

No. 826,705.

PATENTED JULY 24, 1906.

A. W. BANKS.
HEATER.

APPLICATION FILED APR. 17, 1905.

2 SHEETS—SHEET 1.

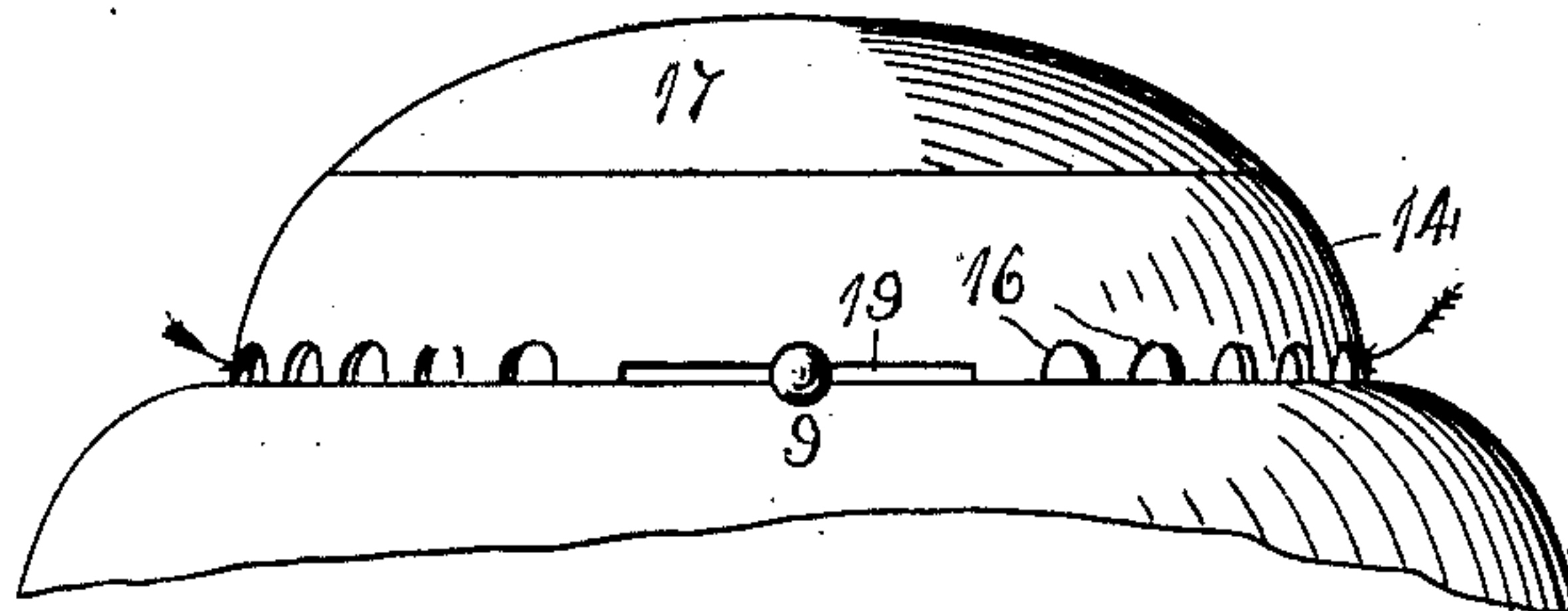


Fig. 2.

