

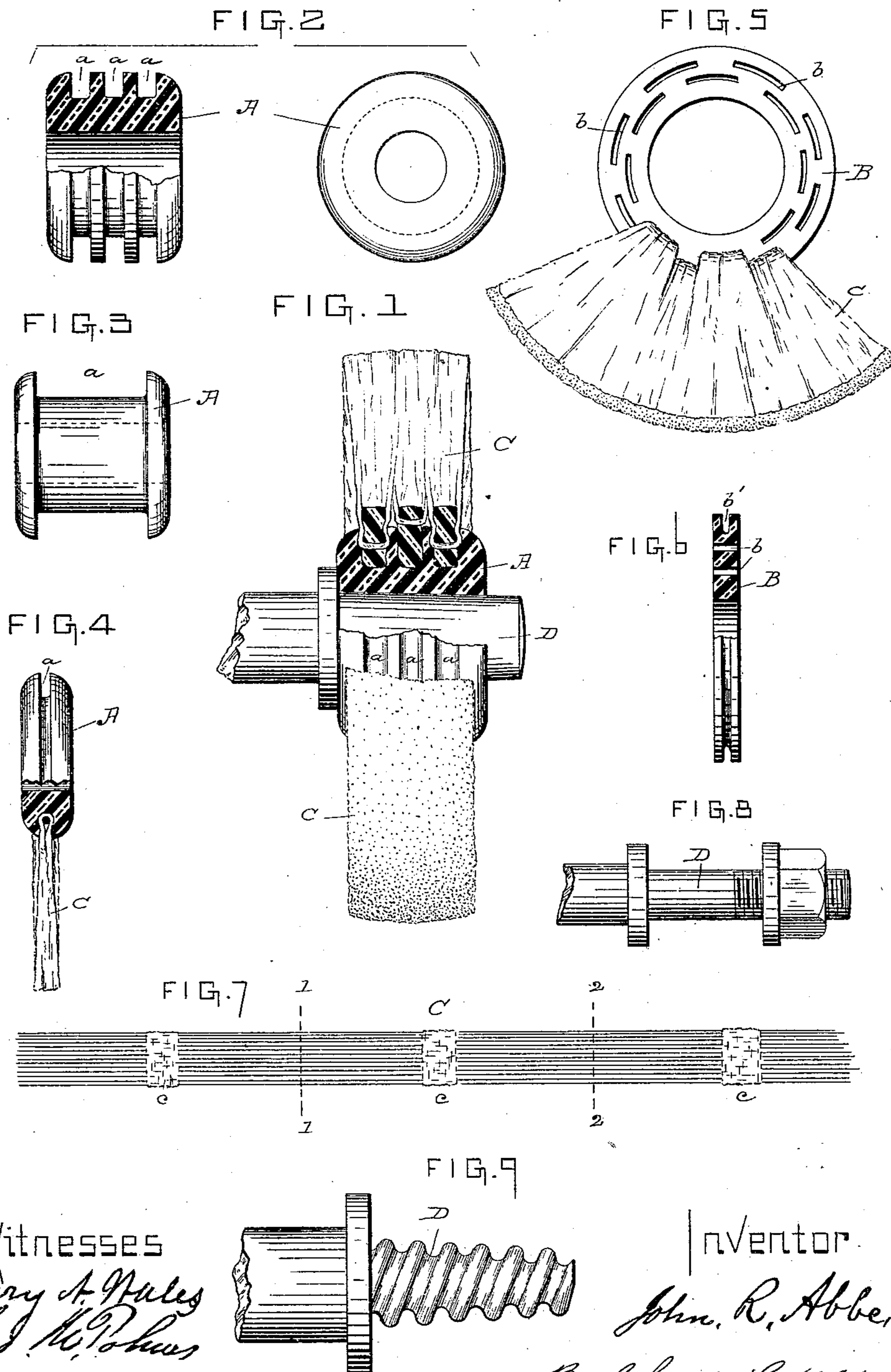
(Model.)

4 Sheets—Sheet 1.

J. R. ABBE.
BUFFING WHEEL.

No. 277,097.

Patented May 8, 1883.



Witnesses
Henry A. Hales
Chas. M. P. Jones

Inventor

John R. Abbe,
By Charles C. Abbe
his atty

(Model.)

4 Sheets—Sheet 2.

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BUFFING WHEEL.

