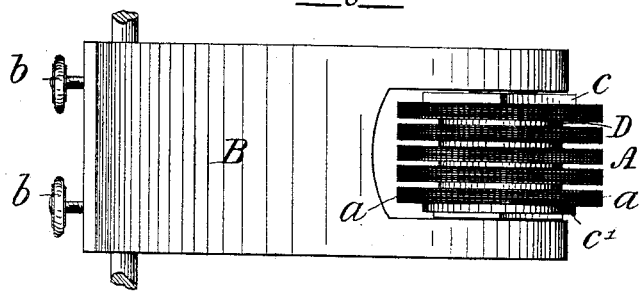
(No Model.)

J. A. I. CRAIG.

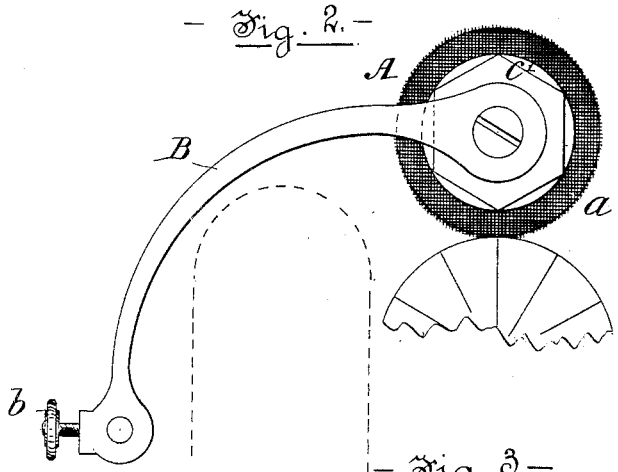
DYNAMO ELECTRIC MACHINE.

No. 260,541. Patented July 4, 1882.

— Fig. 1. —

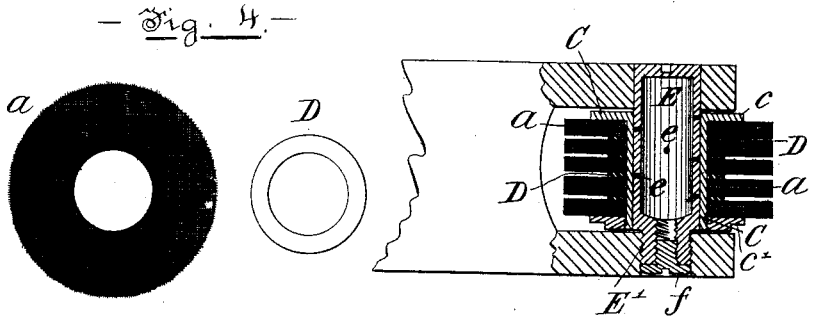


— Fig. 2. —



— Fig. 3. —

— Fig. 4. —



Witnesses:
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Inventor.
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Atty.

UNITED STATES PATENT OFFICE.

JOSEPH A. I. CRAIG, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF TWO-THIRDS TO EDWIN RUTHVEN WHITNEY AND CHARLES LUCIEN BOSSÉ, BOTH OF SAME PLACE.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,541, dated July 4, 1882.

Application filed October 26, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. I. CRAIG, of the city of Montreal, in the District of Montreal and Province of Quebec, in the Dominion of Canada, have invented a certain new and useful Improvement in Dynamo-Electric Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to an improvement in the construction of the "brushes" or collectors used in dynamo-electric machines to gather from the commutator and throw into circuit the electric current generated by the machine, and has for its object to save and utilize a very large percentage of electric energy which is at present lost, owing to the imperfect construction and operation of the usual brushes in their connection with the commutator.

Up to the present time, as is well known, pieces of flat metal have been generally used to connect the poles of the electro-magnets with the commutator in dynamo and magneto electric machines for the purpose above named; but I have found that brushes of this description fail to collect and transmit anything like the full amount generated.

I am aware that an attempt has been made in France by Biloret and Mora to construct these brushes in the form of rollers made up of wires projecting radially from the core; but I have proved by actual experiment that this system cannot be practically utilized, owing to the liability of these wires to burn up, and thus involve a great waste of electric energy, as it will be readily seen that a proportion of the current must necessarily be lost by the burning of these wires which would otherwise be transmitted along the circuit.

My invention may be briefly described as the arrangement in the form of a roller of a number of dies cut out of wire-cloth, mounted upon a spindle or shaft, and having washers interspersed between them. The roller thus formed is carried in the end of a forked arm connected with the poles of the electro-magnets, and revolves in close contact with the commutator.

Certain details of construction also form part of my improvements; but for full comprehension of the invention reference must be had to the accompanying drawings, where similar letters of reference indicate like parts, and in which—

Figure 1 represents a plan view of my improved roller and arm carrying same; Fig. 2, a side elevation, showing same in connection with a commutator; Fig. 3, a longitudinal section taken through roller and its journals, and Fig. 4 details of wire disk and washer.

A represents the roller carried in the forked end of an arm, B. The other end of this arm (which is represented as curved, so as not to touch the magnet, which is located underneath, as shown in dotted lines in Fig. 2) is connected by any desired device to the negative or positive pole of the magnet, as the case may be, and provided with set-screws *b b*, for purposes of adjustment. The roller A is made up of any desired number of disks, *a a*, cut preferably from fine wire-cloth, which are slipped over a sleeve, C, formed with a flange, *c*, at one end and a nut, *c'*, at the other. I prefer to put about twelve of these wire disks *a* together upon the sleeve C against the flange *c*, and then insert an annular ring or washer, D, then twelve more of the disks *a*, and again a washer, D, and so on until the desired width of roller is obtained. The nut *c'* is then screwed in place and the whole tightened firmly upon the sleeve C. The roller thus formed is placed in position in the fork of the arm B, and a hollow shaft, E, is thrust through a hole in one of the forked extensions and through the sleeve C of the roller A, one end of this hollow shaft E being screwed, as shown at E', into the other arm of the fork, thus keeping the axle for the roller perfectly rigid. This hollow shaft or axle E is perforated, as shown at *e e*, for the purpose of allowing a lubricant, inserted therein through one of its ends, (which is shown closed by a screwed plug, *f*,) to escape to the journal.

The advantages which I claim to gain by forming my roller of sections cut from wire-cloth and dividing these sections at intervals by washers are, first, that the wires, being interwoven one with another, present a firmer surface to the commutator than can be obtained by the system of flexible single wires; and, secondly, that the interposition of washers or rings between these wire disks at intervals throughout the roller will insure the necessary amount of flexibility and allow of the lateral play, which cannot be obtained by the brushes at present in use.

What I claim, and desire to secure by Letters Patent, is as follows:

1. A brush or collector for a dynamo electric machine, made up of disks cut from wire-cloth, said disks being separated at intervals by rings or washers.

2. In a revolving brush or collector for a dynamo-electric machine, the combination, with the wire disks *a a* and rings or washers D D, of the sleeve C, provided with flange *c* and nut *c'*, and revolving on a hollow shaft or journal, substantially as described.

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