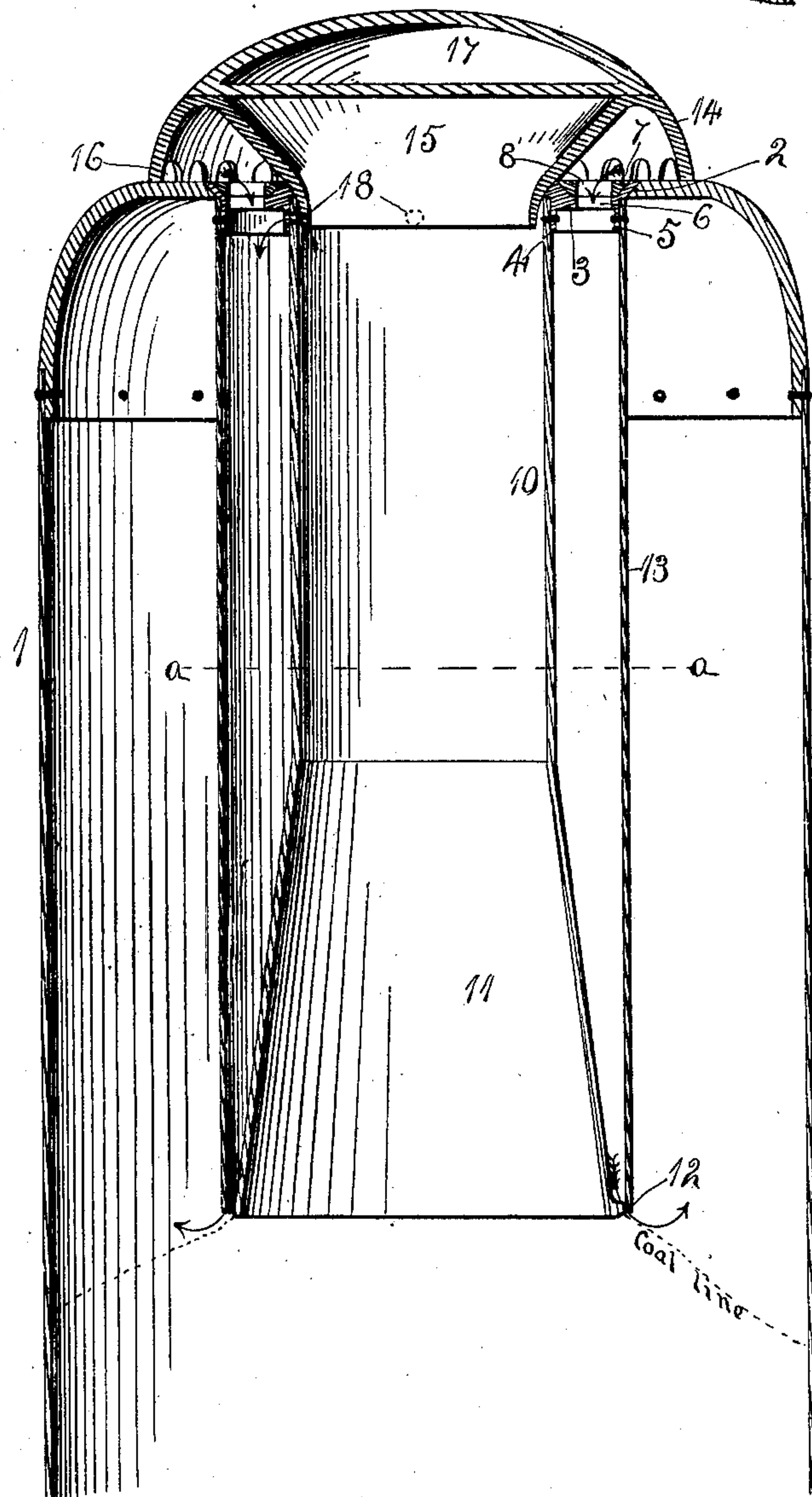


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