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FIG. 10

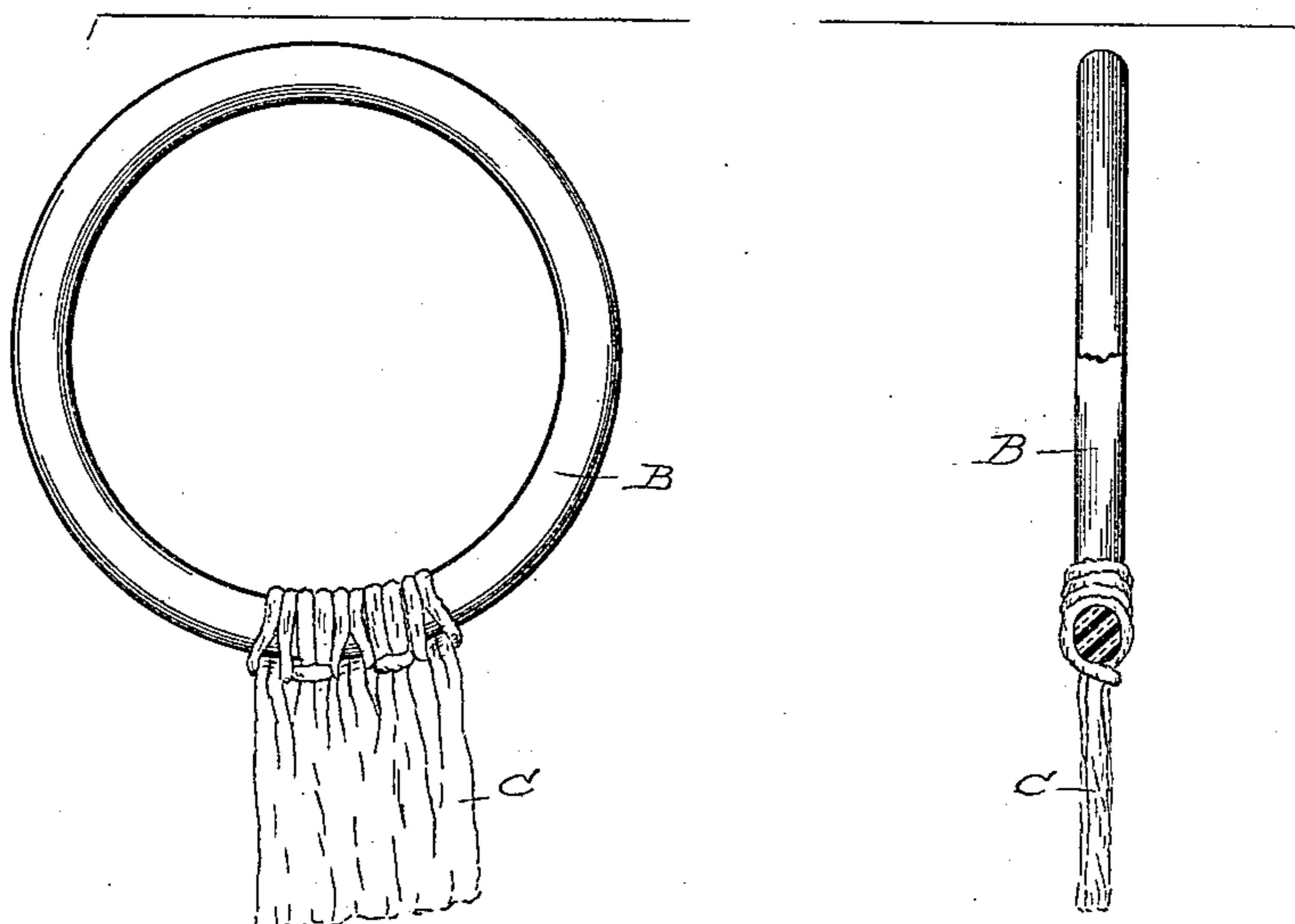
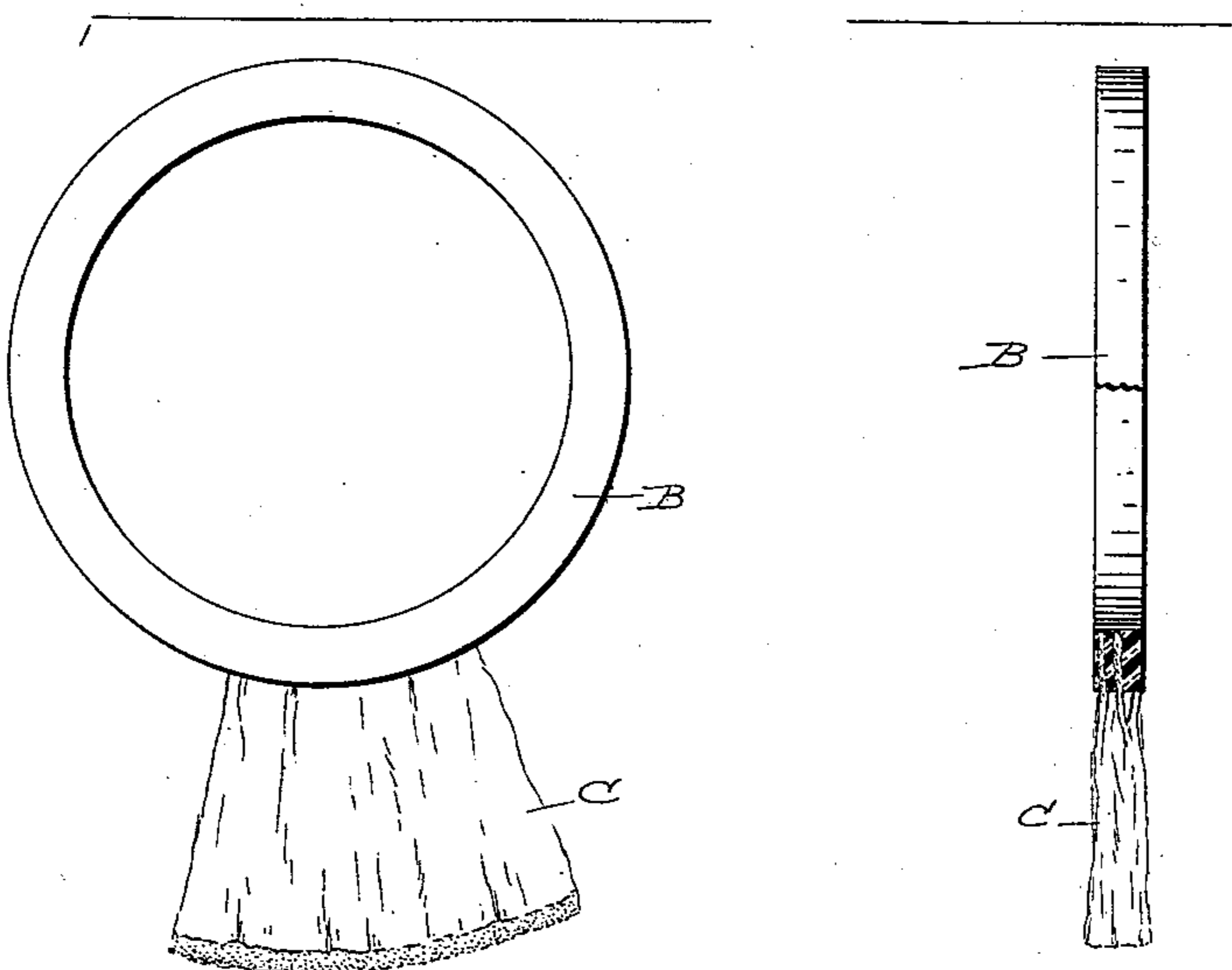


