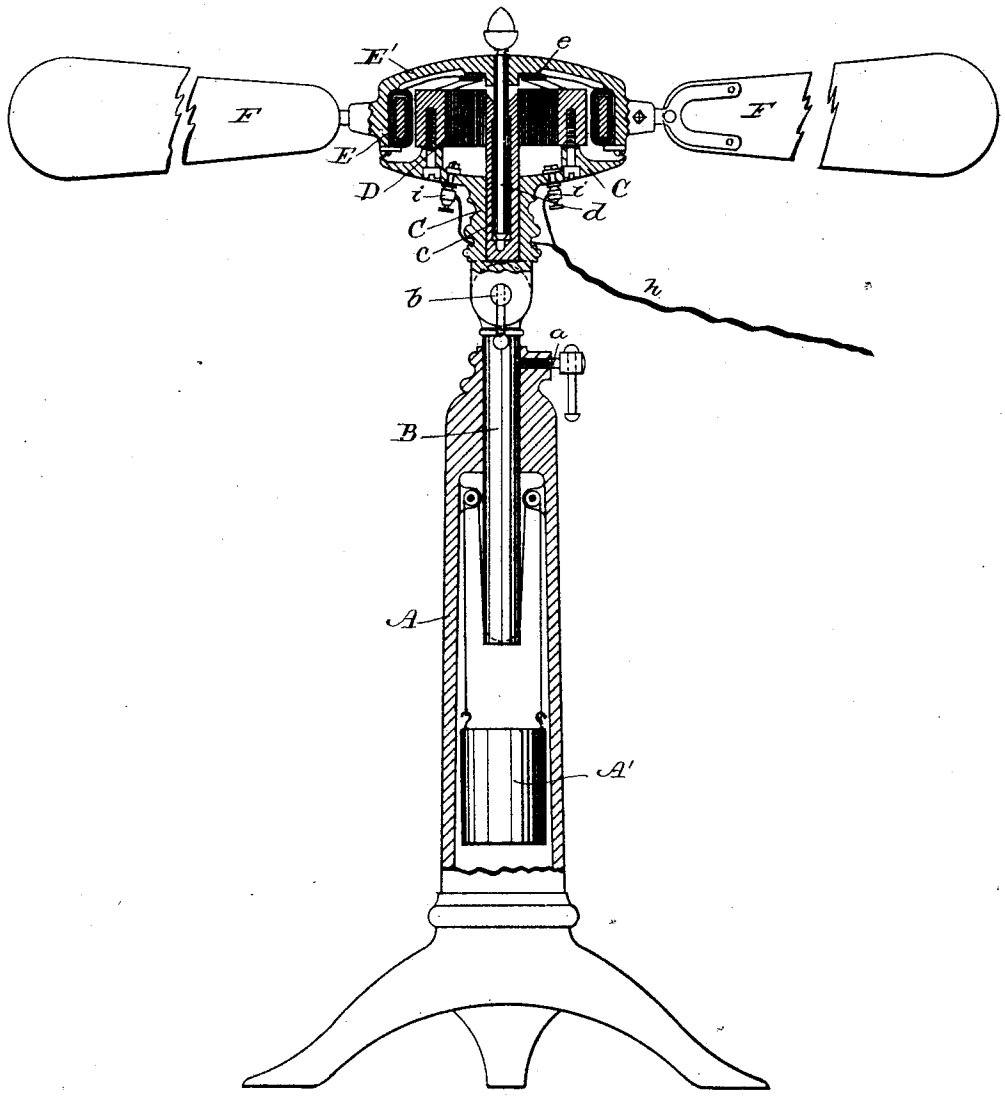
(No Model.) 4 Sheets—Sheet 1.

P. DIEHL.

ELECTRIC FAN.

No. 425,995. Patented Apr. 22, 1890.

Fig. 1.



