

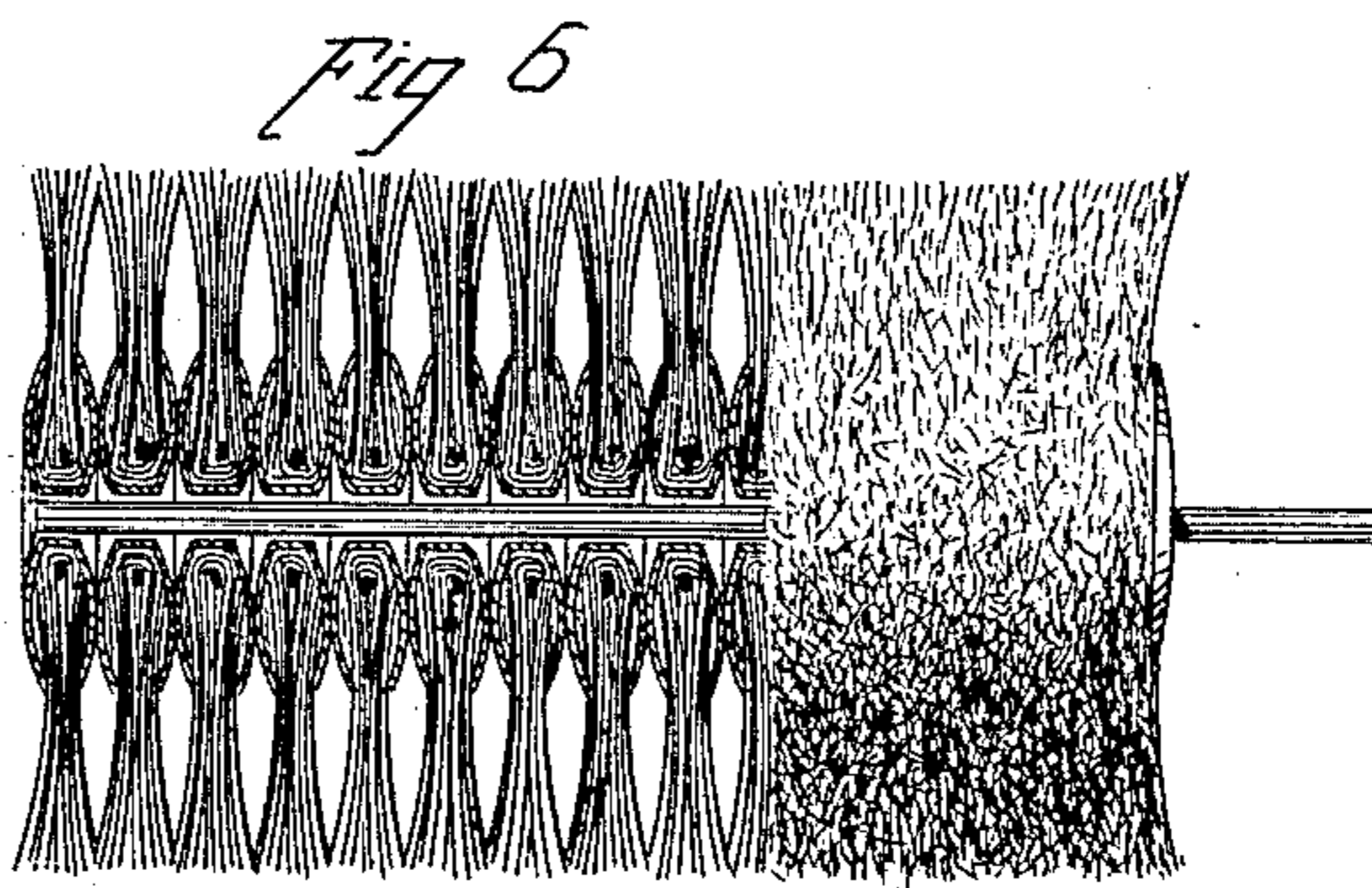
