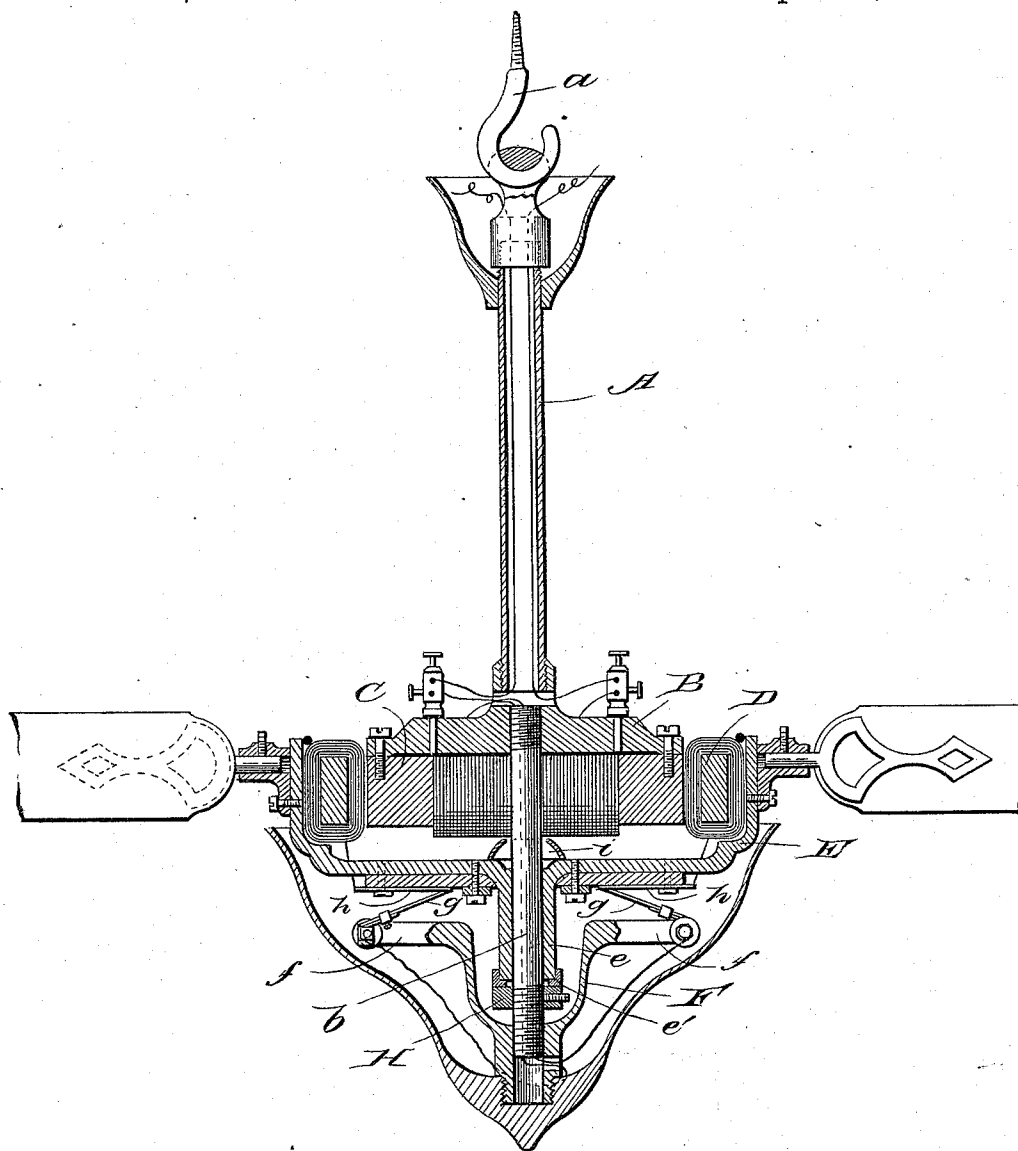


(No Model.)

P. DIEHL.  
OIL GUARD FOR ELECTRIC FANS.

No. 537,679.

Patented Apr. 16, 1895.



