

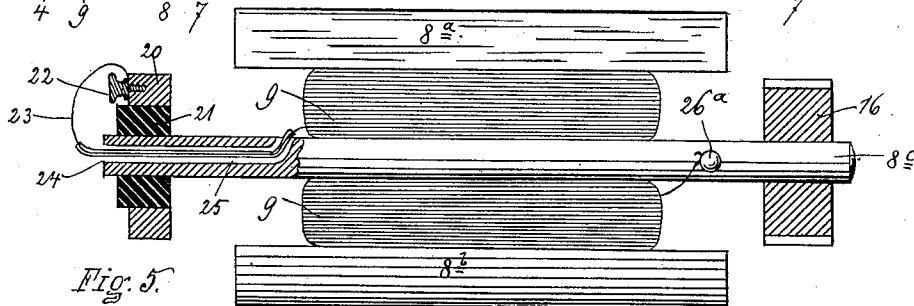
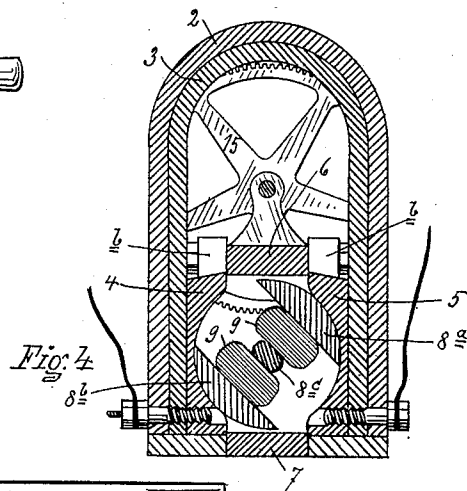
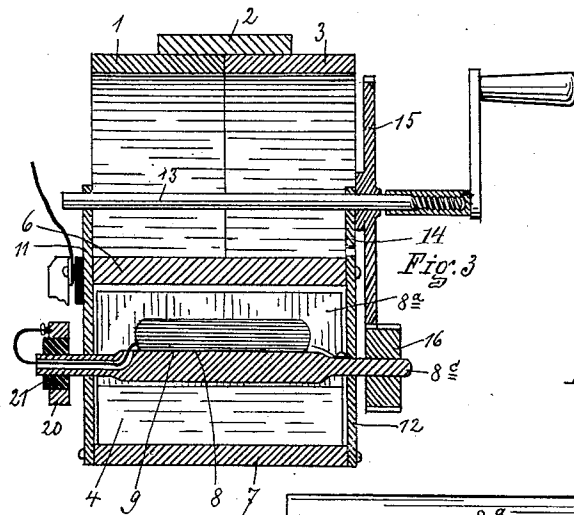
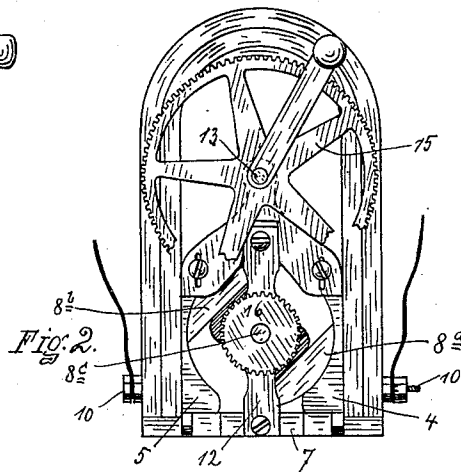
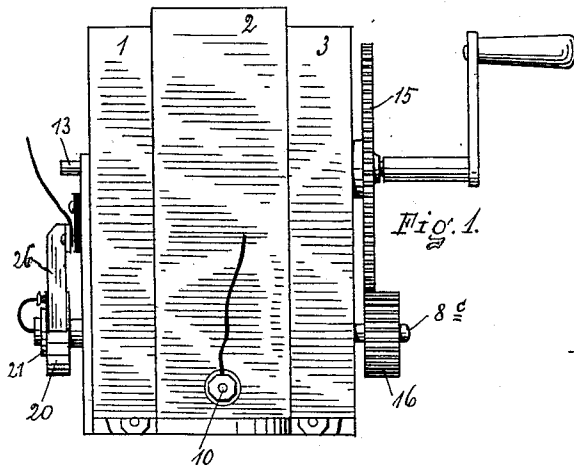
(No Model.)

