

No. 628,995.

Patented July 18, 1899.

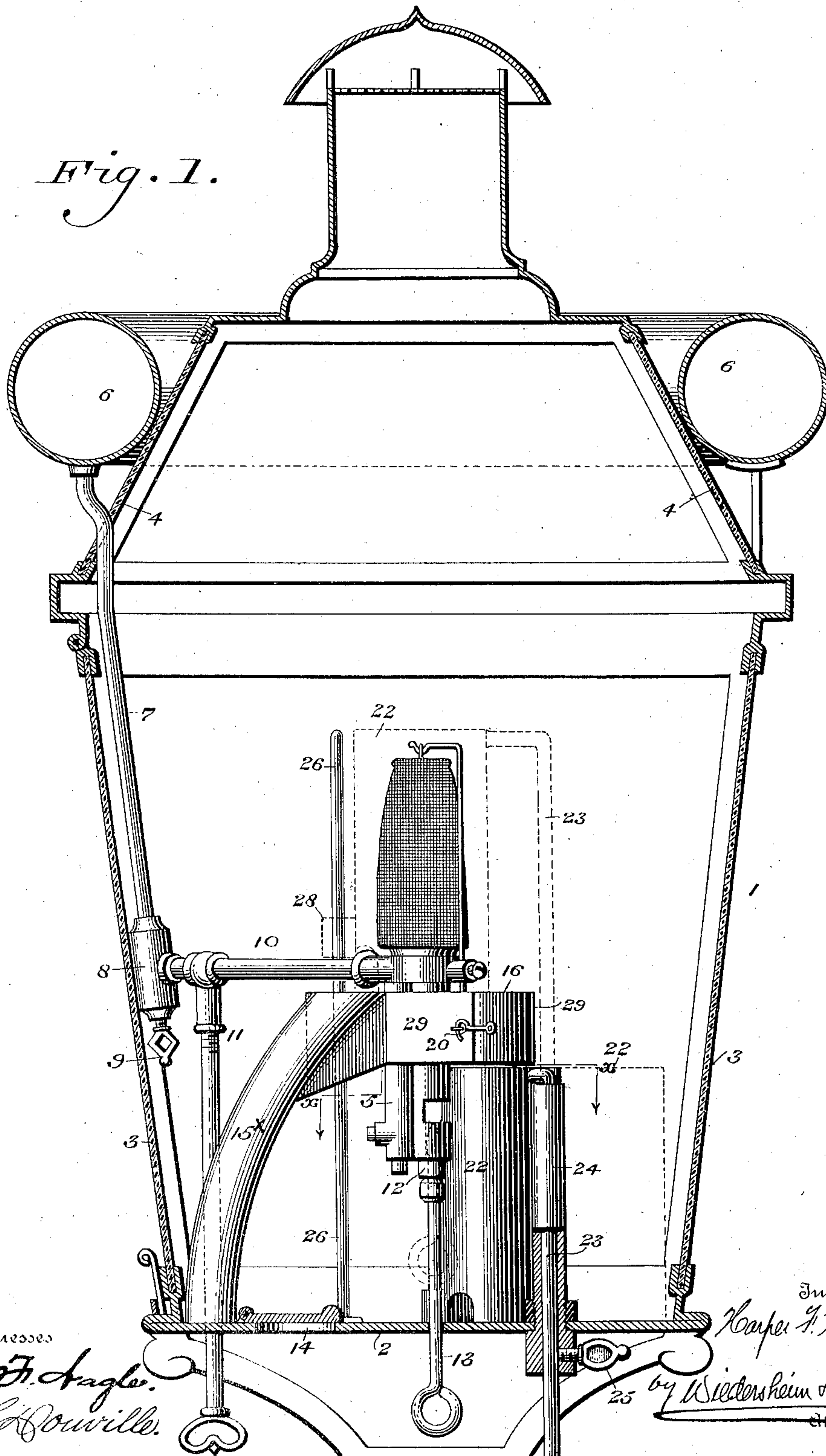
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BURNER.

(Application filed Mar. 30, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 5.

