

E. WESTON.

MAGNETO OR DYNAMO ELECTRIC MACHINE.

No. 266,740.

Patented Oct. 31, 1882.

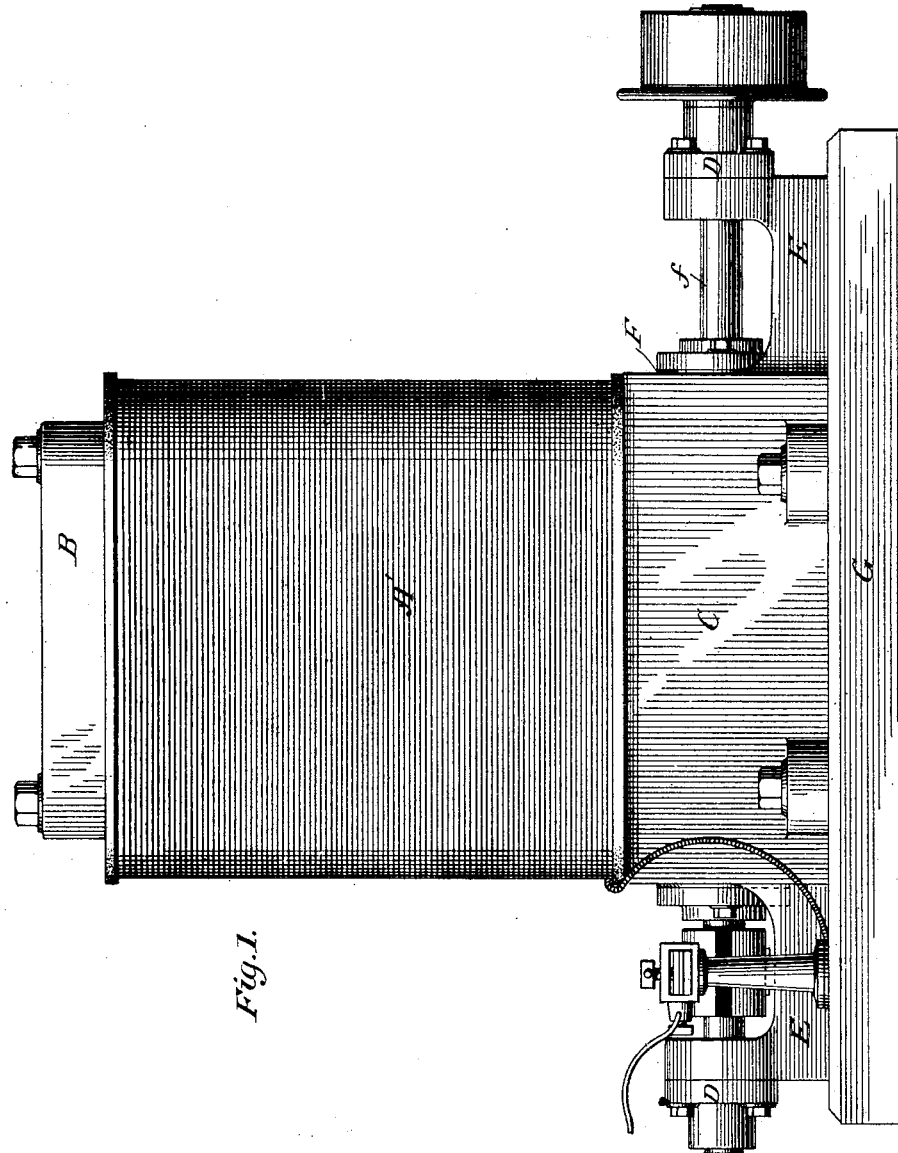


Fig. 1.

