

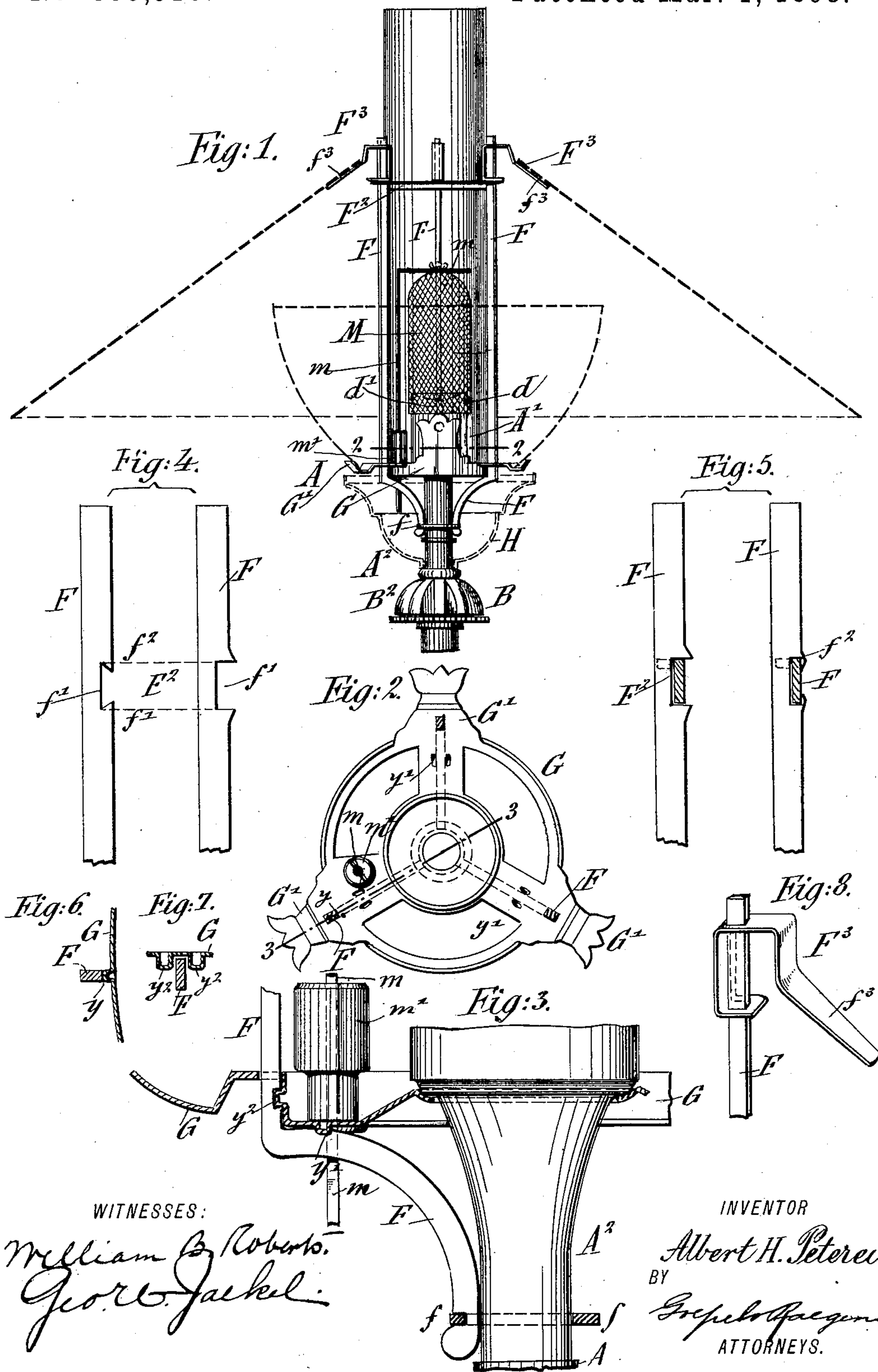
(No Model.)

3 Sheets—Sheet 1.

A. H. PETEREIT.
BURNER FOR INCANDESCENT GAS LIGHTS.

No. 599,915.

Patented Mar. 1, 1898.



(No Model.)