WITNESSES:

W. M. Harrison

A. D. Buckman

INVENTOR

Philip Diehl,

BY

Henry Salmon,

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

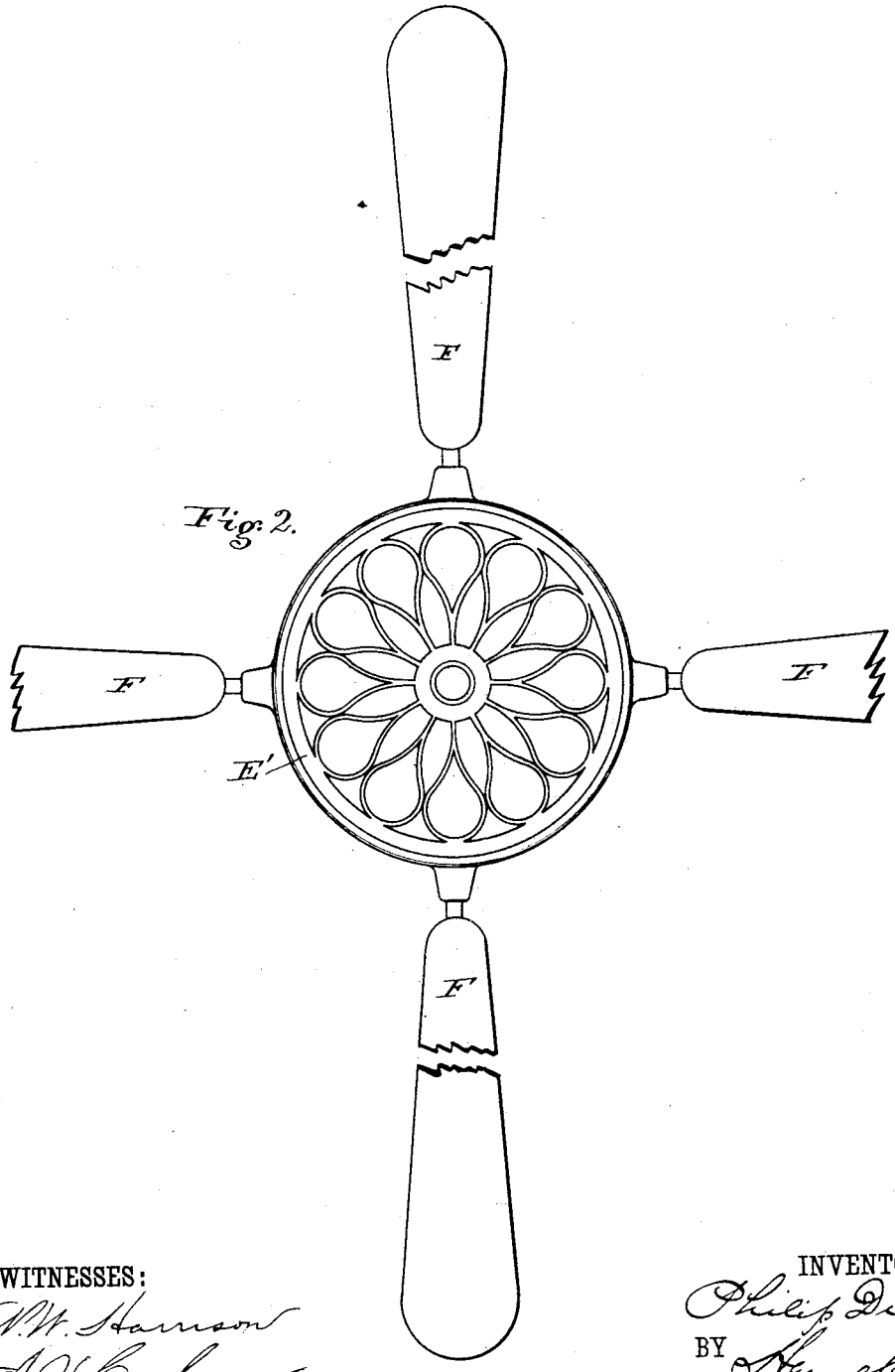
4 Sheets—Sheet 2.

P. DIEHL.

ELECTRIC FAN.

No. 425,995. Patented Apr. 22, 1890.

Fig. 2.



WITNESSES:

A. W. Harrison

A. V. Eickman

INVENTOR

Philip Diehl

BY Munn & Co.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 4 Sheets—Sheet 3.

P. DIEHL.

ELECTRIC FAN.

No. 425,995. Patented Apr. 22, 1890.