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Inventor:

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By Parker W. Page  
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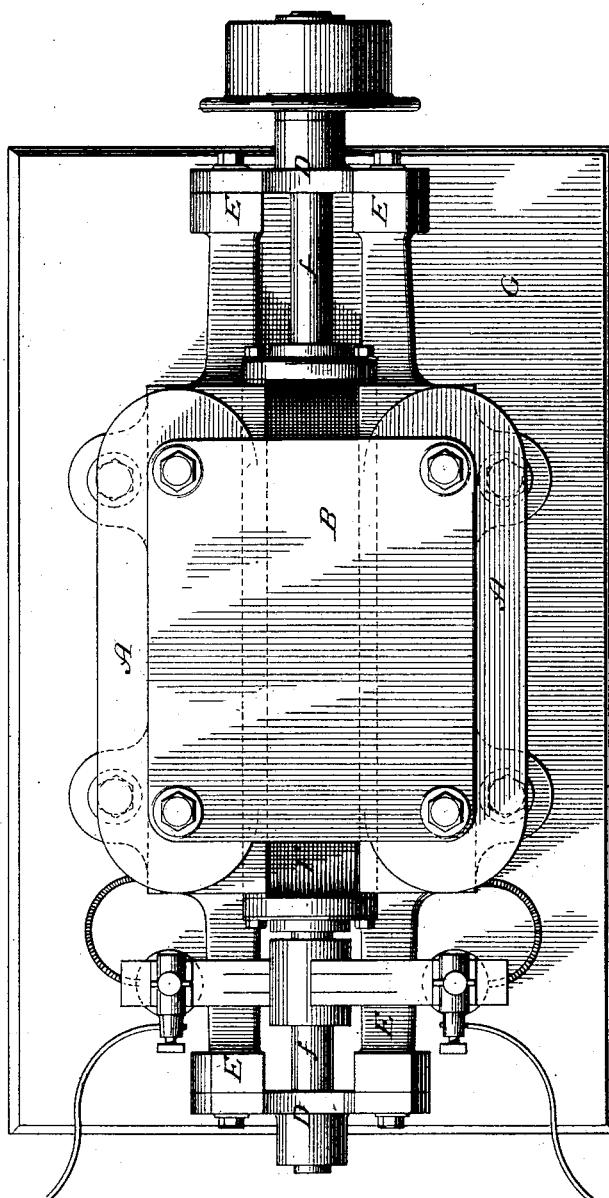
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Fig. 2.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 4.

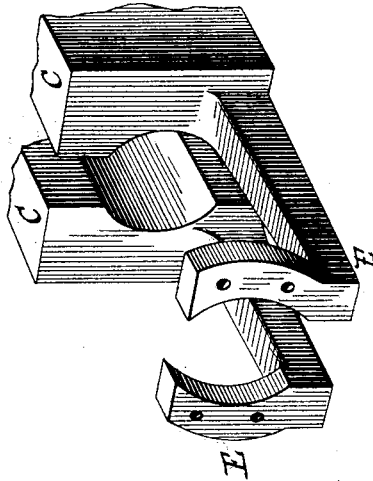
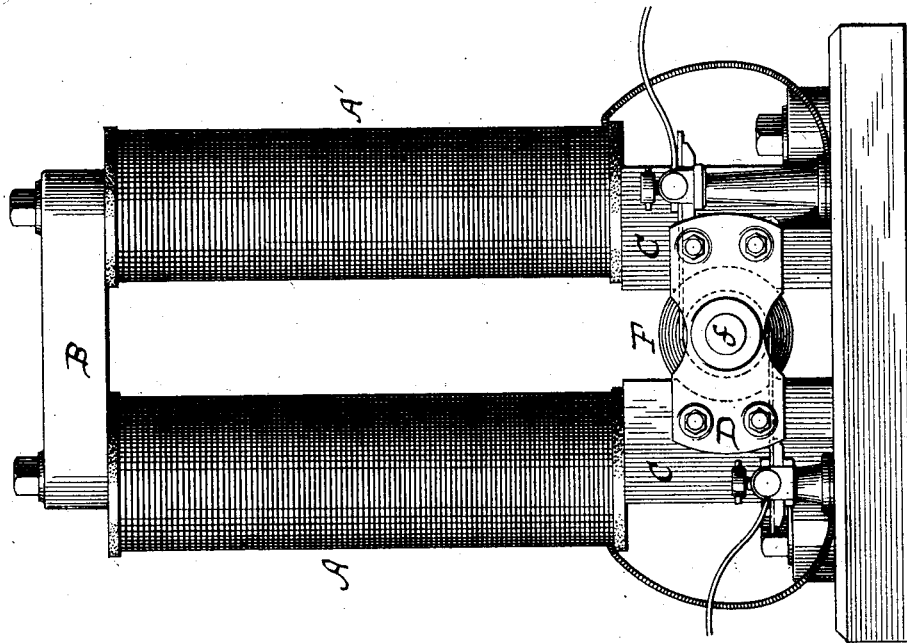


Fig. 3.



