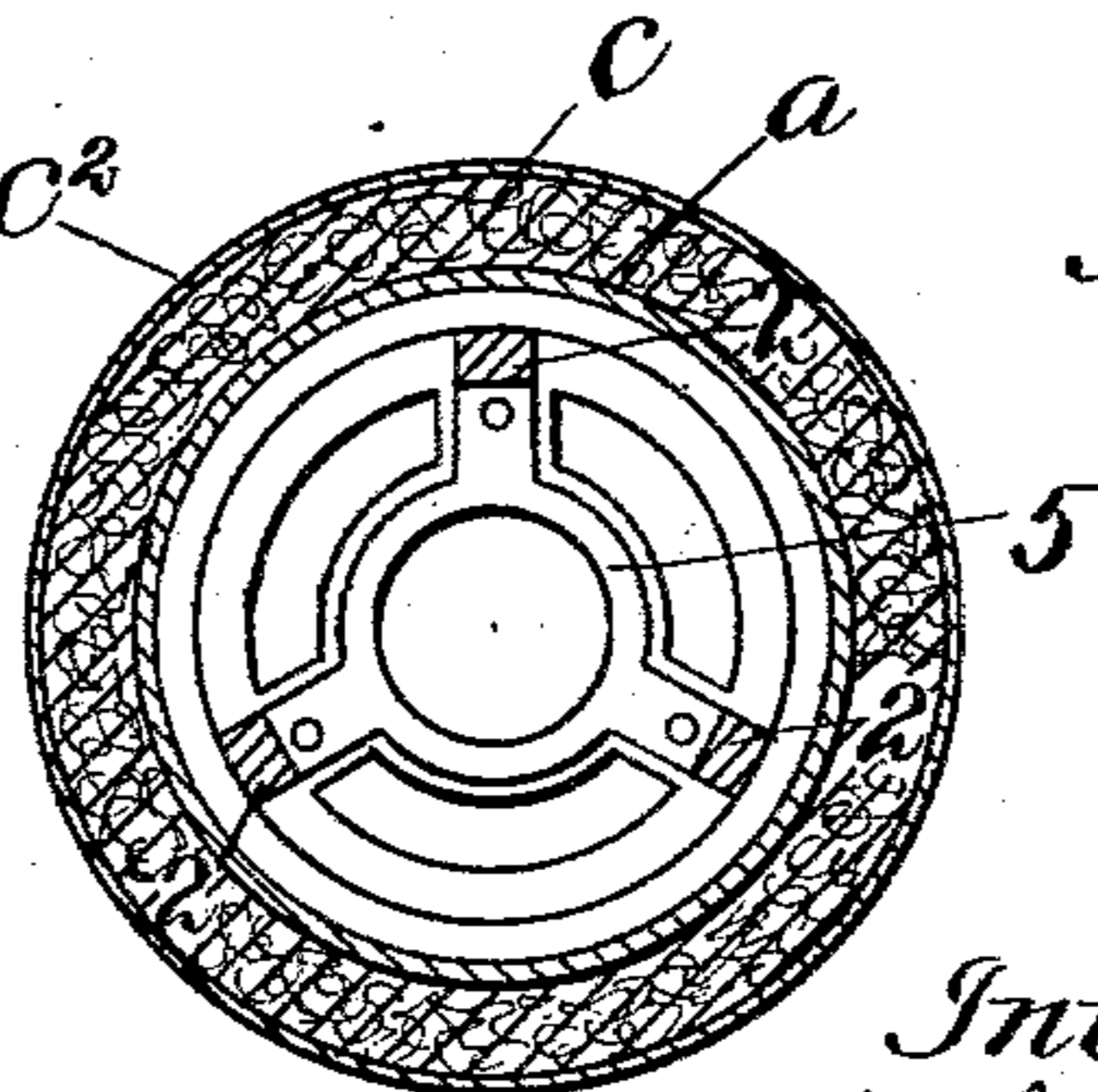
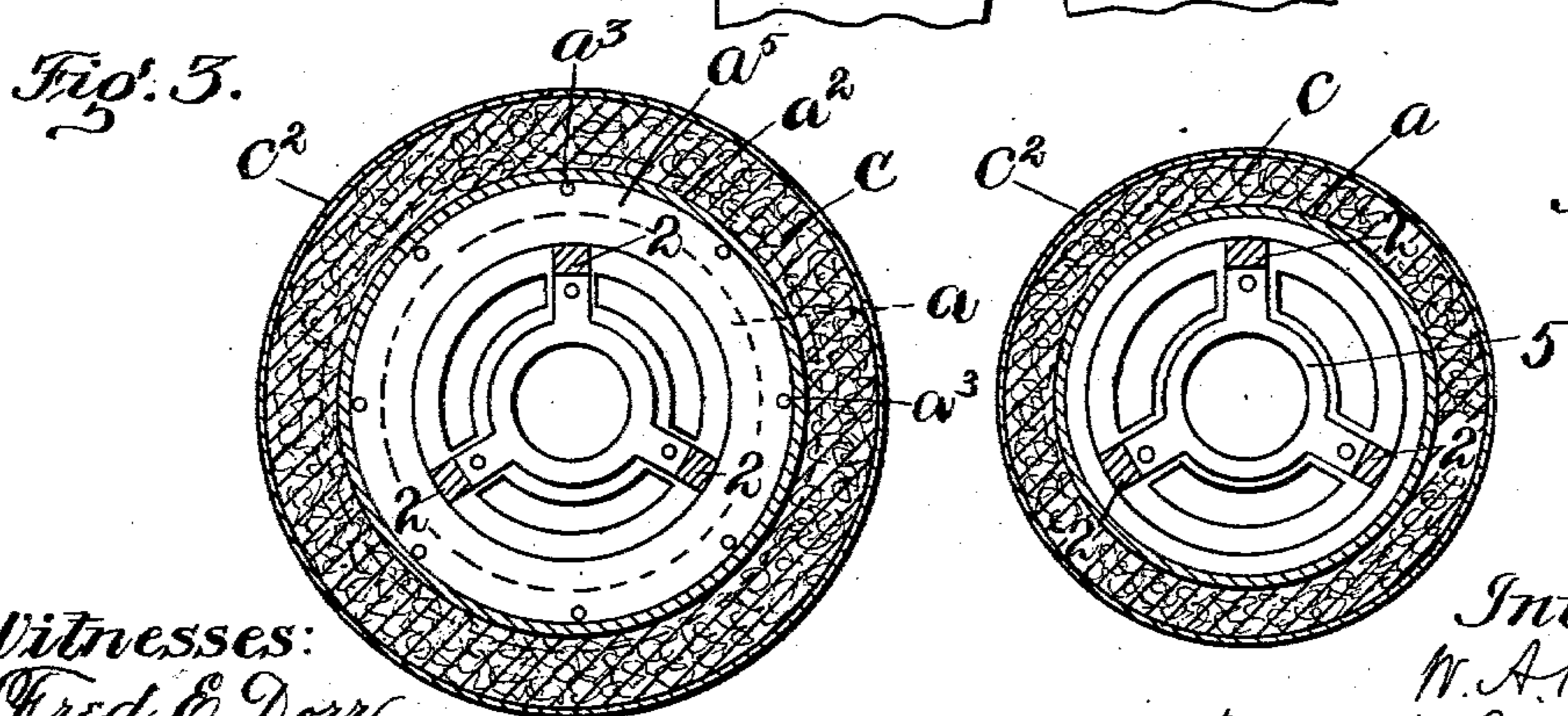
