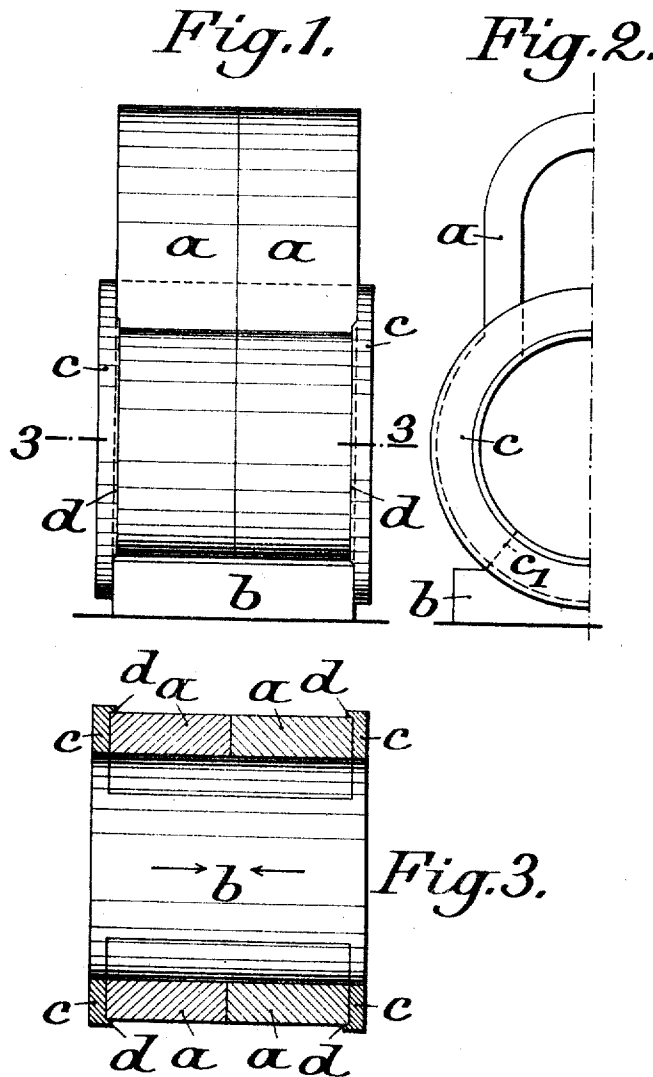


G. HONOLD.
MAGNET FRAME FOR MAGNETO GENERATORS.
APPLICATION FILED JULY 7, 1910.

1,009,518.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 1.



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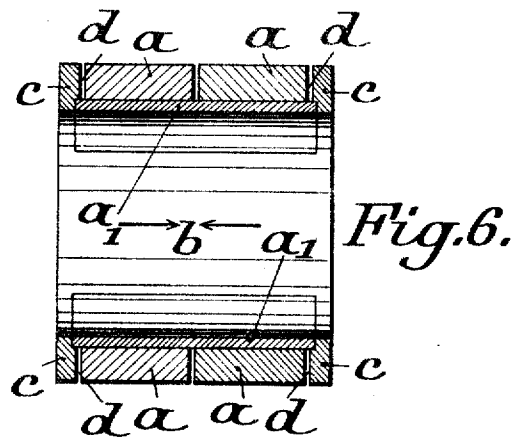
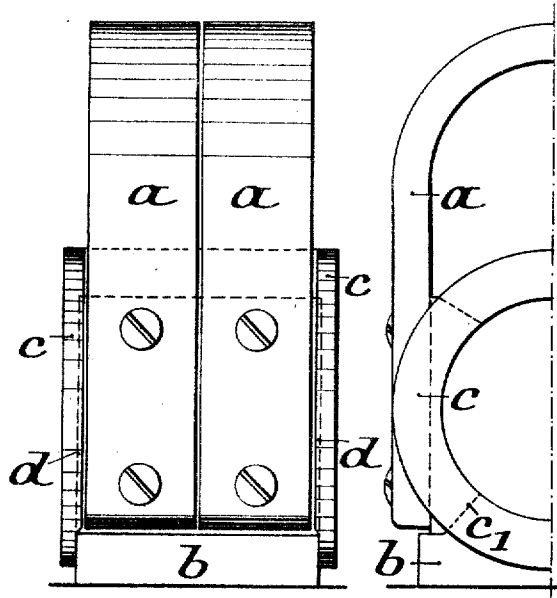
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3 SHEETS-SHEET 2.