3 Sheets—Sheet 2.

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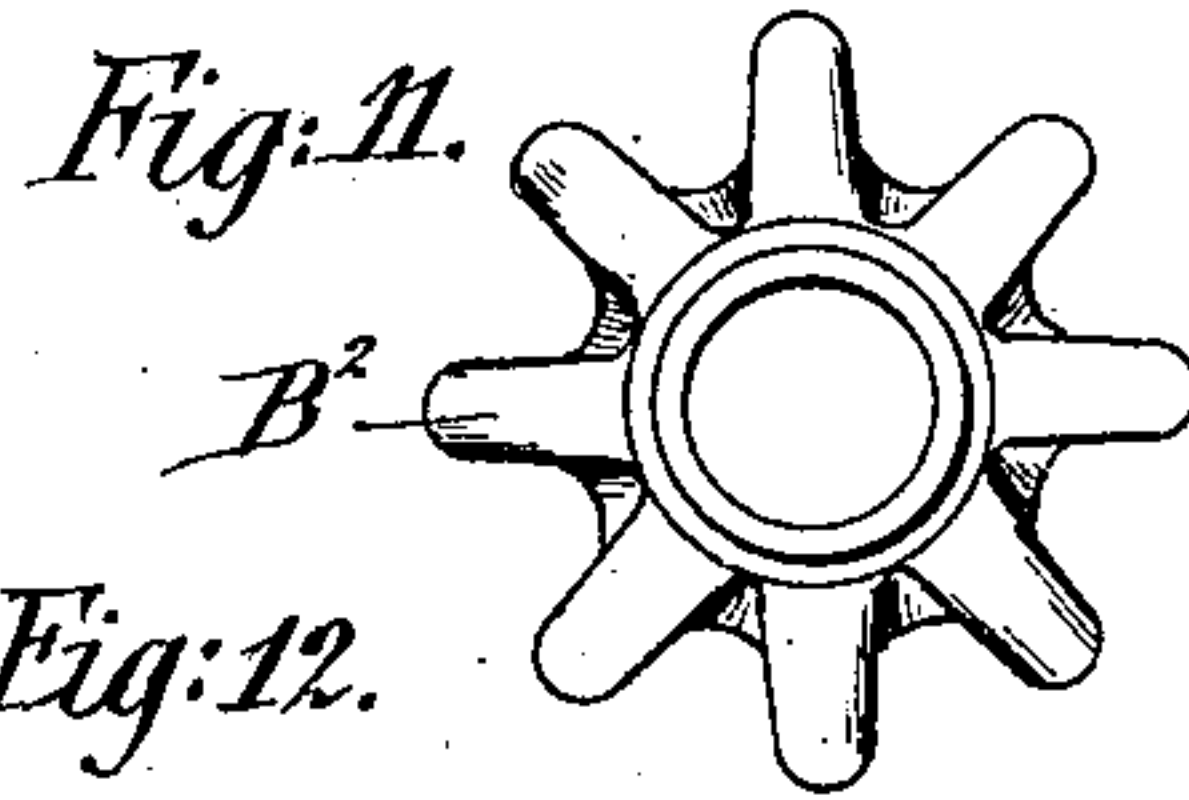
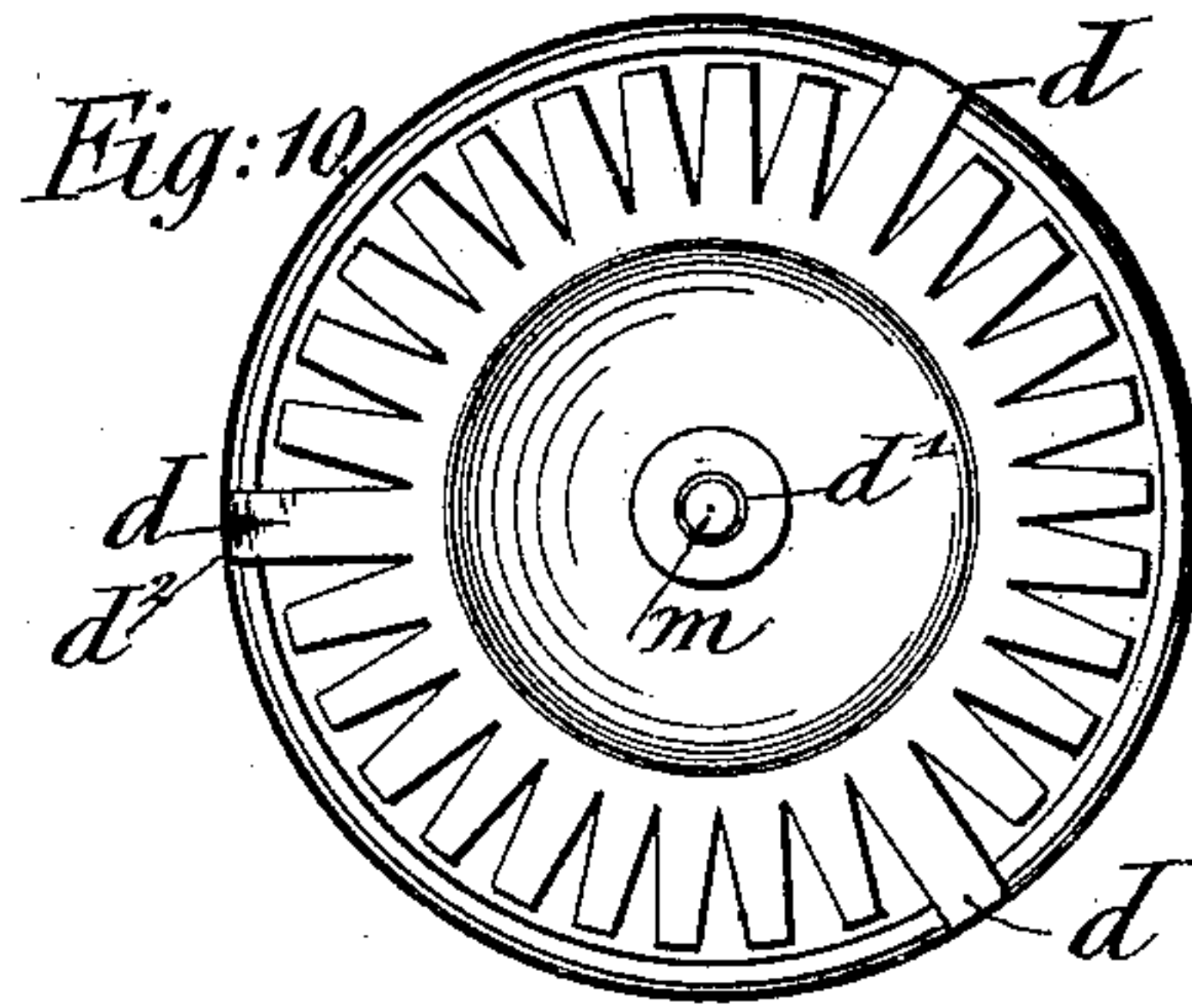
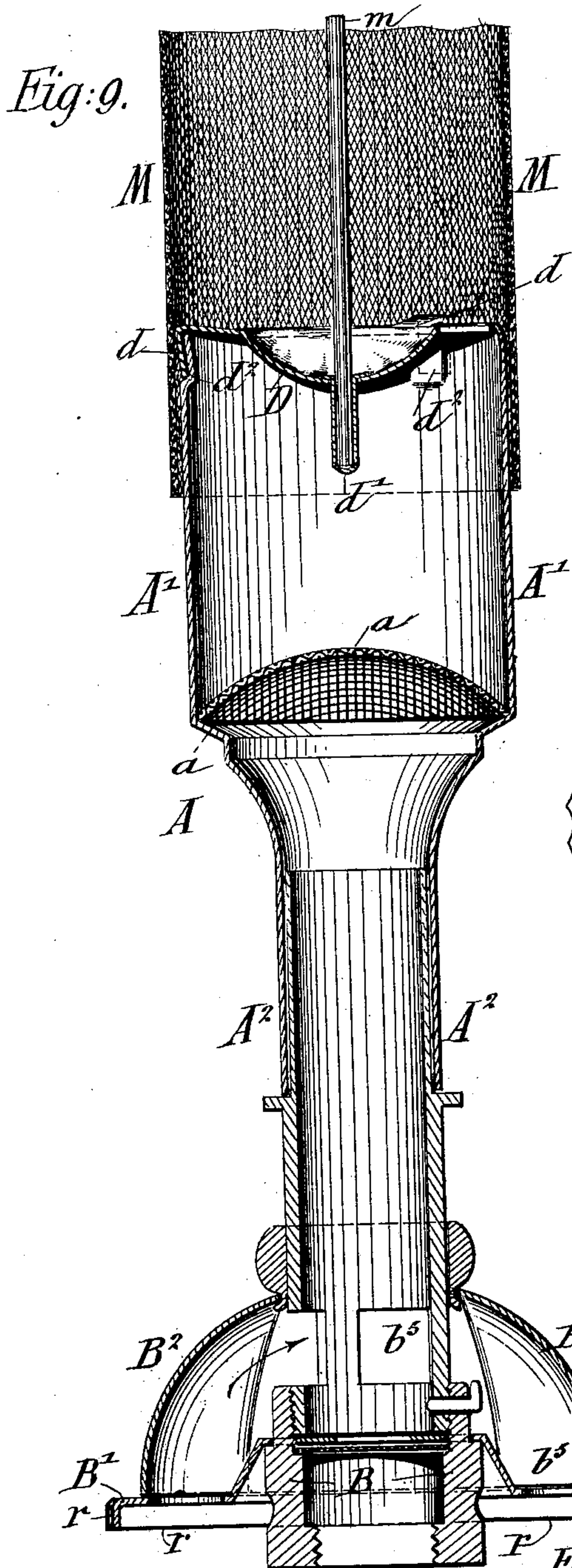


