

PRACTICAL DIRECTIONS FOR ARMATURE AND FIELD-MAGNET WINDING

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Practical Directions for Armature and Field-Magnet Winding by Edward Trevert

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EDWARD TREVERT

**PRACTICAL DIRECTIONS
FOR ARMATURE AND
FIELD-MAGNET WINDING**

UNIV. OF
CALIFORNIA
PRACTICAL DIRECTIONS

—FOR—

ARMATURE

AND

FIELD-MAGNET WINDING.

BY EDWARD TREVERT. *Bubier*

AUTHOR OF

Everybody's Hand-Book of Electricity,
How to make Electric Batteries at Home,
Experimental Electricity,
Dynamos and Electric Motors,
Electricity and its Recent Applications,
A Practical Treatise on Electro-Plating, etc.

ILLUSTRATED.

CONTAINING WORKING DIRECTIONS

FOR WINDING DYNAMOS AND MOTORS, WITH ADDITIONAL DESCRIPTIONS OF SOME
APPARATUS MADE BY THE SEVERAL LEADING ELECTRIC COMPANIES
IN THE UNITED STATES.

Lynn, Mass.:
BUBIER PUBLISHING COMPANY.
1892.

TO THE
AIRBORNE

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1898.**

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PREFACE.

THE winding of a dynamo or motor is a matter of some difficulty (as all students of Electricity have discovered), hence many attempts otherwise successful, have ended here in failure and discouragement. The importance then of knowing how to wind a machine properly, can be seen at once.

The standard works on Electricity contain very little practical information on this subject. The reason for this lack of information probably is the fact that the art of winding was to a great extent theoretical, until a very recent date. At present, although not absolutely perfect, electrical knowledge has reached a more scientific basis. By following certain rules, one may wind a machine to obtain almost any result desired.

In this treatise theories have not been deeply entered into, the information being more of a practical character. It is thus adapted to the use of beginners and to the more advanced student. Illustrations have been used wherever necessary to make the text clear to the mind of the reader.

EDWARD TREVERT.

LYNN, MASS., Feb. 10, 1892.

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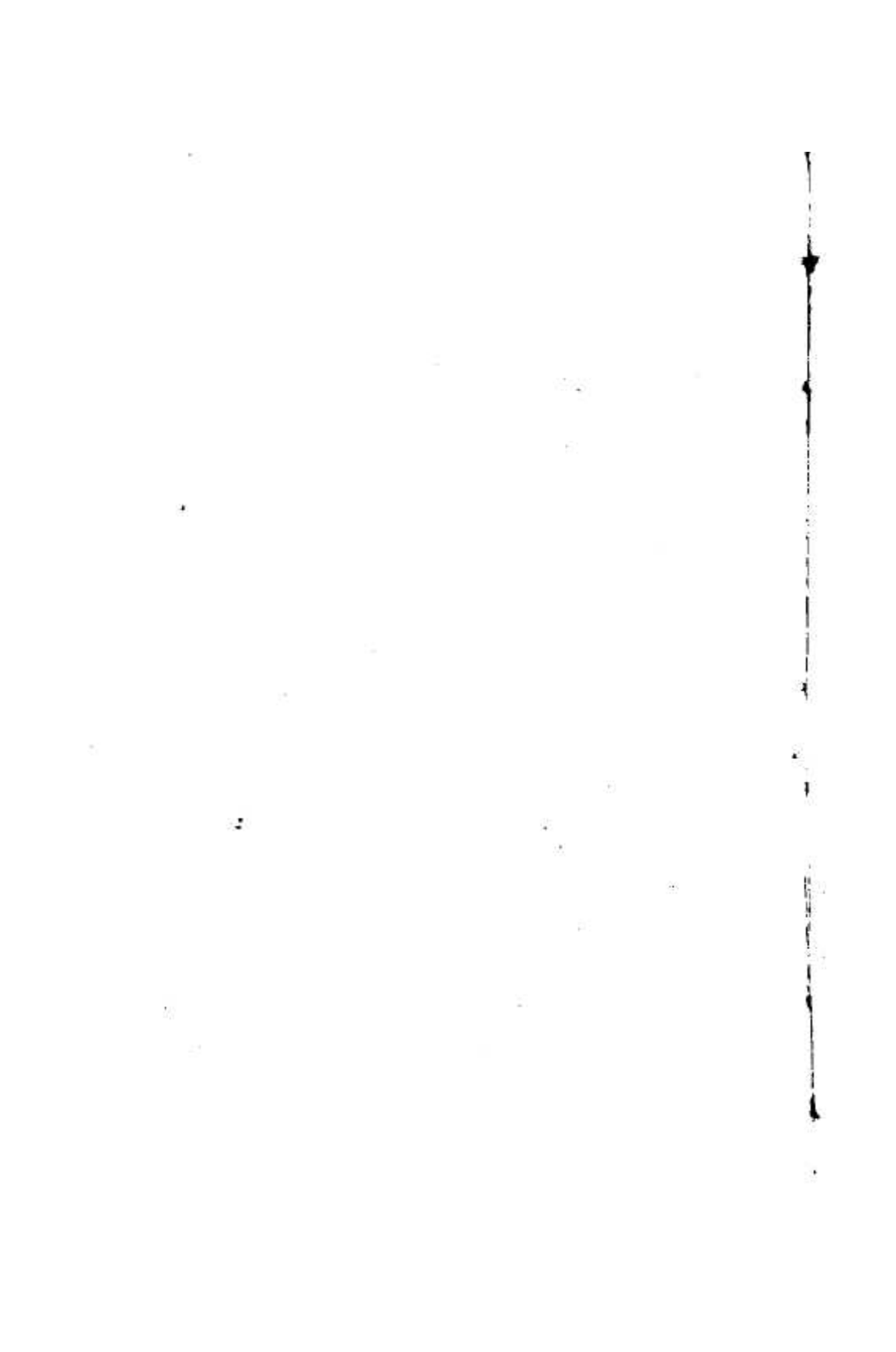
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Armature and Field-Magnet Winding.

INTRODUCTION.

ALL magnets are surrounded by what is known as a field of force. The familiar experiments with the magnet and iron filings give us some notion of the character of this field, for the filings always adjust themselves along certain lines, generally curves, depending for their shape upon the form of the magnet.

The region surrounding the magnet is conceived as being penetrated by "lines of force," which radiate from the poles and are parallel to the lines of iron filings. They emerge from the magnet something like the bristles of a brush, and always form closed curves, that is, they always return by longer or shorter routes to the body of the magnet and through it to the starting point. It is for this reason that it is impossible to make a unipolar magnet. Every magnet must have two poles, a north and south.

These lines do not pass with equal facility through all substances. Most bodies offer a high