

G. SIEURIN.  
CHARGER FOR GAS PRODUCERS.

APPLICATION FILED JULY 14, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.

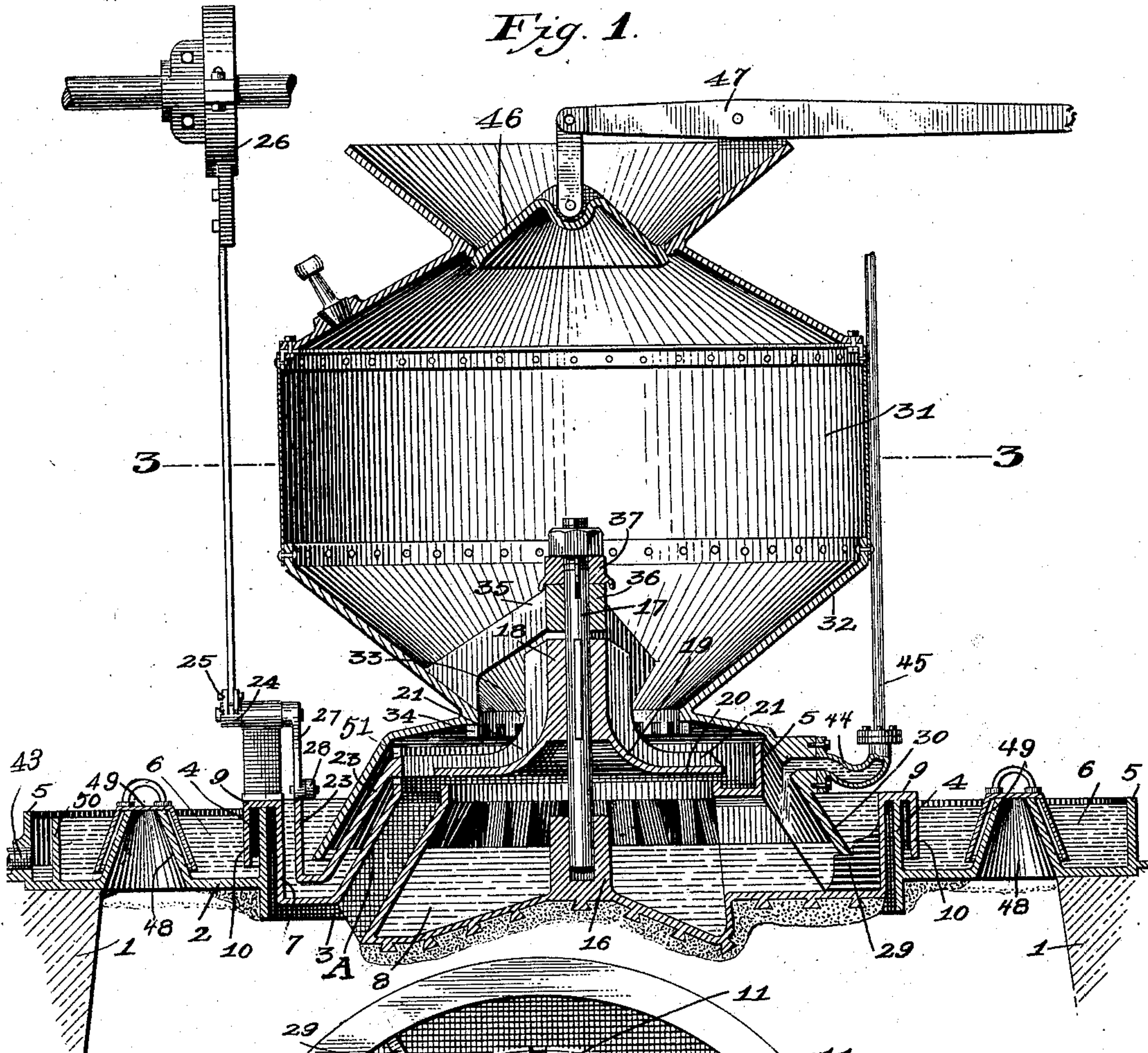
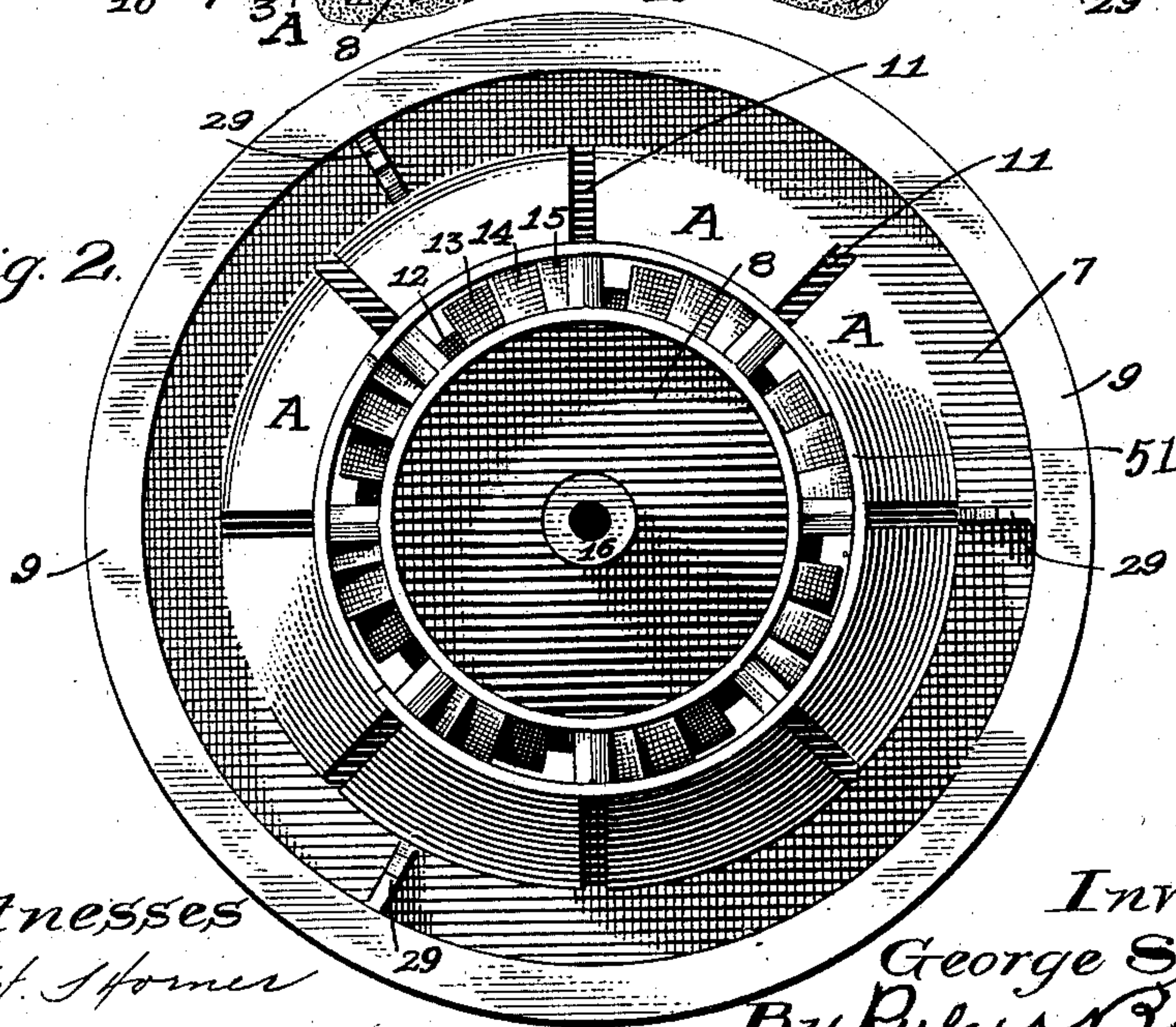