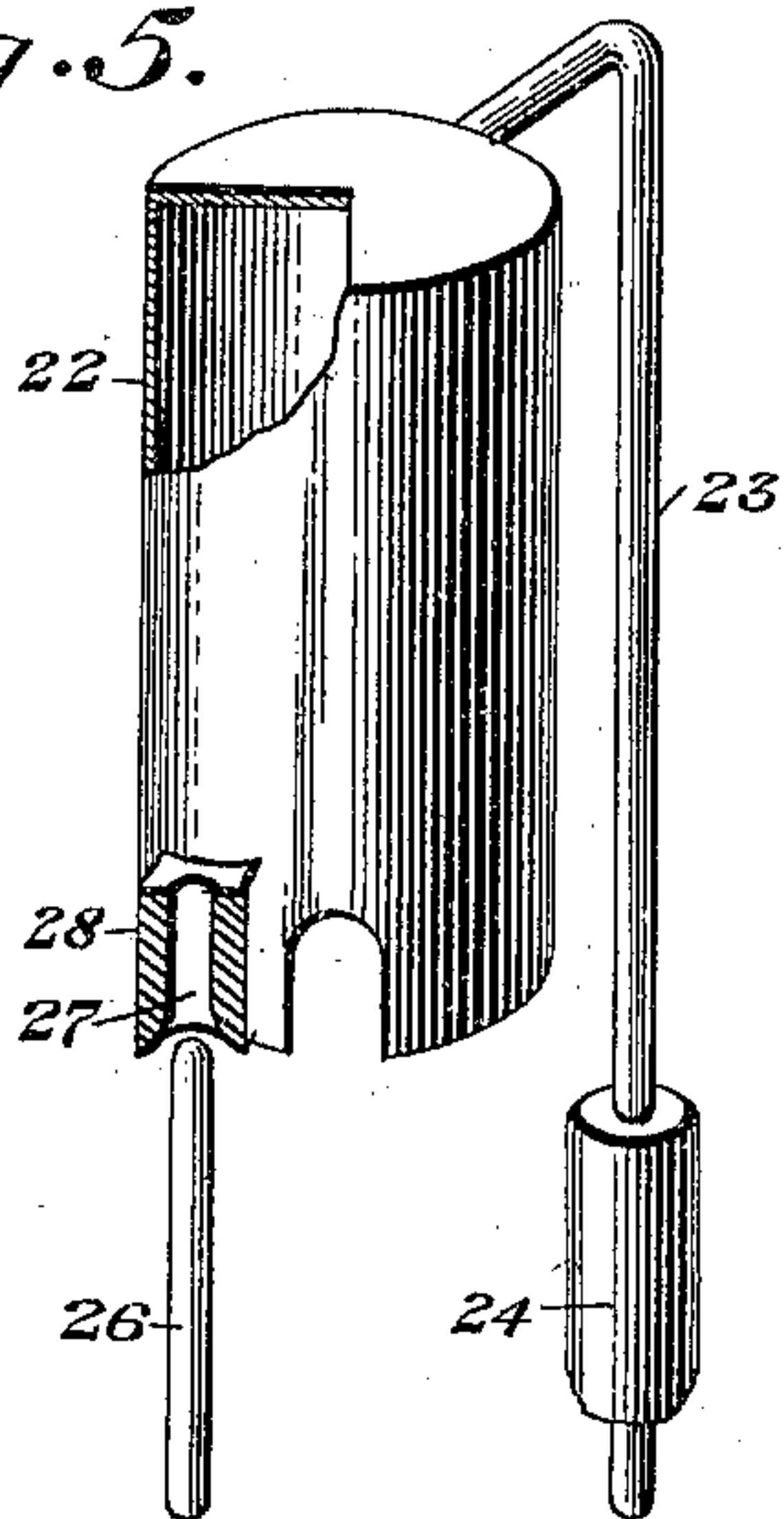


Fig. 6.

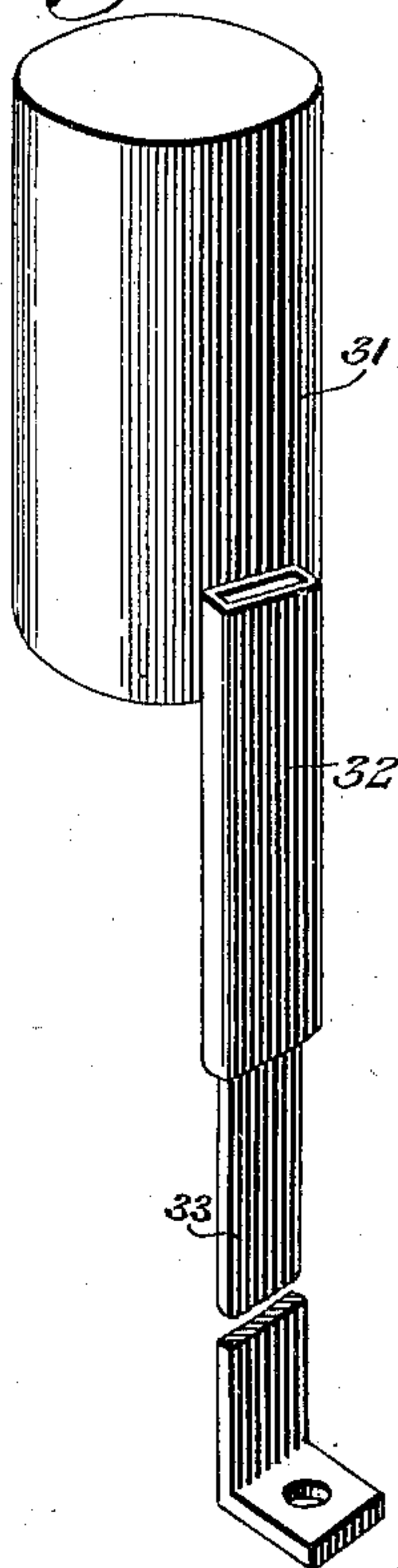


Fig. 3.

