

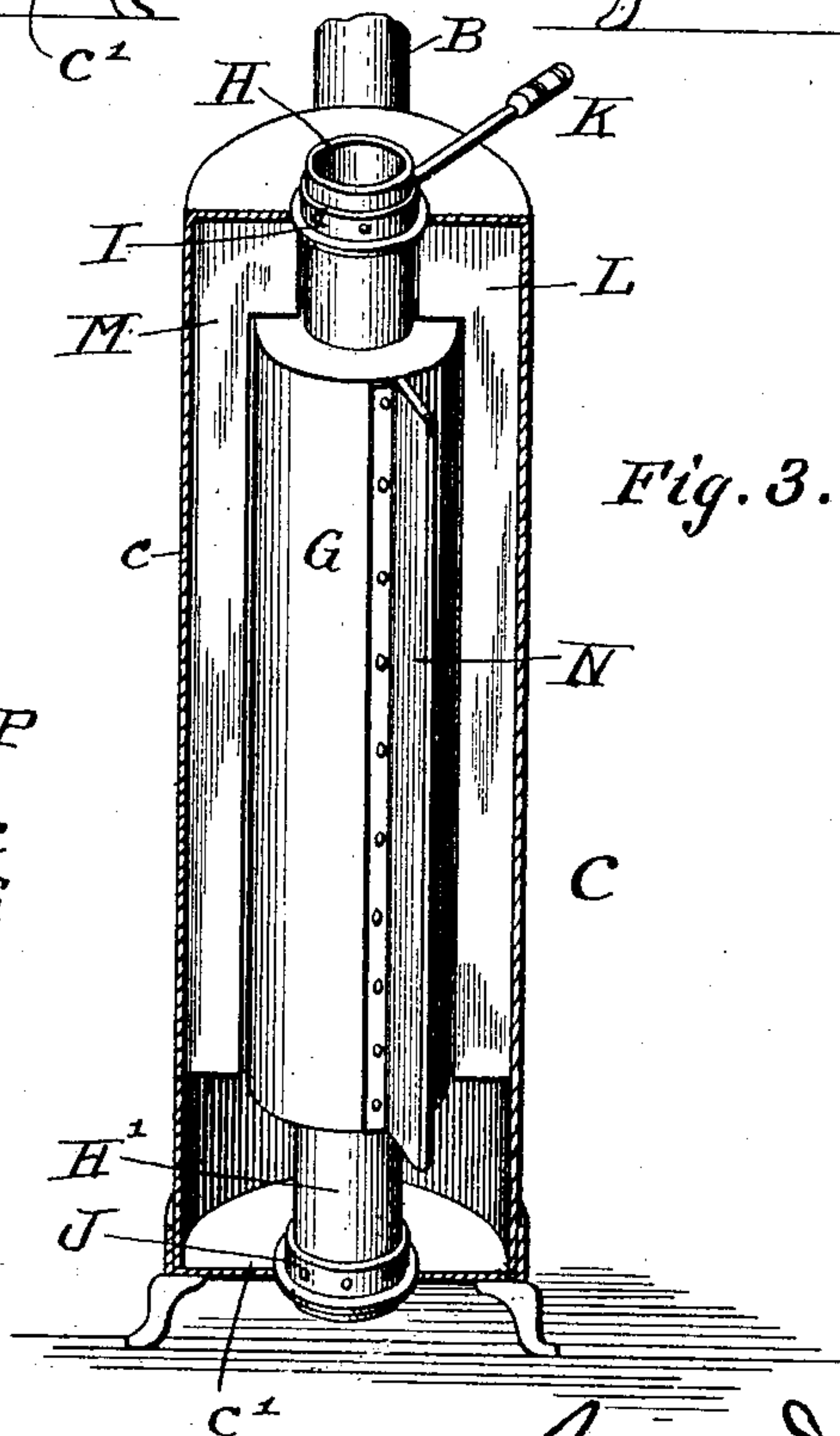