Fig. 12.

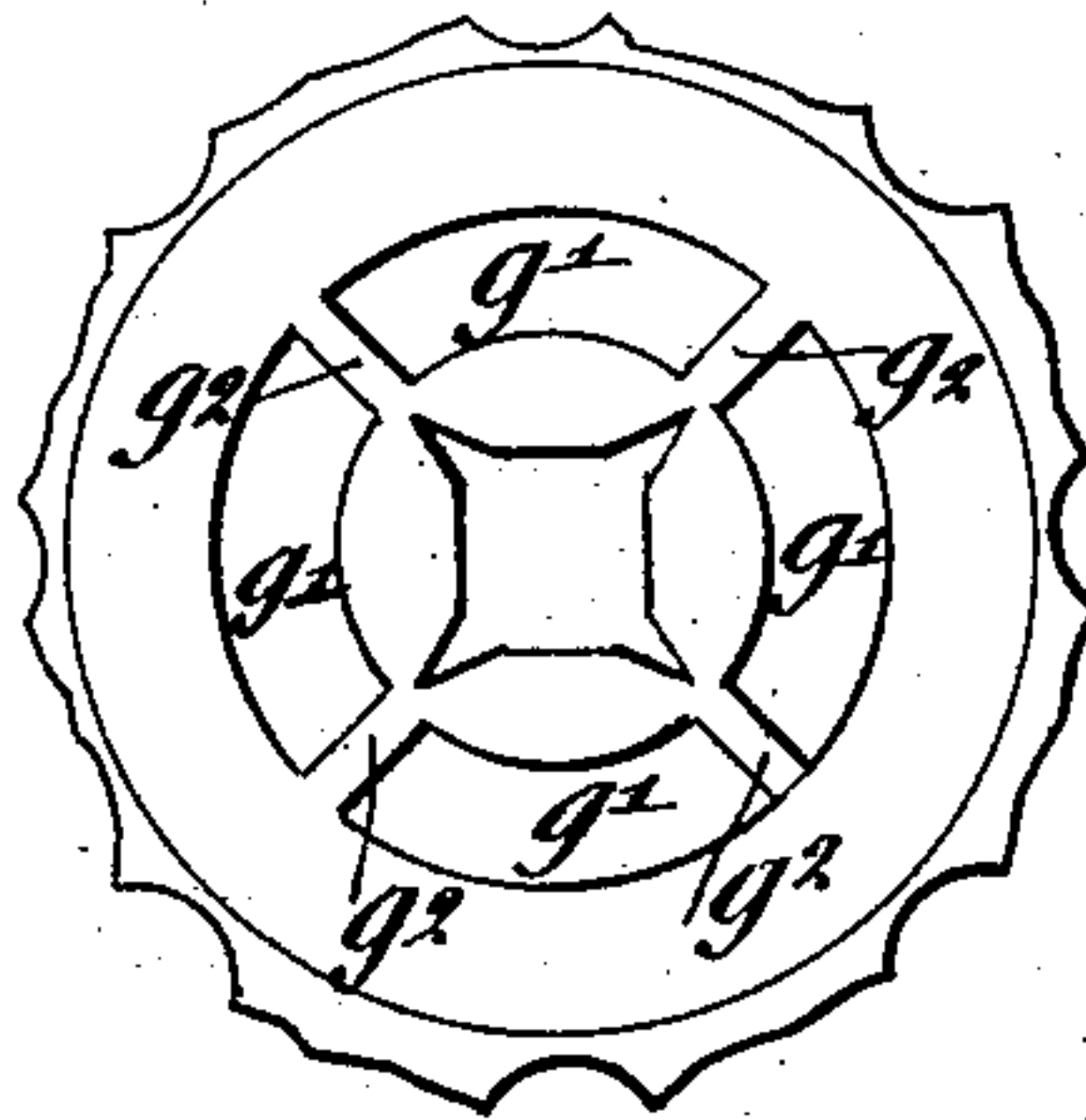


Fig. 13.