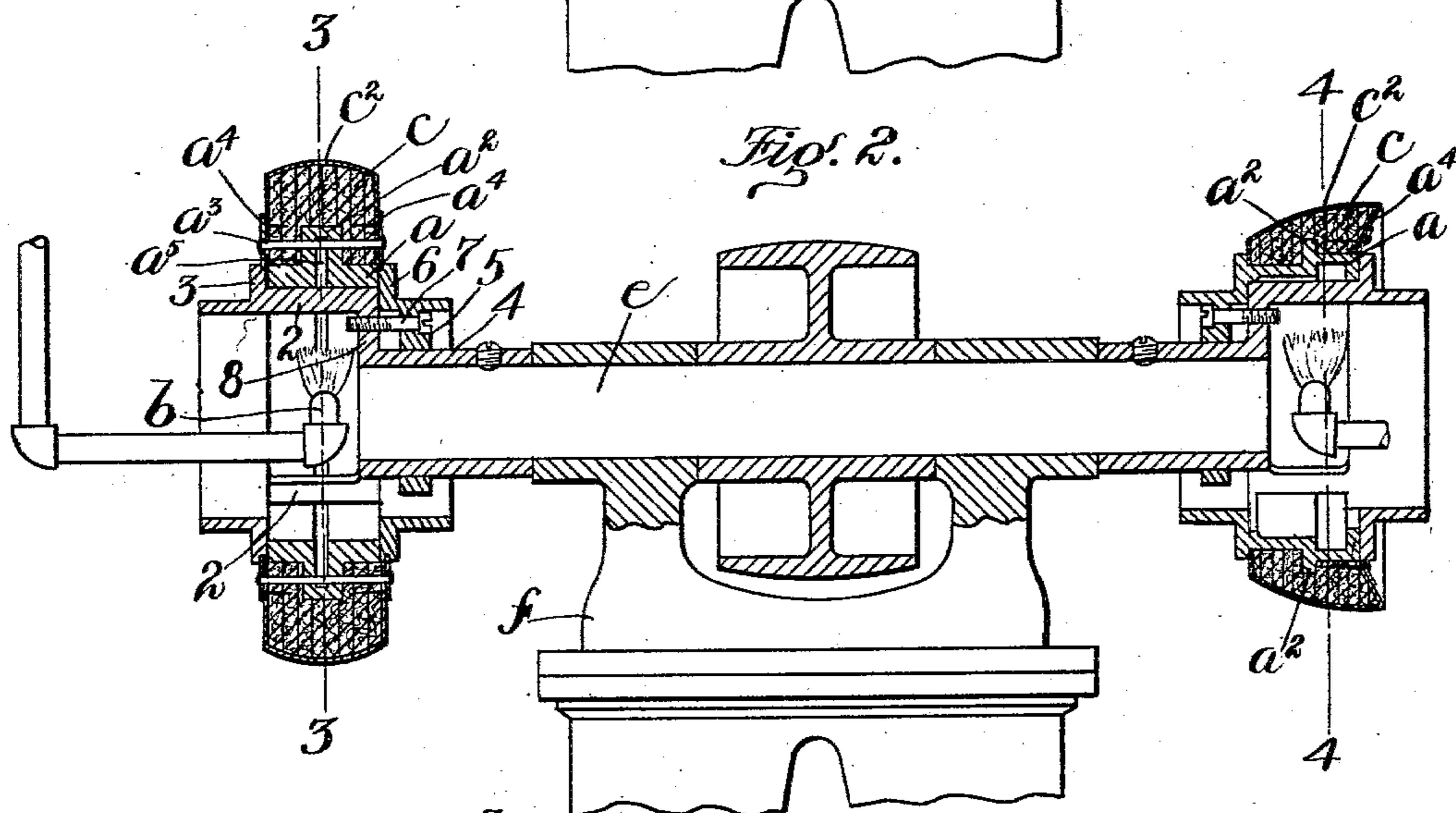
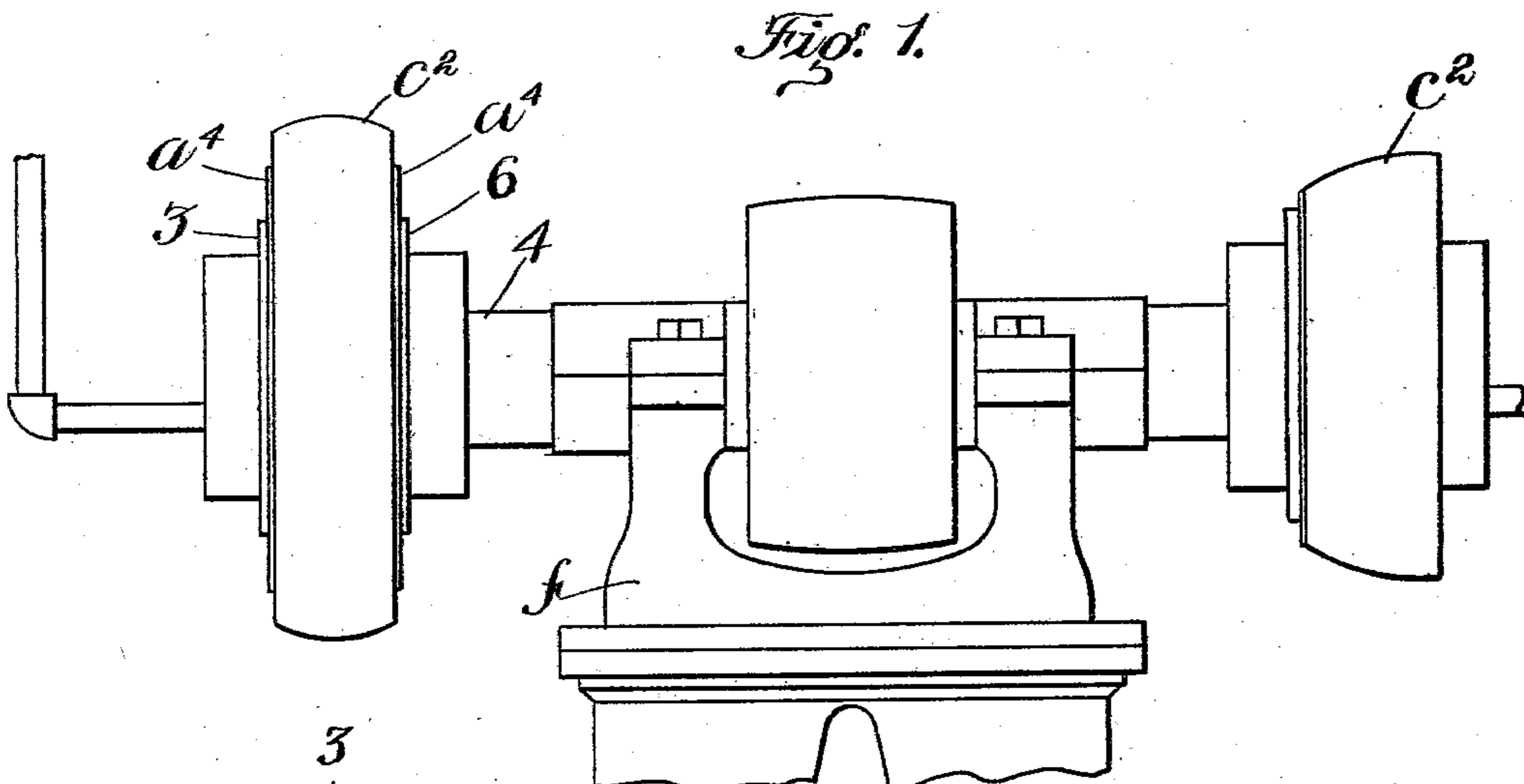