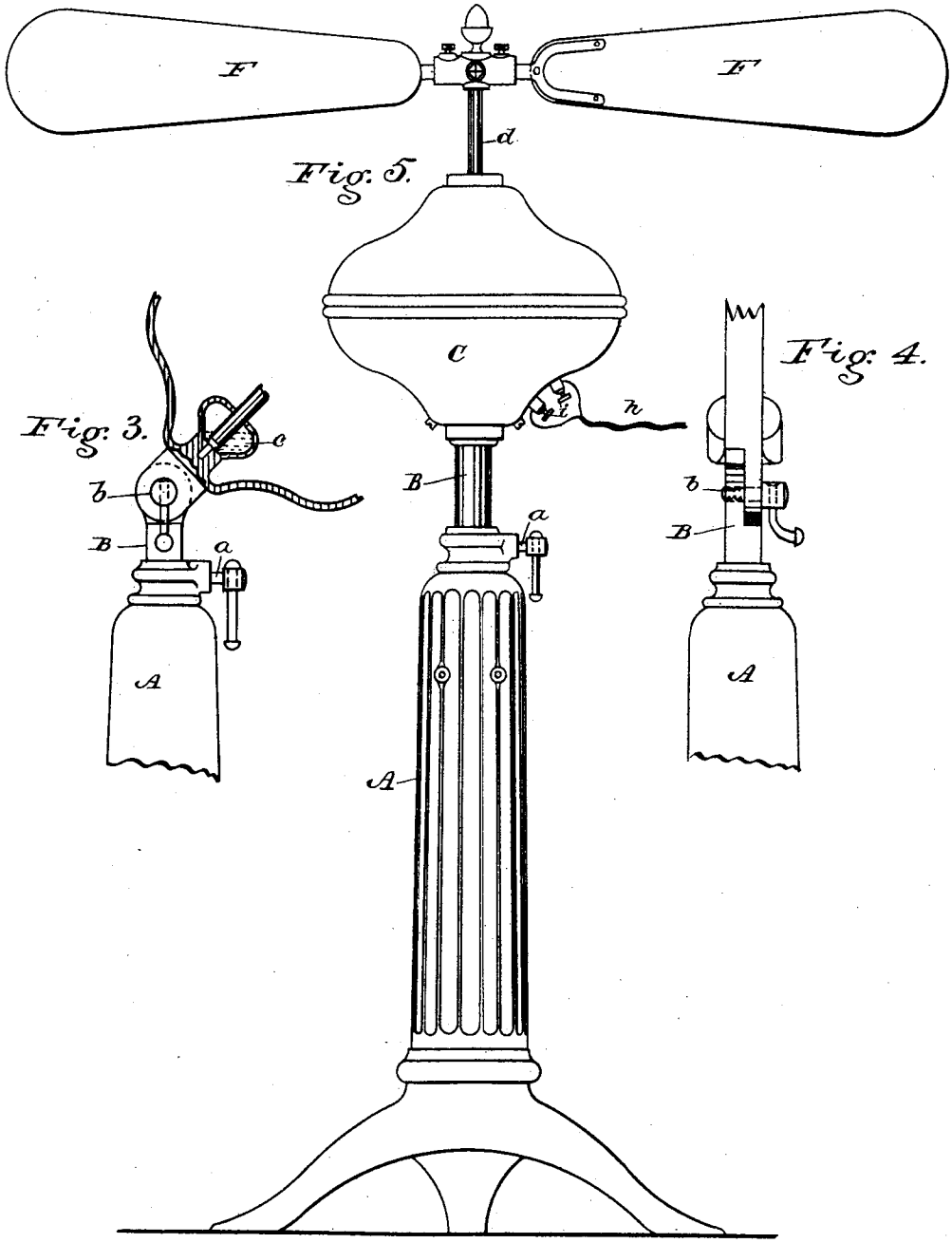


Fig. 5.

Fig. 3.

Fig. 4.

WITNESSES:

A. W. Harrison

A. V. Buchman

INVENTOR

Philip Diehl

BY Strong & Calver,

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 4 Sheets—Sheet 4.

P. DIEHL.

ELECTRIC FAN.

No. 425,995. Patented Apr. 22, 1890.