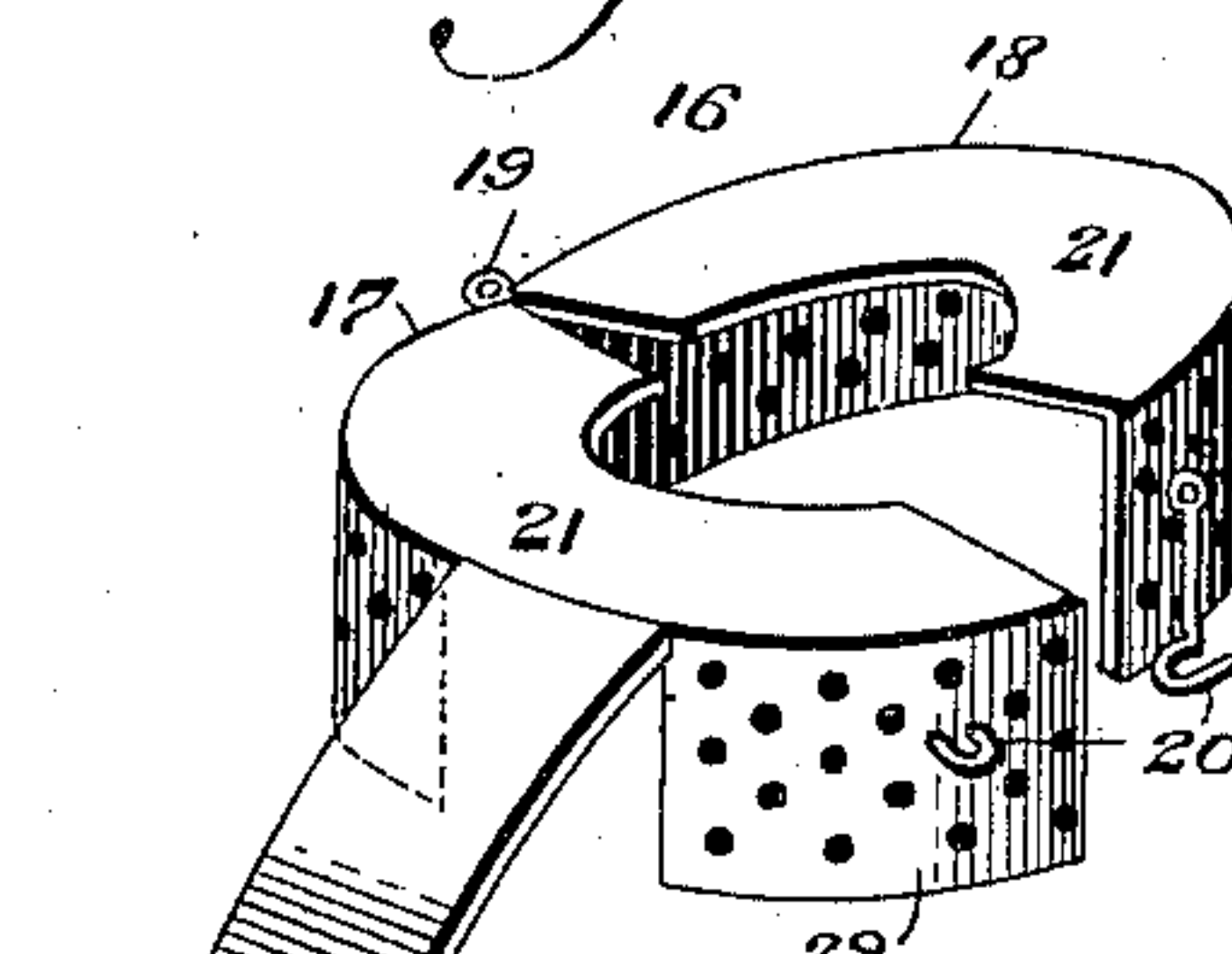


Fig. 9.

