

(No Model.)

T. E. DANIELS, Jr.  
DYNAMO ELECTRIC MACHINE.

No. 415,190.

Patented Nov. 19, 1889.

Fig. 1.

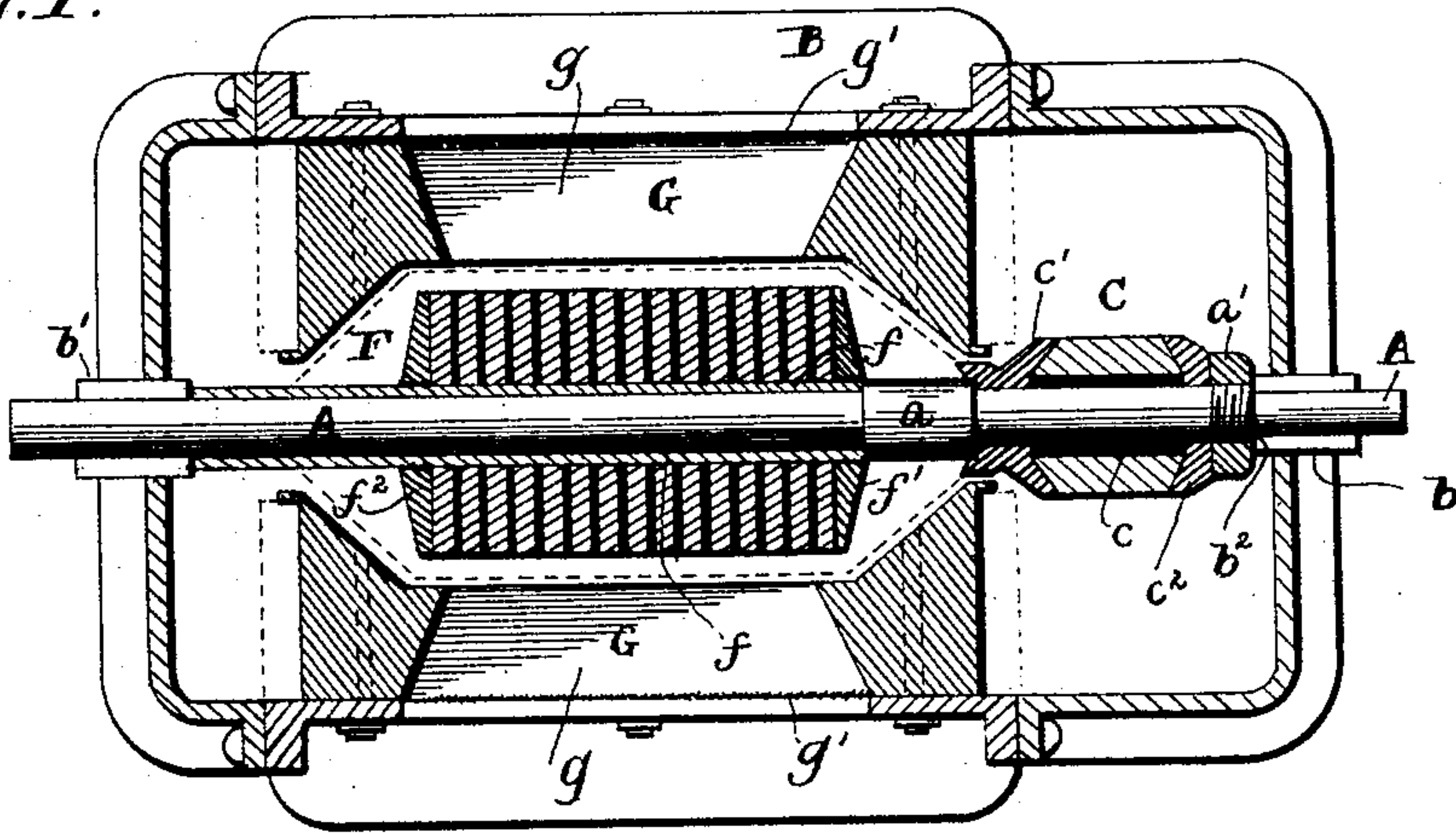
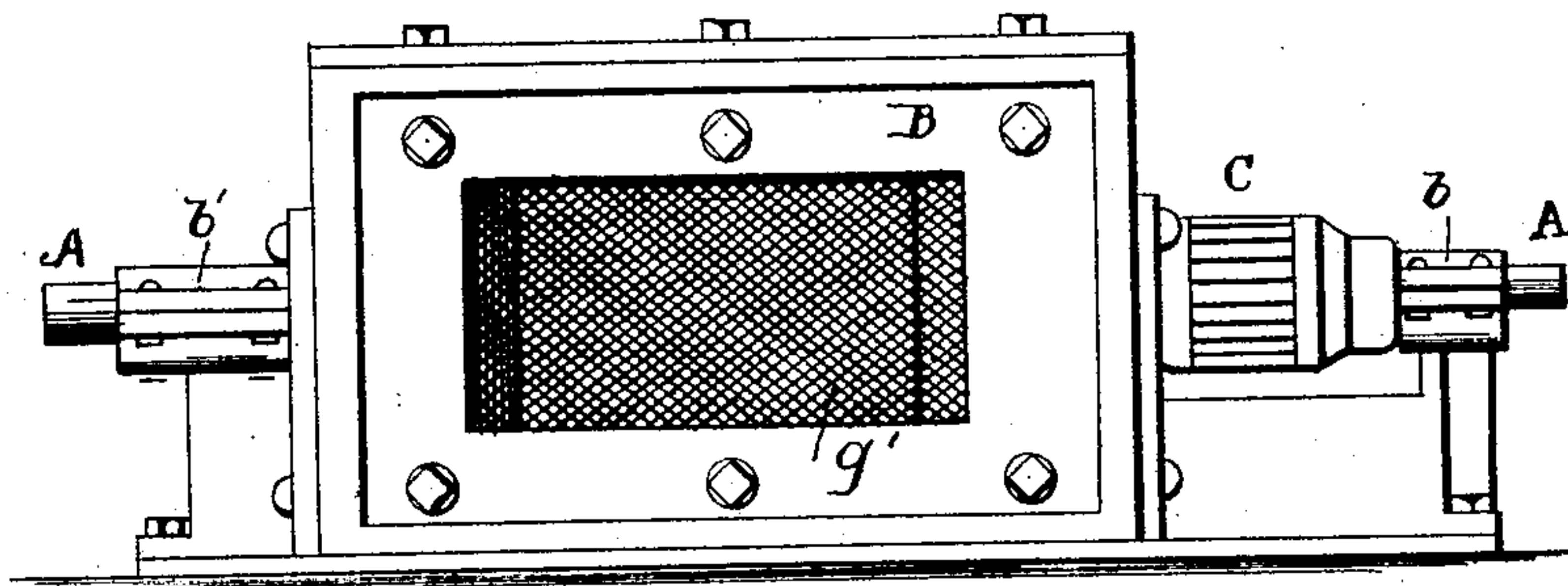


