

(Model.)

L. G. WOOLLEY. BEST AVAILABLE COPY
DYNAMO ELECTRIC MACHINE.

No. 248,822.

Patented Oct. 25, 1881.

Fig. 1.

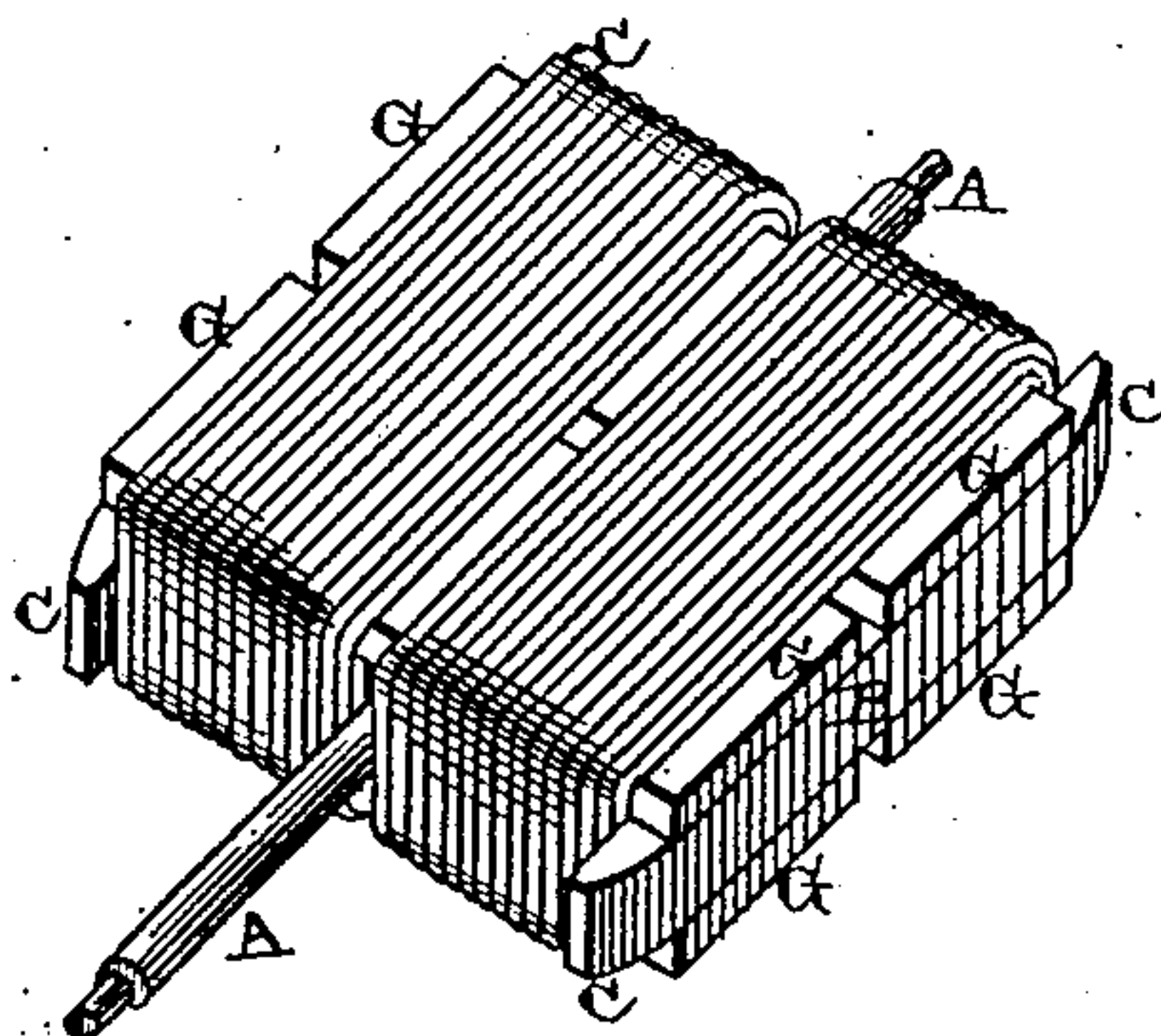


Fig. 2.

