

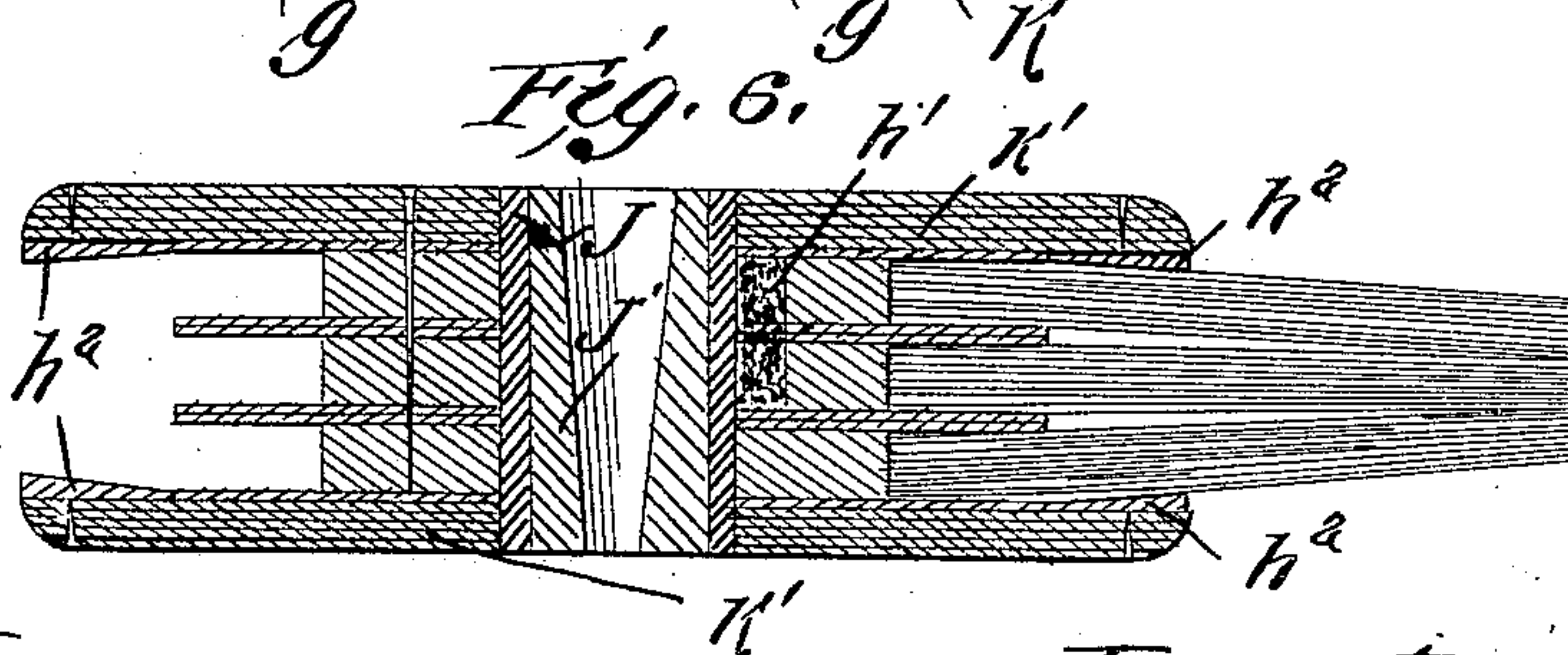
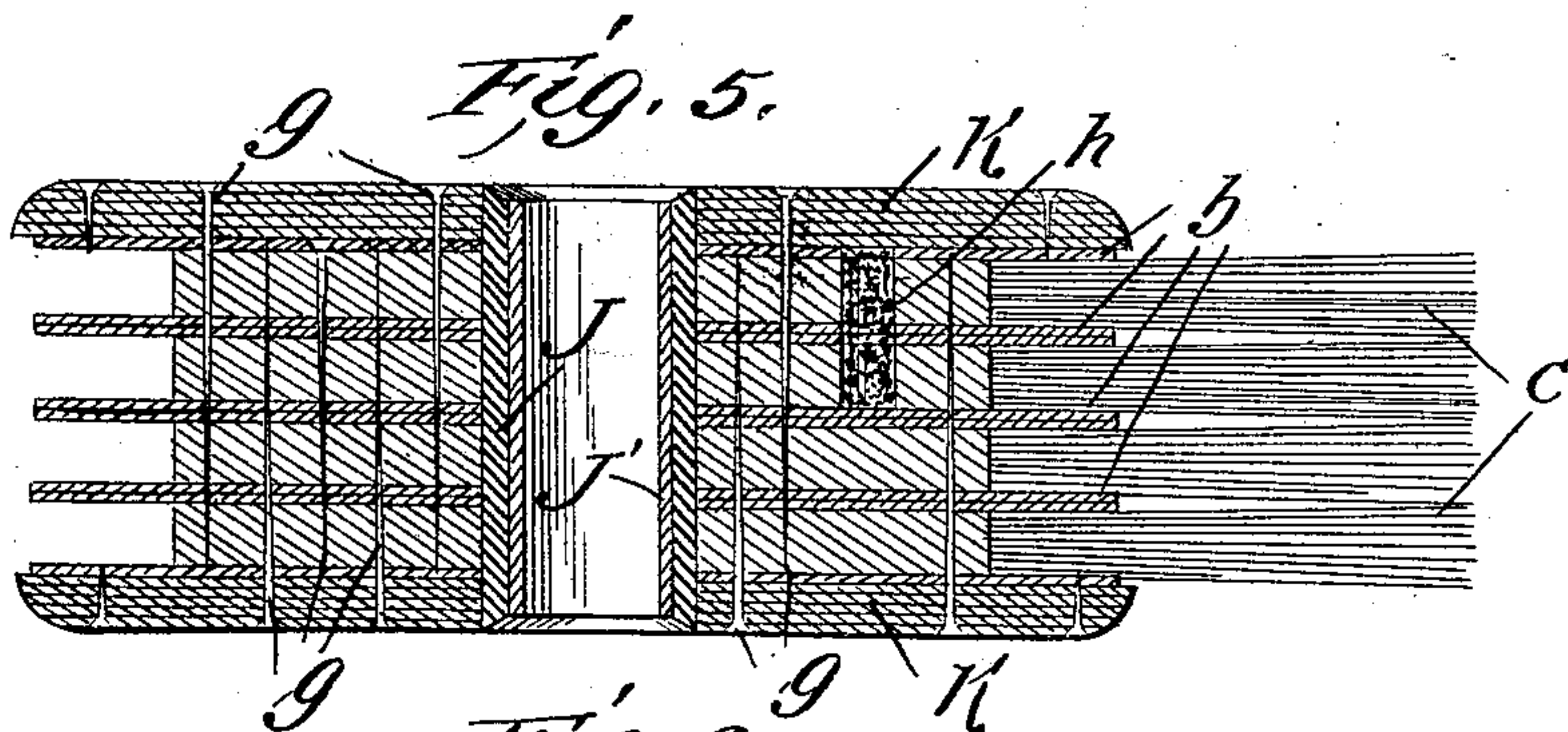
