

(No Model.)

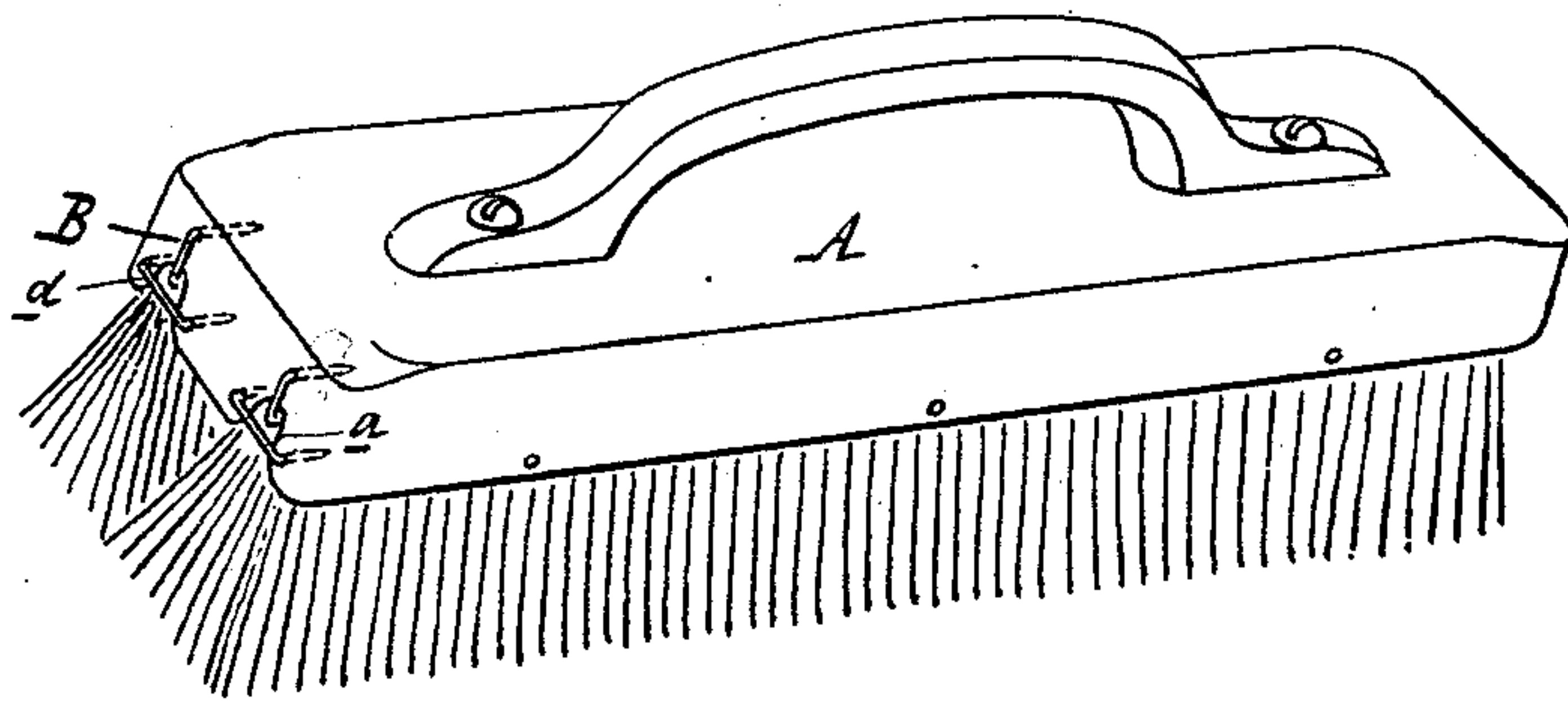
D. A. McDONEL.

BRUSH.