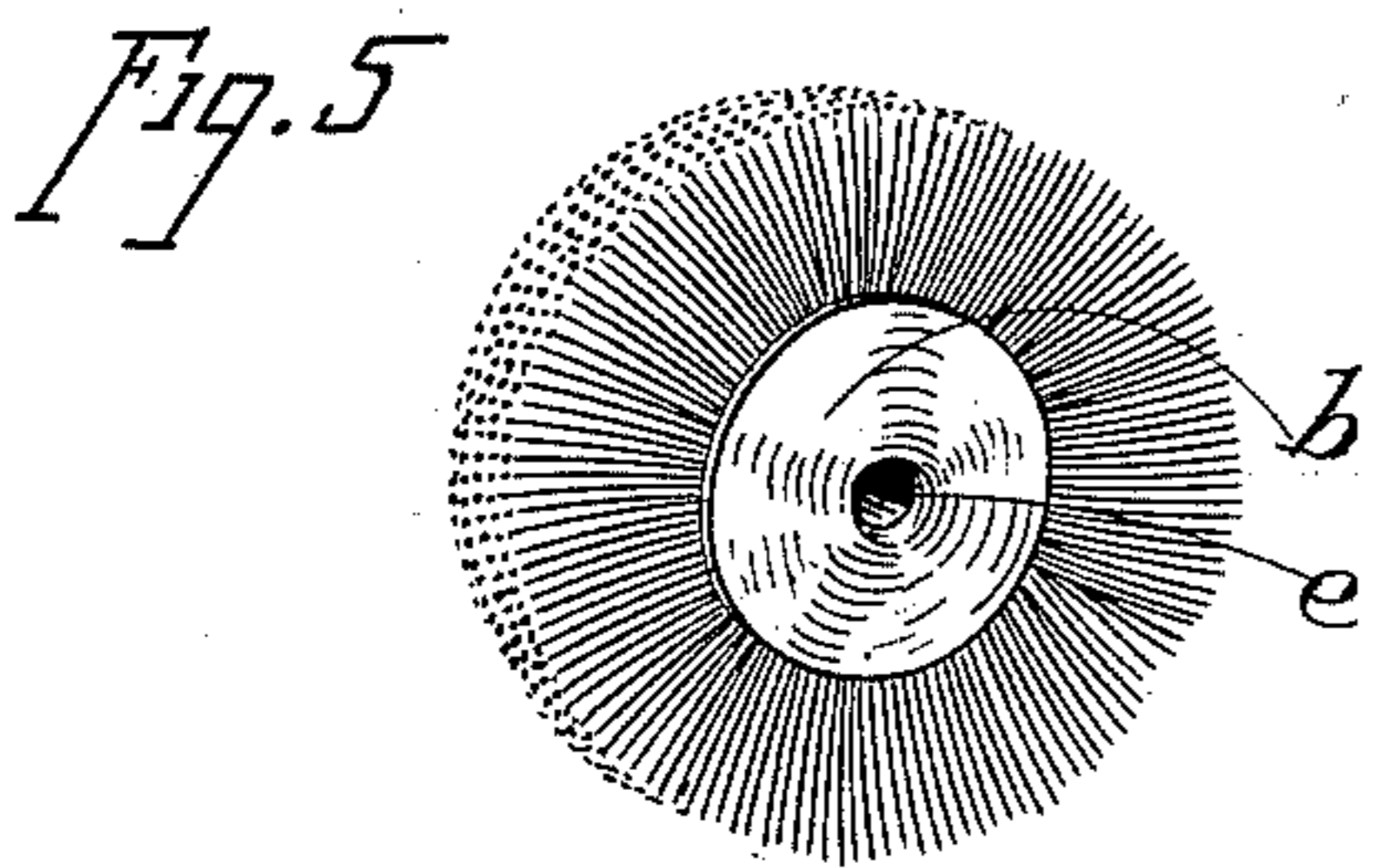