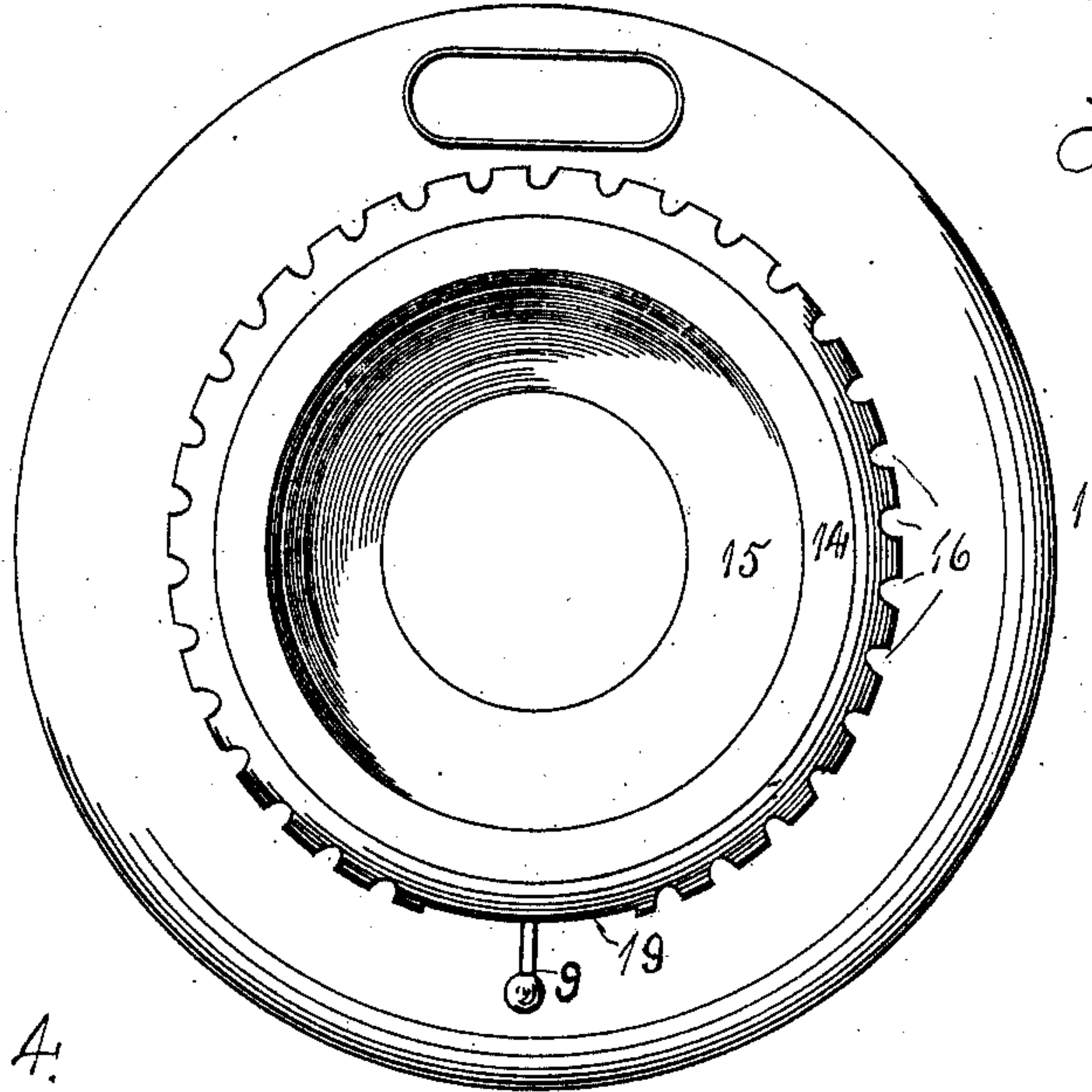


Fig. 4.