Witnesses:  
*W. H. Sweeney*  
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Inventor:  
*Philip Diehl*  
by *Henry Law*  
his Attorney.

# UNITED STATES PATENT OFFICE.

PHILIP DIEHL, OF ELIZABETH, NEW JERSEY.

## OIL-GUARD FOR ELECTRIC FANS.

SPECIFICATION forming part of Letters Patent No. 537,679, dated April 16, 1895.

Application filed May 24, 1893. Renewed March 20, 1895. Serial No. 542,549. (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 Oil-Guards for Electric Fans, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to that class of electric fans in which the fan blades are attached directly to the carrier of a rotating armature which surrounds a stationary field magnet, and relates more particularly to means whereby the oil by which the bearing for the rotating armature carrier is lubricated, will be prevented from escaping outward from the armature bearing by centrifugal action, and thus the difficulty incidental to the throwing or spattering of oil by the rotating fan will be avoided.

In my improved fan the rotating armature carrier is provided with a sleeve or journal which surrounds a stationary rod or tube and the lower end of which rests upon a collar surrounding the said sleeve within an oil cup. The rotating armature carrier is provided at the upper end of the said sleeve with an inverted cup formed non-perforate except at its central open portion, said cup being soldered at its bottom or lower edge to the armature carrier in such a manner as to provide a receptacle into which any oil drawn upward from the oil cup will be held by the centrifugal force incidental to the rotation of the armature, so long as the latter is in motion, but when the rotation of the armature is suspended the oil thus imprisoned in the receptacle will be returned by gravity to the oil cup.

The accompanying drawing is a sectional view of my improved fan illustrating my invention.

A denotes a tube which is suspended from a hook *a* and to the lower end of which is attached a support or bracket B sustaining the stationary field magnet C.

D is the rotating armature attached to a disk or carrier E the latter being provided with a downwardly extending sleeve *e* surrounding the stationary rod or tube *b* attached at its upper end to the support or bracket B.

F is the oil cup screwed onto the lower end of the rod or tube *b* and provided with arms *f* which serve as supports for the brushes *g* operating in connection with the disk commutator *h* attached to the armature carrier E.

H denotes a collar attached to the rod or tube *b*, near the bottom of the oil cup F, and serving as a support for the sleeve journal *e* of the rotating armature carrier. The said sleeve *e* may rest directly upon the said collar, but is preferably provided with a hardened steel bearing ring *e'*. The sleeve *e* is fitted upon the rod or tube *b* so as to rotate easily thereupon and the oil in the oil cup therefore has a tendency to work upward in said sleeve and outward on the disk portion of the armature carrier so as to be liable to be spattered by the rotation of the latter. To obviate this difficulty, I have provided the said armature carrier, above the said sleeve, with the inverted cup *i* which is tight or non-perforate except at its central open portion, said inverted cup being soldered at its lower edges to the said carrier so as to form an oil-tight joint at its point of union with the carrier, the upper open part of said inverted cup loosely surrounding the rod or tube *d* so as not to interfere with the rotation of the armature carrier. Thus the oil which may work upward from the oil cup F in the rotating sleeve *e* will be received in and be confined by the inverted cup *i* in the outer portion of which it will be held by centrifugal force while the armature is in rotation in such a manner that it cannot escape or travel outward on the armature carrier, but when the fan is stopped and the rotation of the armature carrier is suspended the oil imprisoned in the inverted cup *i* will immediately drain downward again into the oil cup F. Thus all waste of the oil from the oil cup F, into which the sleeve or journal of the armature extends, will be prevented, and the serious objection heretofore arising from the spattering of oil by the rotating armature will be wholly avoided.

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

In an electric fan, the combination with a rotating armature provided with a depending

sleeve or journal, of an oil cup into which said sleeve or journal extends, and an inverted cup formed non-perforate except at its central open portion and located on the armature carrier above the said sleeve or journal, there  
5 being an oil-tight joint between said inverted cup and the horizontal part of said armature carrier so that the said cup will serve to prevent the outward escape of oil from the said sleeve or journal when the said armature is in rotation.

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

PHILIP DIEHL.

Witnesses:

E. H. BURNETT, Jr.,

J. G. GREENE.