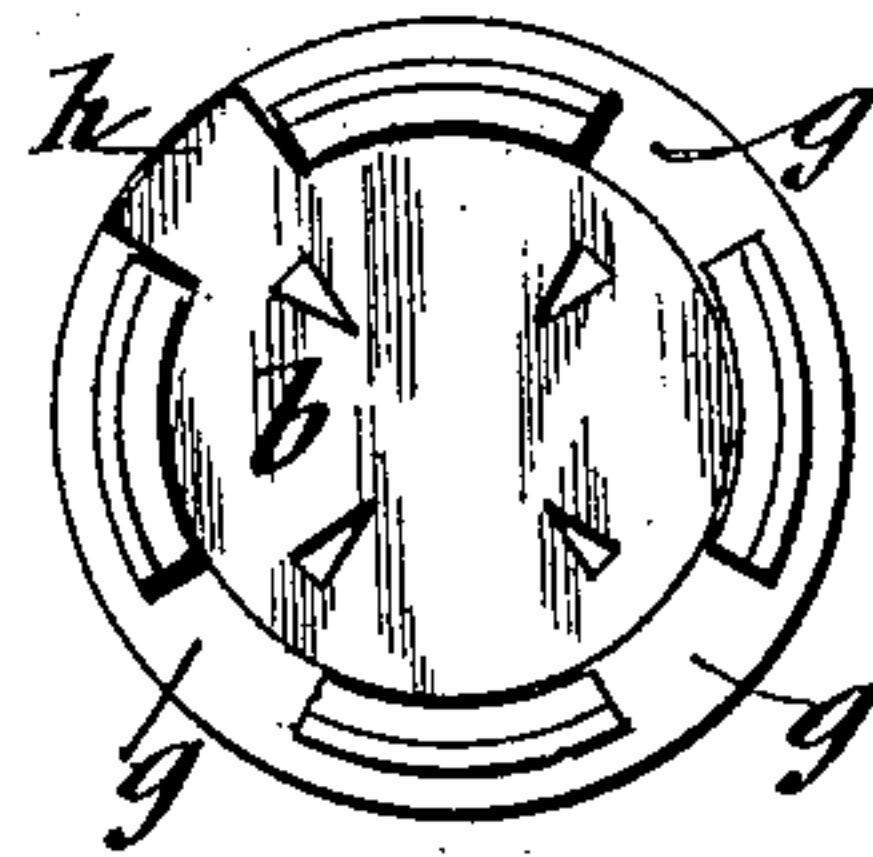


Fig. 14.

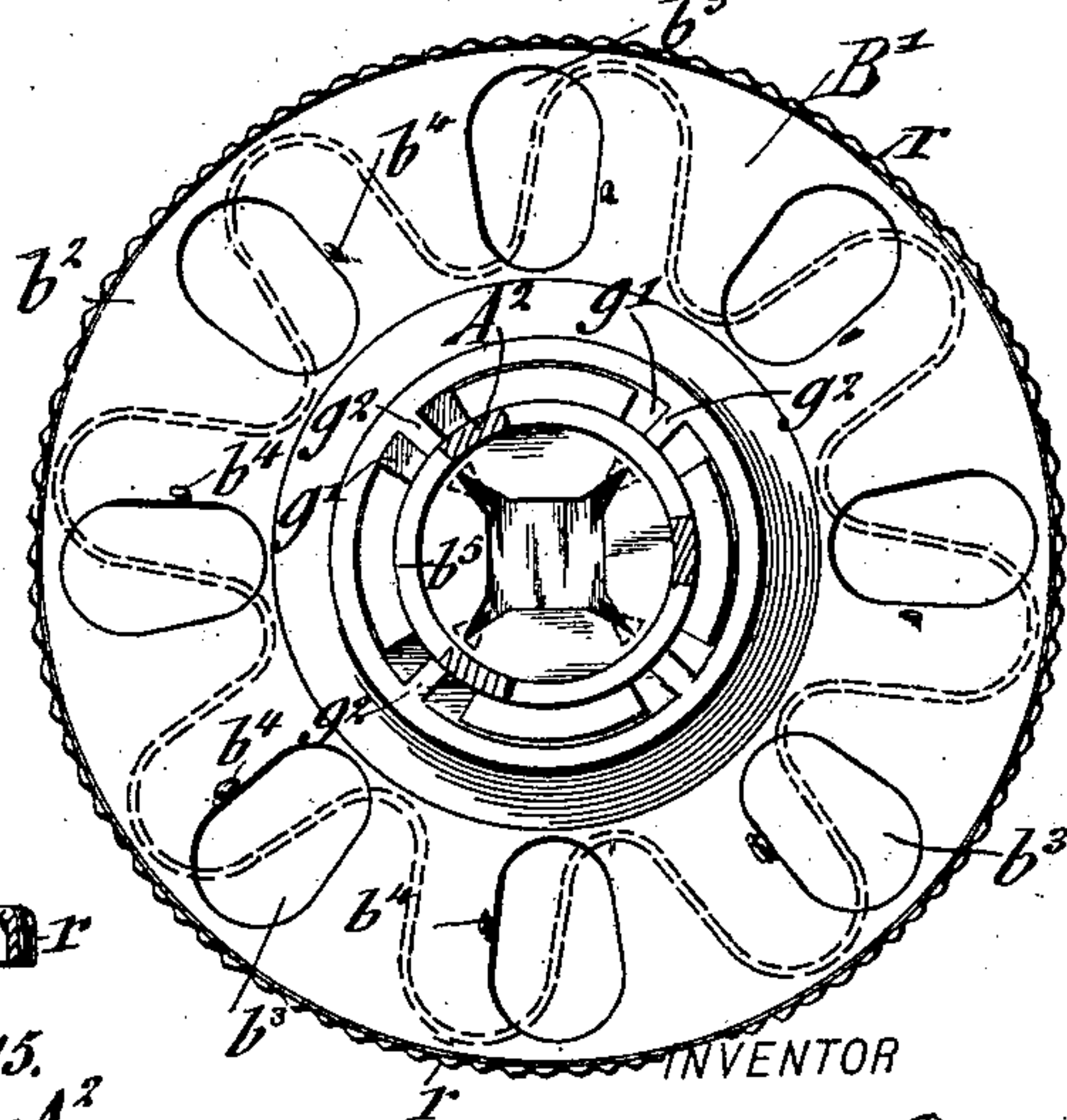
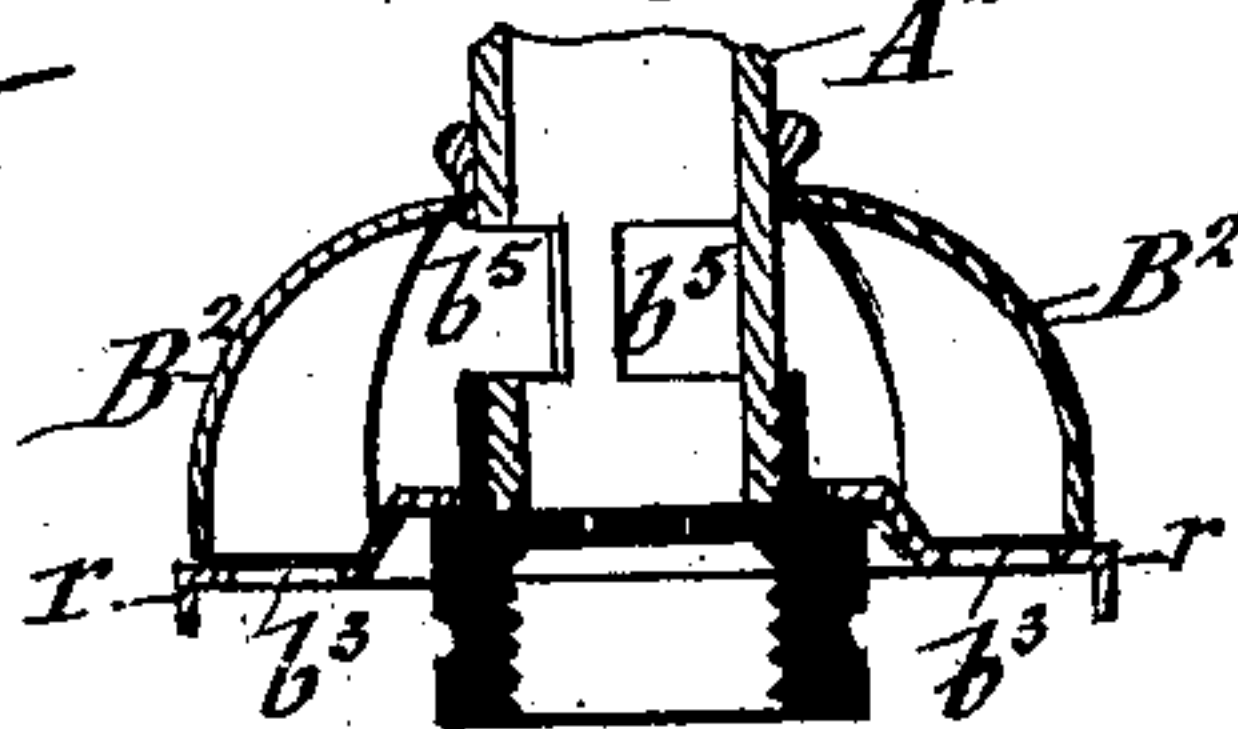


