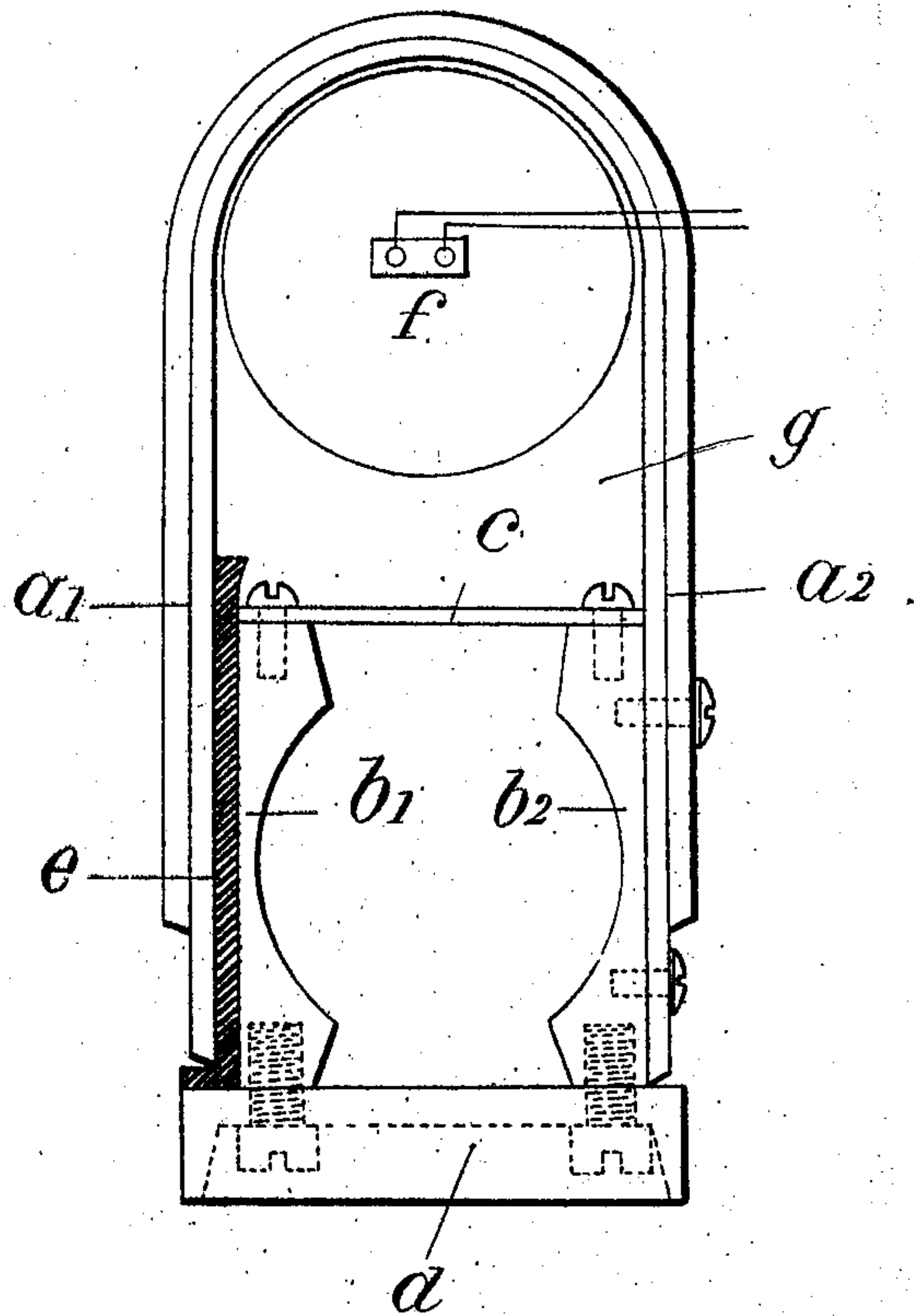


C. M. P. MONTBARBON.
MAGNETO IGNITION APPARATUS.
APPLICATION FILED DEC. 11, 1908.

953,218.

Patented Mar. 29, 1910.



Witnesses:

E. O. Niedebrand
W. B. Taylor

Inventor:

Charles M. P. Montbarbon
by George Messier
his attorney

UNITED STATES PATENT OFFICE.

CHARLES MAURICE PHILIPPE MONTBARBON, OF PARIS, FRANCE.