W. A. REED.
WAX APPLYING ROLL OR BRUSH.

APPLICATION FILED JULY 9, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Fred. C. Dorr.
P. H. Pezzetti

Inventor:
W. A. Reed
by M. H. Brown & Quincy
Attys.

No. 757,496.

PATENTED APR. 19, 1904.

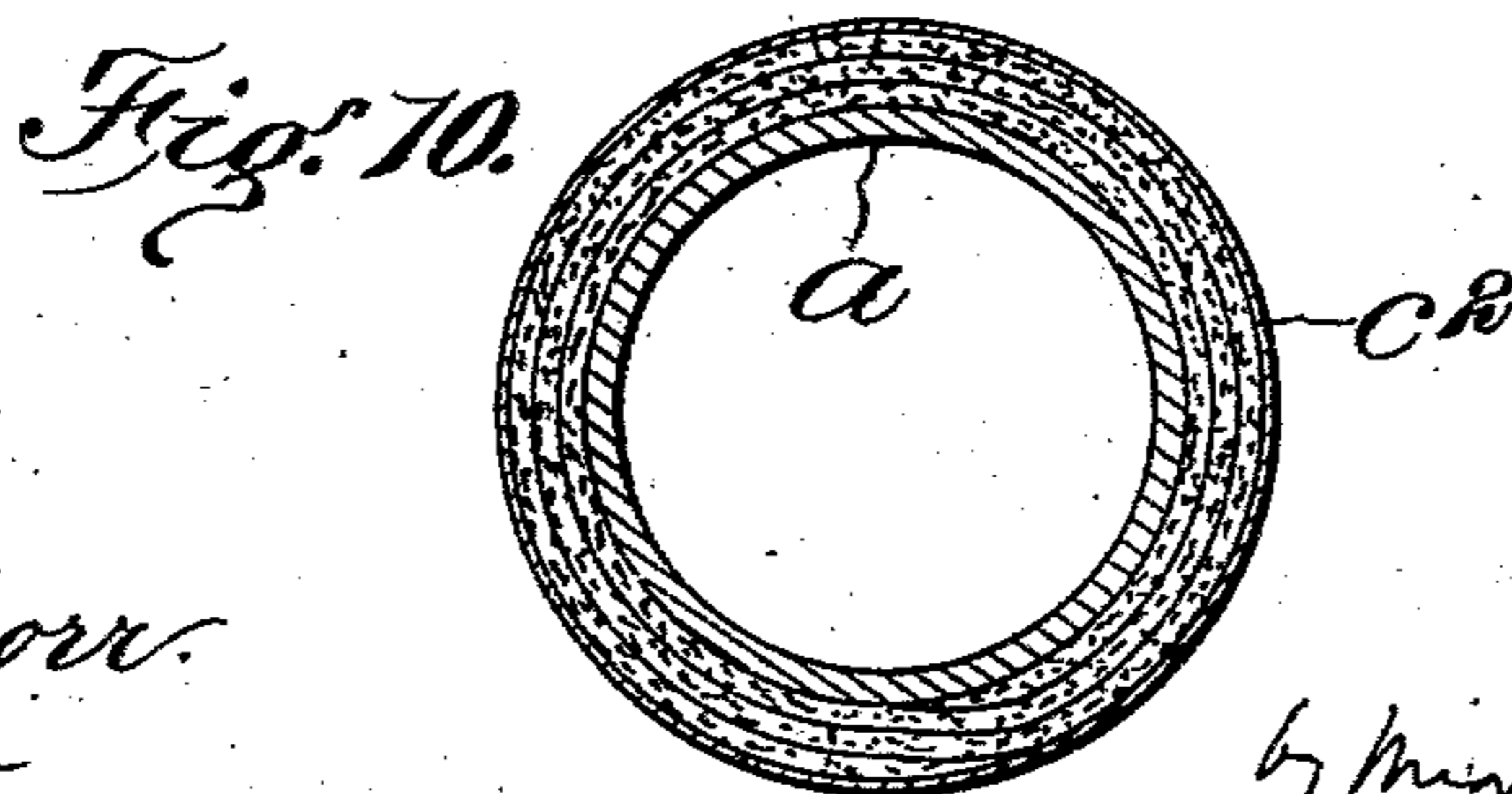
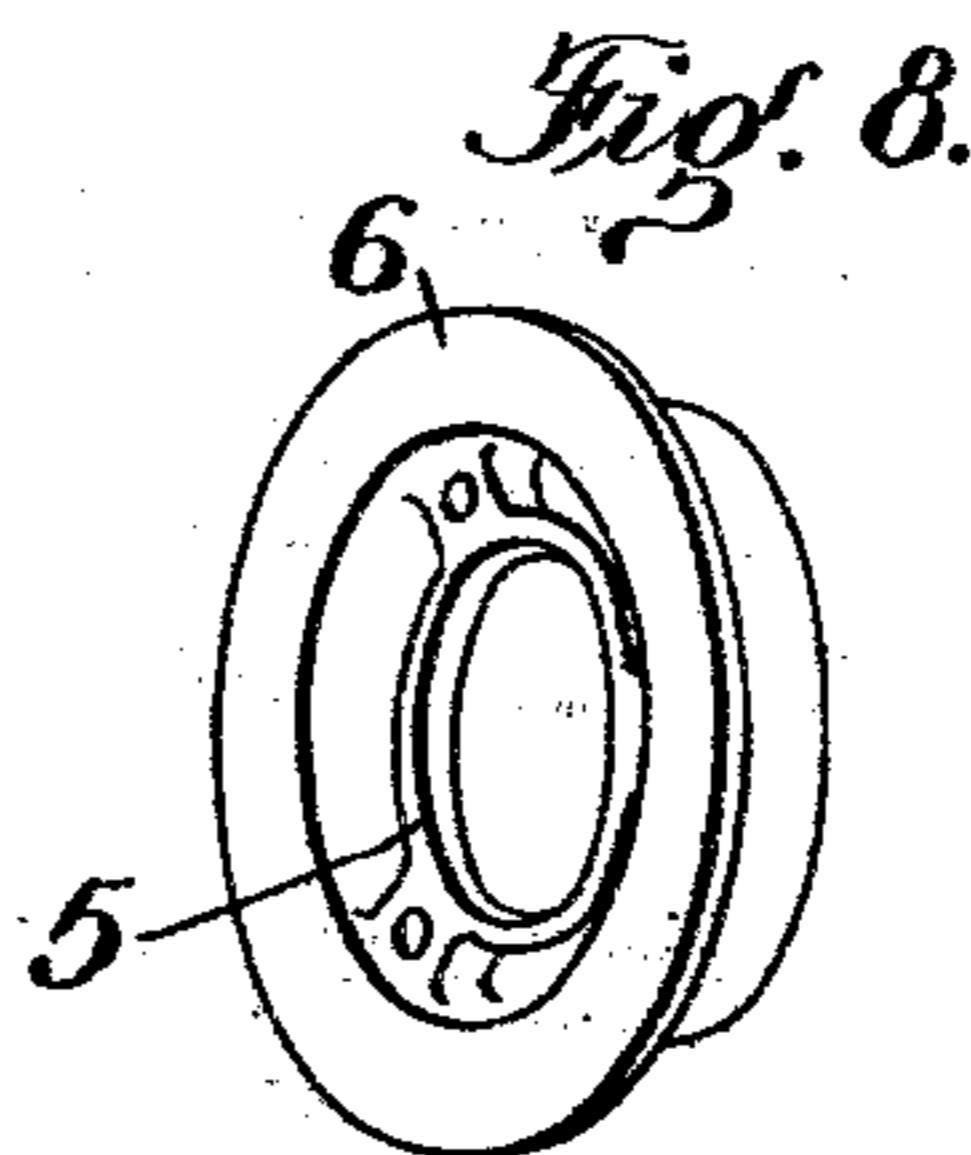
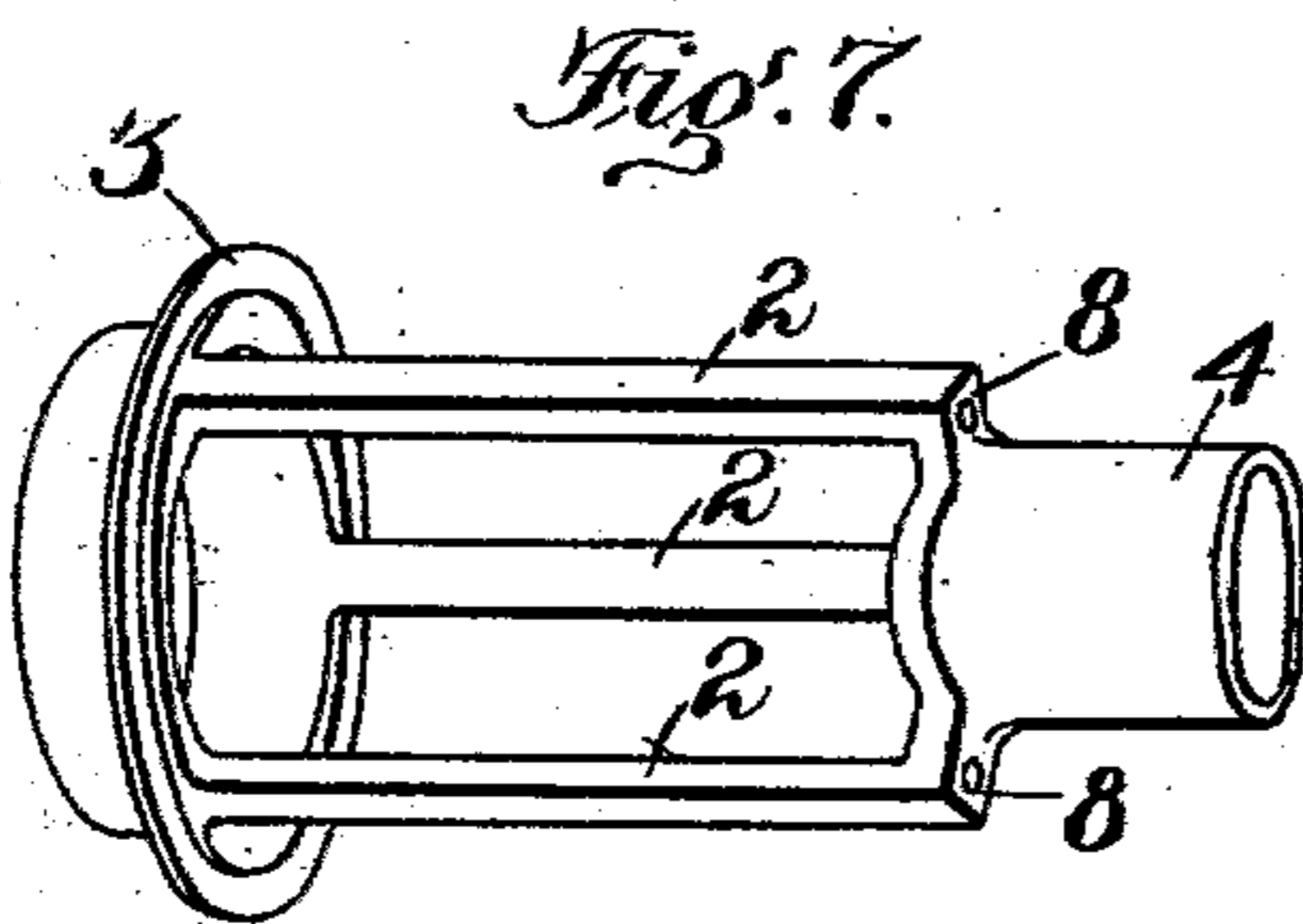