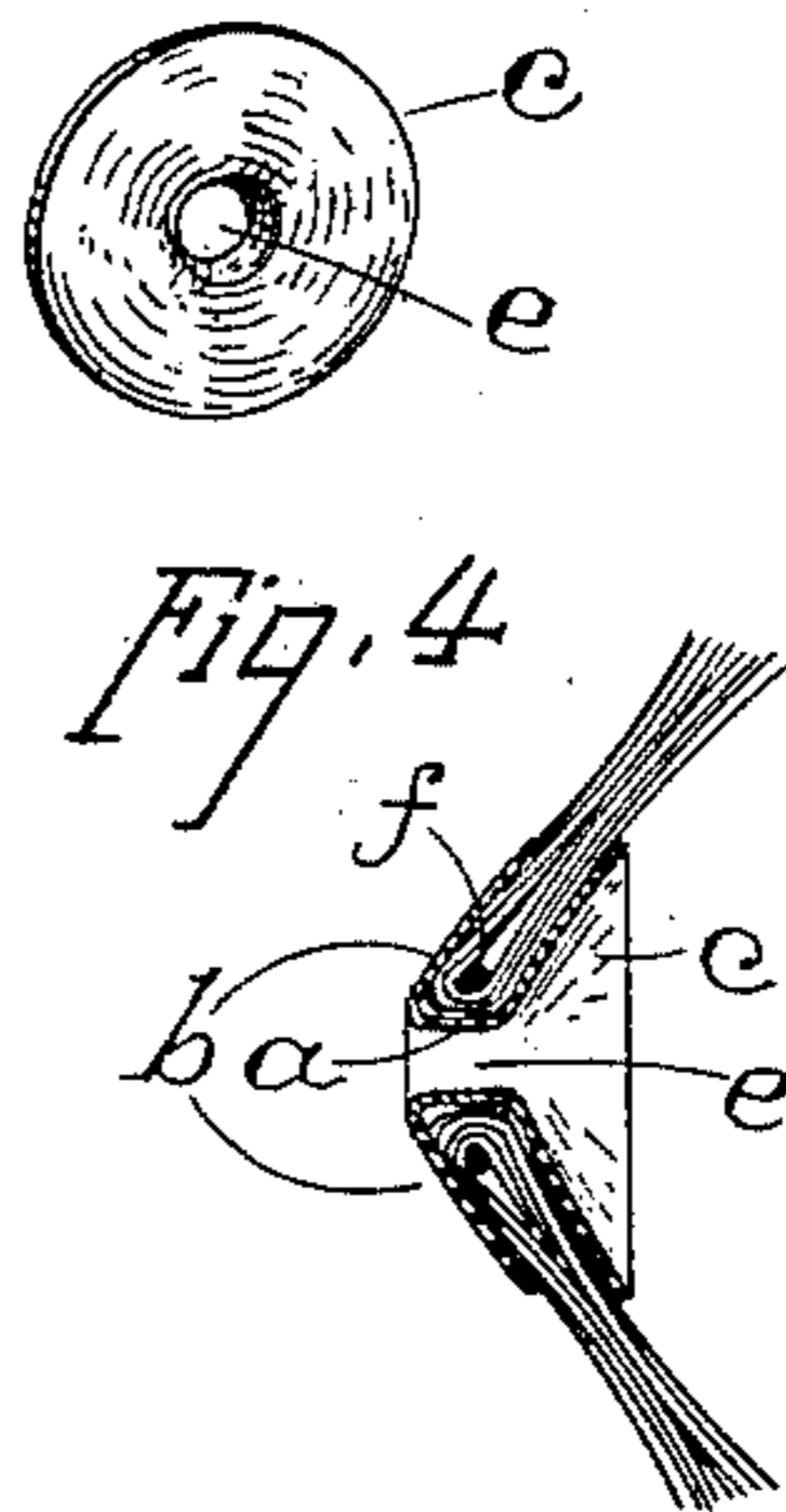
