

No. 613,807.

Patented Nov. 8, 1898.

F. G. SMITH & H. R. ATWATER.
BRUSH.

(Application filed Sept. 14, 1896. Renewed May 4, 1898.)

(No Model.)

Fig. I.

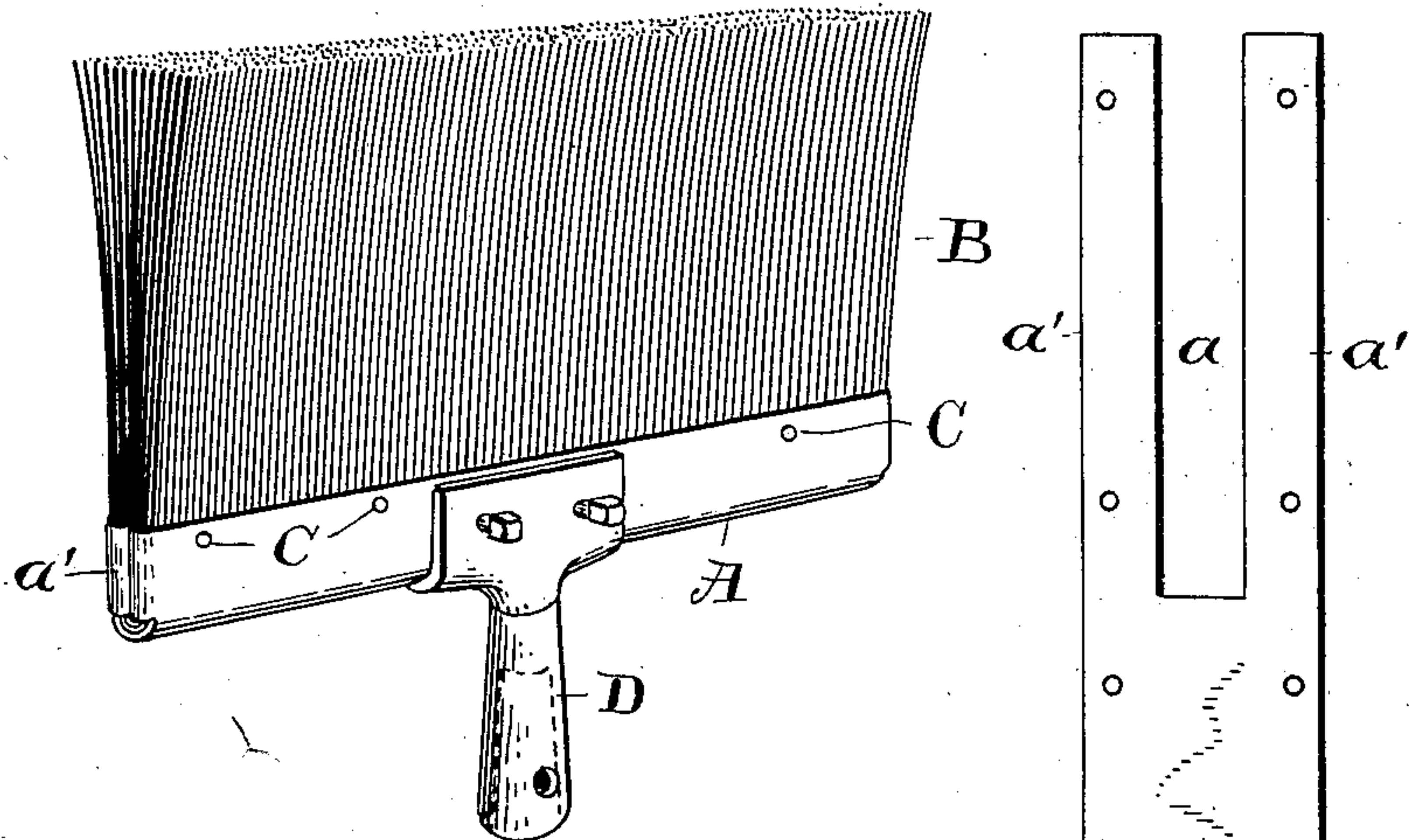


Fig. II.