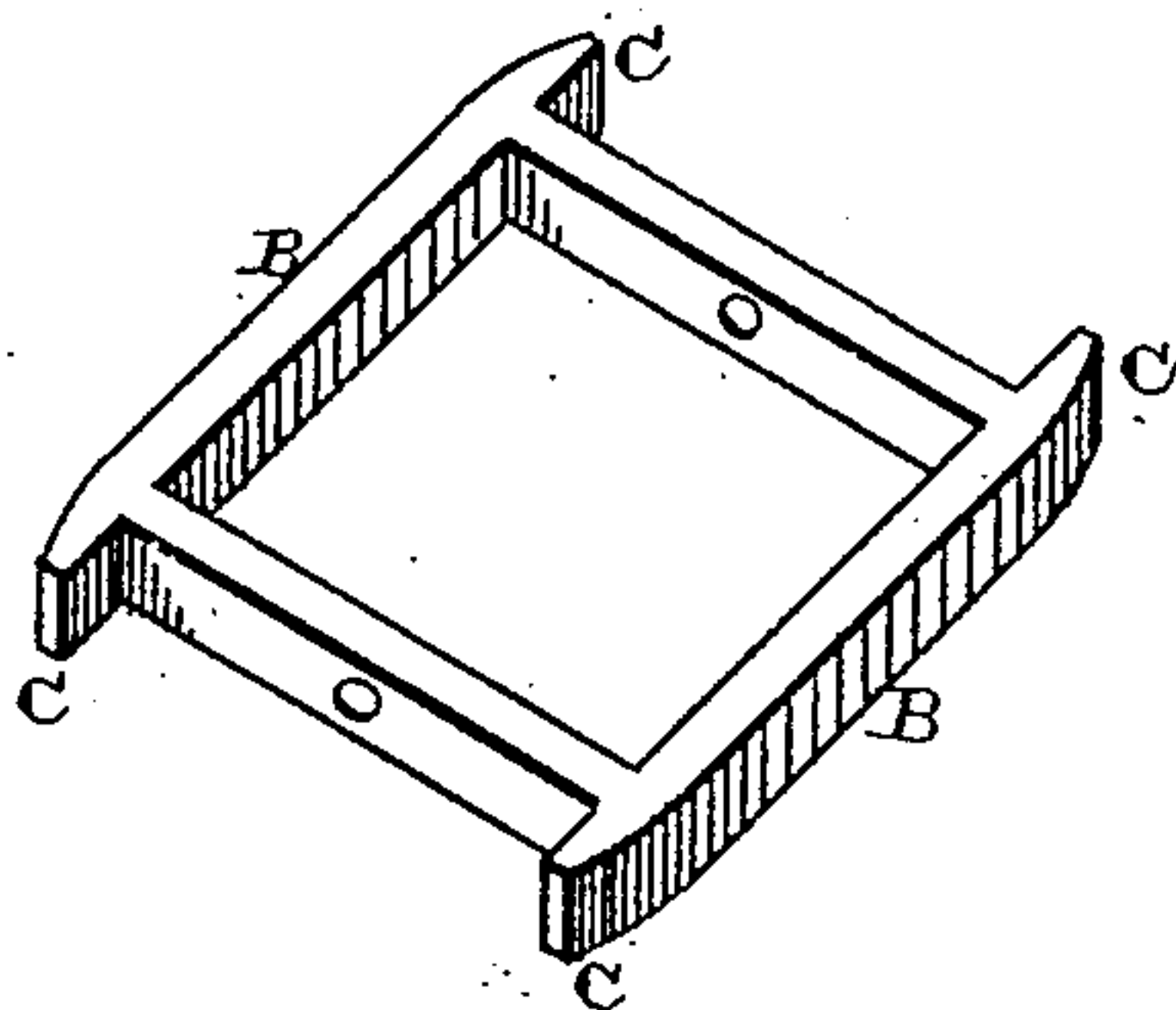
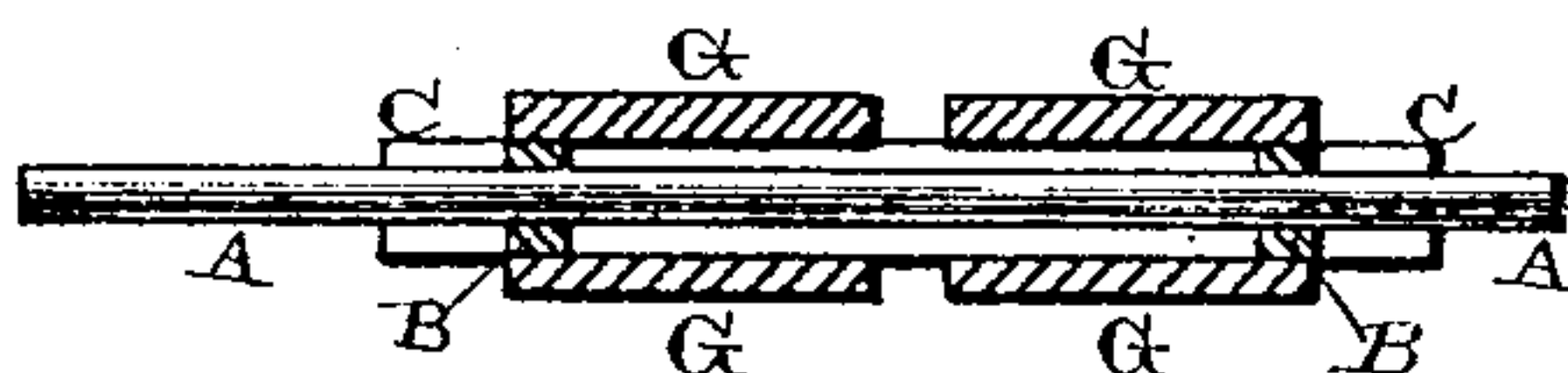