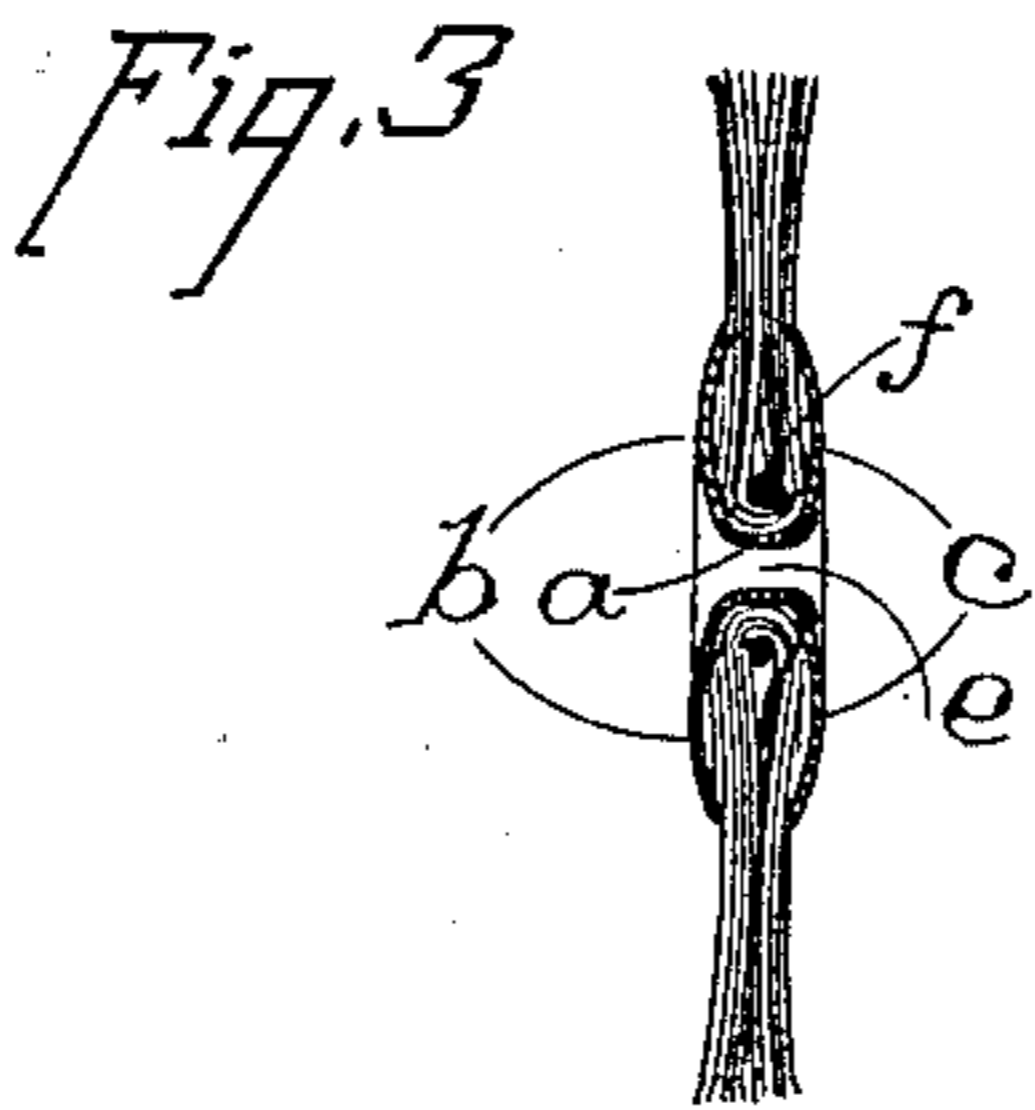
