

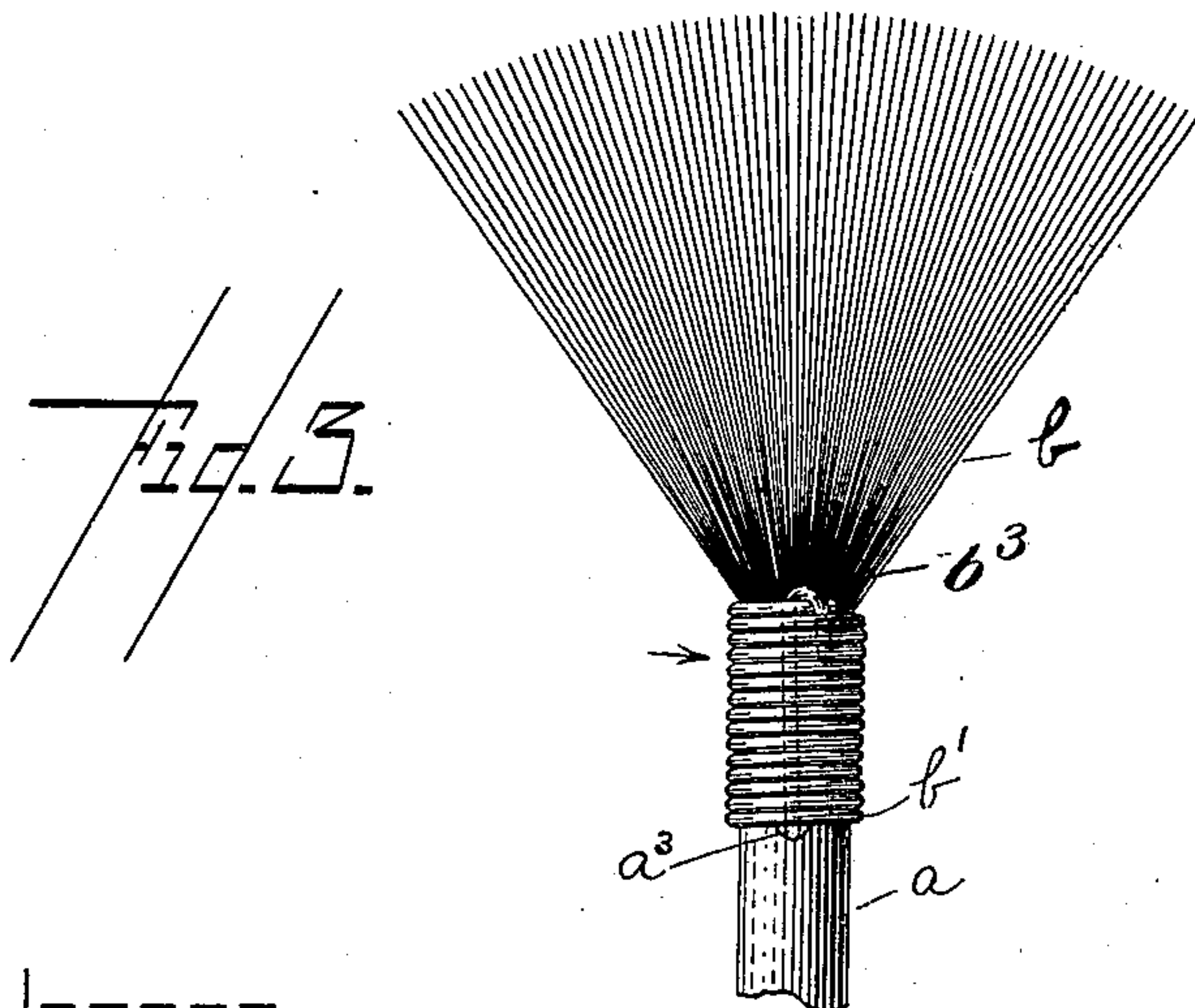