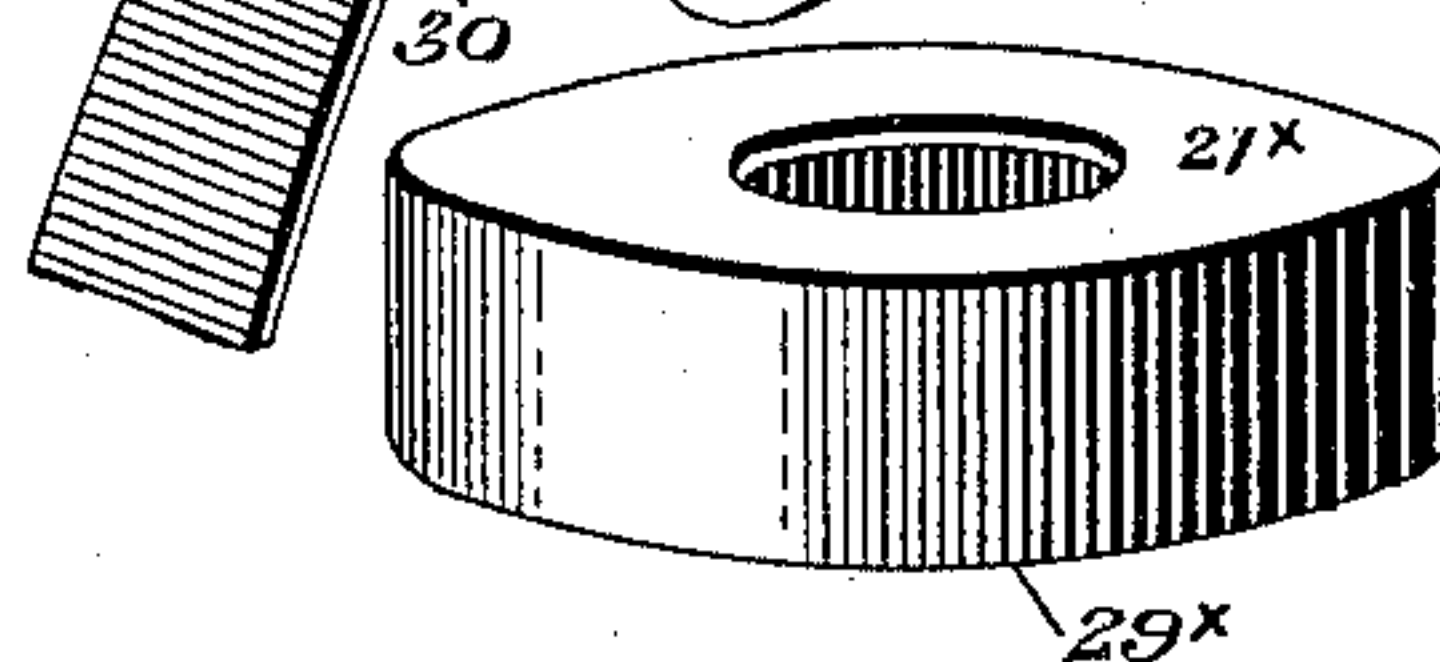


Fig. 2.