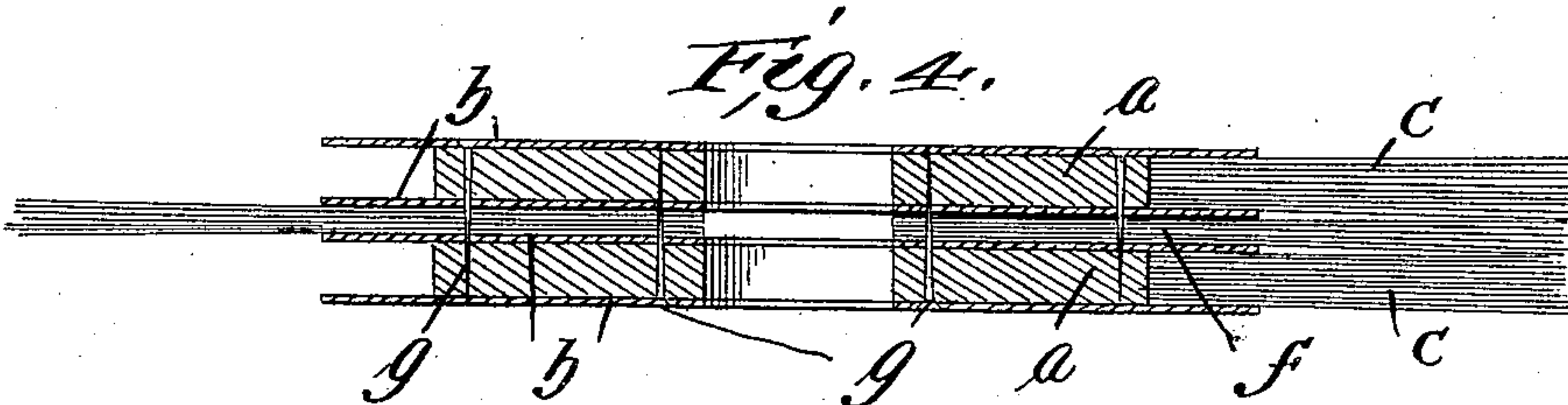
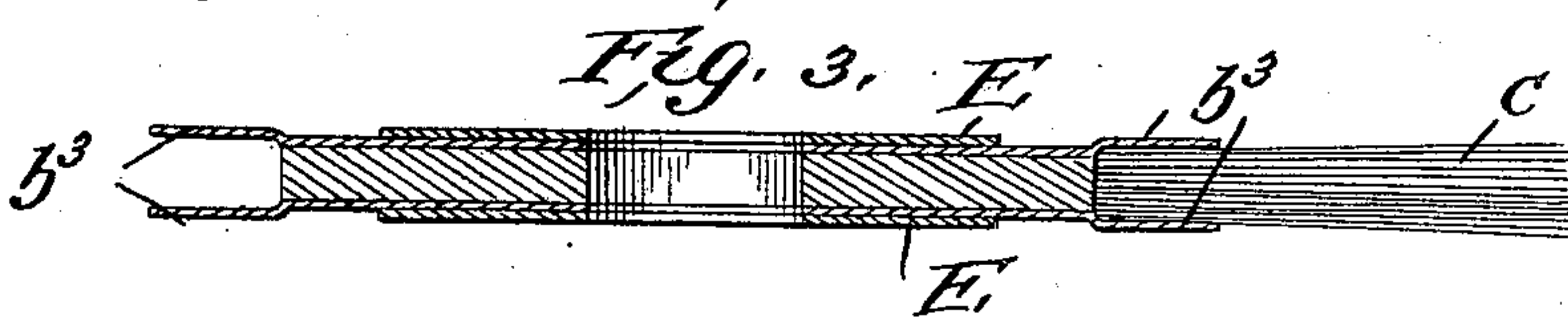