Fig. 4.

Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 7.

Fig. 8.

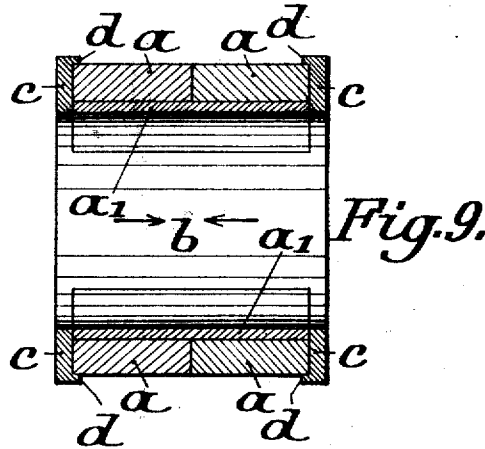
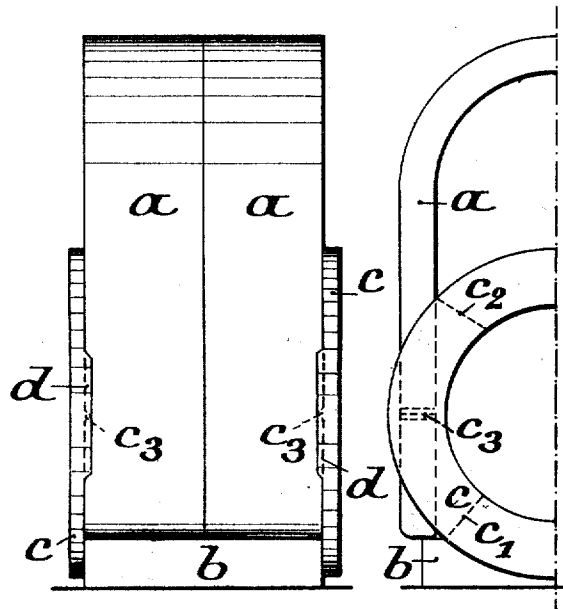


Fig. 9.

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UNITED STATES PATENT OFFICE.

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MAGNET-FRAME FOR MAGNETO-GENERATORS.

1,009,518.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed July 7, 1910. Serial No. 570,702.

To all whom it may concern:

Be it known that I, GOTTLÖB HONOLD, a subject of the Emperor of Germany, residing at 11-13 Hoppenlaustasse, Stuttgart, Germany, have invented certain new and useful Improvements in Magnet-Frames for Magneto-Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to magnet frames for magneto-generators for internal combustion engines, wherein the magnets or the pole pieces thereof are fixed in the armature casing without the use of screws, pins, or the like. Hitherto the pole pieces or the magnets have generally been fixed to the armature casing by screws, but this method of fixing is very often unsuitable owing to the vibration to which the ignition machine, especially in motor vehicles, is subjected, sometimes the previously made pole pieces have been cast into the armature casing, or the pole pieces have been combined with the casing by grooves and feathers. Further, a method has become known by which the pole pieces are packed partly with insulating material or easily fusible metal or alloy and so combined with the casing. Finally, the pole pieces have been fixed in the casing by pins on the pole pieces which pins enter the non-magnetic connecting body of the casing and are fixed therein by riveting, soldering or the like.

The method of construction according to this invention not only affords permanent rigidity notwithstanding vibrations, but is also much more easily carried out than the older methods.

It consists essentially in forming the armature casing, of which the base plate, cover plate and end plate are in one piece, of brass or bronze, in such manner that it covers the end faces of the magnets or the pole pieces, and after the magnets are in place, compressing this casing in the axial direction to such an extent that the end flanges of the casing that cover the end faces of the magnets overlap the edges of the latter.