2 Sheets—Sheet 1.

P. J. CROUSE & E. W. MILGATE.
MAGNETO ELECTRIC MACHINE.

No. 563,453.

Patented July 7, 1896.



WITNESSES.
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E. N. Jones

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(No Model.)

2 Sheets—Sheet 2.

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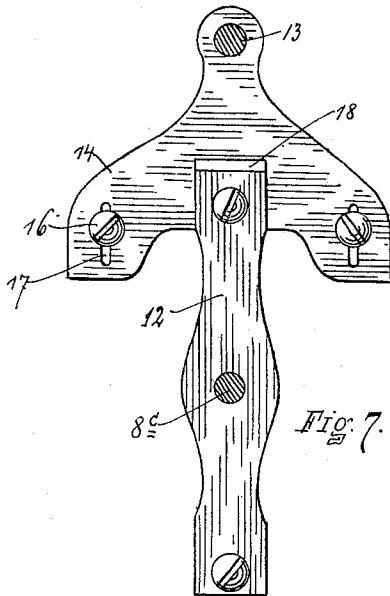


Fig. 7.

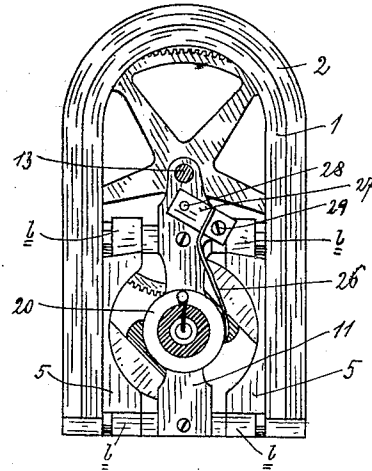


Fig. 6.

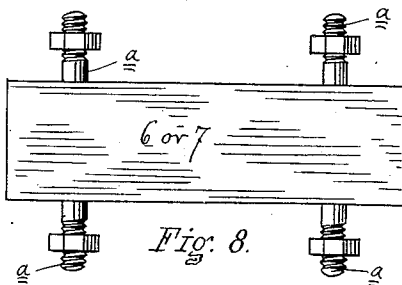


Fig. 8.

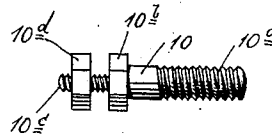


Fig. 9.

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UNITED STATES PATENT OFFICE.

PETER J. CROUSE AND ELLSWORTH W. MILGATE, OF UTICA, NEW YORK.

MAGNETO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 563,453, dated July 7, 1896.

Application filed September 7, 1895. Serial No. 561,744. (No model.)

To all whom it may concern:

Be it known that we, PETER J. CROUSE and ELLSWORTH W. MILGATE, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Magneto-Electric Machines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

Our invention relates to improvements in magneto-electric machines.

In the drawings, Figure 1 shows a side elevation of a magneto-electric machine embodying our invention. Fig. 2 shows the right-hand end view of the machine as shown in Fig. 1. Fig. 3 shows a vertical longitudinal section of the machine. Fig. 4 shows a vertical cross-section of same. Fig. 5 shows details partially in section of the armature. Fig. 6 shows the opposite end of the machine from that shown in Fig. 2. Fig. 7 shows mechanism for adjusting the relative portions of the driving-gears. Fig. 8 shows a plan view of a parting-strip employed in the construction. Fig. 9 shows a combined securing-screw and binding-post.