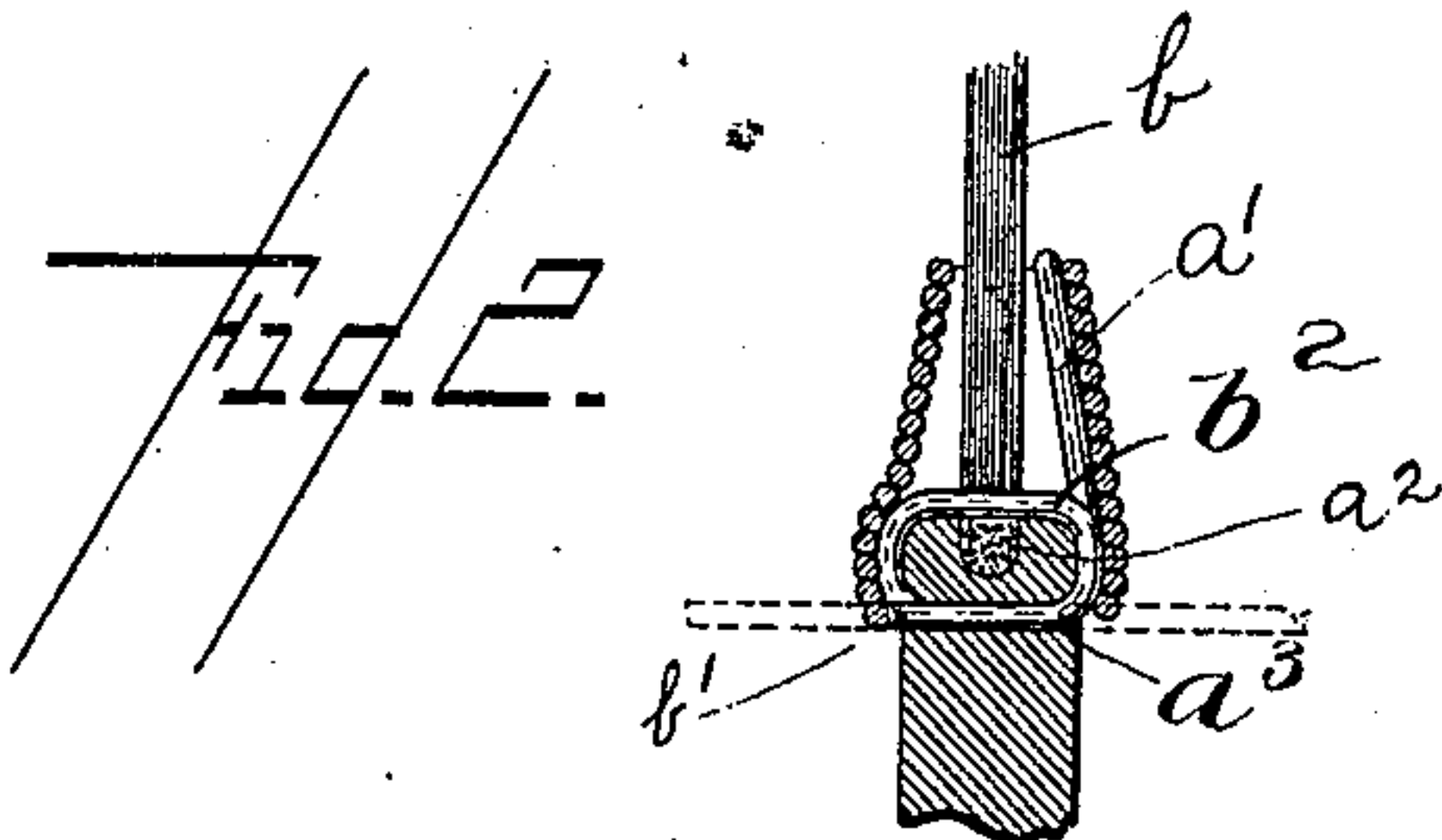