Fig. 2.



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4 SHEETS—SHEET 2.

Fig. 3.

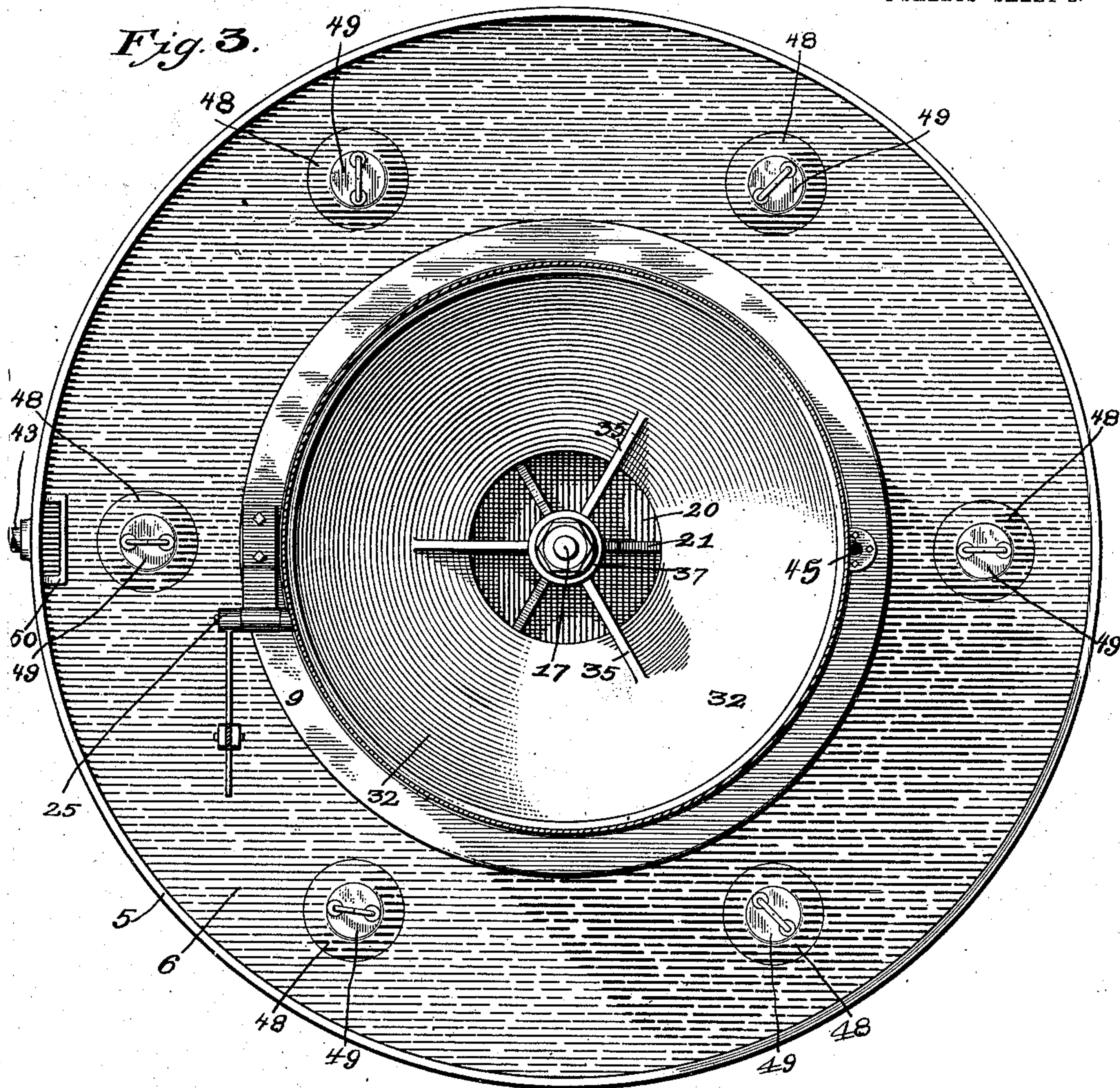
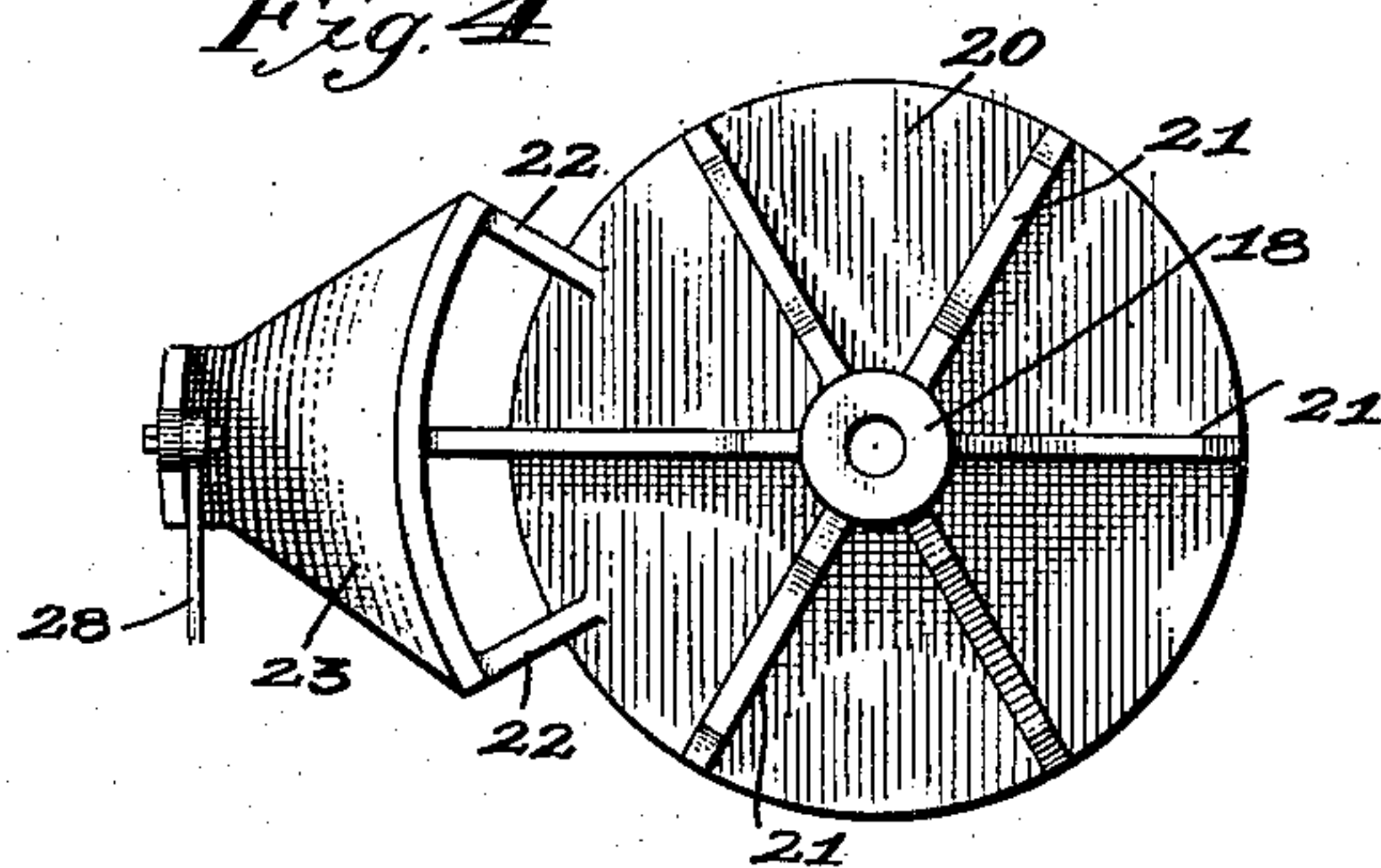