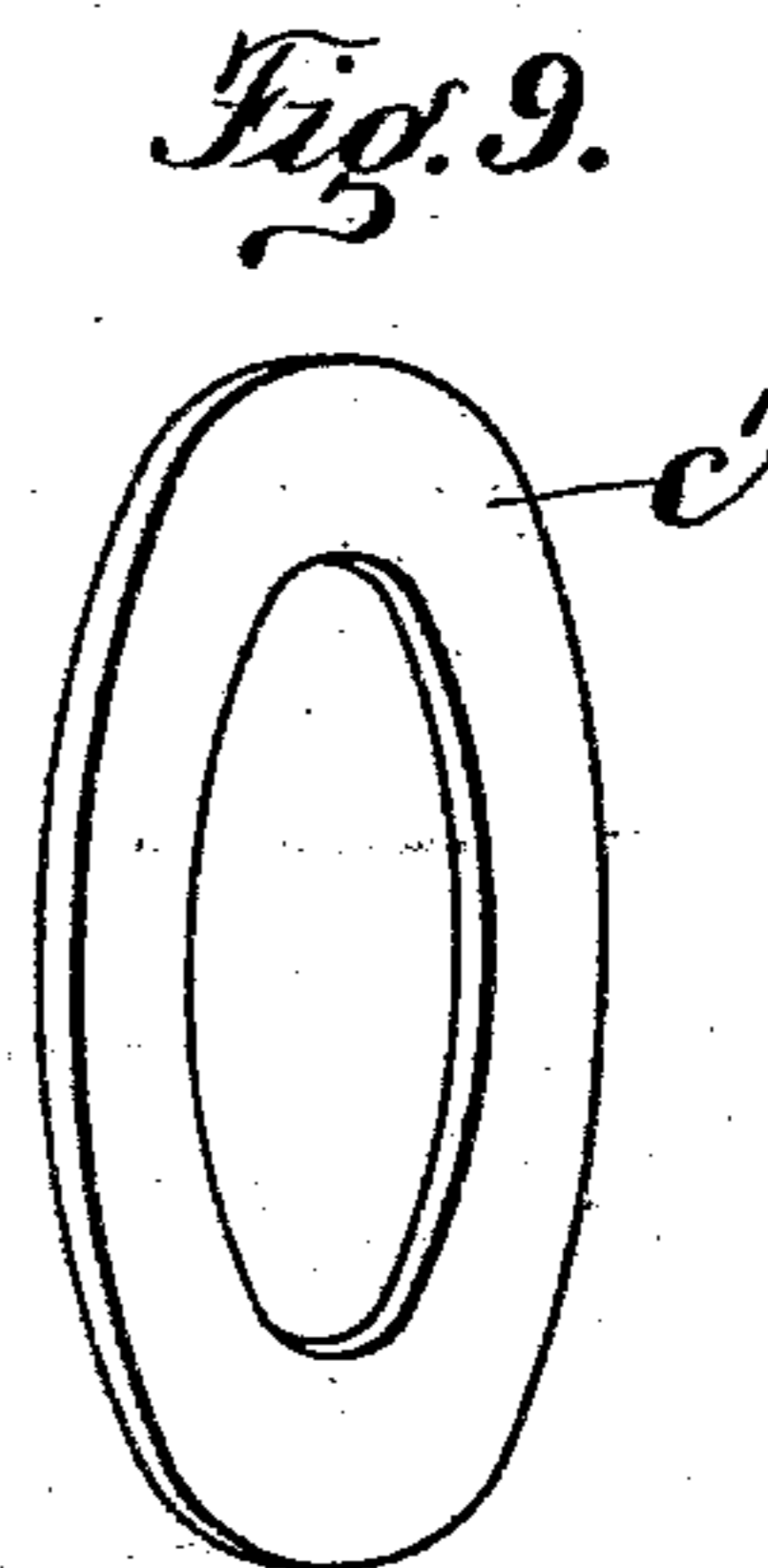
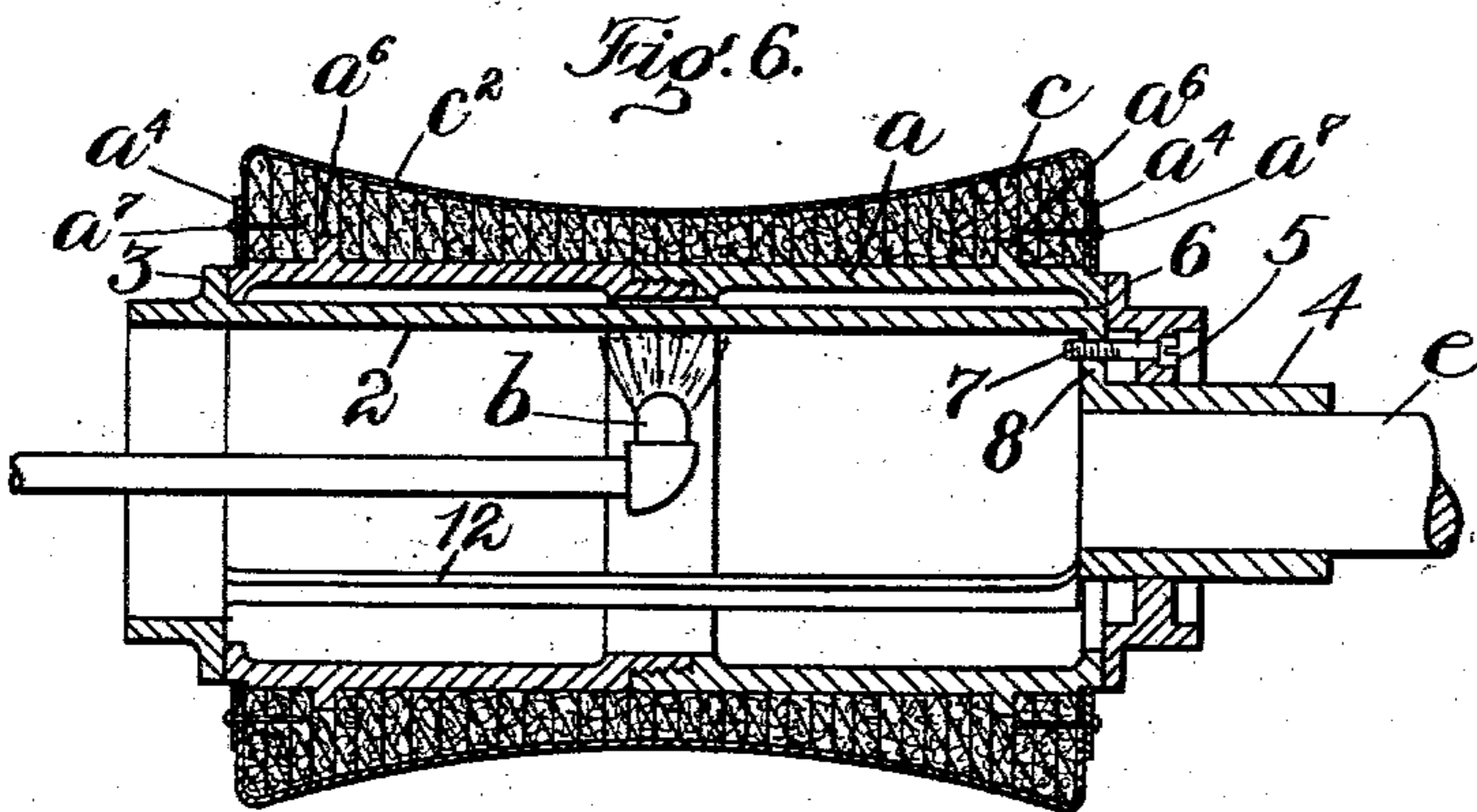
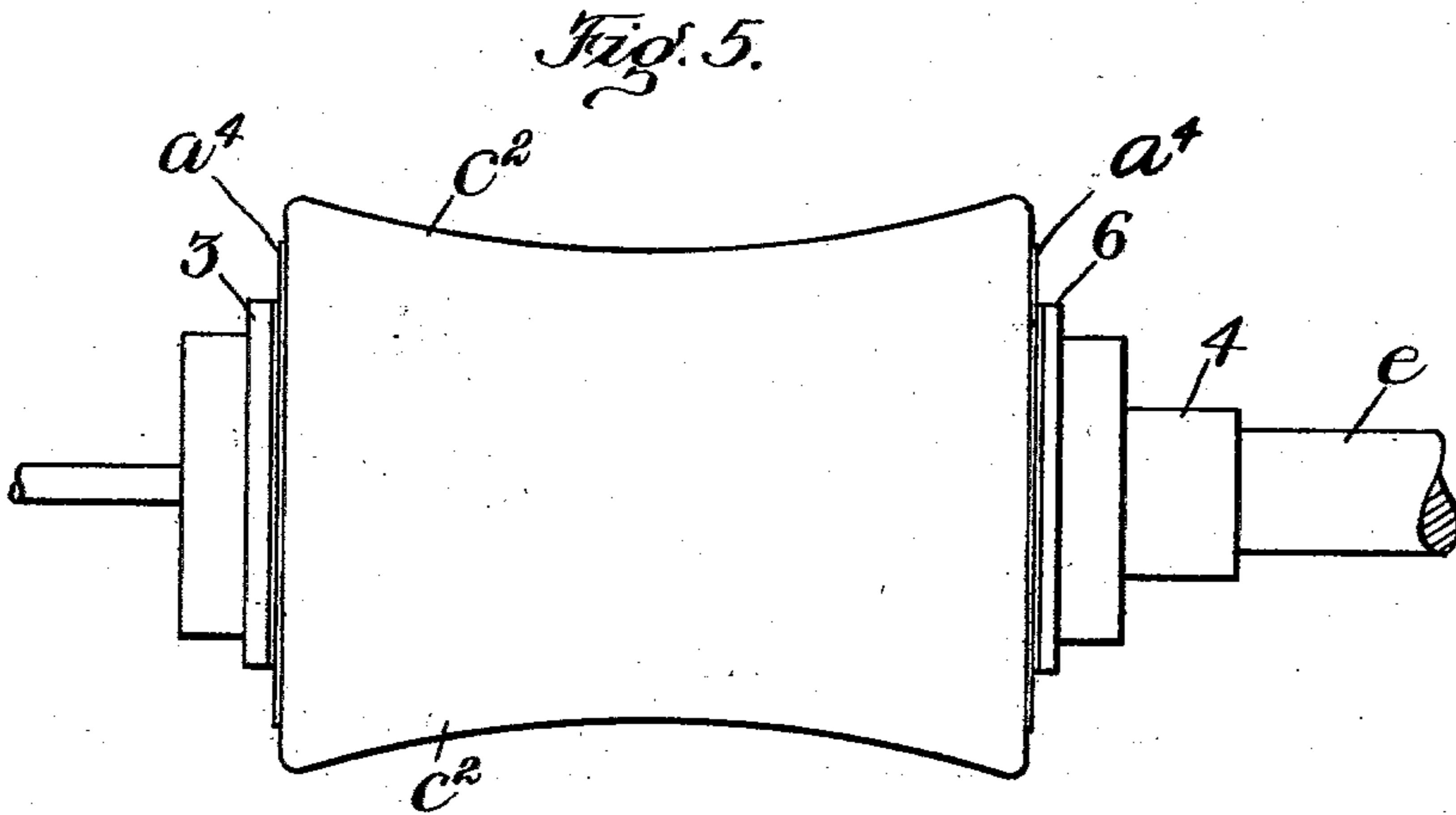
W. A. REED.

