J. E. NOEGGERATH.

CURRENT COLLECTING APPARATUS.

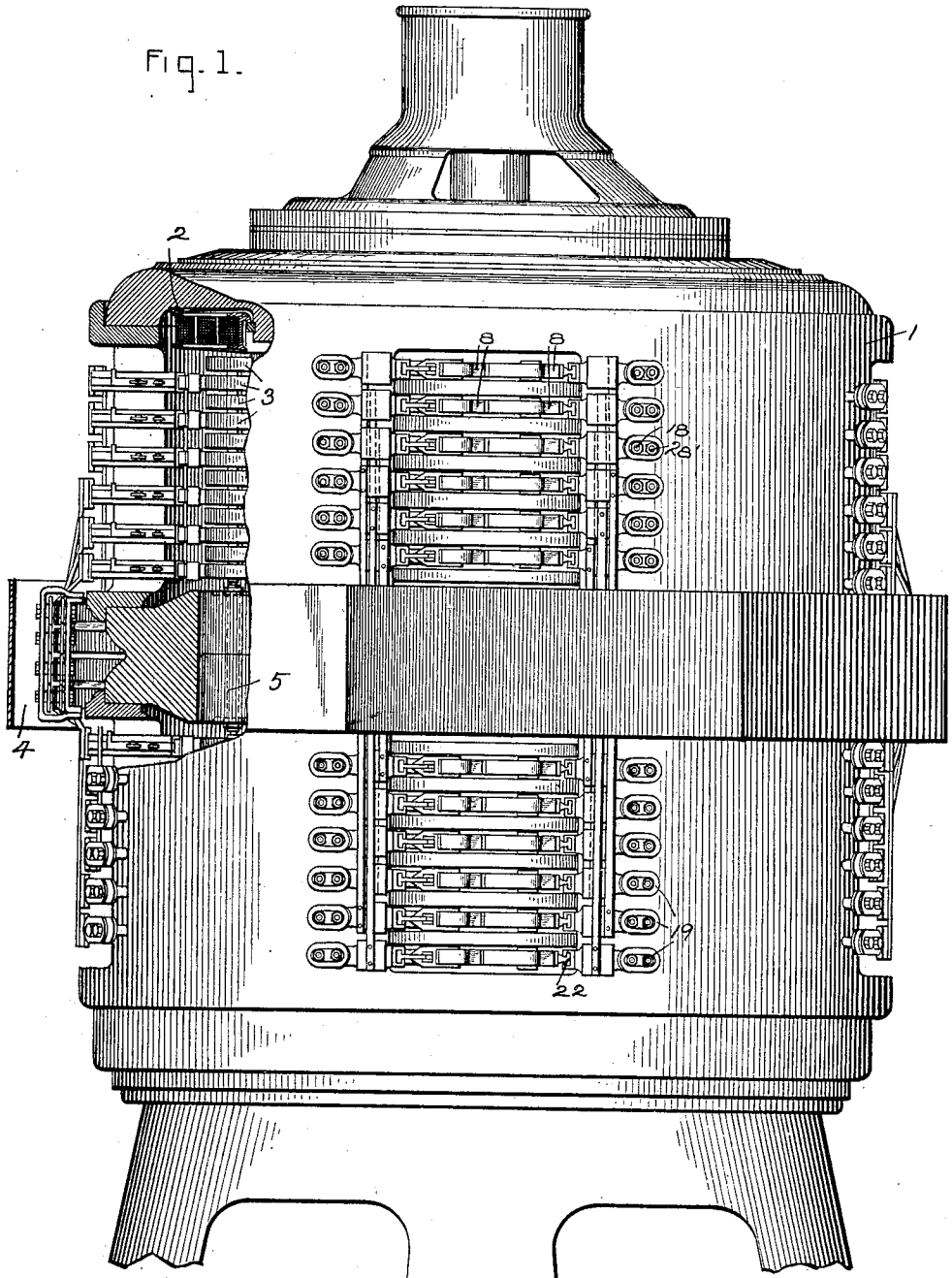
APPLICATION FILED AUG. 23, 1907.

920,627.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

W. Ray Taylor.

J. Ellis Glen

INVENTOR

JAKOB E. NOEGGERATH

by Albert G. Davis

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2 SHEETS—SHEET 2.

Fig. 2.