The machine has three permanent horse-shoe magnets 1, 2, and 3, arranged as shown. Between the arms of the magnet are arranged the pole-pieces 4 and 5. The pole-pieces are held by the parting-strips 6 and 7 in fixed relative position, and the pole-pieces have circular grooves in their adjacent faces to receive the rotary armature 8. The armature is provided with two-part cylindrical faces 8^a 8^b in the usual manner, and on arms which carry these faces from the shaft 8^c of the armature are located the coils 9. The pole-pieces with the spacing or parting strips are secured between the arms of the magnets by the combined securing-screw and binding-post 10, which has a screw-threaded portion 10^a, which enters a tapped hole in the outer side of the pole-pieces, a nut-like head 10^b and a threaded projection 10^c at its head end which receives the nut 10^d, adapted to bind a wire conductor between itself and the head 10^b.

The spacing or parting strips 6 and 7 are provided with integral bolts *a*, which pass through the perforated ears *b* of the pole-pieces, and the parting-strips are of metal or conducting material.

For furnishing bearings for the armature-shaft, there are provided bearing-pieces 11 and 12, secured upon the opposite ends of the parting-strips 6 and 7. The bearing-piece 11 is extended to provide a bearing for driving-shaft 13 at one end of the machine and the bearing at the other end of the machine is provided in the adjustable bearing-piece 14.

The main driving gear-wheel 15 is secured on the shaft 13 and meshes with the gear-pinion 16 on the armature-shaft 8^c. By adjusting the piece 14 the mesh of the teeth of the gear-wheel 15 with those of the pinion 16 can be regulated, so that they will run practically noiselessly. This adjustment is accomplished by means of the set-screws 16, which pass through the slots 17 in the adjustable bearing 14 and bind the piece against the ends of the pole-pieces. The bearing-piece 12 engages in a slotted notch or guide 18 in the bearing-piece 14. It is thereby guided and held in proper alinement when being adjusted.

On the end of the armature-shaft 8^c from that on which the gear-pinion 16 is mounted is provided a brush-ring 20, which is insulated from the shaft by an insulating-collar 21. In the ring 20 is provided a pin or screw 22, and the connection with the coils 9 of the armature is made from this pin by the wire 23, which passes through the hole 24, extending into the end of the armature-shaft and thence out at the side, as shown, the portion of wire which passes through this hole being covered with a small rubber tube, as indicated at 25, to keep it insulated from the shaft. At the other end of the coils 9 the connection is made to the armature-shaft at the pin 26. For taking the current from the brush-ring 20 there is provided a swing-brush 26, which is mounted upon an insulating-piece 27, which insulating-piece is secured by a set-screw 28 to the end piece 11, and when loosened swings pivotally on this set-screw.

The spring-brush is clamped to the swinging end of the insulating-piece 27 by a set-screw 29, which, when loose, allows the brush

to pivotally swing on the piece 27 at this point. Connection is made to the brush at the set-screw 29, as appears in Fig. 1. By arranging the parts as shown aside from effectually insulating the brush, means is provided for effectually adjusting the brush to cause the same to properly operate on the brush-ring, and at the same time provides a large range of adjustment to compensate for wear.

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

The combination in a magneto-electric machine, with the magnets and rotary armature, of the armature-shaft mounted in fixed bearings, a gear-pinion on the armature-shaft, a
15 main driving-shaft having a driving gear-

wheel meshing with the pinion and mounted in a fixed bearing at one end of the machine and in an adjustable bearing-piece 14 at the end on which the driving-gear is mounted, 20 the adjustable bearing-piece having a guide or slide 18 directly between the shafts and slotted openings 17 and the set-screws 16, substantially as set forth.

In witness whereof we have affixed our signatures in presence of two witnesses. 25

PETER J. CROUSE.
ELLSWORTH W. MILGATE.

Witnesses:

E. WILLARD JONES,
DWIGHT H. COLEGROVE.