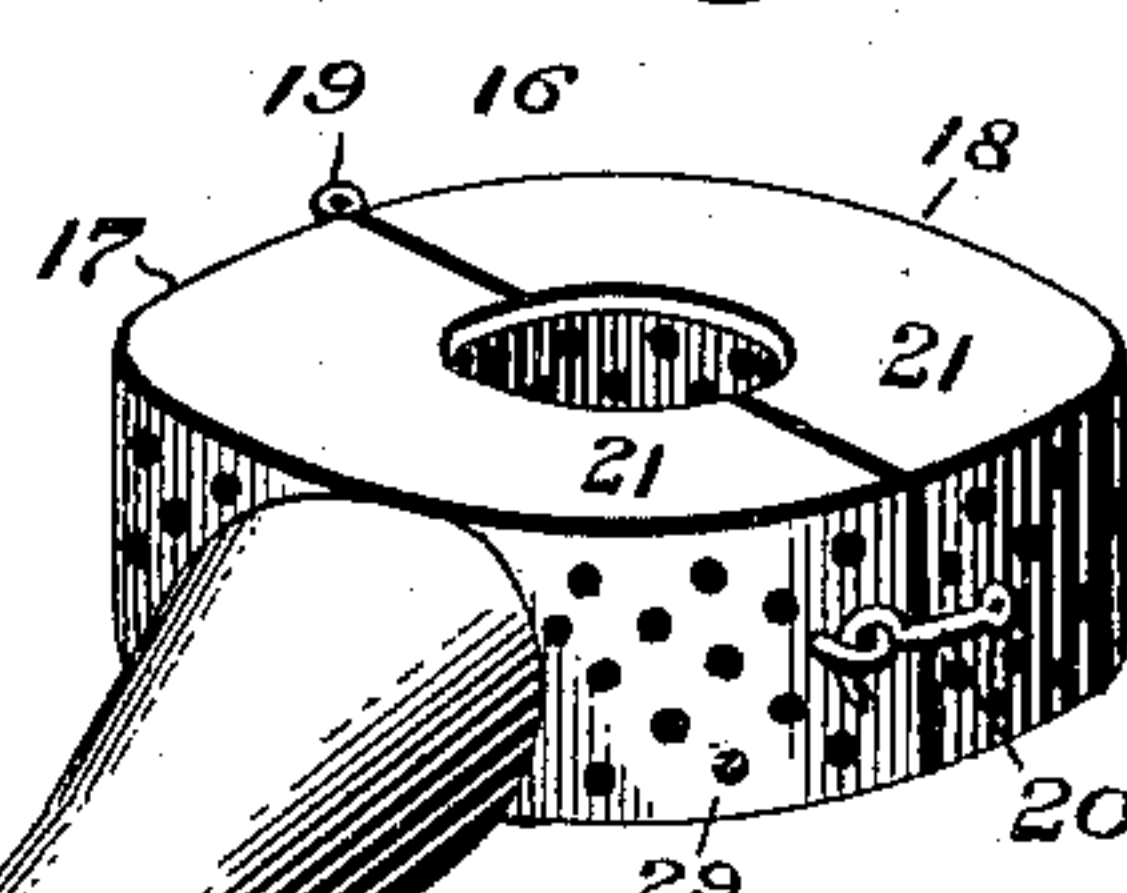


Fig. 4.