Fig. 15.



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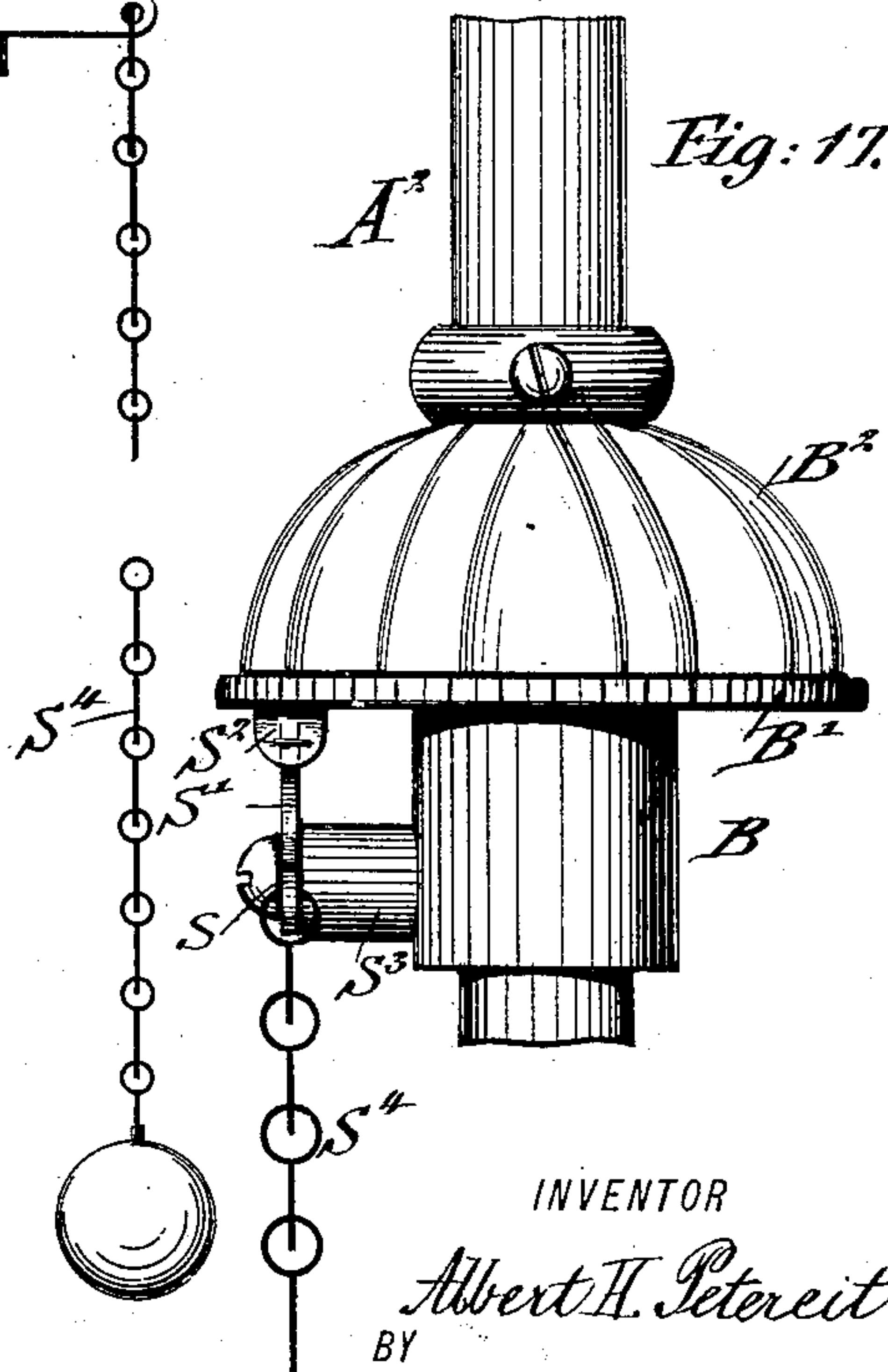