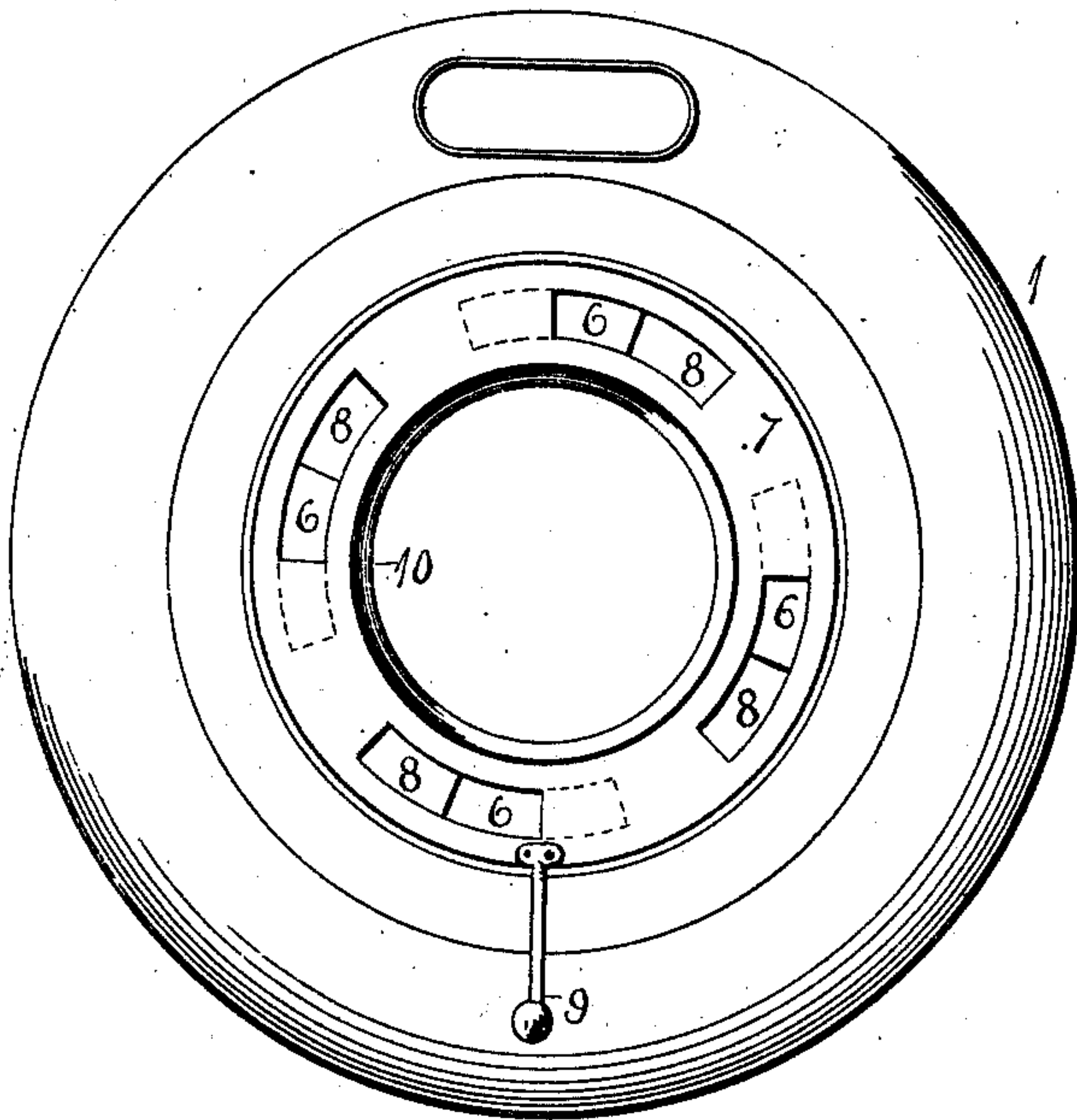