Fig. 3.



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LEONIDAS G. WOOLLEY, OF MENDON, MICHIGAN.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,822, dated October 25, 1881.

Application filed July 25, 1881. (Model.)

To all whom it may concern:

Be it known that I, LEONIDAS G. WOOLLEY, of Mendon, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Dynamo-Electric Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in dynamo-electric machines; and it consists of an armature composed of a series of iron strips or bars, which are secured to a frame of brass or other non-magnetic material in such a manner that each iron strip or bar will be magnetically insulated from each other, so that they will form separate and independent cores.

It still further consists in forming projecting ends or corners upon the non-magnetic frame, so that when the wire is wrapped around the armature there will be no danger of the coils being thrown off by centrifugal force.

The object of my invention has been to reduce the amount of iron usually contained in armatures, to simplify and cheapen their construction, and to divide the armature into a number of pieces of iron, so that each one will form a separate and independent magnet, so as to be magnetized and demagnetized more quickly than where the whole body of the armature is made of one solid piece of iron.

Figure 1 is a perspective of my invention. Fig. 2 is a perspective of the non-magnetic frame. Fig. 3 is a cross-section of the armature.

A represents the shaft upon which the armature revolves, and B a non-magnetic frame, which is secured thereto in any suitable manner. This frame is made wider than it is long, for the purpose of producing a very broad and short electro-magnet, which can be magnetized and demagnetized much more quickly than a long and narrow one. Projecting from each of the corners of this non-magnetic frame is a flange or projection, C, which serve to prevent the coils of wire which are wrapped around the armature from being thrown off from the armature by centrifugal force.

Secured to the two opposite sides of the non-magnetic frame are any desired number of iron

bars or strips, G, which are separated from each other, so that each bar or strip will form a separate and independent magnet. The armature being composed of a number of iron bars, each bar is magnetized and demagnetized very quickly, thus avoiding nearly all the "back-pull" common to armatures composed of a large body of iron made in a single piece.

An armature constructed as above described may be of an unlimited size and capacity without proportionately decreasing its power and efficiency.

An armature of an electric motor or dynamo-electric machine of the type here shown should revolve very rapidly to produce its maximum power with an economical expenditure of force.

The armature here shown having a number of small cores magnetically insulated from each other, and magnetizing and demagnetizing independently, the bars nearest to the attracting poles or "field-magnets" receive their full amount of magnetism much more rapidly than if the armature were made of one piece. Thus it will be seen that the entire series of iron bars receive their magnetic influence in turns as they approach near to the poles of the field-magnets, and consequently there is a greater increase of power. This armature may be used in connection with a common horseshoe-shaped magnet, or any other form may be used.

Having thus described my invention, I claim—

1. The combination of a non-magnetic frame, B, the shaft A, passing through it, and the magnetic plates G, secured to the frame, but separated from each other, the wire coils being wrapped around both the plates and frame, substantially as shown.

2. In a revolving armature, the combination of a series of iron bars, magnetically insulated from each other, with a non-magnetic frame which is provided with a projection at each of its corners, for the purpose of preventing the coils of wire from being thrown from the armature, substantially as described.

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

LEONIDAS G. WOOLLEY.

Witnesses:

WM. HARRIS,
A. L. KING.