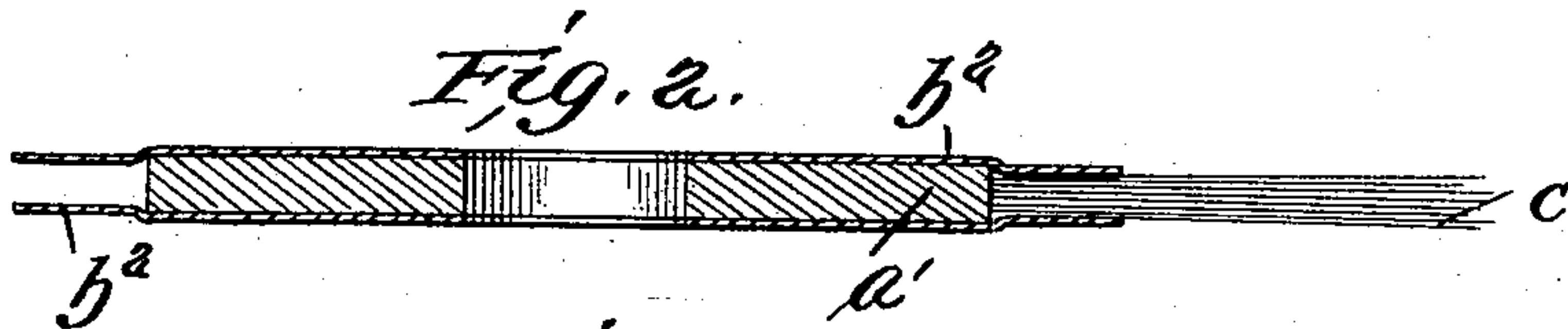
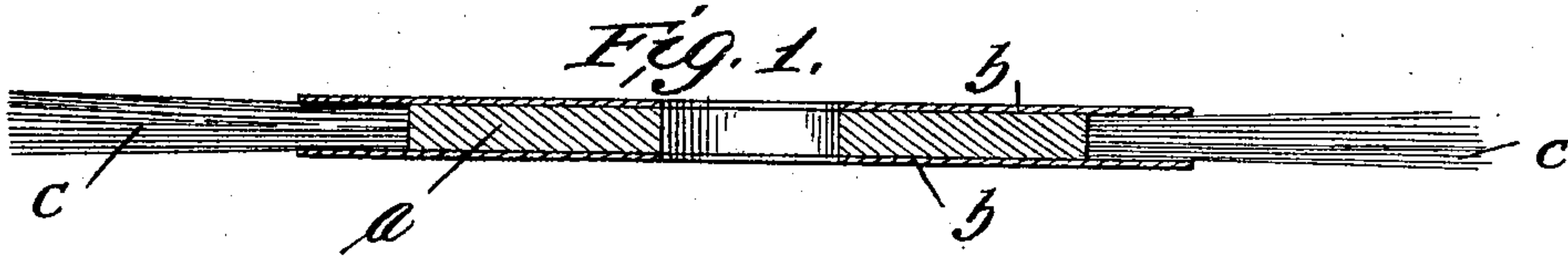
No. 673,119.

