E. FRANKLIN.
CONTACT BRUSH FOR DYNAMOS.

To all whom it may concern:

Be it known that I, EUGENE FRANKLIN, a citizen of the United States of America, residing at Greenville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Contact-Brushes for Dynamo-Electric Machines, of which the following is a specification.

My invention has relation to improved means for clamping the brushes in relative position to the commutator-cylinder and for regulating the pressure of the brushes thereon. In the present usual construction and arrangement of these brushes to the dynamo, so far as I am aware, it is necessary in practice to at least duplicate the brushes by disposing one brush on the other to obtain the requisite amount of pressure or contact; also, since the present style of clamps on these brushes are attached to clamps rigid and unyielding in their position, the fingers frequently break off at the edge of the clamps, falling or sliding across from one brush to the other, creating cross-currents which melt off the brushes and put out the lights; besides, the condition is dangerous.

It is the object of my invention to remove these objections by providing improved means for holding the brush on the commutator of the dynamo to its proper relative position, and to regulate the pressure of the fingers or blades of any desired proper degree.

I accomplish the purposes of my invention by the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of my improved brush holder and regulator. Fig. 2 is a plan view of a commutator and the brush-holder, showing the brush held therein according to my invention. Fig. 3 is a perspective of my improved brush holder and regulator removed from the support and without the brush. Fig. 4 is a view showing the holder with a single arm and narrow clamp adapted to smaller brushes.

A designates a commutator of any of the approved constructions.

B designates the usual brush-clamp attachable to the many common means of support used for that purpose. On the upper bar of this clamp is usually a rib 1, which I utilize for attaching my brush-regulator to. These clamps are mounted sufficiently rigid to meet the purposes of pressure-adjustment intended in my brush-regulator.

C designates my improved brush-regulator, consisting, according to the width of the brush used, either of one or two brass arms 60, which, in case of two arms being used, connect by a bridge-piece 3, in order that the arms may constitute a frame and operate as a single arm. At the rear arm or frame is a groove or grooves 4 to engage the rib 1 on the clamp, and clamped thereon by means of set-screws 5 let through the ends. At the free end of the frame or arm are two or more threaded holes 6, through which are projected the adjusting-screws 7, carrying on their lower ends the upper bar 8 of the finger-clamp, which takes the fingers of the brush. This bar 8 is formed with nut-chambers 9, which take the nuts or washers 10 on the end of the adjusting-screws 7, which are not threaded on that part in the holes leading to the nut-chambers.

11 designates the lower bar of the finger-clamp, held to the upper bar by means of clamping-screws 12, 13, let through both bars 80 at their respective ends. On the stems of the adjusting-screws 7 are jam-nuts 14, by which, when the adjustment of the pressure is made, the adjusting-screws may be set in such position by screwing the jam-nuts upon the 85 stems until they lodge under the ends of the arms.

The brush is arranged with its plate part clamped between the clamps of the supports with the clamp of my invention on the fingers, substantially as shown. The meeting or inner faces of the clamps are preferably made slightly curved to conform to the curve of the brush and prevent cutting into the surfaces of the brush.

It will be perceived from the foregoing description that the supporting-arms are held rigidly to the brush-support, and that the forward or central end of the brush is held adjustable vertically in the finger-clamp, so that the position of the adjusting-screws in the ends of the arms determines the pressure of
the fingers on the commutator, regulating the force either great or little, as desired, and since this contact in arc-light dynamo-machines largely controls the current, and it is advisable and necessary to vary the pressure according to the number of lights in the current, I provide an easy, certain, and reliable means for regulating the contact-pressure to suit the varying demands of the plant of lights.

To maintain all the lights in the circuit I find it necessary to use three brushes in one of the clamps to get the required contact-pressure, while with my improved holder one brush is found amply sufficient to meet the demand, and at those hours of night when perhaps one-half the number of lights are cut out by simply loosening the jam-nuts and turning up the adjusting-screws the pressure is lightened and the wear and tear on the commutator and brush obviated.

The finger, from its arrangement and attachment to the support, is given a slight resilient function, which imparts greater security to the fingers of the brush, so that the liability of breaking is reduced to the minimum.

Having thus described my invention, I proceed to particularly point out and distinctly claim the parts and combinations I claim as my invention, as follows:

1. The combination, with the brush-support of an electric dynamo, of a projecting arm clamped on the brush-clamp, a clamp on the brush across the fingers thereof, and adjusting-screws connecting the ends of the projecting arm and the finger-clamp, substantially as described, and for the purpose specified.

2. As a new article of manufacture, the adjustable brush finger-clamp for electric dynamos, consisting of an arm having a clamping means at one end and adjusting-screws projected through its other end, an upper clamping bar arranged on the ends of the adjusting-screws, an under clamping-bar, and clamping-screws projected through both clamping-bars, substantially as and for the purpose specified.

3. The combination, with the brush-clamp of an electric dynamo and the brush, of the brush-regulator C, herein described, consisting of the projecting arm 2, having a clamping means 4 5 at the rear and adjusting-screws 7 at the front end, an upper clamp-bar held on the ends of the adjusting-screws, a lower clamp-bar, and clamping-screws to clamp the bars together and on the fingers of the brush, substantially as and for the purpose specified.

In witness whereof I hereunto set my hand in the presence of two attesting witnesses.

EUGENE FRANKLIN.

Attest:
E. A. McBRIDE,
N. H. DAVIS.