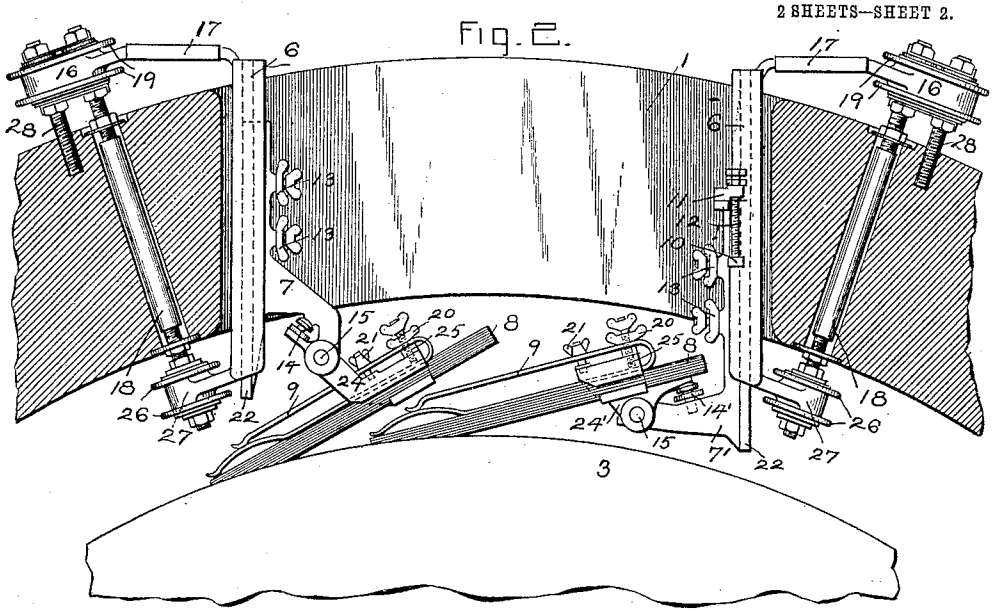


Fig. 3.

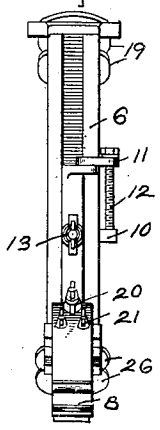
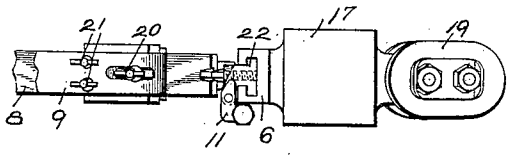


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAKOB E. NOEGGERATH, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

CURRENT-COLLECTING APPARATUS.

No. 920,627. Specification of Letters Patent. Patented May 4, 1909.

Application filed August 23, 1907. Serial No. 389,831.

To all whom it may concern:

Be it known that I, JAKOB E. NOEGGERATH, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Current-Collecting Apparatus, of which the following is a specification.

My invention relates to a means of supporting a collector brush so that it may be easily adjusted and firmly held in place and in contact with the collector surface.

My invention is particularly adapted for use in connection with collector surfaces which require a great number of brushes and which rotate at high speeds, such as are used on acyclic generators. In such machines the collector rings are only accessible through openings in the frame and, since brushes on such machines wear rapidly and must be changed very often as a consequence, it is necessary to have current collecting devices that may be moved out through the openings in the machine and readily adjusted again when the devices are once more placed in position.

The various features of novelty which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the following description taken in connection with the accompanying drawings, in which—

Figure 1 is a view of an acyclic generator provided with the supporting device for collector brushes in accordance with my invention, part of the frame being broken away to show the interior construction; Fig. 2 is a side view of two brush holders and their supporting means; Fig. 3 is a front view of a brush and its supporting means, and Fig. 4 is a plan view of the same.

In the generator shown, the frame 1 incloses the revolving armature 5. One of the exciting coils is shown at 2. The collector rings 3, mounted on the armature, are accessible through openings in the frame and the brushes 8 collect the current from them. The brushes are held in the brush-holders 24 and 24′, and the springs 9 give additional stiffness to the brushes. The brushes are shown as made up of separate leaves which are held in place by means of the bolts 25 and the lock nuts 20. The tension of the springs is regulated by means of the thumb screws 21. The brush-holders 24 and 24′ are pivotally mounted on the brackets 7 and 7′ by means of pins 15. Rotation of the brush-holders is prevented by the clamp screws 14 and 14′ and by the same means the brackets are forced in such a direction that the brushes are pressed on the collector rings.