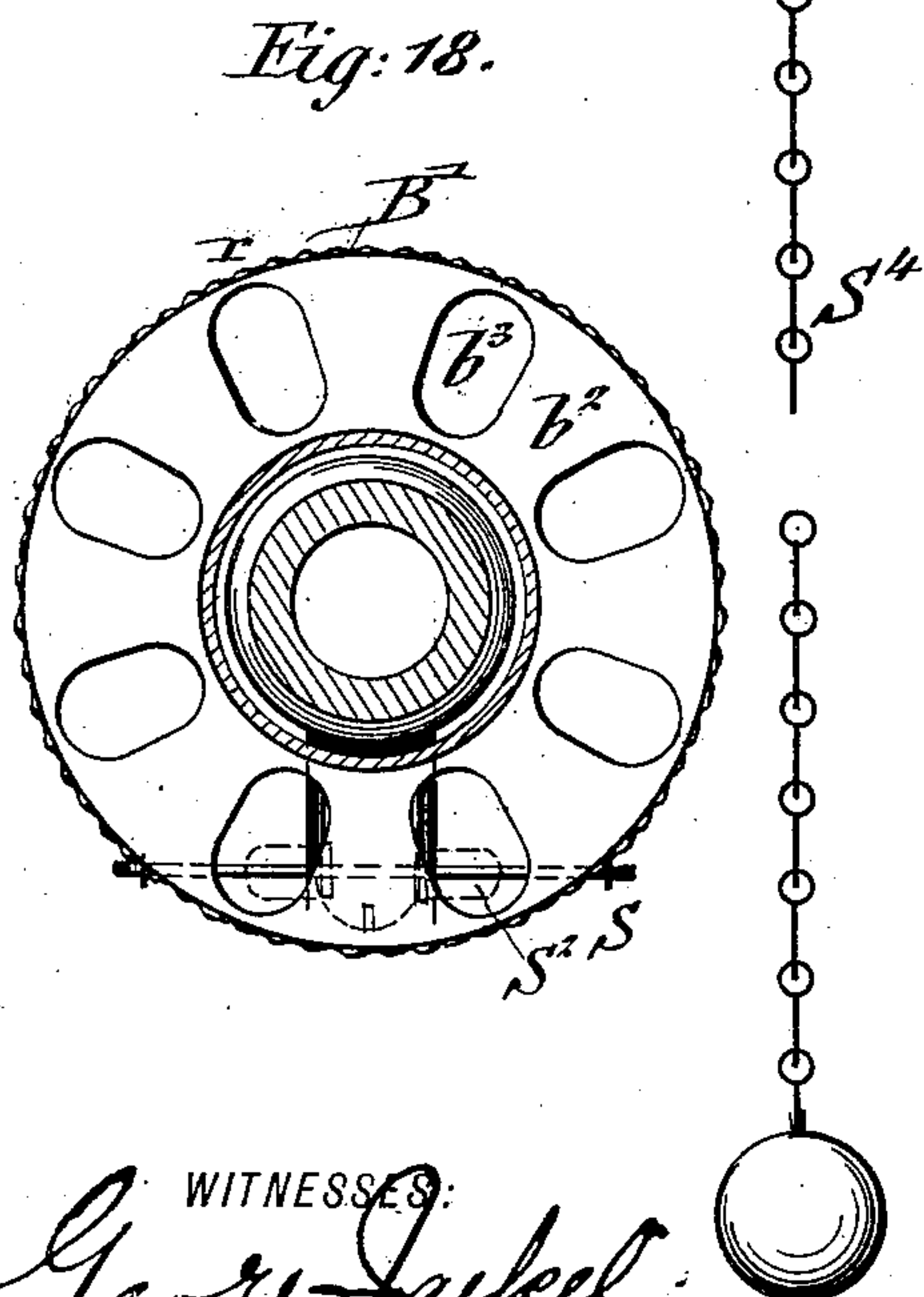
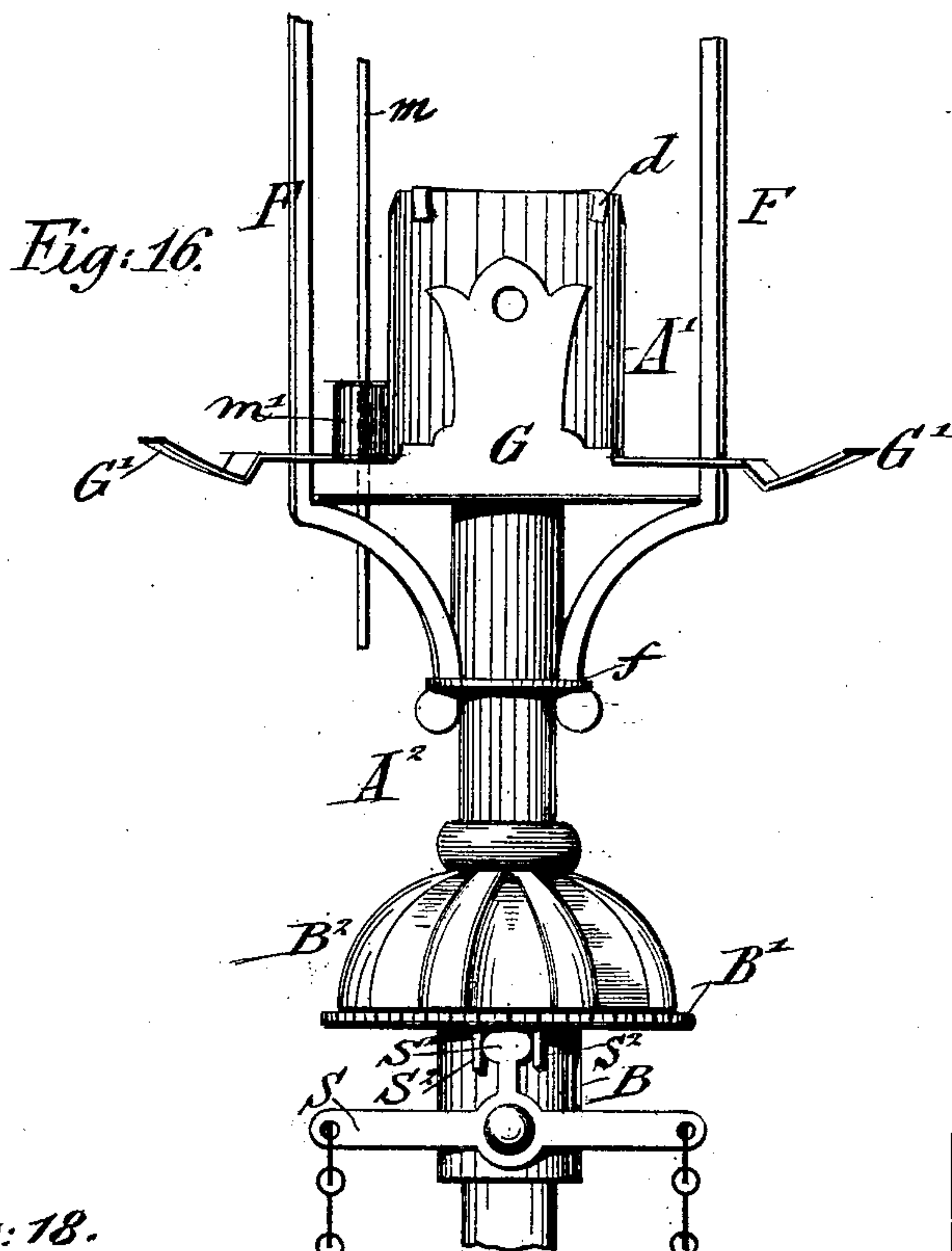
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

