F. D. NEWBURY.

SHUNT ATTACHMENT FOR BRUSHES.

APPLICATION FILED JULY 6, 1917.

1,351,059. **Patented Aug. 31, 1920.**

Fig. 1

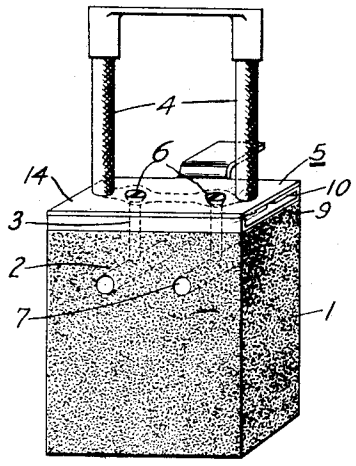


Fig. 2

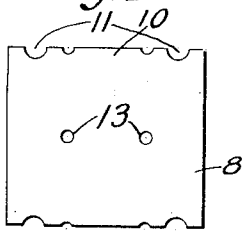


Fig. 3

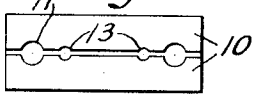


Fig. 4

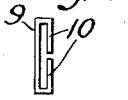


Fig. 5

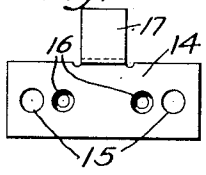


Fig. 6

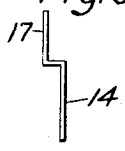


Fig. 7

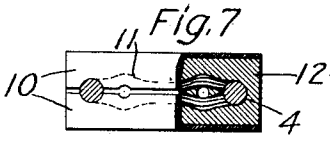
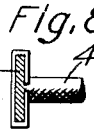


Fig. 8



WITNESSES:

Fred. C. Wilharm

O. W. Kennedy

INVENTOR

Frank D. Newbury

BY

Wesley G. Carr

ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK D. NEWBURY, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

SHUNT ATTACHMENT FOR BRUSHES.

1,351,059. Specification of Letters Patent. Patented Aug. 31, 1920.

Application filed July 6, 1917. Serial No. 178,929.

To all whom it may concern:

Be it known that I, FRANK D. NEWBURY, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Shunt Attachments for Brushes, of which the following is a specification.

My invention relates to current-collecting brushes for dynamo-electric machines, and it has for its object to provide a simple and effective device for attaching an electric conductor or shunt to a brush so that detachment may be readily affected after the brush has worn out without injury to the electric conductor.

A further object of my invention is to provide means combined with the shunt attachment whereby the brush may readily be lifted out of engagement with its coacting current-collecting surface, as is customary in certain types of dynamo-electric machines, such, for example, as rotary converters.

In the accompanying drawing, Figure 1 is a perspective view of a current-collecting brush having my shunt attachment secured thereto. Figs. 2, 3 and 4 are detail views of the contact plate forming a part of my device; Figs. 5 and 6 are detail views of the lifting finger, and Figs. 7 and 8 are detail views of the contact plate and the electric conductor attached thereto, parts being broken away to show details of the construction.

A brush 1, preferably in the form of a block of carbon or similar conducting material, is provided with holes 2 extending transversely therethrough and with communicating holes 3 extending inwardly from the top of the brush at right angles to the holes 2. A flexible electric conductor 4, preferably of inverted U-shape, is attached to a terminal member 5 that is secured to the brush 1 by means of screws 6 located in the holes 3 and in threaded engagement with pins 7 located in the holes 2.

The terminal member 5 comprises a plate 8, one portion 9 of which is seated on the top of the brush and other portions 10 of which are folded over into parallel relation with the portion 9 to form an envelop. As best shown in Fig. 2, the edges of the portions 10 are provided with approximately semi-circular notches 11 which are in complementary relation when the portions 10 are folded over, as shown in Figs. 3 and 4. The notches 11 are adapted to receive the ends of the flexible conductor 4, the bared end portions of which are flattened out within the envelop formed by the plate 8. The space within the envelop that is not occupied by the flattened ends of the conductors 4 is filled with conducting solder 12 which completely embeds such flattened ends, as best shown in Figs. 7 and 8. Holes 13 are then drilled through the plate 8 for the reception of the screws 6 which pass through the strands of the conductor 4. The terminal member 5 further comprises a finger plate 14 that is provided with a pair of openings 15 to receive the ends of the conductors 4 and another pair of countersunk openings 16 to receive the heads of the screws 6. The plate 14 is further provided with an upwardly and laterally extending finger 17.

From the foregoing, it is apparent that the terminal member 8 may be readily applied to the brush 1 and that the conductors 4 will be in good electrical contact therewith by reason of their substantially unitary relation to the contact portion 9. Furthermore, the terminal member 8 may be easily removed from the brush when the latter wears down and may be as readily applied to a new brush without disturbing the connections between conductors 4 and the plate 8.

While I have shown my invention in a simple and preferred form, it is not so limited but is susceptible of various minor changes and modifications within the scope of the appended claims.

I claim as my invention:

1. In a brush structure for dynamo-electric machines, the combination with a block of brush material provided with a transverse opening and with a longitudinal opening extending from the head thereof to said transverse opening, a current lead, of means for attaching said lead to said brush comprising a contact plate mounted in engagement with said brush and provided with side portions bent back upon said plate and enveloping said leads and an additional plate mounted on top of said bent side portions, a conducting rod extending through said transverse opening, and a fastening member extending through said top plate,

said contact plate and said longitudinal opening and into engagement with said rod, whereby said current lead is maintained in effective mechanical and electrical engagement with said block.

2. The combination with a current-collecting brush and a lead therefor, of means for attaching said lead to said brush comprising a contact plate mounted in engagement with said brush and provided with members enveloping the ends of said leads and an additional plate mounted on top of said enveloping members.

3. The combination with a current-collecting brush and a lead therefor, of means for attaching said lead to said brush comprising a contact plate mounted in engagement with said brush and provided with members enveloping the ends of said leads and an additional plate mounted on top of said enveloping members, and means mounted on said top plate for holding said lower plate in engagement with said brush.

4. The combination with a current-collecting brush and a lead therefor, of means for attaching said lead to said brush comprising a contact plate mounted in engagement with said brush and provided with two side portions bent back upon said plate and enveloping said leads and an additional plate mounted on top of said bent side portions and attached to said brush.

5. The combination with a current-collecting brush and a lead therefor, of means for attaching said lead to said brush comprising a contact plate mounted upon one surface of said brush and provided with two side portions so bent as to form a space of relatively great area and relatively small height to receive said lead and a plate mounted upon said bent side portions and attached to said brush.

In testimony whereof, I have hereunto subscribed my name this 27th day of June 1917.

FRANK D. NEWBURY