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 415,190, dated November 19, 1889.

Application filed May 6, 1889. Serial No. 309,678. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS E. DANIELS, JR., a citizen of the United States, residing at Provo City, in the county of Utah, Utah Territory, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to dynamo-electric machines, the principal object being to provide a machine of high efficiency.

The invention consists of the details of construction, which will now be described with reference to the accompanying drawings, in which—

Figure 1 represents a horizontal section of the machine, and Fig. 2 a side elevation of same.

Referring to the drawings by letter, A represents the main shaft of the machine. It is mounted in suitable bearings  $bb'$  in the frame B. Upon the shaft and between the bearings the commutator C and armature F are mounted. That portion of the shaft running in bearing  $b$  is of smaller diameter than the remaining portion, in order to provide a shoulder  $b^2$  for preventing lateral thrust of the shaft. The sections of the commutator are placed upon insulating-sleeve  $c$  in the usual manner, and the beveled ends thereof are embraced and secured by the disks  $c' c^2$ . Disk  $c'$  abuts against a shoulder of collar  $a$  upon shaft A. It is held rigidly in this position by set-nut  $a'$ . The brushes are of any approved construction.

The armature, which is represented by F, is of the drum type, and is mounted upon a brass cylinder  $f$ , turning with the shaft, it being keyed or otherwise secured thereto. At one end this cylinder abuts against the collar  $a$  and at the opposite end against the bearing  $b'$ . The armature is built up of plates or disks of soft iron with sheets of insulation between. The plates are secured in place by means of disks  $f'$  and  $f^2$ , which are threaded upon the cylinder. The winding is in parallel longitudinal layers, crossing over the heads of the armature.

The field-magnets G G are blocks of iron having a general rectangular shape, which are held in position by bolts passing through

the frame, in the manner shown. Each magnet has a central opening  $g$ , which admits of the passage of air through the magnets to the armature. The faces of the magnets standing adjacent to the armature are dished or cupped, in order that the iron of the magnets may surround the ends of the armature as well as its sides. By this construction I utilize what is ordinarily "dead-wire." That portion of the frame to which is bolted the field-magnets consists of iron plates, which are perforated opposite the openings in the field-magnets for the admission of air. These openings are covered with a sheet of gauze  $g'$  to prevent foreign substances from entering them. The winding of the field is in coils parallel to the shaft, and it extends down upon the cores until it embraces or surrounds the space in which the armature rotates. By this means the magnetic resistance is reduced to a minimum.

Having now described my invention, I claim—

1. A dynamo or motor having a substantially-rectangular frame composed of side, top, and bottom plates, two field-magnet cores bolted to the respective side plates, said cores and plates provided with openings which register with each other and admit air to the armature, the cores being recessed or dished for the purpose described, all in combination with a Siemens armature.

2. A dynamo or motor having a substantially-rectangular frame composed of side, top, and bottom plates, two field-magnet cores bolted to the respective side plates, said cores and plates provided with openings which register with each other and admit air to the armature, sheets of gauze covering said openings and held between the plates and the cores, the cores being recessed or dished for the purpose described, all in combination with a Siemens armature.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS E. DANIELS, JR.

Witnesses:

WALTER COX,  
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