Patented Apr. 30, 1901.

F. G. FARNHAM.  
BRUSH.

(No Model.)

(Application filed Dec. 15, 1899.)



*Attest*

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# UNITED STATES PATENT OFFICE.

FRANK GUNN FARNHAM, OF HONESDALE, PENNSYLVANIA.

## BRUSH.

SPECIFICATION forming part of Letters Patent No. 673,119, dated April 30, 1901.

Application filed December 15, 1899. Serial No. 740,431. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK GUNN FARNHAM, a citizen of the United States, residing at Honesdale, Wayne county, Pennsylvania, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

My invention relates to brushes for glass and metal polishing, commonly known as "wheel-brushes," and of the class shown in applications heretofore filed by me in the United States Patent Office, one on the 19th of March, 1898, Serial No. 674,508, and another on the 13th of December, 1898, Serial No. 699,151.

It is the object of my invention to facilitate the manufacture of brushes of this class by making them of a series of sections, each section being made independently and the brush constructed from a number of these sections combined, this number being determined by the width of the brush required.

My invention consists, first, in a brush-section composed of a central disk, a layer of fiber radiating from the periphery of this disk, and outer separating-disks of greater diameter than the central disk, so as to overlap and confine the ends of the fiber, serving also to support the layers of fiber when two or more sections are combined.

The invention also comprises details of construction.

In the accompanying drawings, Figure 1 is a sectional view showing one brush-section complete. Fig. 2 is a modification of the same, showing a section adapted for use in a more open brush than that shown in Fig. 1. Fig. 3 is a view of a modification, showing how a section can be made for a thicker brush. Fig. 4 is a modification showing two sections combined with a layer of fiber between the sections. Fig. 5 shows a brush made up of four sections combined with outer retaining and confining rings or disks. Fig. 6 is a view of a modification in which the layers of fiber are inclined toward each other to make a thrown or tapering brush.