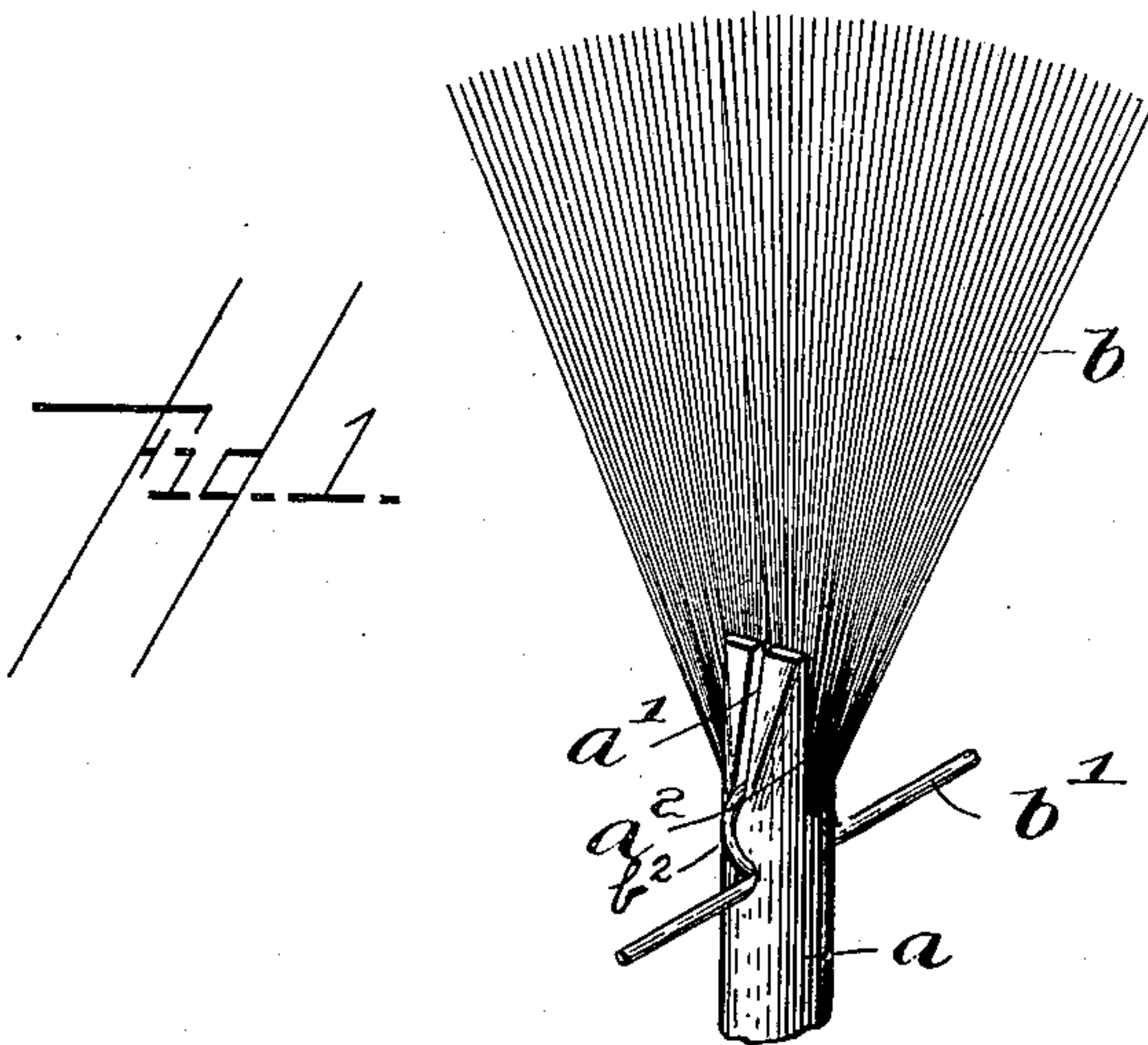
No. 644,303.