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BURNER FOR INCANDESCENT GAS-LIGHTS.

SPECIFICATION forming part of Letters Patent No. 599,915, dated March 1, 1898.

Application filed June 11, 1897. Serial No. 640,385. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. PETEREIT, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Burners for Incandescent Gas-Lights, of which the following is a specification.

This invention relates to an improved burner for incandescent gas-lights in which all the parts can be so constructed that they can be readily assembled, being formed of integral pieces of metal, and in which the burner is constructed in such a manner that a uniform supply of gas and air to the mantle is obtained whatever be the pressure of the gas; and the invention consists of an incandescent gas-burner in which the burner proper is provided with means for regulating simultaneously the supply of gas and air, so that a uniform proportion of the gas and air mixture is supplied to the incandescent mantle for the various gas-pressures.

The invention consists, further, of the peculiar construction of the gallery for supporting the chimney and cup and of the novel construction of the burner-top, which also serves for the support of the mantle-supporting rod.

The invention consists, further, of the special construction of the chimney and shade supporting uprights, and, lastly, of some details of construction which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved incandescent gas-burner. Fig. 2 is a horizontal section of the same on line 2 2, Fig. 1, showing a plan view of the chimney and cup supporting gallery. Fig. 3 is a vertical transverse section of said gallery, drawn on a larger scale, on line 3 3, Fig. 2. Figs. 4, 5, 6, and 7 are details showing the connection of the uprights with the top ring, gallery, and burner. Fig. 8 is a perspective view of the shade-supporting clip. Fig. 9 is a vertical central section through the burner portion proper, drawn on a larger scale. Fig. 10 is a top view of the burner proper. Figs. 11, 12, and 13 are details of the valve for controlling the supply of gas and air to the burner. Fig. 14 is a horizontal section of the diaphragm by which

a uniform supply of gas and air to the burner is circulated. Fig. 15 is a modification showing the gas-supply as fixed, the air-supply only being regulated. Fig. 16 is an elevation showing a modified form of my construction. Fig. 17 is a side view of the lower part of Fig. 16; and Fig. 18 is a top view of the valve, showing details of the modification.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the burner portion proper of my improved incandescent gas-light, which is provided at its upper end with an enlarged cylindrical mixing-chamber A' and at its lower end with a valve B for supplying the required proportionate quantity of gas and air to the mixing-chamber of the burner. A tubular shank A² is arranged between the mixing-chamber and the valve B, the upper end of the tubular shank being covered by means of a convex diaphragm *a* of wire-gauze, through which air and gas supplied to the tubular shank are compelled to pass until they are thoroughly mixed on their way to the mixing-chamber A'. The tubular shank A² is formed of two sections, the lower shouldered section supporting the valve B, while the upper section is formed at the lower end of the mixing-chamber, as shown clearly in Fig. 9. The upper end of the mixing-chamber is closed by a diaphragm D, that is provided with tapering openings near its circumference, said diaphragm being applied by means of radial downwardly-bent strips *d* to the upper end of the mixing-chamber. The upper end of the mixing-chamber is provided with exterior depressions *d*², into which the ends of the downwardly-bent retaining-strips *d* are sprung, so that the diaphragm D is firmly held in position at the upper end of the mixing-chamber, as shown clearly in Figs. 9 and 10. The central portion of the diaphragm D is made concave and may be provided at its center with a downwardly-extending socket *d'*, that serves as a support for the rod *m*, on which the incandescent mantle M is supported. Instead of this construction I prefer to secure to the upper side of the gallery G a stud *m'* for the mantle-supporting rod *m*. This stud is slitted nearly its entire length and is grooved near its lower end, thus affording a spring clamping action for hold-

ing the rod, whereby the rod may be easily removed when desired.

The valve B is constructed of a gas-supply tube, which is screwed to the lower end of the tubular shank A², and of a stationary diaphragm b, that is provided with small inlet-openings. This gas-supply tube is provided with a number of vertical slots g, into one of which a tongue h, formed on the periphery of the stationary diaphragm b, extends, whereby said diaphragm b is locked to the gas-supply tube, as shown in Fig. 13.