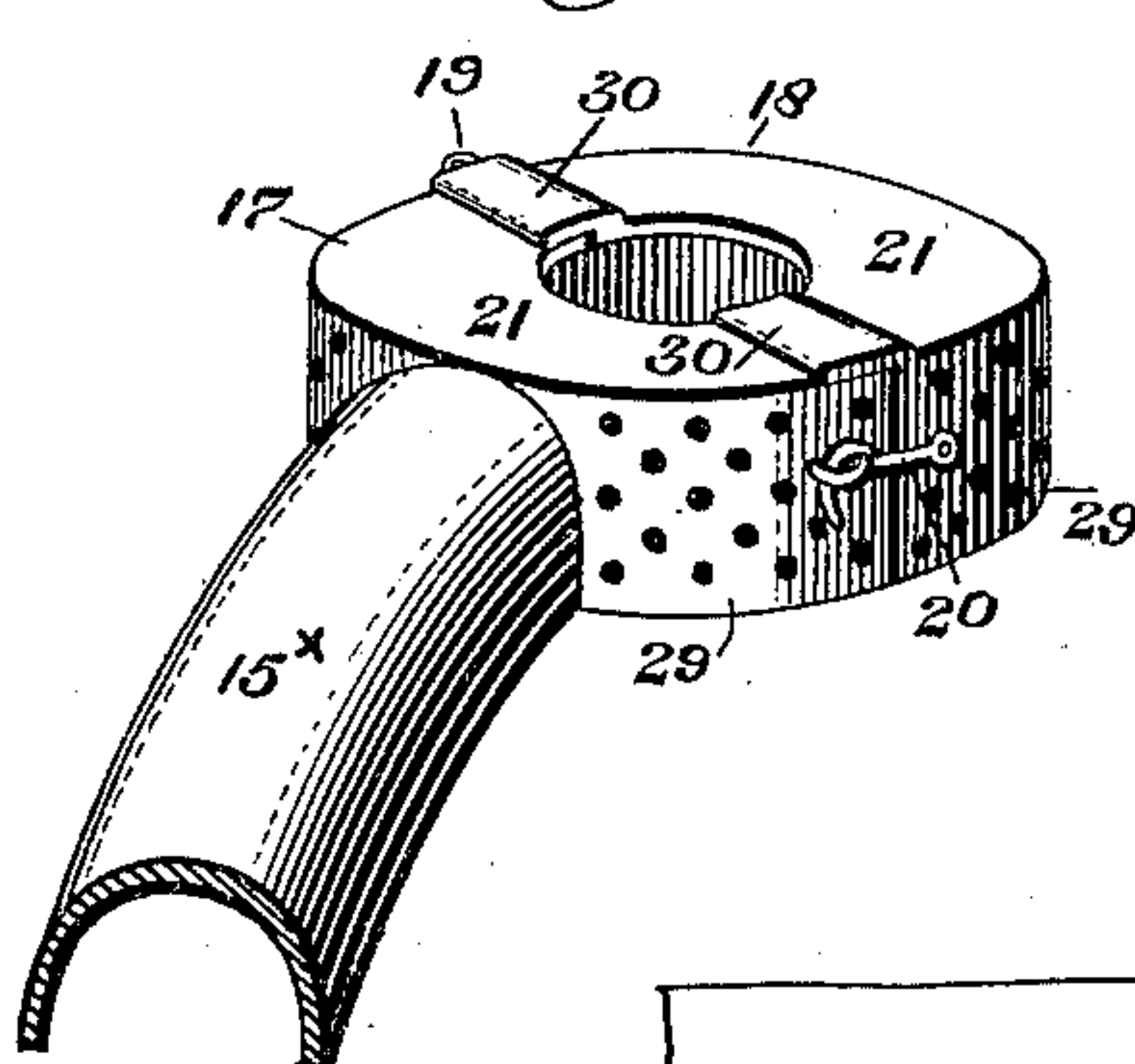
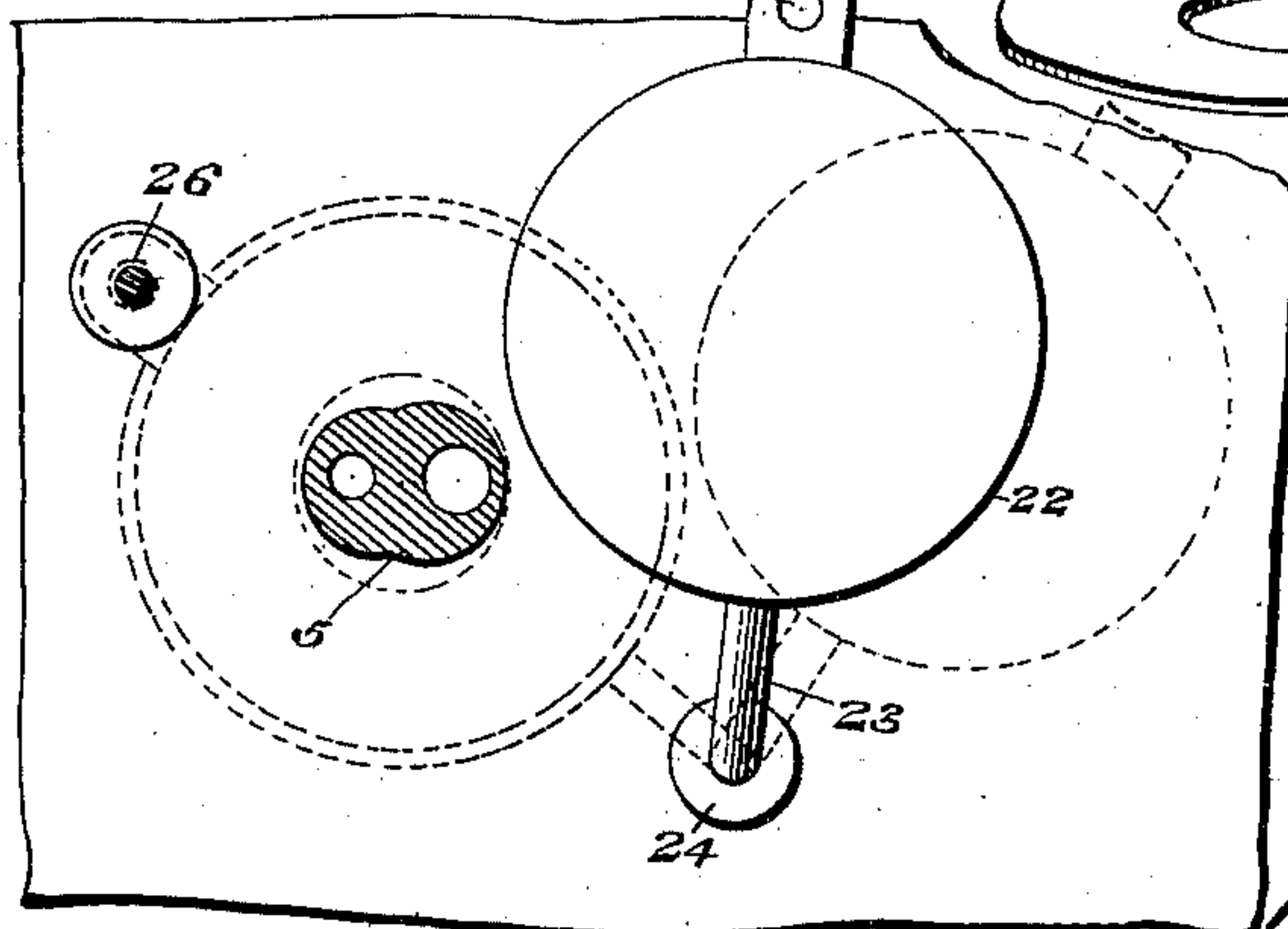


Fig. 7.



Fig. 8.



Witnesses

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HARPER F. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

BURNER.

SPECIFICATION forming part of Letters Patent No. 628,995, dated July 18, 1899.

Application filed March 30, 1899. Serial No. 711,066. (No model.)