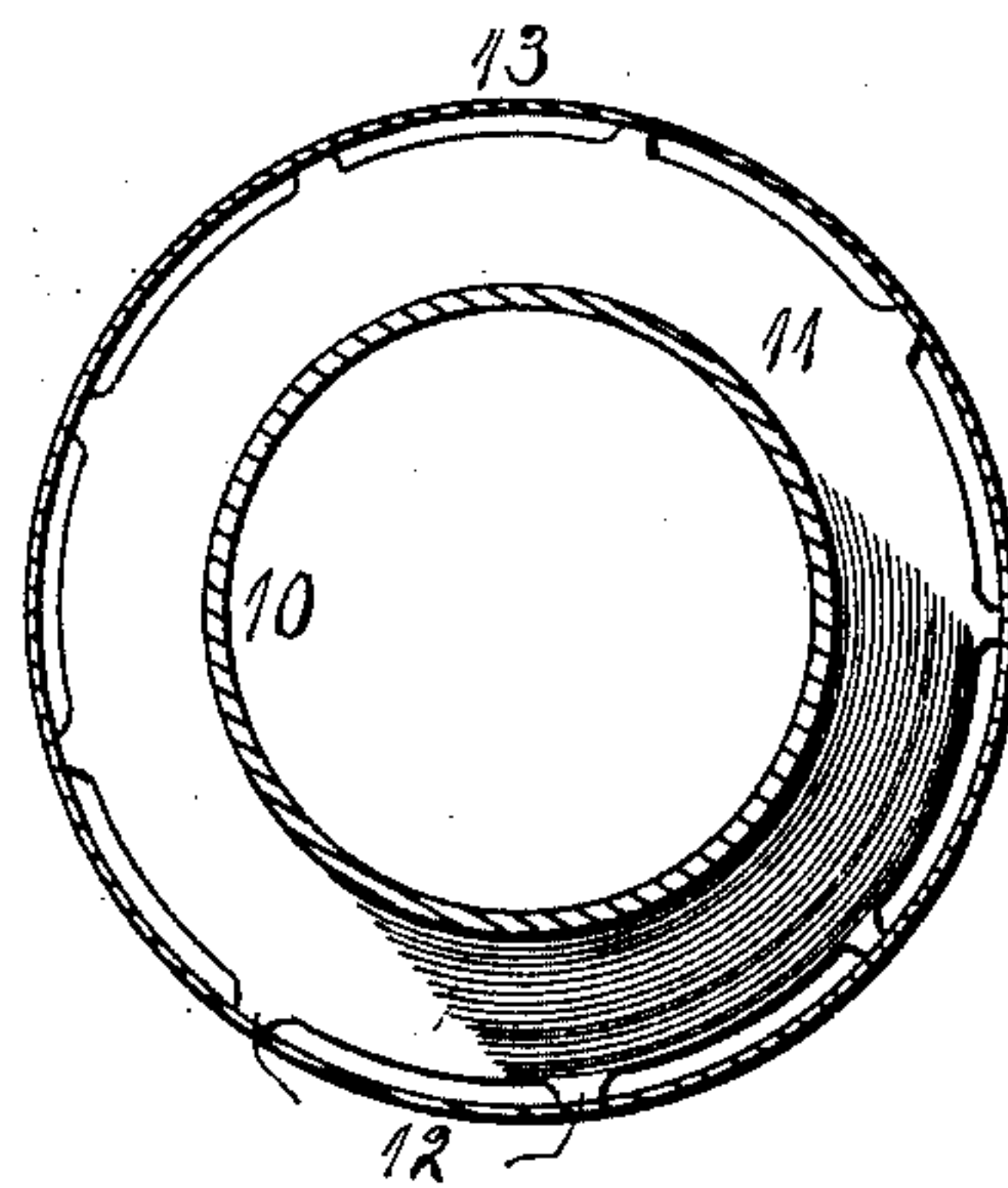