Fig. 4



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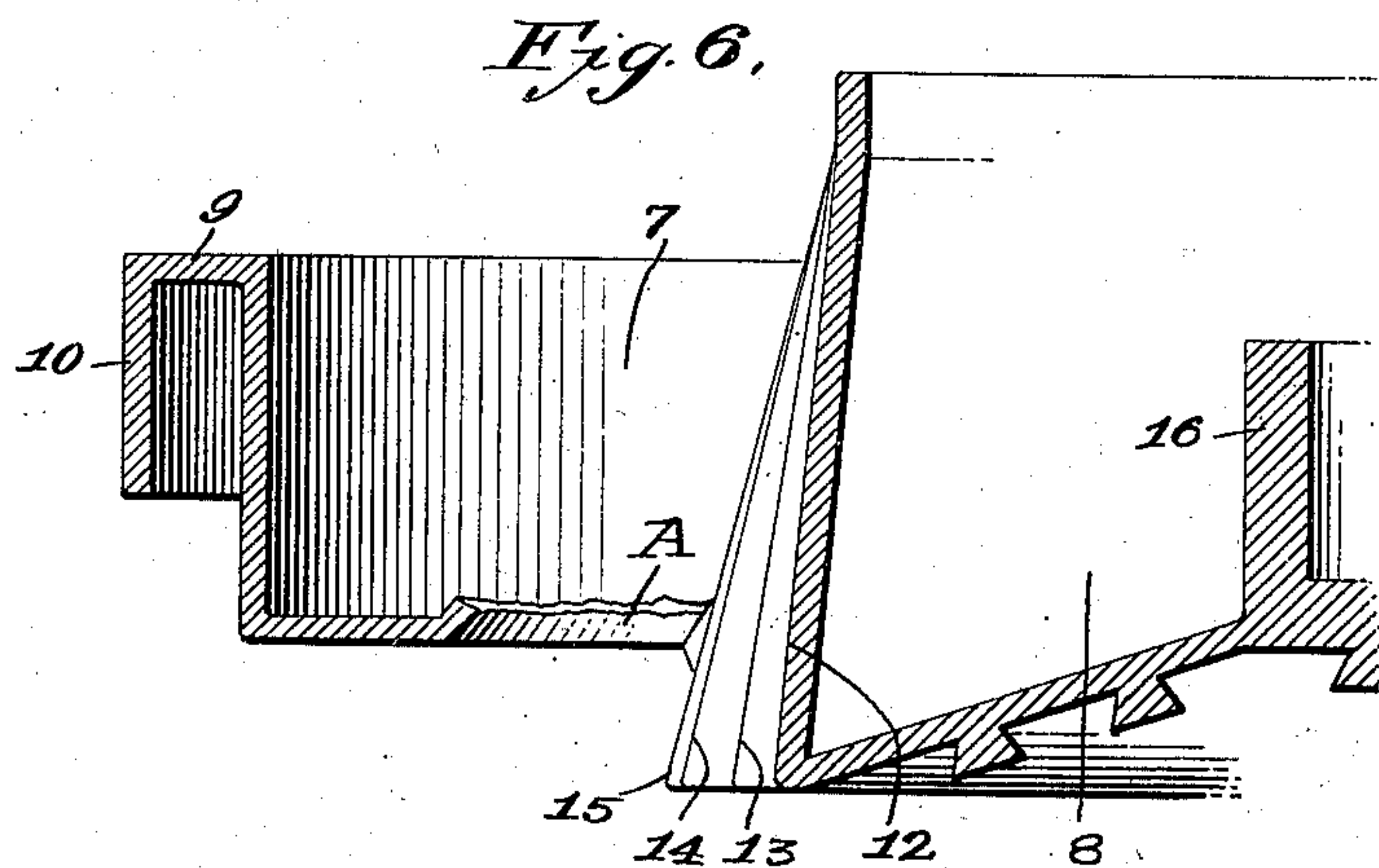
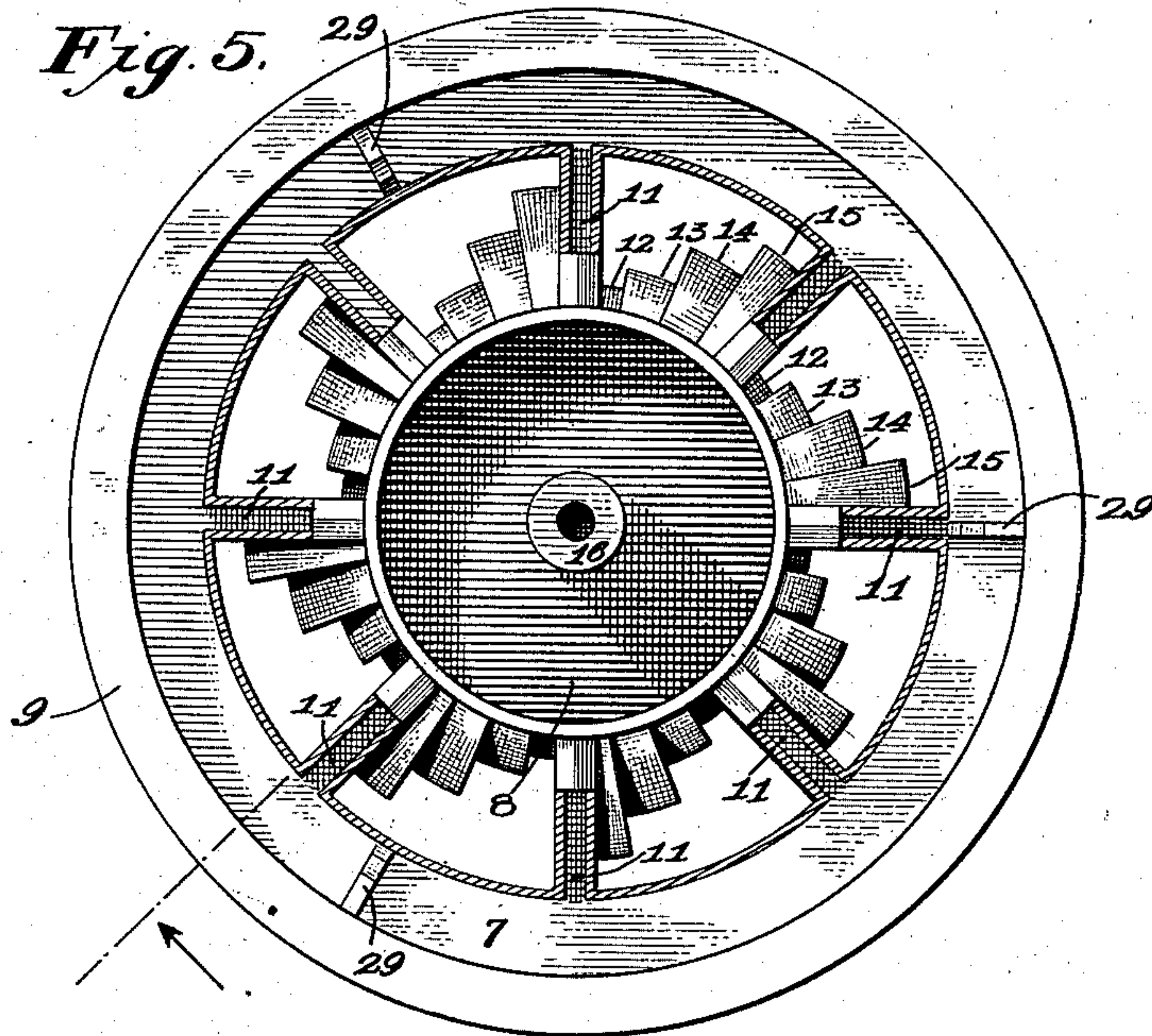


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4 SHEETS—SHEET 3.