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# UNITED STATES PATENT OFFICE.

EDWARD WESTON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF NEW YORK, N. Y.

## MAGNETO OR DYNAMO ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,740, dated October 31, 1882.

Application filed July 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD WESTON, a subject of the Queen of Great Britain, and a resident of Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Magneto or Dynamo Electric Machines, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

My improvements are applicable to dynamo or magneto machines having heavy field-magnets and solid pole-pieces; and the said improvements consist in casting arms integral with the said pole-pieces in substantially the manner hereinafter set forth, said arms being of such a character as to form the supports for the journals of the armature.

In the drawings hereto annexed I have shown a machine illustrating the general type to which the invention is most conveniently and practically applied, Figure 1 showing the same in side elevation, Fig. 2 being a plan view of the same. Fig. 3 is an end view of the machine, and Fig. 4 a view in perspective of a portion of the pole-pieces and the journal-support forming an extension therefrom.

Previous to my invention the armature-shaft of machines equivalent in general plan of construction to that illustrated in the drawings was journaled in standards or bearings independent of the field-magnets. Great difficulty has been experienced in such machines in attaining a perfect rigidity and stability of the parts, and in "truing" the bearings. I have found, however, that when a system of heavy field-magnets are employed in conjunction with an armature journaled between them great increase in stability and economy of construction is attained by mounting the armature in the following manner: The field-magnets A A' are independently cast and joined at their end by a solid cross-connection, B. The armature F is cylindrical in shape, and has necessarily a comparatively-long shaft, *f*, with the bearings at a correspondingly-great distance apart. The pole-pieces C C of the cast-iron cores are solid masses of iron with arms E E extending

from them. These arms are of a size to give perfect steadiness and great strength, and are bent up near their ends to form convenient supports for the plates D D, in which are the journal-bearings. The pole-pieces C C in the present instance are at the ends of the cores A A', and are securely clamped to a bed-plate, G. It will, however, be observed that they may be situated in the middle of the cores or parallel magnets A A', as in the case of consequent-pole machines, and might be cast independently of the cores and mechanically connected thereto.

The machine here shown is one known as a "vertical-magnet machine;" but it is evident that no radical changes of construction are necessitated in case the magnets be horizontal. Should such be the case, only the lower pole-piece need be provided with arms, though for greater stability the plan described is preferable.

When in the construction of a machine the supports or arms E E, or their substantial equivalents, are cast integral with the solid pole-pieces, great saving of time and expense is effected, from the fact that the whole mass of iron may be placed in a lathe and hollowed out and trued without difficulty. In other respects the advantages which follow from the above-described construction are that the accuracy of running of the machine is not affected by the warping or distortion of the base or bed plate, and a more substantial and durable machine produced.

I am aware that in machinery of various kinds it has been common to mount shafts forming part of the mechanism in bearings in the frame of the machines themselves. While, therefore, I do not claim broadly bearings or supports for the same integral with the frame of the machines of which they form a part,

What I claim as new, and desire to secure by Letters Patent, is—

1. In a dynamo or magneto electric machine, the combination, with an armature, of field-magnets having pole-pieces between which the same rotates, and solid arms or extensions cast

in one piece with said pole-pieces and constituting supports for the journals of the armature-shaft, as described.

5 2. In a dynamo or magneto electric machine, the combination, with a cylindrical armature, F, of magnets A A', pole-pieces C C, arms E E, extending from the same, and plates D D, containing bearings for the armature-

shaft, and clamped to the arms E E in substantially the manner indicated.

In testimony whereof I have hereunto set my hand this 7th day of July, 1882.

EDWARD WESTON.

Witnesses:

W. FRISBY,

RAYMOND F. BARNES.