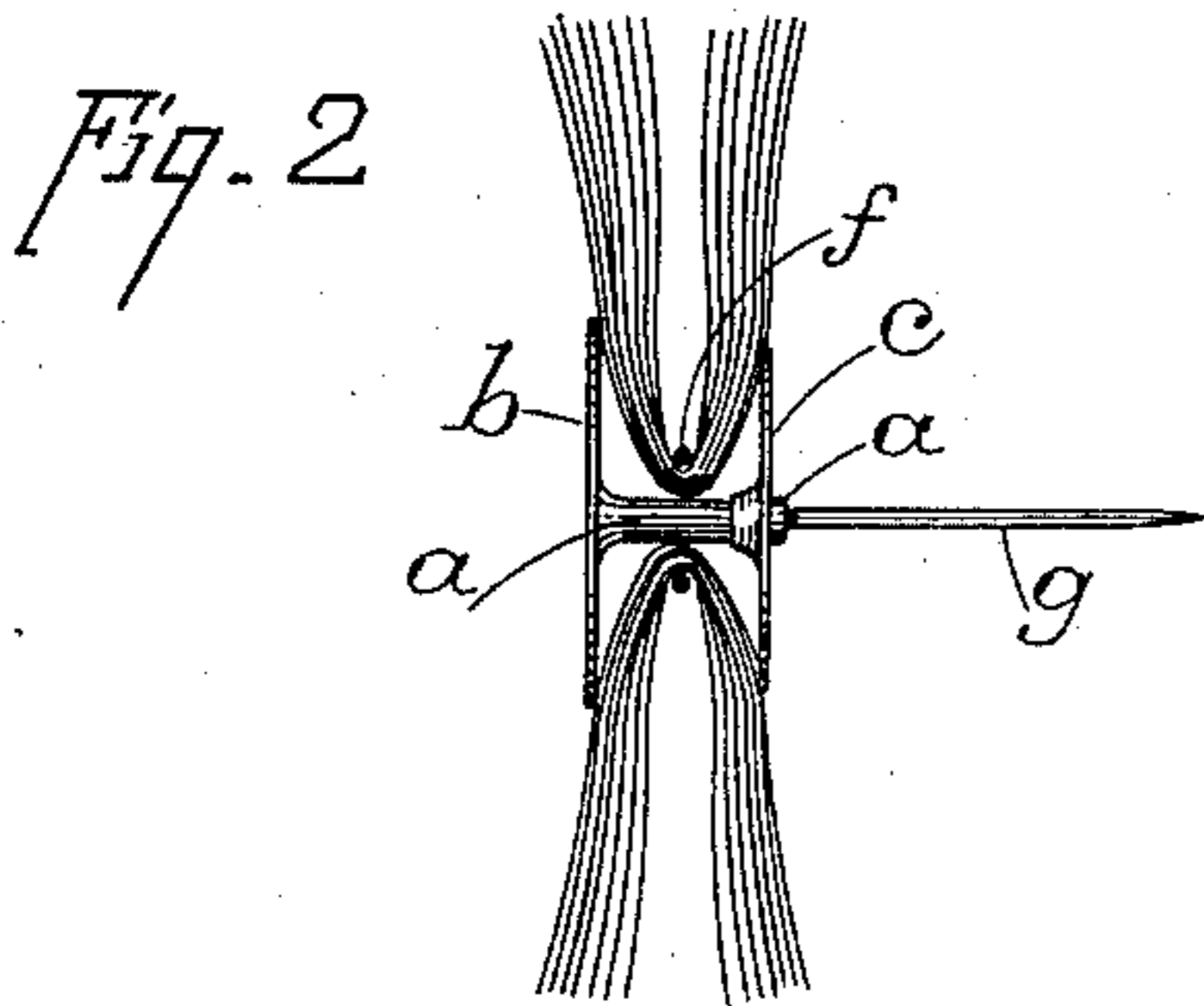