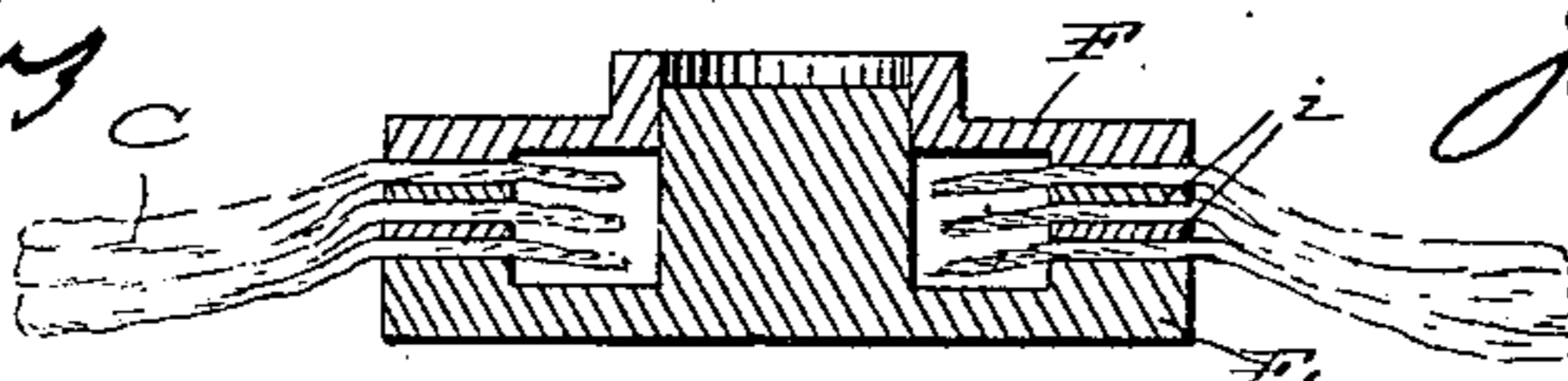
FIG. 11



Witnesses

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