fig. 4 is an edge view of the spring and its attachments.

A represents a suitable frame-work of any kind, and which is mounted upon rollers B, so as to be moved readily from one place to another. Mounted upon the top of this frame-work B are the two pillars or uprights C, of any length, and which have the shaft D extending across and uniting them together at their upper ends. Upon this shaft D are placed the two arms E, in which the fan F is journaled at their outer ends. The fan F is adjusted vertically by means of the slotted arm G, which is held in any desired position by means of a set-screw or other similar device, which will hold the arm in any position in which it may be adjusted.

In the base A is placed an air-pump, H, which is operated by the lever I, which pro-

jects through the top of the frame. The air passes from the pump I through the pipe J into the reservoir L, where it can be compressed to any desired degree. Leading from this reservoir L to the bottom of the cylinder N is a pipe, O, which is provided with a stop-cock, P. In this cylinder N is placed a tightly-fitting piston, Q, to which the rod R is connected, and which rod extends up through the top of the pillar or post C. To the bottom of the cylinder is connected a stop-cock, S, by means of which the air in the cylinder below the piston can be discharged after the stop-cock in the pipe O has been closed, so as to shut off communication between the cylinder N and the reservoir L. When the stop-cock S is closed and the one, P, is open the compressed air passes into the bottom of the cylinder N and forces the piston Q and rod R upward. Fastened to this rod R, above the top of the cylinder, is a suitable projection, T, of any kind, and to this projection T is fastened a cord, U, which extends down and passes around a drum or pulley, V, inside of which is placed a spring and ratchet. This ratchet and dog W engage, so as to hold the spring at any desired point. As the piston Q and rod R move upward, the cord U causes the drum V to revolve, and in revolving the spring is wound up. After the piston has been moved as high as it will move in the cylinder the cock P is closed and the one, S, is opened, so as to discharge the air from the cylinder, and then this spring draws the piston down to the bottom of the cylinder again, where it is again ready to be operated upon by the compressed air.

Journaled horizontally in the base A are the two shafts X, upon which are arranged, alternately, a series of large and small driving-pulleys, the small pulleys being placed opposite and geared to the large ones for the purpose of multiplying speed. Bands, belts, wires, or cords are used to connect these pulleys together and impart the motion which is connected to the first large pulley, next to the spring-actuated drum, successively to the others, which are placed loosely on their shafts. The first large pulley moves very slowly, but the last one of the small pulleys, from which the belt Y passes, moves very rapidly. The belt

Y passes up through one of the hollow standards and around a pulley which is placed upon the driving-shaft D. Upon this shaft D is placed a pulley, Z, from which passes the
5 driving-belt 1 around the pulley 2 on the fan-shaft. When the stop-cock P is opened, so as to admit air to the bottom of the cylinder N, the whole train of pulleys is at once set in motion, and the fan is driven very rapidly, so
10 as to create a current of air. When the stop-cock P is closed, the fan at once stops. The pulleys, being placed loosely upon the shaft X, are not effected by the reverse movement of the drum V.

15 Having thus described my invention, I claim—

The combination of an air-compressor, a reservoir for the compressed air, a pipe for con-

necting the reservoir and cylinder, the piston placed in the cylinder, a projection on the piston-rod, a spring-drum placed upon one of the shafts and connected to the projection on the piston-rod, the two shafts upon which the driving-pulleys are placed, the driving-pulleys connected together, the standards, the driving-
25 shaft journaled in the standards, the arms projecting from the standards and between which the fan is journaled, the fan, and the operating-belt for driving the fan, substantially as shown.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID W. PORTER.

Witnesses:

JENNIE KERR,

EMMA A. MCGINNIS.