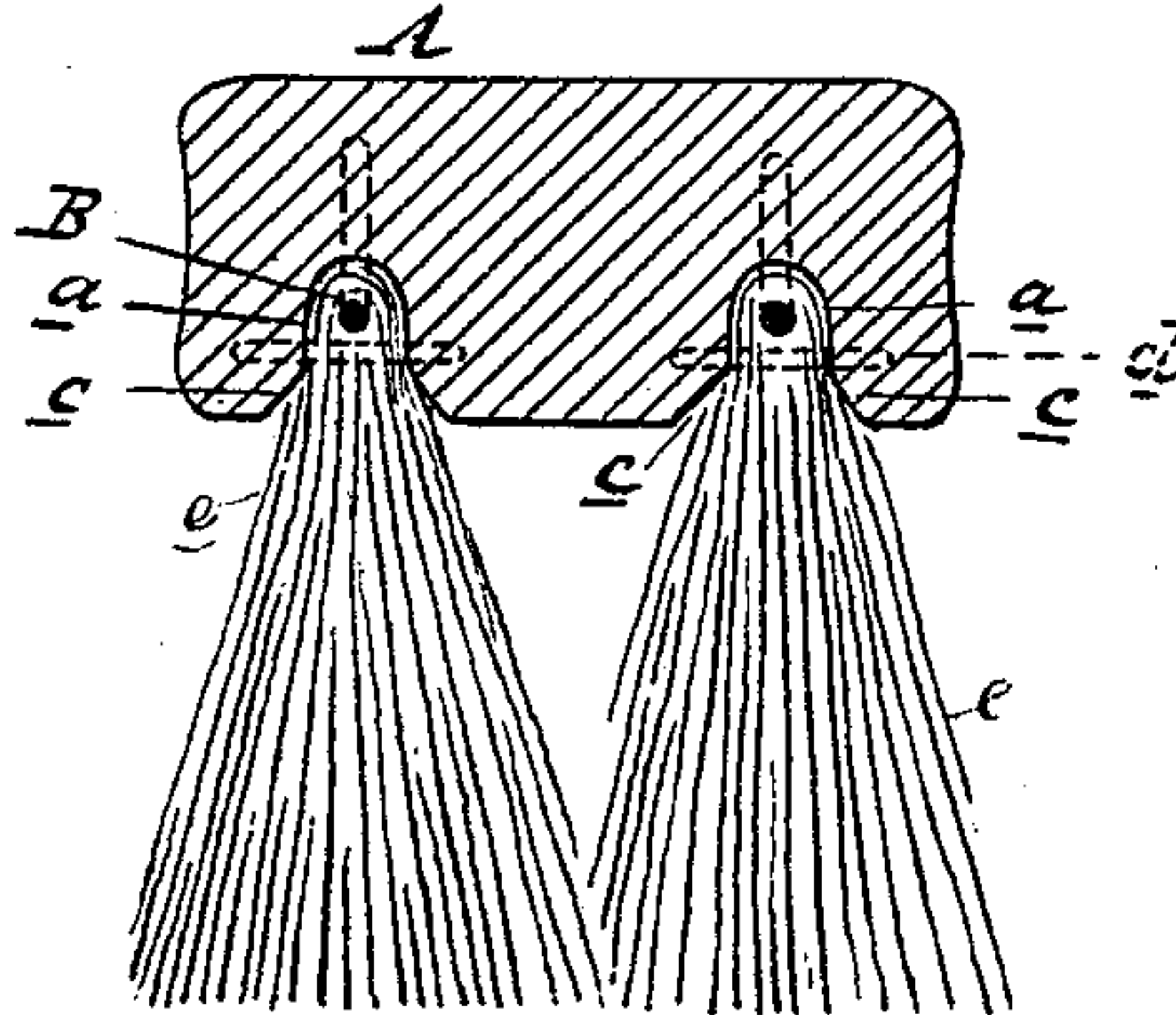
No. 273,867.

Patented Mar. 13, 1883.

*Fig. 1*



*Fig. 2*



*Attest:*

*A. Barikel  
C. Scully.*

*Inventor:*

*Daniel A. McDonel  
by his Atty Thos. J. Sprague*

# UNITED STATES PATENT OFFICE.

DANIEL A. McDONEL, OF DETROIT, MICHIGAN, ASSIGNOR TO HIMSELF AND  
E. W. PORTER, OF SAME PLACE.

## BRUSH.

SPECIFICATION forming part of Letters Patent No. 273,867, dated March 13, 1883.

Application filed November 8, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL A. McDONEL, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful  
5 Improvements in Brushes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 The nature of this invention relates to certain new and useful improvements in the construction of a superior light and cheap brush, by means of which the requisite elasticity, as well as stiffness, is secured, while at the same  
15 time quite a percentage of material is saved in the manufacture.

The invention is designed to be an improvement upon the brush as patented to myself and Peter Z. Klock, October 22, 1872, and No.  
20 132,479. The material employed in these cheap brushes is what is known as "vegetable bristle."

The invention consists in the peculiar means for securing the bristles in the channel of the  
25 brush-head, as hereinafter more fully described.

Figure 1 is a perspective of one of my improved brushes; and Fig. 2 is a cross-section of the same, taken at any point between the ends thereof.

30 In the accompanying drawings, which form a part of this specification, A represents the brush-head, provided with the channels *a*. The bottom of said channels is semicircular, terminating in outwardly-inclined walls *c*.

35 To make a brush, a head, A, is supported in an inverted position, and the proper quantity of bristles are placed across the groove and forced tightly into the same by a wire, B, so

that the center bend of the bristles is forced to the bottom of the channel, and the wires 40 projecting at either end of the groove and having been tightly drawn their projecting ends are turned up and forced into the head, as shown in the drawings, and each successive groove—their number depending upon the 45 width or size of the brush—is closed at each end by means of staples *d*, driven into the wood to prevent displacement of the bristles at the ends of the grooves. The peculiar shape of the grooves gives the bristles an opportunity 50 of spreading, so that their projecting ends will cover a larger space than where the grooves have vertical sides, as in the patent referred to, so that a less quantity of bristles is required to form the brush than when the grooves 55 have vertical walls.

What I claim as my invention is—

1. The combination, with the brush-block A, having the longitudinal grooves provided with semicircular bottoms *a* and outwardly-inclined 60 walls *c*, the bristles *e*, and the longitudinal wire B, holding the bristles tightly in the inclined groove and having its ends bent up and driven into the ends of the brush, substantially as described. 65

2. The combination of the wire B, extending the whole length of the brush and having projecting ends bent up and driven into the brush-head, as shown and described, with the staples *d*, driven into the ends of the brush-head 70 straddling the channel, as and for the purposes set forth.

DANIEL A. McDONEL.

Witnesses:

H. S. SPRAGUE,  
A. BARTHEL.