The brackets are supplied with T-shaped slides 22 which fit in like-shaped guides in the brush-holder supports 6. These supports are substantially U-shaped owing to the arms 17 and 27. Lock nuts 13 hold the brackets in a fixed position in the support. The block 10 is fastened to the support 6, while the block 11 is fastened to the slides 22 of the bracket 7′ so that the screw 12, which enters the block 11 and abuts against the block 10, keeps the bracket from falling even though the lock nuts 13 are loose. The bracket, together with the current collector brush supported thereby, may be moved out of the opening in the frame of the machine when the lock nuts 13 are loose, without disturbing any other portion of the device. The supports are each held firmly in place by two bolts 18 and 28. The bolts 18 extend through the frame and hold the supports in place by means of the arms 17 and 27 through which the bolts pass. These arms are insulated from the bolts by means of insulating washers 19 and 26, and also by insulating bushings passing through the part 16 of the arm of the support. Strips of good conducting material are connected to the arms 17 of the supports and to the bus rings in the compartment 4 which extends circumferentially around the machine. By making the electrical connections to the arm 17 of the support, all of the connections to the current collecting devices are exterior to the frame of the machine.

Referring specifically to Fig. 2, the screw 12 is only used on the right hand support, as there is no danger of the slide 22 on the left bracket striking the collector ring in case it fell, because of the position of the brush.

I desire it to be understood that my invention is not limited to the particular construction shown and described, and aim in the appended claims to cover all modifications which do not depart from the spirit of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is—

1. In combination with the collector surface of a dynamo-electric machine, a current collecting device comprising a bracket, a support for said bracket, a brush, a brush-holder, said brush-holder being mounted on the bracket, said bracket being movable in a direction substantially at right angles to the plane of said collector surface, means for clamping said bracket in said support, and means for preventing the bracket from falling on the collector surface in case the clamping means are loose.

2. In combination with the collector surface of a dynamo-electric machine, a current collecting device comprising a bracket, a support for said bracket, a brush, a brush-holder, said brush-holder being mounted on the bracket, said bracket being movable in a direction substantially at right angles to the plane of said collector surface, means for clamping said bracket to said support, and means for preventing the bracket from falling on the collector surface in case the clamping means are loose comprising a block fastened to the support, a block fastened to the bracket and a screw entering one of said blocks and abutting against the other of said blocks.

3. A dynamo electric machine comprising a frame, a collector surface, a bracket, a substantially U-shaped support for said bracket, a brush and brush-holder mounted on said bracket, said support being held in position on said frame by bolts whereby both ends of the support are secured, said support being insulated from said bolts, substantially as described.

4. In a dynamo-electric machine, a frame, a collector surface, a bracket having a T-shaped slide, a support for said bracket having a T-shaped guide in it substantially at right angles to the plane of the collector surface, said support being fastened to but insulated from said frame, said slide fitting said guide, a brush and brush-holder, said brush-holder being mounted on said bracket, and means for clamping said bracket to said support.

5. A dynamo electric machine comprising a frame, a collector surface, a bracket having a T-shaped slide, a U-shaped support for said bracket having a T-shaped guide in it substantially at right angles to the plane of the collector, said slide fitting said guide, said support being held in position on said frame by bolts and insulated from said frame, one of said bolts passing through the frame thereby securing the support at both extremities, a brush and brush-holder, said brush-holder being mounted on said bracket, and means for clamping said bracket to said support, substantially as described.

6. In a machine of the type described, an inclosing magnet frame having an opening therein, a collector surface accessible through said opening, a bracket, a brush in contact with said collector surface and supported by said bracket, and means for slidably moving said bracket and said brush, whereby said bracket and brush may be moved out through said opening in said machine.

7. In a machine of the type described, an inclosing magnet frame having an opening therein, a collector surface accessible through said opening, a bracket having a slide, a brush in contact with said collector surface and supported by said bracket, and a support for said bracket having a guide into which said slide is clamped, whereby said bracket and brush may be moved out through said opening in said machine.

8. In a machine of the type described, an inclosing magnet frame having an opening therein, a collector surface accessible through said opening, a bracket, a brush in contact with said collector surface and supported by said bracket, and a support for said bracket fastened to said frame but insulated therefrom, said bracket being arranged so that said bracket and brush may be moved out through said opening in said machine.

9. In a machine of the type described, an inclosing magnet frame having an opening therein, a collector surface accessible through said opening, a bracket, a brush in contact with said collector surface and supported by said bracket, said bracket and brush being arranged so that they may be moved out through said opening in said machine, and a support for said bracket fastened to said frame but insulated therefrom and having a portion outside said frame to which an electrical connection is made.

In witness whereof, I have hereunto set my hand this 22nd day of August 1907.

JAKOB E. NOEGGERATH.

Witnesses:

HELEN ORFORD,

HOWARD M. MORSE.