FIG. 12



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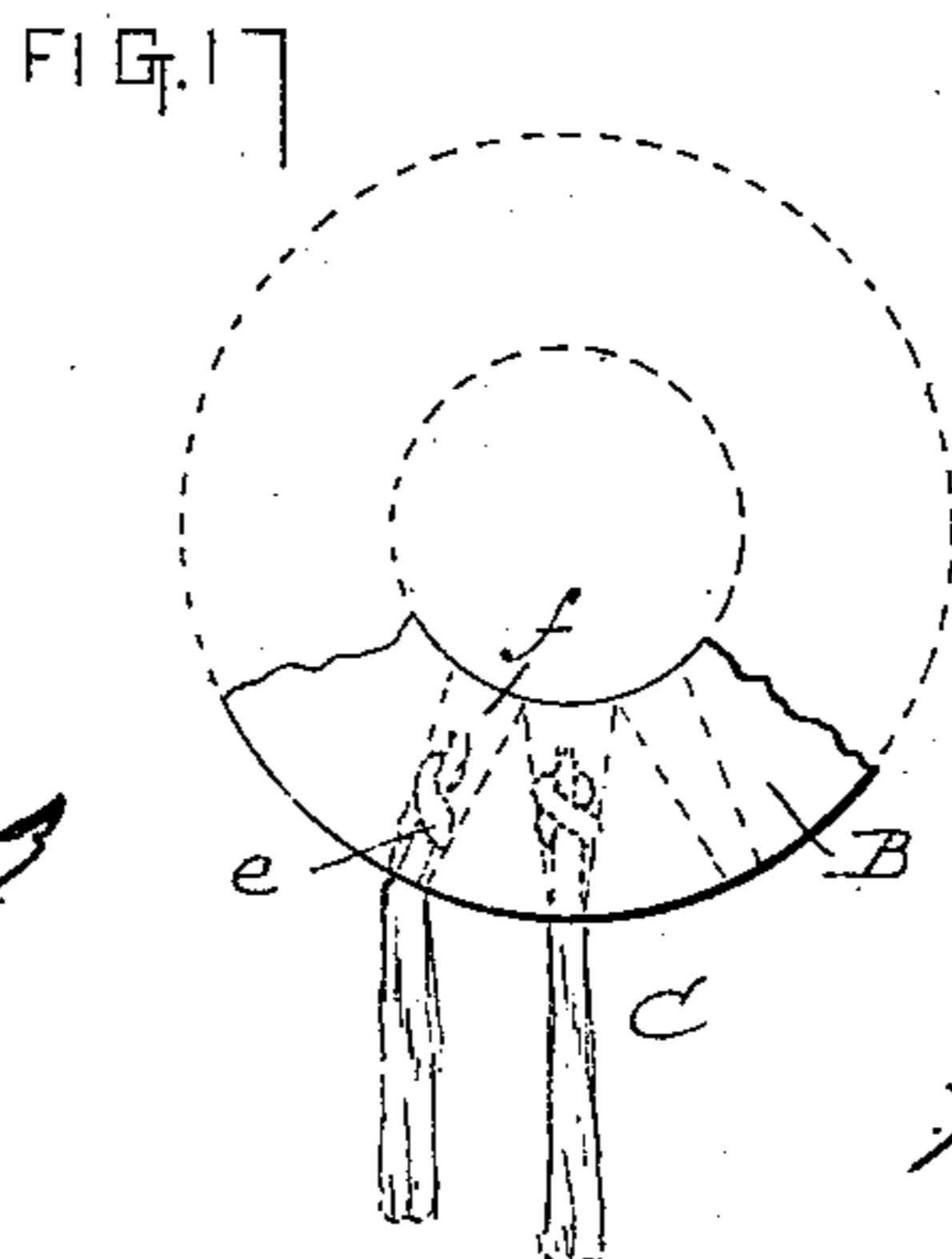
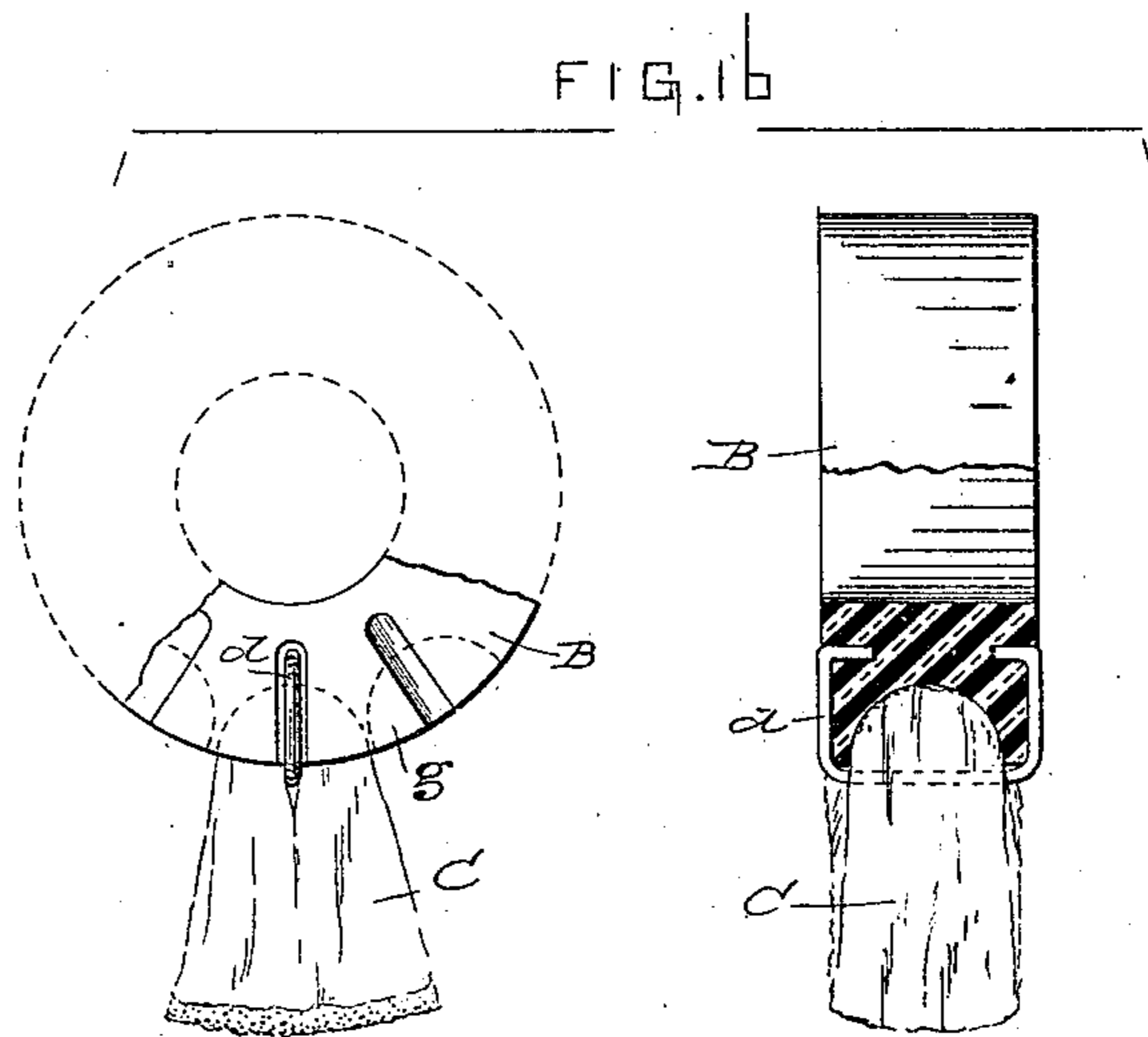
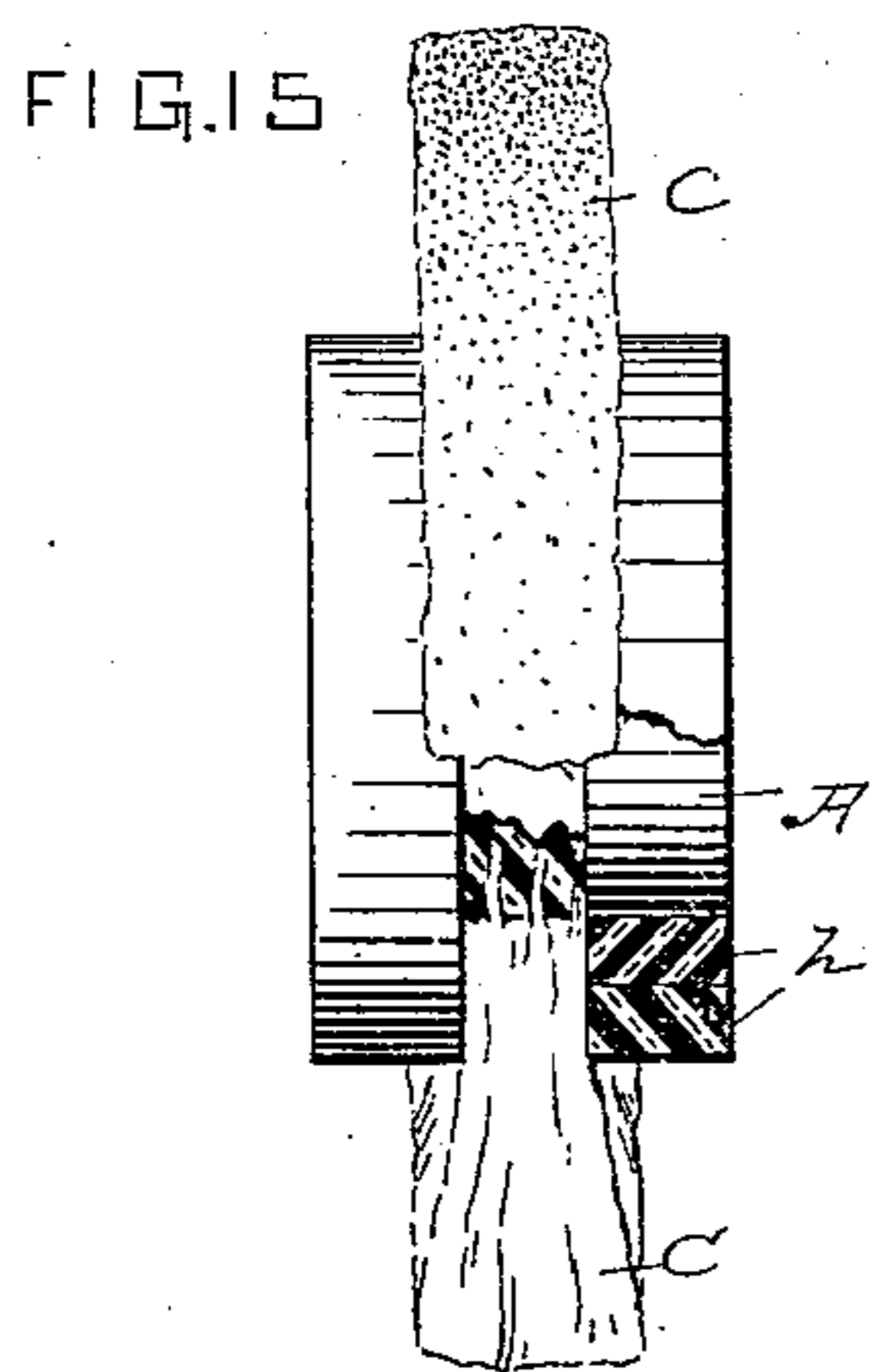