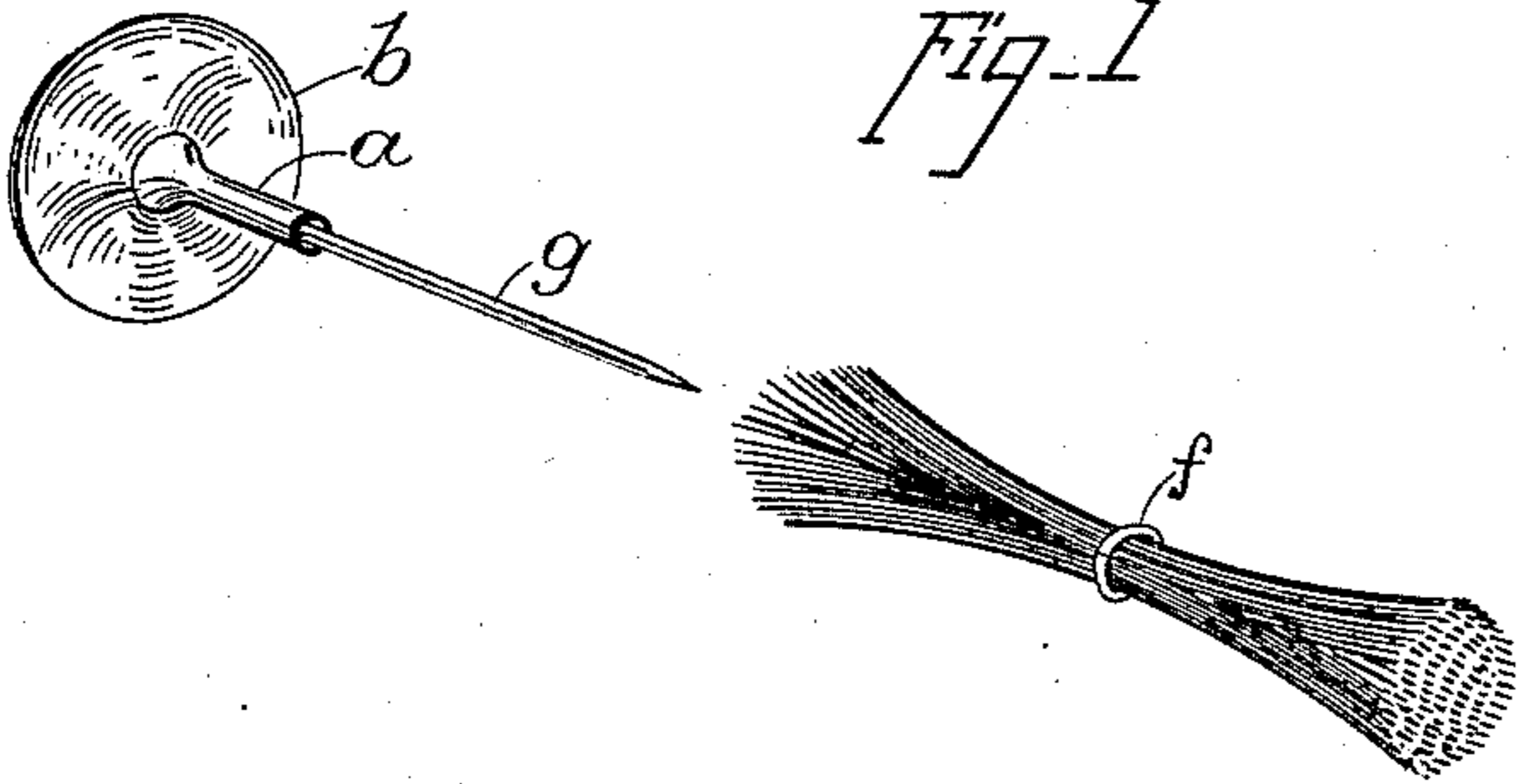
No. 656,374.