Witnesses  
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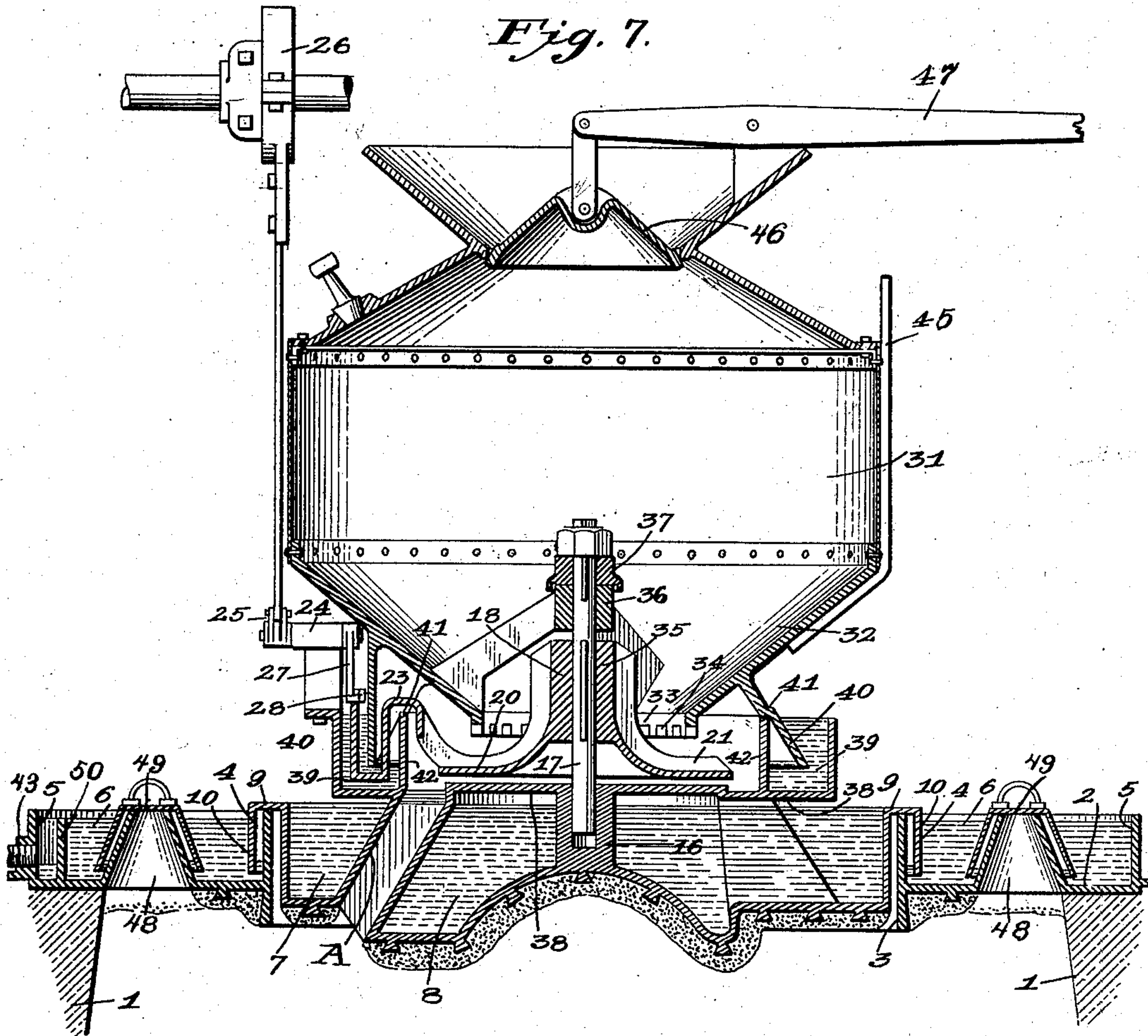
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APPLICATION FILED JULY 14, 1902.

NO MODEL.

4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

GEORGE SIEURIN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MORGAN CONSTRUCTION COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## CHARGER FOR GAS-PRODUCERS.

SPECIFICATION forming part of Letters Patent No. 746,591, dated December 8, 1903.