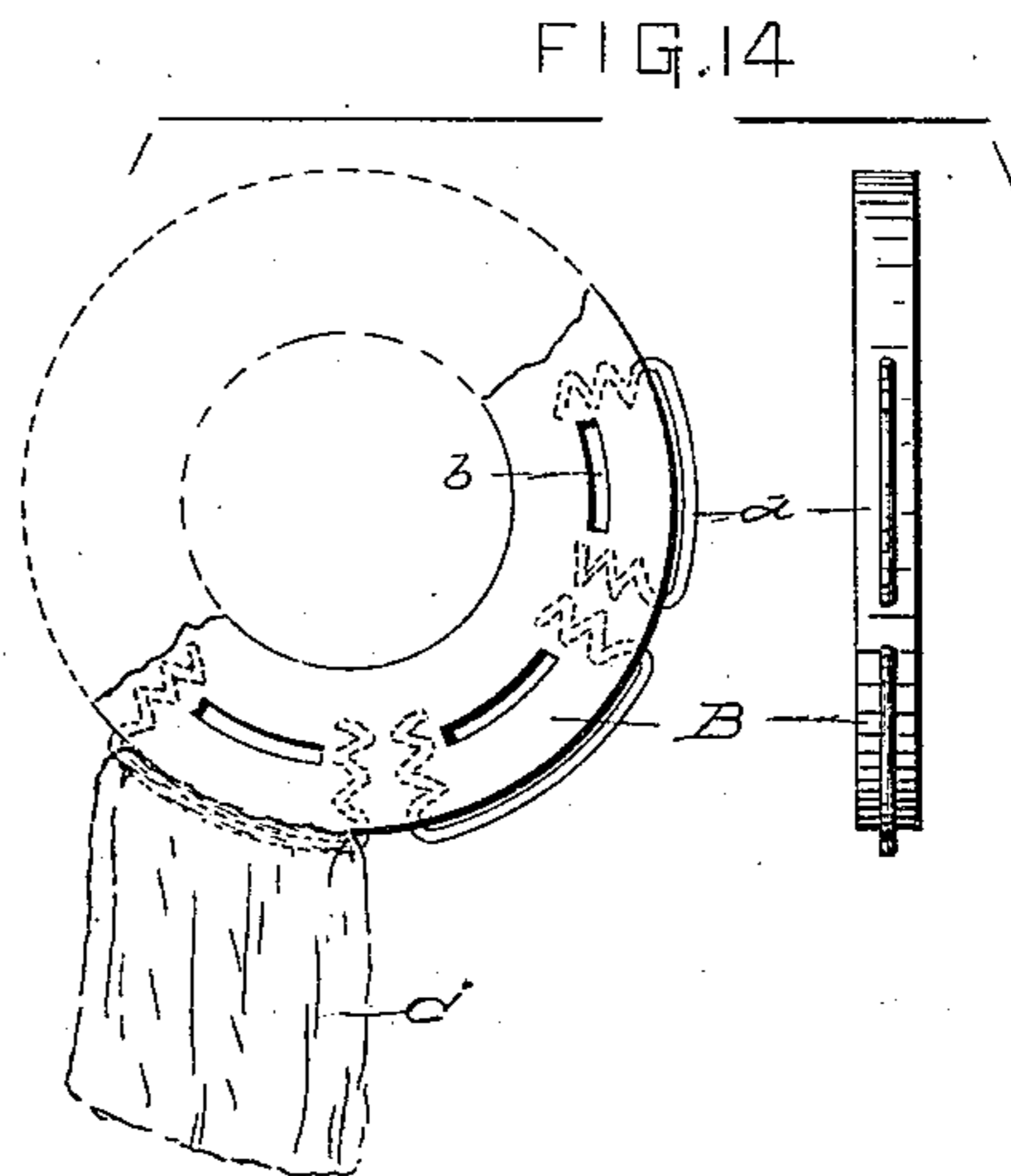
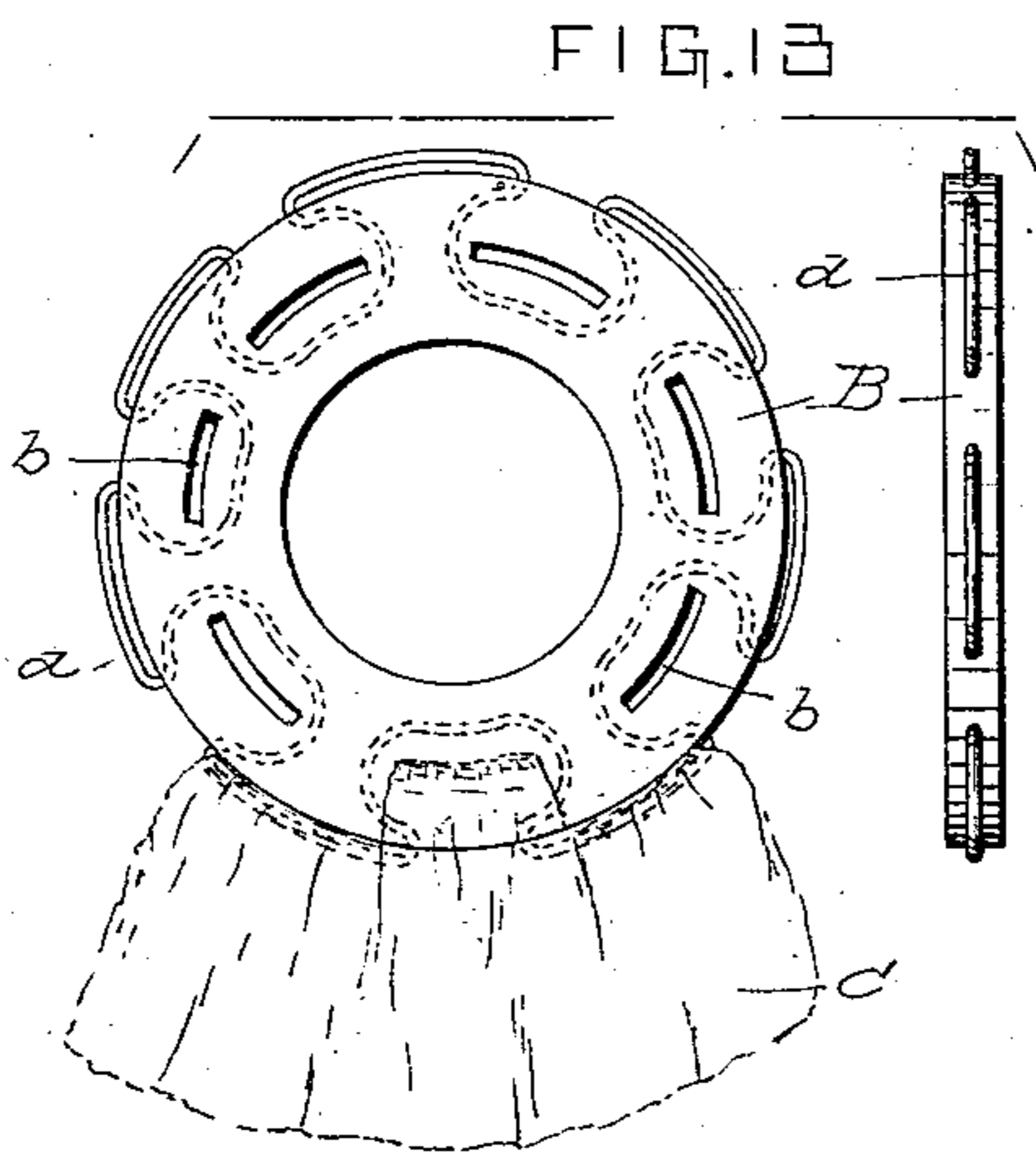
(Model.)