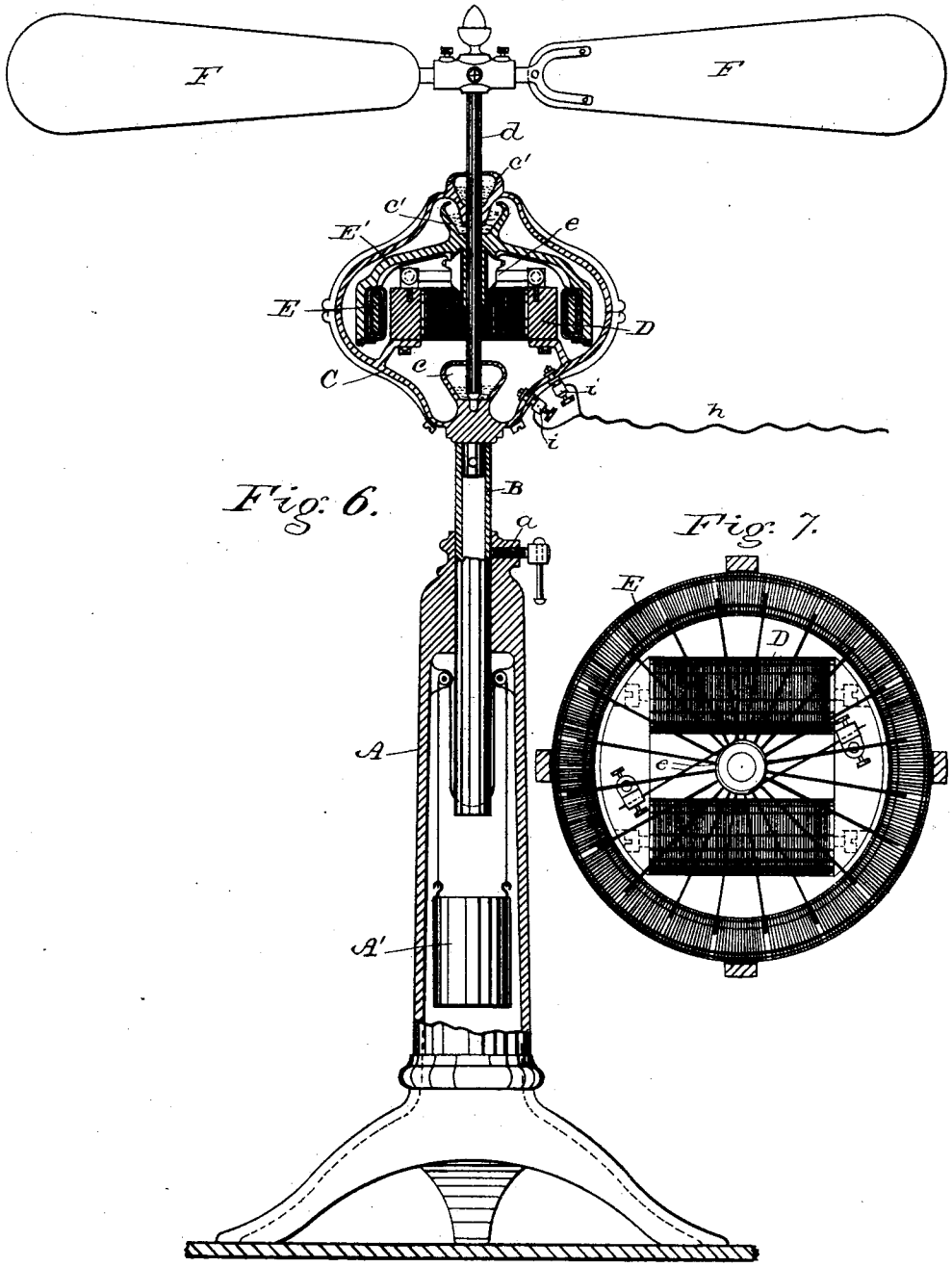


Fig. 6.

Fig. 7.

WITNESSES:

W. F. Harrison

A. V. Buchman

INVENTOR

Philip Diehl

BY

Munn & Co.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILIP DIEHL, OF ELIZABETH, NEW JERSEY.

ELECTRIC FAN.

SPECIFICATION forming part of Letters Patent No. 425,995, dated April 22, 1890.

Application filed September 24, 1889. Serial No. 324,952. (No model.)