Patented Feb. 27, 1900.

E. E. RICE.  
WIRE BRUSH.

(Application filed Oct. 12, 1898.)

(No Model.)



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

EDWARD E. RICE, OF NEW DURHAM, NEW HAMPSHIRE.

## WIRE BRUSH.

SPECIFICATION forming part of Letters Patent No. 644,303, dated February 27, 1900.

Application filed October 12, 1898. Serial No. 693,296. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD E. RICE, of New Durham, county of Strafford, State of New Hampshire, have invented an Improvement in Wire Brushes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an improvement in wire brushes and analogous articles, and relates more particularly to the means for securing the wires in proper position in or on the handle or support.

Wire cannot be manipulated in the same manner in all respects as vegetable fiber, bristles, &c., commonly employed for making brooms and brushes, but requires special and peculiar means for holding it in place and keeping it in proper position on account of its smooth surface and tendency to spring apart, while, on the other hand, the wires have to be positively held in their spread or other arrangement for the reason that the wires do not obtain any grip upon each other and do not afford each other any material support, as is the case with broom-corn and fibrous brushes.

It is the object of my present invention to make a strong, permanent, and satisfactory brush or broom of highly-tempered and springy wires in an inexpensive way, the details of which will be fully pointed out in the course of the following description, reference being had to the accompanying drawings, illustrative thereof, and the invention will be more particularly defined in the appended claims.

In the drawings, Figure 1 is a perspective view of a preferred embodiment of my brush partly made. Fig. 2 is a central longitudinal cross-section showing the arrangement of the securing and binding wires. Fig. 3 is a side elevation of the brush completed.

The handle  $a$ , preferably of wood, although it may be of any other suitable material, is provided at its outer end with transverse notches  $a'$   $a^2$  at right angles to each other, the latter notch having considerable depth and being wide enough to receive the brush-wires  $b$  and the notch  $a'$  being narrow, corresponding in width substantially to the binding-wire  $b'$ , which it contains. The bottom

of the notch  $a'$  terminates in a plane above the bottom of the notch  $a^2$ , as clearly shown in Fig. 2, so that the loop  $b^2$  of the binding-wire (see Fig. 2) spans or arches across the bottom of the larger notch, thereby providing a receiving-aperture in which the brush-wires may be snugly held on all sides. Preferably, also, the sides of the handle taper toward each other at the end, as indicated in Figs. 1 and 2, this arrangement giving firmness to the brush and bringing the end winding of the binding-wire into close and rigid gripping engagement with the brush-wires.

The brush-wires are preferably fine spring-steel wires which are carefully arranged or selected in a bunch with the ends substantially even, and then the bunch is bent at its middle and inserted or secured in the notch  $a^2$  underneath the arch or loop  $b^2$  of the binding-wire  $b'$ , whereupon the free ends of the latter which have been inserted in opposite directions through a hole  $a^3$  in the handle are tightly drawn, thereby firmly holding the brush-wires in place. One end of the binding-wire  $b'$  is then bent up and looped, as indicated at  $b^3$ , Fig. 3, and the other end of the binding-wire is then tightly wrapped around the brush-wires in a spiral manner down to the end of the handle, whereupon the free or outer end of said binding-wire is passed through the loop  $b^3$ , and thereby secured neatly and smoothly, as indicated in Fig. 3.

My improvements enable me to make a firm permanent brush of highly-tempered and springy wires, and constructed as above explained the brush is not only very inexpensive to manufacture, but is exceedingly durable and practical, there being no liability whatever of the wires becoming loose or uneven.

A wire brush may be constructed according to my invention with as much neatness of appearance and finish as a fiber brush, notwithstanding that the brush-wires are so intractable and so difficult to hold.

These brushes are adapted to many uses, particularly for cleaning out sinks, culinary vessels, and other scrubbing purposes, and when made light and thin they are sometimes used for killing flies and various other purposes.

While I have herein set forth the preferred



means of making the brush, I wish it understood that various of the specific details thereof may be modified without departing from my invention.

5 Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. A brush of the class described, comprising a handle having notches or slits approximately at right angles to each other in its upper end, a bunch of brush-wires in one slit, said slit having a width to receive and support said brush-wires, said bunch of brush-wires being bent within their notch intermediate their ends, and a binding-wire in the  
15 other of said slits, said binding-wire engaging and binding said brush-wires within the handle at their bent portion, substantially as described.

20 2. A brush of the class described, comprising a handle having notches or slits approximately at right angles to each other, and a perforation below one of said notches in its upper end, a bunch of brush-wires in one  
25 slit, said slit having a width to receive and support said brush-wires, and a binding-wire

in the other of said slits and in said perforation, said bunch of brush-wires being bent within their notch intermediate their ends, and said binding-wire engaging said brush-wires within the handle at their bent portion, substantially as described. 30

3. The herein-described wire-brush, comprising a handle provided with a binding-wire and a bunch of brush-wires, said brush-wires being bent within the handle intermediate their ends and held in an aperture in said handle, and the binding-wire being held rigidly by said handle, and provided at one end with a loop, the other end of the binding-wire being tightly wrapped spirally about  
40 said brush-wires and said handle, and the free end thereof secured through the loop of said other end, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 45

EDWARD E. RICE.

Witnesses:

CHARLES L. PINKHAM,  
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