Patented Aug. 21, 1900.

W. H. ROBINSON.
ROTARY BRUSH.

(Application filed May 9, 1899. Renewed July 6, 1900.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM H. ROBINSON, OF ALAMEDA, CALIFORNIA, ASSIGNOR TO S. M. ROBINSON, OF SAME PLACE.

ROTARY BRUSH.

SPECIFICATION forming part of Letters Patent No. 656,374, dated August 21, 1900.

Application filed May 9, 1899. Renewed July 6, 1900. Serial No. 22,752. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ROBINSON, a citizen of the United States, residing at Alameda, Alameda county, State of California, have invented certain new and useful Improvements in Circular Brushes; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to that class of circular brushes in which the bristles or fibers are clamped between two metallic disks or plates.

My invention relates to the manufacture of such brushes; and it consists in arranging the fibers or bristles in a layer around the central tube or spindle and then binding their middles by a wrapping to the tube or spindle, so that when the disks are compressed against their opposite ends each bristle or fiber will be bent outward upon its bounden middle, so that its end will project beyond the outer edge or periphery of the disks and form the bristles of the brush, thereby producing a greatly-superior circular brush out of a single bunch or bundle of bristles or fibers without any complicated manipulation and without the necessity of using glue or other adhesive substance.

Reference is had to the accompanying drawings, in which—

Figure 1 is a perspective view of the disks and a bundle of bristles in position to be placed together to form the brush. Fig. 2 is an edge view of the disks and a section of the bristles, showing them being brought together for clamping. Fig. 3 is a vertical transverse section of the disks and bristles after clamping. Fig. 4 is a section showing the disks and bristles bent at an angle. Fig. 5 is a perspective view of a narrow brush, and Fig. 6 is a part section and part elevation of a wide brush.

a represents a short tube, one end of which is flanged outward, so as to form a disk *b* at one end of the tube. An ordinary eyelet of commerce may be used for the purpose or a similar eyelet made of any size.

c is a metallic disk having a central hole *e* large enough to slip easily over the tube *a*. It may be the ordinary washer of an eyelet of

commerce or one similarly made for the purpose.

The eyelet or flanged tube *a b* and the washer or disk *c* form the frame or center piece of my brush. The tube or barrel *a* forms a hollow mandrel around which the bristles or fibers are held by the band *f* and clamped laterally between the flanges *b* and *c*, as hereinafter described.

In the construction of my circular brush I proceed in the following manner: I take a bundle of bristles or other fibers of sufficient length to make the brush and bind this bundle around its middle with a thread, cord, or wire *f*, as shown at Fig. 1, or with a metal ring or band, which can be slipped over the bundle from one end. I then take an eyelet *a b* and pass a pointed guide-rod *g* through it from the flanged end. This guide-rod is long enough to pass through the eyelet and tube and extend an inch or so beyond the end of the tube. The guide-rod with the eyelet on it is then passed through the center of the bundle of bristles or fibers until the banded middle of the bundle has passed onto the end of tube *b*. The centrally-perforated disk or washer *c* is then passed over the end of the pointed guide-rod *g* and pressed toward the disk *b* of the eyelet until it has passed onto the end of tube *a*. The pressure of the disks *b* and *c* against the ends of the bristles or fibers of the bundle causes them to spread out radially in every direction. The pointed guide-rod *g* is then removed, and the two disks, with the intervening fibers or bristles, are placed between the jaws of a vise or other compressing mechanism and the disks forcibly compressed together. As the disks approach each other the fibers or bristles will be bent outward on each side of the band *f* and caused to double upon themselves, and the pressure of the disks will cause the bristles or fibers on each side of the tie or band *f* to spread out radially in a thin body in every direction between the two disks. The disks when forced together are then riveted or otherwise fastened in place, so as to permanently clamp and hold the bristles or fibers in place, with the ends of the bristles or fibers projecting in every direction in the same plane, as represented at Fig. 5. No particular care need be taken to give radial direction

to the bristles, as the wiry character of the
bristles causes them to assume the proper ra-
dial position when the disks come together.
A tubular cutting-punch can then be used to
5 trim the outer ends of the bristles to the proper
length and give the brush a uniform surface,
and the stiffness of the brush can be regulated
by the projecting length of the bristles. In
this way brush-wheels or revolving brushes
10 can be made very small and narrow. The
small ones I call "bristle-disks." These are
specially useful to dentists for cleaning and
polishing teeth. It is evident, however, that
brushes of any desired diameter can be made
15 in this way, and by placing a number of
brushes on eyelets on a long barrel or tube,
either with or without washers between them,
a brush of any desired width can be made.
If the disks *b c* are made cup or V shaped, a
20 correspondingly-shaped brush will result, as
shown at Fig. 4.

These brushes can be cheaply made, and
they possess qualities that cannot be obtained

by any other mode of manufacture with which
I have knowledge.

Having thus described my invention, what
I claim, and desire to secure by Letters Pat-
ent, is—

In the manufacture of circular brushes, a
central tube; a flange or disk on one end of
the tube; a layer of fibers arranged length-
wise around said tube and bound around their
middles to said tube; a centrally-perforated
disk adapted to slide on the opposite end of
said tube and force the ends of the fibers out-
ward radially between said disks, the end of
the tube being clenched for securing the disks
together after the fibers are doubled and
clamped between them, substantially as de-
scribed.

In witness whereof I have hereunto set my
hand this 17th day of April, A. D. 1899.

WILLIAM H. ROBINSON.

Witnesses:

LEO S. ROBINSON,
WM. H. THOMPSON.