To all whom it may concern:

Be it known that I, HARPER F. SMITH, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Burners, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to a burner in which a suitable hydrocarbon fluid is employed; and it consists of novel means for protecting the mantle thereof during the act of cleaning, the protector employed being a cylinder or shell having a closed top and open bottom and provided with suitable guiding and manipulating devices, whereby said protector can be placed around said mantle when it is desired to clean the lantern or the burner, means being also provided for enabling said protector to be removed from said mantle and to normally occupy a position below the burner and away therefrom.

It further consists of a novel construction of a conduit whereby I am enabled in the act of igniting the burner to direct the flame to the torch employed directly thereupon without endangering the mantle.

It further consists of a novel construction of a casing for said burner which when employed in conjunction with the conduit connected thereto further assists in protecting the mantle employed from the flame of the igniting-torch, the upper portion or top of said casing serving as a support for the mantle-protector when the latter is in elevated position and inclosing said mantle.

It further consists in making the casing surrounding the burner in sections and providing the same with a locking device, whereby the burner is rendered accessible for the purpose of inspection or repairs.

It further consists in the employment of a suitable guide through which the rod carrying the mantle-protector passes and in means for locking said rod so as to secure said protector in the desired position.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a side elevation of a burner embodying my invention, showing

also the mantle-protector and device for conducting flame to the burner and the lantern, the latter being in section. Fig. 2 represents in detached position a perspective view of a casing, showing the flame-conducting conduit therefor. Fig. 3 represents a perspective view of a casing similar to the one seen in Fig. 2, but showing a different form of conducting device. Fig. 4 represents a perspective view of another form of casing, showing the upper portion of the same provided with rabbeted or overlapping edges. Fig. 5 represents a perspective view, partly in section, of the mantle-protector and its adjuncts in detached position. Fig. 6 represents a perspective view of another form of mantle-protector and means for supporting the same. Fig. 7 represents a perspective view of a supporting-disk employed. Fig. 8 represents, on an enlarged scale, a sectional diagrammatic view on line *xx*, Fig. 1, showing the relative position of the protector and its adjuncts to the burner when in normal position. Fig. 9 represents in detached position a perspective view of a solid casing adapted to surround the burner.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a lantern which is provided with a base 2, the transparent sides 3, and the top portion 4, inclosing the burner 5.

6 designates a hydrocarbon-reservoir, which is suitably supported above the lantern in any suitable manner and has the pipe 7 depending therefrom, said pipe being provided with a fitting 8 and a drip 9, from which fitting leads the laterally-extending pipe 10 to the burner 5, the flow of fluid through said pipe 10 being controlled by a suitable valve, whose handle 11 depends through the base 2 of the lantern, the flow of vapor to the burner being controlled by means of the needle-valve 12, whose operating-needle 13 also projects through said base.

14 designates an opening in the base 2, through which an igniting-torch is adapted to be inserted, the flame therefrom being conducted upwardly adjacent to the conduit 15, which is suitably secured to the base 2 and terminates at its upper portion in the casing 16, the latter being made in sections 17 and

18, which are hinged, as at 19, and provided with a locking device 20. The top 21 of said sections is adapted to support the mantle-protector 22, the latter consisting of a cylinder or shell having a closed top and an open bottom and actuated by means of a rod 23, which is attached thereto and passes through the guide 24, which is secured to the base 2 in any suitable manner and provided with a set-screw or other locking device 25.

26 designates a rod which is secured to the base 2 and is adapted to be engaged by the opening 27 in the lug or guide 28, wherefrom it will be seen that the mantle-protector is rigidly held in the desired position.

If desired, I may make the depending annular wall 29 either solid, as seen in Fig. 1, or perforated, as will be understood from Figs. 2, 3, and 4, and in place of the half-round conduit 15^x or tube 15 (seen in Figs. 2 and 4) I may employ a single flat strip 30, which is suitably secured to the base 2 of the lantern and serves to support the member 17 in the same manner as does the conduit 15^x or tube 15, said member 17 supporting the member 18, as is evident. In Fig. 4 the abutting edges of the top 21 are shown as being rabbeted or provided with an overlapping member 30, which expedient may be applied to the casings seen in Figs. 2 and 3 if desired.

In Fig. 6 I have shown another form of mantle-protector 31 as provided with a tubular portion 32, which is adapted to engage the upright strip 33, which is secured to the base 2 of the lantern, said protector 31 being manipulated in any suitable manner.

In Fig. 7 I have shown the device seen in Figs. 2, 3, and 4 as provided with a disk or plate 33, which latter may be supported upon the guide 24 or pipe 10 or other desired point, if desired, the burner 5 passing through the opening 34, as is evident.

In Fig. 9 I have shown the structure seen in Figs. 2, 3, and 4 as made solid, the same having the solid top 21^x and the solid annular depending wall 29^x, the opening in said top being adapted to engage the burner.