Application filed July 14, 1902. Serial No. 115,401. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE SIEURIN, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Gas-Prod-  
5 ucers, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

10 Figure 1 represents a vertical sectional view through the feeding mechanism of the gas-producer. Fig. 2 is a plan view of the coal-distributor removed from the producer. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4  
15 is a plan view of the coal-agitator removed from the producer. Fig. 5 is a plan view of the coal-distributor, partly shown in section by the removal of the conical plates A, which cover the coal-openings, in order to disclose  
20 the outer edge of the coal-distributing plate. Fig. 6 is a detached view of a portion of the coal-distributor shown in vertical sectional view; and Fig. 7 is a vertical sectional view similar to that shown in Fig. 1, but showing  
25 a modification in the construction.

Similar reference letters and figures refer to similar parts in the different views.

My present invention relates to the feeding mechanism of a gas-producer by which fuel  
30 is supplied to the heating-chamber; and it has for its object to accomplish a saving in fuel and labor, to increase the efficiency of the producer by securing a uniform supply of coal uniformly distributed throughout the  
35 heating-chamber, and to provide means for protecting those parts of the feeding mechanism which are exposed to heat and for preventing the escape of noxious gases from the feeding mechanism.

40 My improved feeding mechanism as represented in the accompanying drawings comprises a coal-hopper, a stationary coal-reservoir, a stationary coal-distributor for evenly distributing the coal in the producer, and a  
45 coal-agitator interposed between the distributor and the reservoir, to which an oscillating or shaking motion or a continuous rotary motion is imparted, as desired; and my invention consists in the employment in the  
50 feeding mechanism of a gas-producer of a

stationary distributing-plate of varying diameter, whereby the supply of coal to the producer is uniformly distributed, and a movable coal-agitator placed above the stationary distributor; also in the means employed  
55 for water-cooling the stationary distributor; and it further consists in the novel construction and arrangement of parts, as hereinafter described, and pointed out in the annexed claims.

Referring to the accompanying drawings, 1 1, Fig. 1, denote the upper part of the side walls of the heating-chamber, upon which is supported a top plate 2, having a central opening 3, provided with an upstanding flange  
60 4 and a concentric outer flange 5, with a water-space 6 inclosed between the flanges 4 and 5. Supported upon the upper edge of the inner flange 4 and extending over the central opening 3 of the top plate is a coal-distributor.  
65 (Shown in plan view in Fig. 2 and a vertical sectional view in Fig. 1 and partly shown in Figs. 5 and 6.) The coal-distributor consists of two inverted pan-shaped sections—an outer section 7 and an inner section 8. The outer  
70 section 7 is supported by its horizontal edge 9 upon the upper edge of the flange 4 of the top plate 2, and from the edge 9 an annular flange 10 projects downwardly into the water inclosed in the water-space 6. The outer and  
75 inner pan-shaped sections 7 and 8 are connected by the hollow radial arms 11, inclosing water-passages between the sections 7 and 8, so that water delivered in the outer section 7 may flow freely through the hollow arms 11  
80 into the inner pan-shaped section 8, as shown in Fig. 5, alternating with the hollow arms 11 11. The outer section 7 is provided with arc-shaped inclined portions A A, between which and the sections 12, 13, 14, and 15 the  
85 coal passes to the heating-chamber. Between each of the hollow arms 11 the periphery of the inner section 8 is formed in sections of varying inclination, four such sections 12, 13, 14, and 15 being formed between each of  
90 the hollow arms 11, the inclined sections 12, 13, 14, and 15 forming the distributing-surface over which the coal delivered from the reservoir slides into the heating-chamber of the producer. As each of the sections 12, 13, 100



14, and 15 are of varying inclination from a perpendicular, the lower ends of the sections are consequently at different radial distances from the center, and the coal sliding over each of these inclined sections will therefore be delivered in the heating-chamber at different radial distances from the center.

Although I have shown but four inclined surfaces between each of the radial arms 11, the number and inclination may be varied as desired to accomplish the proper distribution of the coal within the heating-chamber.

The inner section 8 of the coal-distributor is provided with a central hub 16, which forms a bearing for the lower end of a rotating shaft 17, to which is attached the long hub 18 of the coal-agitator 19, (shown in plan view in Fig. 4,) and consisting of a circular curved disk 20, forming a cover for the central pan-shaped section 8 of the coal-distributor. Extending from the side of the hub 19 and radially across the upper surface of the disk 20 are ribs 21, which serve to disturb the coal resting upon the disk as the agitator is moved. Attached to the disk 20 by arms 22 is a bent plate 23, to which mechanism for moving the agitator is operatively connected, said mechanism consisting in the present instance of a rocking shaft 24, having at one end a radial arm 25, connected with an eccentric 26, by which the shaft is rocked, and upon its opposite end a radial arm 27, pivotally connected by a link 28 with the bent plate 23, the rocking motion of the shaft 24 imparting an oscillating motion to the agitator 19. The arms 22 work back and forth in a slot 51, formed in the upper inner edge of the section 7.