To all whom it may concern:

Be it known that I, PHILIP DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Electric Fans, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide a convenient form of portable electric fan which will be neat and attractive in appearance, which may be easily raised or lowered when desired, and which may also be preferably set at different angles of inclination. To this end a portable standard or column is provided with a frame or casing, to which the stationary field-magnet of the motor is secured, said frame being preferably supported by a post or upright vertically adjustable on said standard or column. The rotating armature surrounding said magnet is carried by a vertical shaft stepped in an oil-cup in said frame or casing, and the fan-wings may be attached to the upper end of said shaft, or may be carried directly by the armature-wheel. The vertically-adjustable post or upright supporting the frame or casing, motor, and fan is preferably counterbalanced by a weight or spring, so as to be easily movable up and down, and is secured in adjusted position by a set-screw. The frame or casing at the upper end of said post or upright may be joined to the latter by a horizontal set-screw pivot, so that the fan may be set at any desired inclination. The electric conductors may be run up through the hollow portable standard to the binding-screws on the frame or casing, or they may run directly to said screws outside of said standard.

In the accompanying drawings, Figure 1 is an elevation, partly in vertical section, of one form of my improved fan. Fig. 2 is a top view of the armature-wheel and fan shown in Fig. 1. Figs. 3 and 4 are detail views illustrative of the joint between the post and motor-frame. Figs. 5 and 6 illustrate in elevation and vertical section another form of my invention, and Fig. 7 is a detail plan view of the armature-ring and field-magnet shown in Fig. 6.

A denotes a hollow portable standard or column, receiving at its upper end the post or upright B, (preferably formed hollow or tubular for lightness,) and *a* is a set-screw for securing said post in any position to which it may be adjusted. To the top of the post B is attached the frame or casing C, and to the latter is secured the stationary field-magnet D of the motor, and surrounding the latter is a motor ring-armature E, carried by an armature-wheel E′, made either open or solid, as may be desired. The field-magnet consists, preferably, of two round cores covered with wire, the pole ends of said cores being connected; but any well-known form of magnet may be used. The commutators *e* may also be of any well-known form.

F is the fan, which may be attached to the upper end of the shaft *d*, to which the armature-wheel is secured, as shown in Figs. 5 and 6; or the fan-blades may be attached directly to the armature-wheel, as shown in Figs. 1 and 2. The shaft *d*, which carries the fan and armature-wheel, is stepped or has a vertical center bearing in a lubricant cup or chamber *c*, formed on or attached to the frame or casing C, and other lubricant-chambers *c′* may be formed at the top of the armature-wheel and casing, as shown in Fig. 6. By means of these chambers sufficient solid or liquid lubricant may be put in the fan at one time to last an entire season.

The frame or casing C is shown in Figs. 1, 3, and 4 as being connected with the post B by a joint *b*, consisting of a horizontal set-screw pivot. This joint permits the fan to be adjusted to different angles of inclination when desired and to be secured in such positions.

The lubricant cups or chambers *c* and *c′* are preferably constructed with inturned flanges at their tops, as shown in Figs. 3 and 6, so that when the jointed frame or casing is inclined, as shown in Fig. 3, the liquid lubricant will not be spilled.

The post B and the parts supported thereby are preferably counterbalanced by a weight A′ within the hollow standard or column, as clearly shown in Figs. 1 and 6; but instead of a weight its equivalent—a counterbalancing-spring—may be employed.

It will be seen by reference to Figs. 1, 5, and 6 that the motor is concealed and protected from dust by the casing by which it is in-

closed, said inclosing-casing, as shown in Fig. 1, being formed partly by the solid disk or upper face of the armature-wheel, the latter being preferably ornamented in any suitable manner—for example, as shown in Fig. 2—to give it an attractive appearance.

The electric current passes to the motor through the conductors *h*, attached to the frame or casing C by the binding-screws *i*.

From the foregoing it will be apparent that I provide a neat and attractive portable electric fan, simple in construction, convenient of adjustment, and capable of being moved about as desired.

I claim—

1. The combination, with a portable column or standard, of a frame or casing supported by said column or standard and adapted to be inclined at different angles, said frame or casing being provided with one or more lubricant-cups having inturned flanges, a rotary fan-carrying shaft journaled in said frame or casing and lubricated from said cup or cups, a rotary armature carried by said shaft, and a stationary field-magnet attached to said frame or casing.

2. The combination, with the column or standard, of the vertically-adjustable post supported thereby, a frame or casing, an electric motor and rotary fan sustained by said frame or casing, and a counter-balance for said post, frame or casing, motor, and fan.

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

PHILIP DIEHL.

Witnesses:
P. J. RYAN,
JNO. W. RYAN.