The operation is as follows: The parts normally appear as seen in Fig. 1. When it is desired to light the burner, the lighting-torch is inserted in the opening 14 and placed in proximity to the conduit 15^x, the tube 15, or the strip 30, whereupon the flame will be instantly directed to the proper portion of the burner and will primarily heat the same to a sufficient extent to volatilize the hydrocarbon, the valves 11 and 12 being next opened, as is evident.

Either the conducting-strip 30 or the conduits 15^x or tube 15 may be employed, as may be expedient, and it will of course be evident that other forms of conducting devices may be used without departing from the spirit of my invention.

It will of course be apparent that when the tube 15 is employed, as seen in Fig. 2, the opening through the base 2 must be located

so as to permit the flame to have access to the interior of said tube.

The mantle-protector 22 normally appears in the position seen in Fig. 1, and when it is desired to clean the interior of the lantern the locking device 25 is loosened and the rod 23 is turned, whereupon said protector assumes the position seen in dotted lines at the lower right-hand portion of Fig. 1, after which the rod 23 and the mantle-protector are raised until the opening in the lug 27 is in alignment with the rod 26. The protector 22 is then lowered until it assumes the dotted position surrounding the mantle, (seen in Fig. 1,) whereupon it will be evident that the interior of the lantern or the burner can be readily cleaned without injury to the mantle. It will thus be seen that by the provision of the conducting strip or conduit which leads to the casing 16 and the mantle-protector 22 I provide means for initially heating the burner without injury to the mantle and also means for conducting the heat from the igniting-torch directly to the burner, and I further provide a convenient means for protecting the mantle when it is desired to clean the lantern or the burner, said protecting device being located so as to be normally out of the way of the burner.

In Figs. 7 and 9 the protecting-plates may be used as drawn without the flame-directors 15, 15^x, or 30 being attached thereto, and the lighting-torch will then be applied to the burner directly beneath the plate.

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

1. The combination of a burner, a mantle therefor, a plate supported below the burner and a conducting device leading downwardly from said plate for enabling the heat or flame from the igniting-torch to be conducted directly to said burner.

2. The combination of a burner, a mantle therefor, and a casing located in proximity to said burner said casing being made in sections and provided with a conducting-strip leading thereto.

3. The combination with a lantern of a burner supported therein, a mantle therefor, a plate located below said mantle, a guide suitably supported, a rod passing through said guide, a mantle-protector attached to said rod, and a locking device for the latter, said mantle-protector being adapted to be turned, elevated and lowered so as to inclose said mantle when it is desired to protect the same.

4. In a lantern, a base therefor, an upright guide secured to said base, a rod passing through said guide, a mantle-protector attached to said rod, a guide on said protector, a rod adapted to be engaged by said guide and a support for said protector when in operative position and surrounding said mantle.

5. The combination of a burner, a mantle therefor, a casing surrounding said burner and consisting of a top plate having depend-

ing walls, the sections of said casing being hinged together and provided with locking devices and a conducting-strip leading to said casing.

5 6. The combination of a burner, a mantle therefor, a plate supported adjacent to said burner, a mantle-protector consisting of a shell having a closed top and open bottom, a rod attached to said shell, an upright guide
10 secured to said base, a locking device for said guide, a mantle-protector attached to said rod and a guiding device for said protector, said mantle-protector being adapted to be supported upon said plate when in operative
15 position.

7. In a lantern, a base having an opening therein, a burner supported above said base, and a conducting device leading downwardly and located in proximity to said burner, the
20 lower portion of said device being located adjacent said opening whereby the heater flame from the igniting-torch can be conducted directly to said burner.

8. The combination of a burner suitably
25 supported, a base below said burner, and a conducting device extending from said base at a point adjacent to said opening to said burner for enabling the flame from the igniting-torch to be conducted directly to said
30 burner.

9. The combination of a burner, a casing

adjacent the latter for the purpose of retaining flame in proximity to said burner a base below the latter and a conducting-strip leading downwardly from said casing, to a point
35 adjacent an opening in said base, whereby the flame from an igniting-torch can be directed through said opening along said strip to said burner.

10. The combination of a burner, a mantle
40 therefor, a mantle-protector, a rod to which said protector is attached, said rod being suitably guided and supported, a plate or support located in proximity to said burner and adapted to sustain said protector, the
45 latter normally resting below said burner and being adapted to be turned, elevated and lowered so as to inclose said mantle.

11. The combination of a burner, a casing
50 adjacent to the latter, for the purpose of retaining flame in proximity to said burner, the walls of said casing being perforated, and a device for conducting flame to the burner leading downwardly from the latter, to a base
55 below said burner, said base having an opening therein adjacent the lower terminus of said device.

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Witnesses:

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