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J. R. ABBE.
BUFFING WHEEL.

No. 277,097.

Patented May 8, 1883.



Witnesses
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(Model.)

4 Sheets—Sheet 4.

J. R. ABBE.
BUFFING WHEEL.

No. 277,097.

Patented May 8, 1883.

FIG 18.

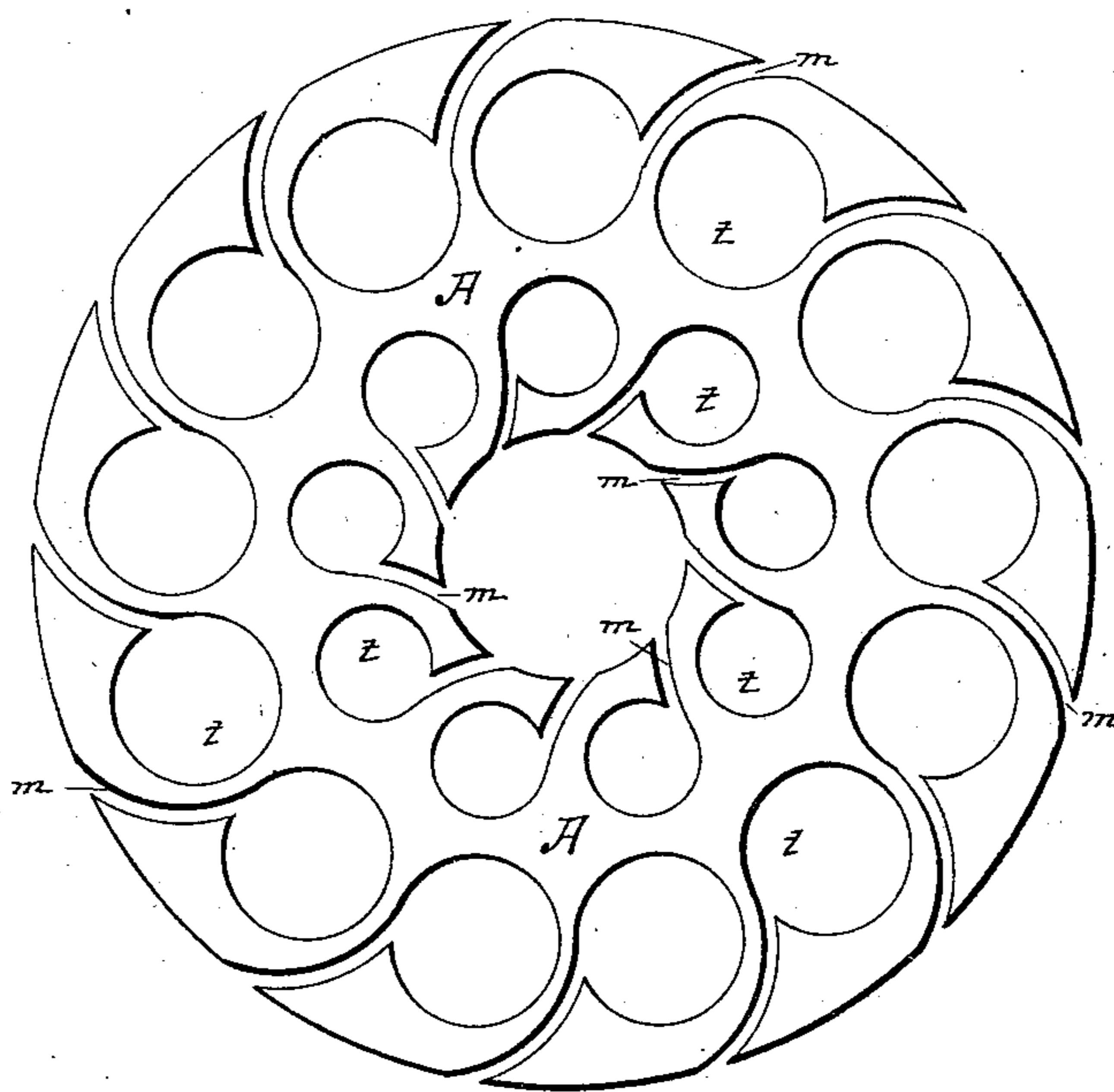
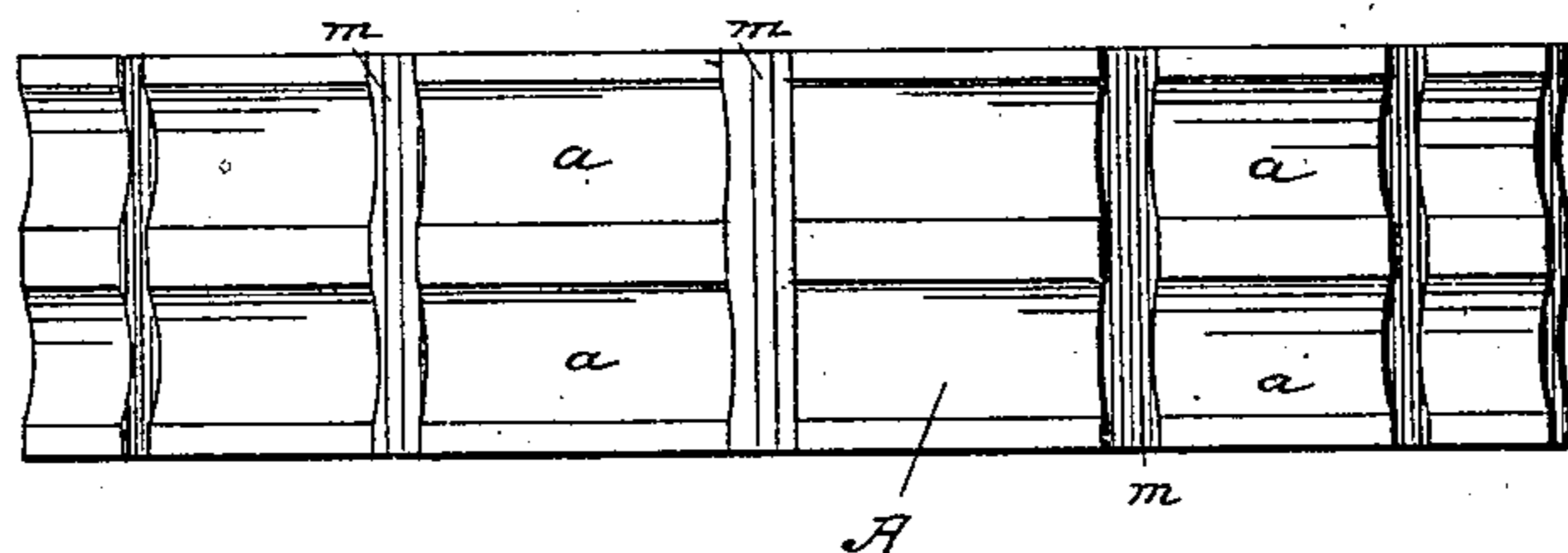


FIG 19.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN R. ABBE, OF SOUTH WINDHAM, CONNECTICUT.

BUFFING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 277,097, dated May 8, 1883.

Application filed February 9, 1883. (Model.)