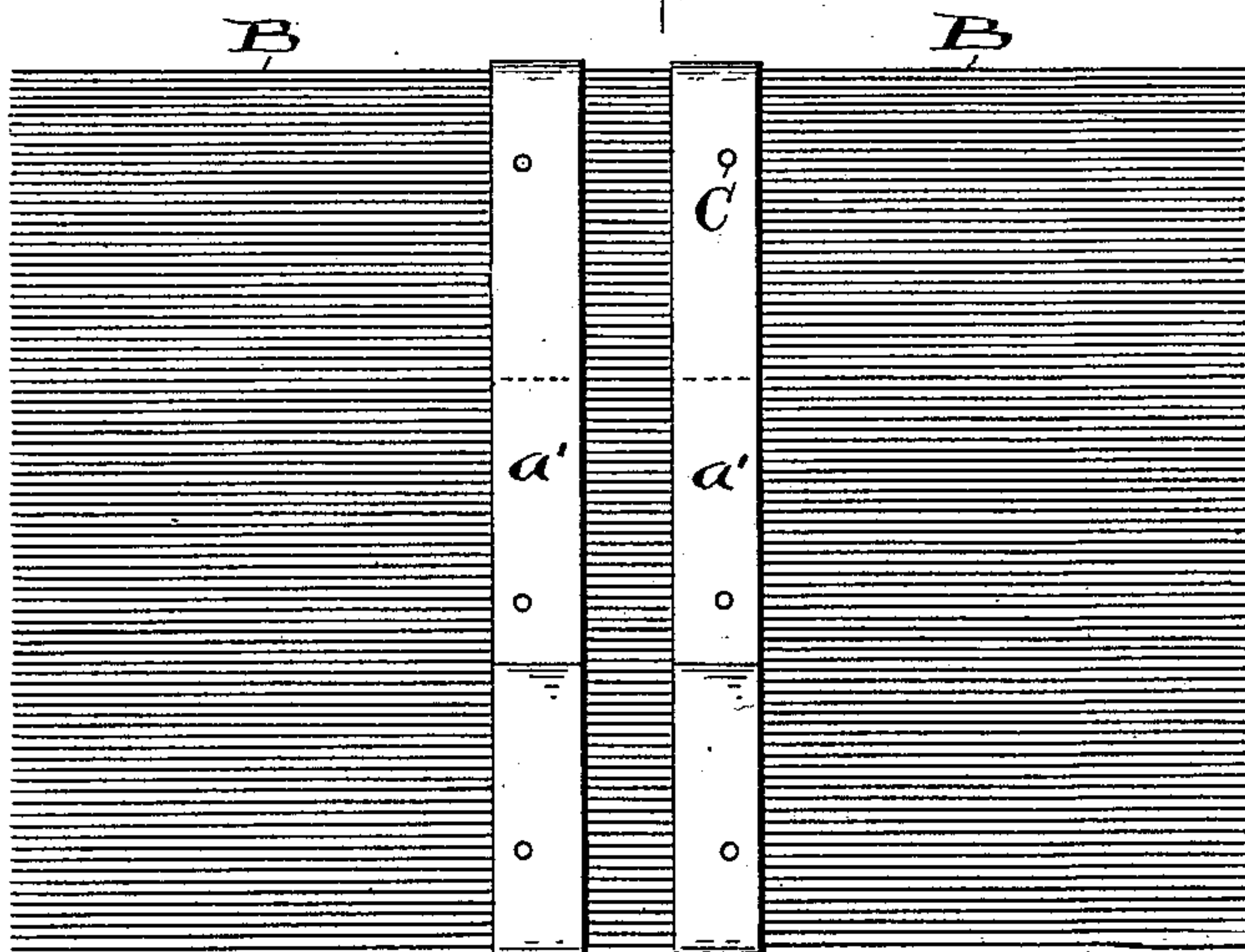
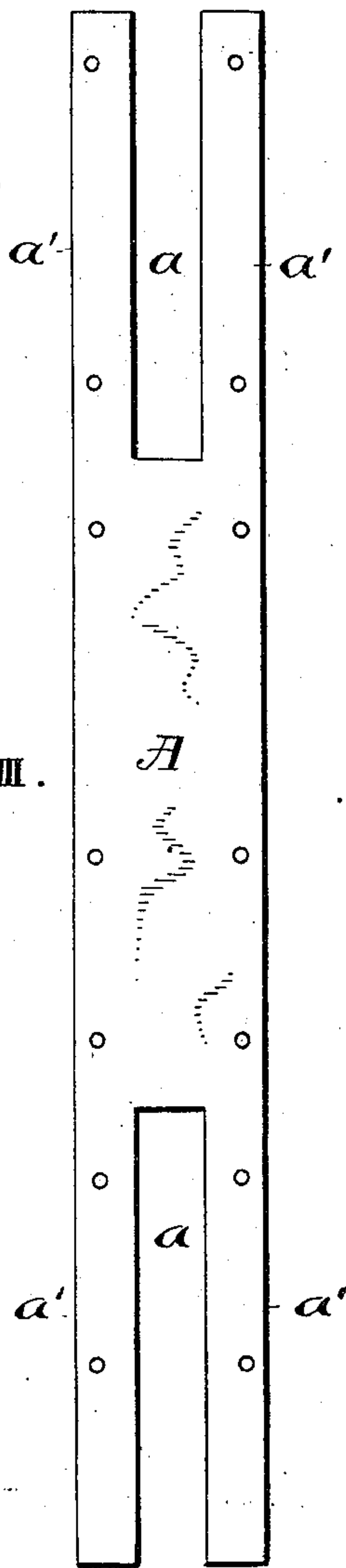