WAX APPLYING ROLL OR BRUSH.

APPLICATION FILED JULY 9, 1903.

NO MODEL.

2 SHEETS--SHEET 2.



Witnesses:

Fred. C. Dorr.
P. W. Pezzetti

Inventor:

W. A. Reed
by Wright Brown & Quimby
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. REED, OF CHELSEA, MASSACHUSETTS.

WAX-APPLYING ROLL OR BRUSH.

SPECIFICATION forming part of Letters Patent No. 757,496, dated April 19, 1904.

Application filed July 9, 1903. Serial No. 164,782. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. REED, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Wax-Applying Rolls or Brushes, of which the following is a specification.

This invention relates to means for supplying to the bottoms of boot and shoe soles and heels and other surfaces wax which becomes hard and rigid when cold and is plastic and soft when heated.

The invention has for its object to provide a rotary roll or brush adapted both to soften wax of this character and to absorb a sufficient quantity of the softened or melted wax and keep the wax in a soft condition, so that it may be properly applied to the surface to be treated simply by the rotation of the roll or brush.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of an organized wax-applying machine equipped with rolls or brushes embodying my invention. Fig. 2 represents a longitudinal section of the machine shown in Fig. 1. Fig. 3 represents a section on line 3 3 of Fig. 2. Fig. 4 represents a section on line 4 4 of Fig. 2. Fig. 5 represents a side elevation showing a form of roll or brush differing from the forms shown in Figs. 1 and 2. Fig. 6 represents a longitudinal section of the roll or brush shown in Fig. 5. Figs. 7 and 8 represent perspective views of parts of the hub portion of the roll or brush shown in Figs. 5 and 6. Fig. 9 represents a perspective view of one of the washers of which the yielding portion of the roll or brush is composed. Fig. 10 represents a view similar to Fig. 3, showing a modification hereinafter referred to.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a hollow cylindrical metallic hub, which is adapted to be heated and formed to receive a suitable heater,

such as a gas-burner *b*. Upon the outer periphery of the hub *a* is mounted an annular body *c*, of compressible or yielding refractory and absorbent material. The best material now known to me for said body is asbestos, and I prefer to form the body *c* by cutting out from sheet-asbestos a suitable number of annular disks or washers *c'*, Fig. 9. These washers are formed to be placed upon the external periphery of the hub *a*, their inner edges closely fitting said periphery. The number of disks or washers *c'* will depend upon the thickness of the sheet from which the washers are cut and the desired length of the brush. The disks are clamped closely together to secure them to the hub. In the construction shown in Figs. 1, 2, and 3 the preferred clamping means are a rigid flange *a²*, formed on the central portion of the hub, and rivets *a³*, passing through said flange and through the washers at opposite sides of the flange, the ends of the rivets being engaged with metal washers *a⁴*, bearing against the outer sides of the outer washers *c'*. The washers *c'*, surrounding the flange *a⁴*, are enlarged internally to fit the periphery of said flange and are clamped between the washers *a⁴*, engaged by the rivets *a³*.

In Figs. 5, 6, and 7 I show a roll or brush which is longer than the rolls or brushes shown in Figs. 1 and 2, but is of the same general construction, the main difference being as follows: First, the hub *a* is made in two sections secured together at its central portion and is provided with flanges *a⁶*, which prevent sidewise displacement of the asbestos washers; secondly, the rivets *a³* are omitted, and the washers *a⁴* are secured by tacks or nails *a⁷*, driven into the end portions of the asbestos body.

e represents a shaft which supports and rotates the roll or brush. The hub *a* is connected with the shaft *e* by means of a spider or holder forming a part of the hub and composed of two general parts, Fig. 7. One of said parts comprises parallel bars 2 2 2, arranged to bear on the interior of the hub; secondly, a flange 3, integral with the bars 2 and bearing against one end of the hub, and,

thirdly, a sleeve 4, also integral with the bars 2 and formed to embrace and fit the shaft e , said sleeve being affixed by a set-screw or otherwise to the shaft. The other part of said holder comprises a collar 5, formed to embrace the collar 4, and a flange 6, integral with the collar 5 and bearing against the opposite end of the hub a . The collar 5 is affixed by screws 7 to arms 8, which connect the bars with the collar 4. The said holder is formed to surround the burner or heater b , the flame of said burner extending outwardly between the bars 2 of the holder. The flange a^2 of the hub is in this case made hollow to provide a chamber a^3 , into which the flame is projected. The part a constitutes a tubular outer portion of the hub, while the spider or holder constitutes a two-part inner portion of the hub, said two-part inner portion having flanges 3 and 6, which engage the ends of the tubular outer portion.