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARCHIE W. BANKS, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-FIFTH
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HEATER.

No. 826,705.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed April 17, 1905. Serial No. 256,012.

To all whom it may concern:

Be it known that I, ARCHIE W. BANKS, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

The object of this invention is to construct a magazine-heater in which air to supply combustion is admitted around the magazine near its upper end and discharged at or near the lower end of the magazine and which in addition to supplying combustion serves to keep the fuel in the magazine cool, thereby preventing the fuel coking, also to cause any gases that may accumulate in the magazine to unite with the air around the magazine and to be discharged therewith at the surface of the fuel and there consumed.

In the accompanying drawings, Figure 1 is a vertical central section. Fig. 2 is an elevation of the upper end of the heater. Fig. 3 is a plan view with the cover removed. Fig. 4 is a plan view with the cover and top removed. Fig. 5 is a transverse section on dotted lines *a a*, Fig. 1.

In the drawings I have shown only the upper portion of a heater, which is sufficient to convey a clear idea of the location and arrangement of my improvements.

The upper portion of the combustion-chamber is inclosed by the outer wall or casing 1, having a flange-opening 2 in its upper end. An annular ring 3 has depending perforated flanges 4 and 5 in two concentric circles. The outer upper edge of this ring 3 is flaring and is received by the flaring opening 2 in the upper end of the outer casing. This ring 3 is provided with a series of openings 6. A damper 7 has openings 8, corresponding with the openings 6, seated in the upper recessed portion of the ring, and is moved by a handle 9. To the flange 4 is secured a fuel-magazine 10, having its lower end 11 somewhat enlarged and flaring and provided with a series of projections 12, extending from its outer face. To the flange 5 is secured a shell 13, inclosing the fuel-magazine, and its lower end held separated from the lower end of the fuel-magazine by the projections 12.

On the upper end of the heater is located a top 14, having a funnel-shaped center 15, the lower end of which is located in the upper end of the fuel-magazine. This top is formed

with openings 16. A cover 17 is located over the top and closes the open enlarged upper end of the funnel-shaped center 15. The lower end of this funnel-shaped center extends within the upper end of the fuel-magazine sufficiently to protect the openings 18, leading from the fuel-magazine into the space between the fuel-magazine and the shell 13.

The handle 9 extends through the top 14 and its movements are limited by the ends of the slot 19.

In use the fire is started in the usual manner and the magazine filled with soft coal. After the fire is under way the damper 7 is moved to bring its openings to coincide with the openings 6 in the annular ring 3. Air will then be admitted through the openings 16 in the top, through the openings in the damper, into the space between the fuel-magazine and the shell and will escape at the lower end of the fuel-magazine into the combustion-chamber. The fuel will then burn at its upper surface around the lower end of the fuel-magazine. Should gas accumulate in the fuel-magazine, it will escape through the openings 18 into the air-space around the fuel-magazine and be conducted to the lower end of the magazine and burned.

In burning soft coal in a magazine-heater it is necessary that the coal be kept cool to prevent it expanding, and consequently clogging. This I accomplish by admitting cold air around the outside of the fuel-magazine and also by making the lower portion of the fuel-magazine flaring to permit expansion of the coal.

It is evident that my improvements may be applied to furnaces and steam or hot-water heaters.

I claim as my invention—

1. In a self-feeding heater, the combination of an outer casing having an opening in its upper end, a ring located concentric with the opening and supported by the casing, a fuel-magazine and shell supported by the ring, the shell inclosing the magazine leaving an air-space between the magazine and shell, the ring provided with a series of openings communicating with the air-space, a damper for the openings, the magazine provided with an opening near its upper end communicating with the air-space, and a top located over the upper end of the magazine and extending beyond said ring, said top being formed with

air-inlet openings communicating with the openings in the ring and having a funnel-shaped center integral therewith, the lower end of the center located within the upper
5 end of the magazine.

2. In a self-feeding heater, the combination of an outer casing having an opening in its upper end, a ring located concentric with the opening and supported by the casing, a
10 fuel-magazine and shell supported by the ring, the shell inclosing the magazine leaving an air-space between the magazine and shell, the ring provided with a series of openings communicating with the air-space, the maga-
15 zine provided with an opening near its upper

end communicating with the air-space, and a top located over the upper end of the magazine and extending beyond said ring, said top being formed with air-inlet openings communicating with the openings in the ring and
20 having a funnel-shaped center integral therewith, the lower end of the center located within the upper end of the magazine, and the shell terminating short of the lower end of the magazine.

ARCHIE W. BANKS.

Witnesses:

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