Fig. 1 shows a single section comprising a central disk or core *a*, made, preferably, of a single piece of wood, and this core has secured to it upon each side disks *b b*, preferably of cloth, of greater diameter than the

core *a*, so as to extend beyond the periphery of said core, and overlapping and confining the ends of the fiber *c*, which radiates from the periphery of the core. A series of these sections are used to build a brush, as shown in Fig. 5, and it will be understood that one or more of these sections may be used, according to the width of brush desired. As shown in Fig. 5, the disks *b* serve not only to confine the fibers of each section, but also to support the layers of fiber, as shown to the right of Fig. 5. The sections are secured together by nails *g* and also by being glued together, and then outer disks *K* are applied, which serve to finish the brush and add stability to it and also aid in confining the fibers. These outer disks *K*, I prefer to make of veneer sections of any suitable thickness. The brush thus built up is provided with a hub *J* and a bushing *J'*. The brush is balanced by boring a hole through one or more of the core-sections, as shown at *h* in Fig. 5, and this is afterward filled with lead and covered by the outer plate or disk *K*.

In Fig. 2 I have shown a modification of a section for use in making a more open brush. In this figure, *a'* shows the core, and *b<sup>2</sup>* the disks; but instead of extending out horizontally in the same plane as the body of the disk the edges beyond the core are bent inwardly to confine a layer of fiber of a thickness less than that of the core *a'*.

In Fig. 3 I have shown a further modification in which the ends of the disks are bent outwardly, as at *b<sup>3</sup>*, to receive and confine a thickness of fiber greater than that of the core, and to provide for this additional thickness in the core I add a disk *E*, which evens up the body of the section with the periphery.

In Fig. 4 I show two plain sections combined; but instead of being placed directly one upon the other I interpose a third layer of fiber *f* and secure the sections together by nails *g*.

In Fig. 6 I have shown a still further modification in which the sections are similar to those shown in Fig. 1; but instead of the plain outer confining-disks of Fig. 5 the disks *k'* of this figure have rings secured on their inner faces near the periphery, as at *h<sup>2</sup>*, and these rings have beveled faces which bend inwardly the layers of fiber and form a point-



ed brush. In this figure, instead of forming the balancing-hole midway of the core between the hub and the periphery, I have shown this hole at  $h'$  alongside of the hub.

5 I find in some cases where it is desired to reduce the cost of the sections that instead of using a core-piece of wood, which requires turning, I may use heavy cardboard cut out by dies. The cloth disks are glued to the  
10 core-pieces and act not only to separate the layers of fiber, but as anchors for the layers, making a more secure and stable connection.

In some uses to which brushes of this character are put—such as scouring in silver-plating, in which a stream of water drips on the  
15 rim of the brush—I prevent absorption of the moisture by varnishing with waterproof varnish each section as these are assembled and both the inside and outside of the outer con-  
20 fining plates or disks.

I do not limit myself to the separating-disks of the relative diameter shown, as for some kinds of work they may extend out to the periphery of the fiber.

25 What I claim is—

1. In an article of manufacture a brush-section made up of a central core, a layer of fiber around the periphery of the core and outer flexible disks of greater diameter than  
30 the core covering the core and extending be-

yond the same to cover and confine the inner ends of the fiber, said disks being of substantially uniform thickness throughout, substantially as described.

2. A brush made up of a series of independent sections, each section comprising a central core, a layer of fiber glued in place and separating-disks overlapping the ends of the fiber and extending over the face of the core and outer finishing-disks for the brush, sub-  
40 stantially as described.

3. A brush comprising a series of sections, each section made up of a core, a layer of fiber, confining and separating disks, a recess or opening in said core, a balancing material  
45 filling said recess and outer finishing and confining disks, substantially as described.

4. A brush comprising a series of sections, each made up of a core, a layer of fiber and confining and separating disks, and outer finishing-disks, said disks having inner inclined  
50 faces adapted to bear upon the layers of fiber and project them inwardly to form a pointed or tapering brush, substantially as described.

In testimony whereof I affix my signature  
55 in presence of two witnesses.

FRANK GUNN FARNHAM.

Witnesses:

ROBT. A. SMITH,  
JOHN G. RIEFLER.