The shaft e is journaled in bearings on a suitable supporting stand or frame f and may be extended from opposite sides of said frame, as shown in Figs. 1 and 2, so as to hold two rolls or brushes, the roll at one end differing in shape from that at the other end. For example, the roll at one end of the shaft may be formed to apply wax to the edge of a sole or heel, while the roll at the opposite end may be adapted to apply wax to the shank of a sole. The roll or brush shown in Figs. 5 and 6 is adapted particularly to apply wax to the bottom of a sole.

It will be seen that when the hub a is heated the heat will be conducted from it to the annular body c , the latter becoming heated, so that normally hard wax applied to its periphery will be melted. A suitable quantity of the melted wax will be absorbed by the porous or absorbent material of the body c and will be given out thereby to the surface of a sole or heel pressed against the periphery of the said body.

It will be seen that the asbestos body c , formed as described, is adapted to withstand a high degree of heat, so that its character will not be changed nor its structure weakened by any degree of heat to which it is liable to be subjected. It will also be seen that the compressible or yielding nature of the asbestos enables it to apply the melted wax to the surface to be treated without scratching, indenting, or otherwise injuring said surface.

When the body c is to be used without the cover, hereinafter described, the construction embodying the series of annular disks or washers cut from sheet-asbestos is particularly desirable, because the washers so cut are composed of layers or laminae which extend substantially at right angles to the axis of rotation of the roll or brush, the crevices between said layers enabling the wax to penetrate well into the body c . The arrangement

of the layers is such that the body is of practically uniform density from center to periphery, and its fibers are so closely held together as to prevent the formation of air-spaces or cracks. I prefer, however, to provide the body c with a cover c^2 , of relatively strong flexible porous material having sufficient strength to withstand frictional contact with the articles to be waxed and sufficient porosity to permit the melted wax to pass through it from the body c to the work. The cover c^2 may be a woven or knitted fabric composed of fibrous material, such as cotton or asbestos, and is formed to closely fit the periphery of the body c . I prefer an asbestos fabric, as I find that if the same is made of a good quality of asbestos carefully woven it is sufficiently durable. Asbestos fabric is superior to cotton in that it is not affected by heat. When the cover c^2 is employed, the body c may be made by wrapping a sheet of asbestos in a coil or scroll around the hub, as shown in Fig. 10, or said body may be otherwise constructed.

The cover may be secured in place in any suitable way, preferably by the insertion of its ends between the ends of the body c and the washers a^4 , as shown in Figs. 2 and 6. I am not aware that an asbestos body of any construction has ever been applied to a hub adapted to be heated, and although I prefer the washer construction of the body c on some accounts I do not limit myself thereto. I believe myself to be the first to construct a wax-applying roll or brush by applying to a hub or holder a compressible or yielding absorbent body of practically uniform density from center to periphery, said body being of any suitable refractory material and of any suitable construction. I therefore wish to be understood as claiming as broadly as possible within legal bounds a wax-applying roll or brush comprising these elements.

I do not limit myself to a roll or brush which is adapted to be heated internally, it being obvious that the body c may be heated directly, as by a gas-burner arranged to direct its flame against a suitable part of the periphery of the body.

I am aware that it has been proposed to make a buffing-wheel by attaching limp elongated strands of asbestos to a hub, the strands radiating from the hub and projecting so far therefrom that they are readily separable to form air-crevices, the asbestos portion or cover being of varying density, its density decreasing toward its periphery. While such a wheel may be suitable for use in a dry condition, it cannot be used to apply melted wax, because the looseness and separability of its strands would enable the pressure of the work to form cracks and admit air between the strands to such an extent as to chill and harden the wax and prevent its proper application.

The body c , above described, is of practi-

cally uniform density from center to periphery, and its fibers are so closely held together as to prevent the formation of air-spaces or cracks by the pressure of the work against its periphery.

I claim—

1. A wax-applying roll or brush comprising a rigid hub or holder, and a compressible or yielding refractory absorbent body supported by the holder and adapted to be heated, said body being of practically uniform density from its center to its periphery.

2. A wax-applying roll or brush comprising a rigid hub or holder, and a compressible or yielding body of asbestos surrounding the hub and adapted to be heated, said body being of practically uniform density from its center to its periphery.

3. A wax-applying roll or brush comprising a rigid hub or holder, and a plurality of asbestos rings or washers mounted on the hub and collectively constituting an annular compressible or yielding refractory absorbent body which is of practically uniform density from its center to its periphery.

4. A wax-applying roll or brush comprising a rigid hub having means for attachment to a shaft, and a series of asbestos rings or washers mounted on the hub, the said hub being provided with means for preventing sidewise displacement of said washers.

5. A wax-applying roll or brush comprising a hollow rigid hub open at one end and having a shaft-engaging sleeve at its other end, and an annular asbestos body surrounding

the hub, the said hub having means for preventing displacement of the asbestos body.

6. A wax-applying roll or brush comprising a rigid hub or holder, a compressible or yielding refractory absorbent body supported by the holder, and a flexible porous cover inclosing said body.

7. A wax-applying roll or brush comprising a rigid hub or holder, a compressible or yielding refractory absorbent body supported by the holder and a flexible porous refractory cover inclosing said body.

8. A wax-applying roll or brush comprising, first a rigid hub or holder composed of a tubular outer portion, and a two-part hollow inner portion having flanges engaging the ends of the outer portion and a shaft-engaging sleeve, and secondly, a compressible or yielding refractory body surrounding said outer portion.

9. A wax-applying roll or brush comprising, first, a rigid hub or holder composed of a tubular outer portion having one or more flanges, and a two-part inner portion having flanges engaging the ends of the outer portion and a shaft-engaging sleeve, and secondly, a compressible or yielding refractory body surrounding said outer portion and engaged with the flange or flanges thereof.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM A. REED.

Witnesses:

C. F. BROWN,

H. L. ROBBINS.