MAGNETO IGNITION APPARATUS.

953,218.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed December 11, 1908. Serial No. 467,113.

To all whom it may concern:

Be it known that I, CHARLES MAURICE PHILIPPE MONTBARBON, of 13 Rue Spontini, Paris, France, engineer, have invented a new and useful Improvement Relating to Magneto Ignition Apparatus, which improvement is fully set forth in the following specification.

In order to reduce the size of ignition apparatus consisting of a separate magneto and coil, attempts have been made to place the coil in the space between the cover of the armature and the arch formed by the magnets. If however the coil be merely placed in this position without any special modifications, the secondary winding can only generate a very weak current. This is due to the fact that the coil when so situated is surrounded by a conducting circuit of large cross section and low resistance, viz. the circuit formed by the assemblage of the magnets, the pole pieces, the base and the cover of the magnets. When the flux, generated in the soft iron core of the coil is altered by the sudden making or breaking of the current from the magneto in the primary winding of the coil, there is then produced: 1, a secondary current in the secondary winding of the coil; 2, another secondary current in the conducting circuit of low resistance above mentioned. This second current flows through a circuit of little or no resistance and generates in the soft iron core of the coil a flux opposite to the flux produced by the primary winding of the coil and nearly equal to it. The secondary current generated in the secondary winding of the coil, is thus only due to the difference of the variations of flux in the soft iron core. This explains the failure of the experiments undertaken with this object.

This invention has for its object an arrangement in which the coil can be placed as above indicated without any loss of power resulting.

It consists in breaking at one or more places this electric circuit through which the secondary currents flow. The break or breaks are preferably made by interposing a suitable dielectric at one or more points of the circuit. The layer of dielectric interposed in this circuit should be as thin as possible consistent with the effective interruption of the electric current, in order to permit the same to serve effectively as a magnetic circuit. In practice the dielectric

is interposed between two elements of the circuit in question and it may project where necessary in order to make certain that current cannot pass. In order to hold the magnets in position, two methods among others may be employed. When the layer of dielectric is placed on one side only for example, the other pole of the magnet may be fixed on the other side to the pole piece by means of a screw. When a layer of dielectric is placed on each side of the pole pieces the distance between the poles is made smaller than the pole pieces in such a manner that when in position the poles grip the dielectrics and hold themselves in position. Any suitable dielectric may be employed but preferably it should be one of great electric resistivity so that it may be thin. Good results are obtained with mica in leaves less than one tenth of a millimeter thick, so as to avoid losses caused by too large a gap in the metal.

The accompanying drawing illustrates a magneto frame constructed in accordance with this invention.

Between the limb a^1 of the magnet and the assemblage formed of the corresponding pole pieces b^1 b^2 , the cover c and the base d , is placed a layer of dielectric e completely insulating the pole a^1 from the neighboring parts. The dielectric is held in place by the elasticity or resiliency of the magnet limbs, the other limb a^2 of the said limb being fixed to the pole piece b^2 by means of a screw or screws. The coil f is placed in the space g above the cover c .

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A magneto-generator magnet substantially closed as a magnetic circuit but broken as an electric circuit, in combination with an induction coil arranged on the inside of said magnetic circuit.

2. A magneto-generator magnet comprising an arch and an armature cover, in combination with an induction coil arranged within the arch, the electric circuit formed by the arch and the cover being electrically interrupted.

3. A magneto-generator magnet comprising an arch and an armature cover, in combination with an induction coil arranged within the arch, a break being formed in the electric circuit formed by the arch and

the cover, a dielectric being arranged in said break.

4. A magneto-generator magnet comprising an arch and limbs, pole-pieces extending from the limbs, an armature cover and a base, in combination with an induction coil arranged within the arch, and a dielectric layer inserted between a limb and the adjacent parts.

10 5. A magneto-generator magnet comprising an arch and limbs, pole-pieces extending from the limbs, an armature cover and a base, in combination with an induction coil arranged within the arch, and a dielectric

layer interposed between a limb and a pole-piece and the base. 15

6. A magneto-generator magnet comprising pole-pieces and resilient limbs, in combination with a dielectric held between one of said limbs and the adjacent pole-piece 20 by the resiliency of the limbs.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES MAURICE PHILIPPE MONTBARBON.

Witnesses:

DEAN B. MASON,
FRÉDÉRIC HARLÉ.