Fig. III.



WITNESSES:

David D. Davies

W. B. Moser

INVENTORS:

F. G. Smith and
H. R. Atwater

By Hall & Fay

ATTYS

UNITED STATES PATENT OFFICE.

FRANKLIN G. SMITH AND HARRY R. ATWATER, OF CLEVELAND, OHIO.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 613,807, dated November 8, 1898.

Application filed September 14, 1896; Renewed May 4, 1898. Serial No. 679,732. (No model.)

To all whom it may concern:

Be it known that we, FRANKLIN G. SMITH and HARRY R. ATWATER, citizens of the United States, and residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Brushes, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention; such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a perspective view of our improved brush. Fig. II represents a plan view of the brush before the bristles and head have been bent into final position. Fig. III represents a plan view of the head-blank after having been slit.

The head-blank A is made of any suitable sheet-metal strip cut into rectangular shape and approximately twice as long as the required brush is wide. The blank is then slit longitudinally with a rectangular slit *a* of suitable width from each end to about one-fourth of its length. The bristles B are now laid centrally and at right angles to the said blank and between the ends of the slits and the portions *a'*, formed by the slit *a*, bent over and upon the said bristles. Rivets C are fastened at intervals near the long edges of the head, binding the bristles firmly in the metal strip. The blank is now bent longitudinally upon itself, the bristles being also bent upon themselves, the bending being in a direction such that the portions *a'* are brought upon the inside of the head. Two contiguous loops are thus formed, each loop confining the bristles, which pass through one loop, bend, and pass into and through the other loop. The bristles having been laid centrally upon the blank their extremities now form the extremity of the brush. A suitable handle D is provided and fastened in any convenient manner upon the head.

The brush may be built up by combining several thicknesses together instead of a single thickness.

The term "bristles" in this specification is used to denote any bristles or fiber used in making brushes or brooms and not merely in its limited sense of hog-bristles.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means set forth in any one of the following claims be employed.

We therefore particularly point out and distinctly claim as our invention—

1. In a brush, a brush-head consisting of bristles laid in a metallic head, said head folded substantially parallel to said bristles; and folded substantially at right angles thereto, whereby said bristles are bent and confined, their ends forming the extremity of the brush, substantially as set forth.

2. In a brush, a brush-head consisting of a metallic head bent to form contiguous confining-loops, bristles confined within said loops, said bristles being bent so as to pass through one loop and into the contiguous loop, substantially as set forth.

3. In a brush, a brush-head consisting of bristles laid in a metallic head, said head having a body portion and a diminished end portion, the said end portion being folded upon the body portion, the said body portion bent substantially at right angles to the bend in the end portion, whereby said bristles are bent and confined, their ends forming the extremity of the brush, substantially as set forth.

4. In a brush, a brush-head consisting of bristles laid in a metallic head, said head consisting of a sheet-metal strip longitudinally bifurcated, the portions formed by said bifurcation being bent over and upon said bristles and the said sheet bent longitudinally upon itself, whereby the bristles are also bent, their extremities forming the extremity of the brush, substantially as set forth.

In testimony that we claim the foregoing to be our invention we have hereunto set our hands this 8th day of September, A. D. 1896.

F. G. SMITH.
H. R. ATWATER.

Witnesses:

J. B. FAY,
DAVID T. DAVIES.