The outer section 7 of the coal-distributor is provided with three notched ribs 29, Fig. 2, upon which rests the flaring flange 30 of the coal-reservoir 31, provided with a hopper-shaped bottom 32, having a central opening 33 for the delivery of coal upon the disk 20 of the agitator. The opening 33 is preferably surrounded by a depending serrated flange 34. The hopper-shaped bottom 32 is provided with a spider 35, supporting a hub 36, in which the shaft 17 is journaled, the shaft 17 and the attached coal-agitator 19 being suspended by means of a collar 37, attached to the upper end of the shaft and resting upon the hub.

In Fig. 7 I have shown a slight modification in the construction of the feeding device, which consists in extending a horizontal plate or cover 38 from the upper end of the hub 16, and at its outer edge I form a water-space 39 to receive the flanges 40 of the coal-reservoir, which is supported at 41 upon the upper edge of a concentric flange 42, raised upon the horizontal plate 38 instead of being supported upon the notched ribs 29, as shown in Fig. 1. In Fig. 1 the flange 30 of the coal-reservoir is water-sealed in the outer pan-shaped section 7 of the distributor, while in Fig. 7 the cor-

responding flange 40 is sealed in the water-space 39.

Water may be supplied to the water-space 6 by means of the overflow from the space 70 between the sections 7 and 8, and a discharge-pipe 43 is provided leading from this space 6, the opening being surrounded by an imperforate wall 50. In Fig. 1 I have shown a connection 44, carried by the flange or apron 30 of the coal-reservoir and communicating with the space between the sections 7 and 8, the connection having a water-supply pipe 45 secured thereto. The coal-reservoir is closed at its upper end in any convenient manner, as by means of a bell 46, connected with a counterweight (not shown) by means of a lever 47, and the water-space 6 is provided with a series of conical openings 48, adapted to be closed and sealed by means of covers 49.

The operation, briefly set forth, is as follows: The coal-reservoir is charged with the coal and the agitator 20 set in motion, the lowermost layers of coal resting upon the agitator-disk and being displaced therefrom by the motion of the disk. The coal falls off the edge of the disk onto the outer surfaces of the various inclined sections 12, 13, 14, and 15 and passes downward upon the inclined sections and inclosed by the arc-shaped inclinations A A and falls off of the unequal ends of the various sections 12, 13, 14, and 15 to the heating-chamber below.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the heating-chamber of a gas-producer provided with an opening in its top, of a stationary coal-distributor located within said opening and provided with a series of coal-distributing surfaces of varying inclination from a vertical plane symmetrically arranged around said distributor.

2. The combination with the heating-chamber of a gas-producer provided with an opening in its top, of a coal-distributor extending across said opening and comprising two pan-shaped sections with openings between said sections for the delivery of coal to the heating-chamber.

3. The combination with the heating-chamber of a gas-producer provided with an opening in its top, of a coal-distributor extending over said opening and comprising two pan-shaped sections having openings between said sections for the delivery of coal therethrough and conduits between said sections.

4. The combination in a gas-producer of a stationary coal-distributor consisting of two pan-shaped sections for holding water, whereby said sections are cooled, conduits between said sections for the flow of water; openings between said sections for the delivery of coal therethrough, a reservoir for coal above said distributor and a movable coal-agitator between said reservoir and said distributor.

5. In a gas-producer, the combination with



the heating-chamber provided with an opening in its top for the admission of coal, of a stationary coal-distributor extending over said opening and comprising two pan-shaped sections adapted to hold water, a top plate on the heating-chamber having an annular water-space, a depending flange on said distributor extending into said water-space, openings between said pan-shaped sections of the distributor for the delivery of coal there-  
through, a stationary coal-reservoir above said distributor, hubs supported by said distributor and said reservoir, a shaft journaled in said hubs, a collar attached to said shaft and resting on one of said hubs by which said shaft and its connected parts are supported, a coal-agitator attached to said shaft and consisting of a disk provided with a se-

ries of ribs interposed between said distributor and said reservoir and means for moving said agitator.

6. In a gas-producer, the combination of a stationary coal-distributor, a stationary coal-reservoir having an opening in its lower end for the delivery of coal to the distributor, said reservoir having a serrated edge surrounding said opening and a movable coal-agitator interposed between said serrated edge and the coal-distributor, having a series of ribs on its upper surface.

Dated this 11th day of July, 1902.

GEORGE SIEURIN.

Witnesses:

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