Above the diaphragm b is arranged a main diaphragm B', the central portion of which is provided with openings corresponding to the gas-supply openings, and the outer portion or rim b² of which is provided with a number of elongated openings b³, that open or close more or less a number of curved radial air-tubes B², that are for communication with the openings b⁵ in the lower part of the tubular shank A², as shown in Fig. 9. The movable web of the main diaphragm B' is provided with a milled circumferential rim r, so that it can be readily taken hold of and adjusted into the required position, it being provided alongside of each opening b³ with small projections or teats b⁴, that abut against the lower edge of the air-tubes B² when the main diaphragm B' arrives in entirely open or entirely closed position. The main diaphragm B' is provided with an annular opening g' in its central portion, through which project the ends of the gas-supply tube formed by the vertical slots g. This opening is subdivided by a number of radial arms g², which fit loosely into the spaces formed by said vertical slots of the gas-supply tube, as shown in Fig. 12, whereby the main diaphragm B' is supported in close contact with the stationary diaphragm b. By the partial rotations of the central perforated web of the main diaphragm B' and the exterior perforated portion b² of the same the gas-inlet openings, as well as the air-inlet openings, are simultaneously opened or closed, so that the supply of gas and air to the burner is kept at the same proportion whatever be the gas-pressure, whereby a better and more effective light is obtained.

When the burners are placed on chandeliers too high to be easily reached, the valve may be operated by providing a three-armed lever S, which is pivoted to a projection S³ on the gas-tube. The lever S is provided with a vertical arm S', located in the center thereof, which arm operates between two ears S², formed on the underside of the diaphragm B'. A suitable weighted chain is attached to each end of the lever S, by which the valve may be operated in the ordinary well-known manner.

To the tubular shank A² of the burner proper, below the mixing-chamber A', is applied a gallery G, which is made in one integral piece with its cup-supporting brackets C', being preferably stamped from one piece

of sheet metal and provided with the required openings y, nicks y', and projections y², so as to form connection with the shade-supporting uprights F. The lower ends of the upright rods F are attached by a ring f to the shank of the burner, as shown in Fig. 3. The details of connection between the uprights F and the gallery G are clearly shown in Figs. 6 and 7 and permit the ready connecting of these parts when assembling the different parts of the lamp. The uprights F are provided at some distance from their upper ends with recesses f' and inwardly-projecting ribs f², that retain a connecting-ring F², said ribs passing over the inner surface of the ring F² and holding it firmly in position on the uprights, as shown clearly in Fig. 5. To the upper ends of the uprights F are applied the shade-supporting clips F³, which are provided with oblong perforations in the upper clip portions and inclined outwardly-extending arms f³, as shown in detail in Fig. 8, said clips being slipped over the upper ends of the uprights F until they are supported on the shoulder formed in the same.

In order to prevent side drafts from striking the air-mixing chamber and rendering the light unsteady, a draft-guard H, Fig. 1, may be sleeved upon the tubular shank A². This draft-guard is substantially cup-shaped and is stamped out of thin sheet metal and extends upwardly, encompassing the lower portion of the air-mixing chamber A'.

The modification shown in Fig. 15 differs from the principal construction in forming the gas-supply orifices in a transverse partition which is fixed or integral within the gas-supply tube near its upper end. The main diaphragm B' is sleeved upon the upper portion of the said gas-supply tube and rests upon a ledge formed thereon, so as to revolve freely about the same. In this construction the separate stationary diaphragm b (shown in Fig. 13) is not required. The air-supply only is regulated, and this is accomplished in the same manner and by the same construction as above described in the principal form.

My improved incandescent gas-lamp has many advantages, among which may be mentioned the quick and convenient assembling of the parts, owing to the fact that the various parts are easily detachable and by reason of their construction can be quickly assembled and locked in position. The novel construction of the valve permits the perfect regulation of the supply of gas and air to the burner proper regardless of the greater or smaller gas-pressure, so that the proper proportions of air and gas are automatically obtained and the supply both of the air and gas simultaneously regulated by the turning of one valve-diaphragm. The simple construction by which the mantle is supported in the burner-top permits the ready removal of the mandrel for the purposes of cleaning, repairing, or renewing the same. The various parts are produced by special dies in such a manner that

they can be easily and quickly assembled with little hand labor, thus materially reducing the cost of manufacture.

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

1. A burner for incandescent gas-lights, composed of a mixing-chamber, a burner-top having outlet-openings, a tubular shank below the mixing-chamber and provided with air-openings, a regulating-valve at the lower end of the tubular shank, said regulating-valve being formed of a movable diaphragm provided with gas-openings and air-openings, a stationary diaphragm provided with gas-openings, and stationary air-tubes registering with the air-openings of the shank and those of the movable diaphragm, substantially as set forth.

2. In a burner for incandescent gas-lights, a gas and air regulating valve composed of a stationary diaphragm having gas-openings and located in the gas-tube, a movable diaphragm sleeved around said gas-tube and provided with an exterior part having air-openings, and stationary air tubes or channels registering with said exterior air-openings and communicating with openings in the burner-shank, substantially as set forth.

3. In a burner for incandescent gas-lights, a gas and air regulating valve composed of a stationary diaphragm having gas-openings, a movable diaphragm provided with openings registering with the gas-openings in the stationary diaphragm and provided with an exterior part having air-openings; and stationary air tubes or channels registering with exterior air-openings and communicating with openings in the burner-shank, substantially as set forth.

4. The combination, with a burner, of a gal-

lery applied to the upper part of the burner, shade-supporting uprights having integral, inwardly-curved lower ends extending downwardly upon the burner-shank, means for attaching said curved ends to the burner-shank, means for attaching the gallery to the uprights, and a connecting-ring for the upper ends of the uprights, substantially as set forth.

5. In a burner for incandescent lights, a gas and air regulating valve composed of a stationary diaphragm having gas-openings, a movable diaphragm provided with openings registering with the gas-openings of the stationary diaphragm and provided with an exterior part having air-openings, and stationary air tubes or channels registering with the exterior air-openings and communicating with openings in the burner-shank, depending ears formed on the movable diaphragm, a three-armed lever pivoted to the burner, one of said arms operating between the said ears, and operating-chains attached to the other arms of said lever, substantially as set forth.

6. In a burner for incandescent lights, a suitable base, a two-part tube the lower tube attached to the gas-tube and provided with air-openings, a regulating-valve sleeved about said lower tube, a mixing-chamber connected with the upper tube, a slotted diaphragm covering the top of said mixing-chamber, a gallery sleeved on the upper tube below the mixing-chamber, a mantle and a rod for supporting said mantle removably secured to said burner, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ALBERT H. PETEREIT.

Witnesses:

THOMAS M. ROWLETT,
EMIL F. GENNERT.