To all whom it may concern:

Be it known that I, JNO. R. ABBE, of South Windham, in the county of Windham and State of Connecticut, have invented a new and
5 useful Improvement in Buffing-Wheels, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a part-sectional and part-full
10 view of my improved buffing-wheel; Fig. 2, a side and end view of the hub or body-support for buffing-fibers. Figs. 3 and 4 are modified forms of above-mentioned hub. Figs. 5 and 6 are side and edge views of ring for holding
15 buffing material; Fig. 7, a plan view, showing form in which the buffing-fibers are woven; Figs. 8 and 9, views of various forms of mandrels for holding the hub; Figs. 10, 11, 13, 14,
20 16, and 17, various forms of elastic rings for holding the buffing-fibers; Fig. 12, a sectional view of a mold for forming the rings which hold the buffing-fibers; Fig. 15, a front view of a buffing-wheel with rings adapted to reduce the width of buffing-fibers; Figs. 18 and 19, a
25 side and edge view of a modified hub so formed as to be elastic.

The object of my invention is to furnish a fibrous buffing-wheel which can be easily made, is cheap in construction, and adapted to fill
30 the place of all those now in use.

As shown in the drawings, A is an annular elastic hub made of rubber or other material, and so constructed as to be directly applied to a mandrel from which it is to receive its rota-
35 tive motion. On its exterior surface there is formed a groove or grooves, *a*, so formed as to receive the annular rings B, to which the buffing-fibers are attached. The grooves *a* are of any depth desirable, and form ribs between
40 each other, which support the fibers attached to the rings B, which are elastic and formed in various ways, as shown by the several views. In Fig. 5 is shown a perforated ring with perforations *b b*, in which the buffing-fibers are
45 placed in gangs. The said gangs of fibers overlapping each other, as shown, causes the fibers to form a solid body, so to speak, of buffing material.

In Figs. 13, 14, and 16 I have shown these
50 elastic rings re-enforced by a spring-wire, *d*,

the object of which is to retain the ring in compact form should there be a tendency to expand when revolving at a high rate of speed. In Fig. 16 there are pockets *g*, formed in the ring, and the wires *d* are placed across the
55 pockets to retain the fibers. In Fig. 17 the pockets are formed on the inside, and are of wedge shape. Through these openings the fibers are drawn, and prevented from passing entirely through by knots on the same. In
60 Fig. 10 there is shown a solid ring with the buffing-fibers looped or caught up by a noose. In Fig. 11 the fibers C are shown embedded in the elastic material which forms the ring B, and in Fig. 12 I show the former or die for mak-
65 ing such rings, E being the lower half of the die, with an upright teat or projection at the center. Between the fibers C are placed annular plates *i*, and on top of all is placed the cap F. The rubber being run into the die when
70 in this condition hardens around the fibers and holds them securely. In Fig. 15 are shown annular rings or reducers *h*, which are placed one on top of the other to reduce the width of face of polishing-surface without taking off or add-
75 ing to the hub the rings B. The buffing-fibers I make of woven or twisted asbestos, as such I find (through its peculiar formation) especially adapted to buffing purposes where such fibers are used in gangs, as shown in Figs. 5, 80
13, 14, and 16. I would prefer to make or weave the same as shown in Fig. 7, where the warp C is formed of asbestos and connected or woven together at proper intervals by the ordi-
85 nary filling-threads made of cotton, hemp, asbestos, or other material suitably adapted to the same purpose, as at *c*. When these fibers are to be applied to the rings they are cut into lengths, as at 1 1 and 2 2, and drawn into the ring as far as that portion which is woven, thus
90 forming a solid body for abrasive purposes when enough have been drawn through. To the fibers I prefer to attach by means of some adhesive material fine abrasive powders—such as rouge, flower of emery, &c.—which will act with
95 the fibers in polishing.

In operation the hub A is placed upon a mandrel, D, which may be of various forms, and adapted to revolve at a high rate of speed. The rings B are slipped over the hub until a
100

sufficient thickness of fibers is obtained, and all is ready for work. If, while in use, the width of polishing-surface is desired to be reduced, the rings *h* are added one on top of the other, the width growing less as each additional layer is added.

With this construction there are no metallic parts to come in contact with articles being polished and injure the same, the rubber parts overcoming all previous objections.

In describing my construction I do not wish it understood that I limit myself to the exact construction shown—as, for instance, the central hub may be made of wood or metal, Figs. 18 and 19, with a series of holes, *t t*, around the inner and outer circumferences; and parallel with the axis of the hub, radiating from these openings *t t*, are slots *m m*, opening through to the inner or outer circumference and eccentric to the axis of the hub, thus forming a spring-like body in such construction. The reinforcing wire may be either zizzag or in spiral form. It may be placed in lines parallel with the axis of the hub, or in two or more continuous rows in planes at right angles to its axis. Strong fibers of paper or cloth impregnated with polishing-powders may be used.

I am well aware that rubber has been used as a center for an emery-wheel, but not as a hub, the object being to prevent chattering of the emery-wheel when in use. I therefore disclaim the same; but

What I desire to claim and secure by Letters Patent is—

1. A fibrous buffing-wheel provided with a self-supporting elastic hub whose exterior surface is recessed, as and for the purpose set forth.

2. A perforated annular ring composed of elastic material, to which the fibrous buffing material is attached.

3. An annular perforated ring composed of elastic material, which is re-enforced by a wire through the same, as and for the purpose set forth.

4. A fibrous buffing-wheel provided with an elastic hub, in combination with an elastic ring to which the fibrous buffing material is attached, as and for the purpose set forth.

5. A buffing-wheel having the polishing-surface formed of fibers of asbestos, as and for the purpose set forth.

6. The polishing-fibers of a buffing-wheel, formed in continuous lengths and woven together at certain intervals, which are adapted to be cut in proper lengths when applied to use, as and for the purpose set forth.

JOHN R. ABBE.

Witnesses:

CHESTER TILDEN,
JAMES M. BOWEN.