In the accompanying drawings three constructions of magnet casings, differing somewhat from each other, are shown, as constructed according to the invention.

Figure 1 is a side elevation, Fig. 2 an end elevation, and Fig. 3 a horizontal cross section on line 3-3 of Fig. 1, of a magnet casing in which the magnet poles are formed by bending the limbs of the magnets to cylindrical form. Figs. 4-9 are similar views of two different constructions in which the method is applied to magnets having attached pole pieces.

The method of construction is as follows:—The armature casing *b* made of brass or bronze, for example by casting or otherwise, is cut away on each side to receive the limbs of magnets *a* in Figs. 1-3, or the pole pieces *a*, in Figs. 4-6; or the limbs of magnets *a* and the pole pieces *a*, in Figs. 7-9. The end faces of the armature casing have flanges *c c*, which cover the end faces of the pole pieces or the magnets formed as such. The exact proper position of the pole pieces co-axially with the armature is insured by abutting surfaces *c*, *c*. After the pole pieces or magnets have been put in place, the whole is introduced into a press, by which a strong axial pressure is exerted on each end on the armature casing. The material of the armature casing must be so selected that under the influence of the pressure it begins to flow before the material of which the pole pieces or the magnets are made begins to flow, if, for example, the casing is made of brass and the pole pieces or magnets are made of steel, the requisite condition is fulfilled. Under the influence of the pressure the material forming the edge of the flanges *c c* bends around the edges of the pole pieces or magnets and forms overlapping portions *d d* tightly gripping the pole pieces or magnets on both sides, so that they are held firmly in their positions. Material which owing to the pressing overlaps the inner edges of the pole pieces or magnets, can be subsequently removed by turning.

The construction shown in Figs. 4-6 differs from that shown in Figs. 1-3, in that only the pole pieces, which are separate from the magnets, are embraced by the flanges *c c* and the overlapping portions *d d*, the actual magnets *a a* being screwed to the pole pieces in the usual manner.

In Figs. 7-9 both the magnets and the pole pieces are embraced. To prevent displacement of the magnets during the pressing operation two abutting surfaces *c*, *c*

are provided. It is also advisable to make depressions such as c_1 , c_2 on the end faces of the pole pieces or magnets into which the material of the flanges c c flows under action of the pressure and so prevents subsequent longitudinal displacement of the magnets.

What I claim is:

1. In a magneto generator, a magnet frame comprising a cylindrical armature casing of relatively soft, non-magnetic material with openings at the sides, a field magnet having pole pieces projecting closely within said openings, and end flanges on said casing forced into close contact with the end faces of said pole pieces to tightly lock the parts together.

2. In a magneto generator, a magnet frame comprising an armature casing of relatively soft non-magnetic material with openings at the sides, a field magnet having pole pieces projecting closely within said openings, and end flanges projecting beyond and forced into close contact with the end faces of the pole pieces to tightly lock the parts together.

3. A magnet frame for magneto-generators comprising an armature casing of non-magnetic material having openings at the sides, a field magnet having pole pieces

closely fitting in said openings, and axially extending end flanges on the armature casing tightly embracing the pole pieces to lock the parts together.

4. A magnet frame for magneto-generators comprising an armature casing of non-magnetic material having openings at the sides, a field magnet having pole pieces closely fitting in said openings, and end flanges on the armature casing extending beyond and overlapping the pole pieces to lock the parts together.

5. A magnet frame for magneto-generators comprising an armature casing of non-magnetic material having openings at the sides, a field magnet having pole pieces closely fitting in said openings and provided with recesses c_1 in their end faces, and end flanges on the armature casing tightly embracing the pole pieces and extending into the said recesses, to lock the parts together and prevent longitudinal displacement of the pole pieces.

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

GOTTLOB HONOLD.

Witnesses:

MAX ANSCHÜTZ,
REINHOLD ELWERT.