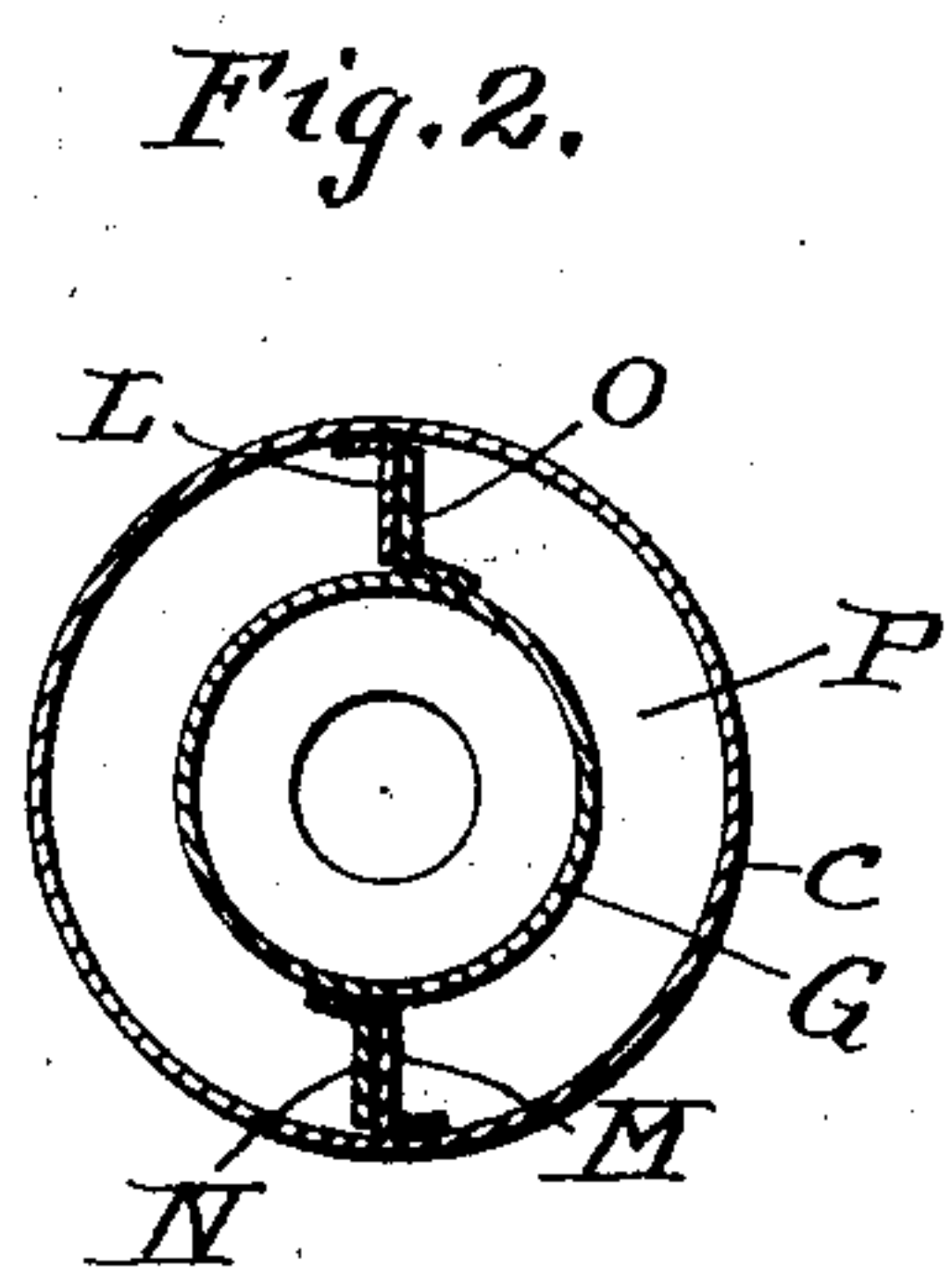
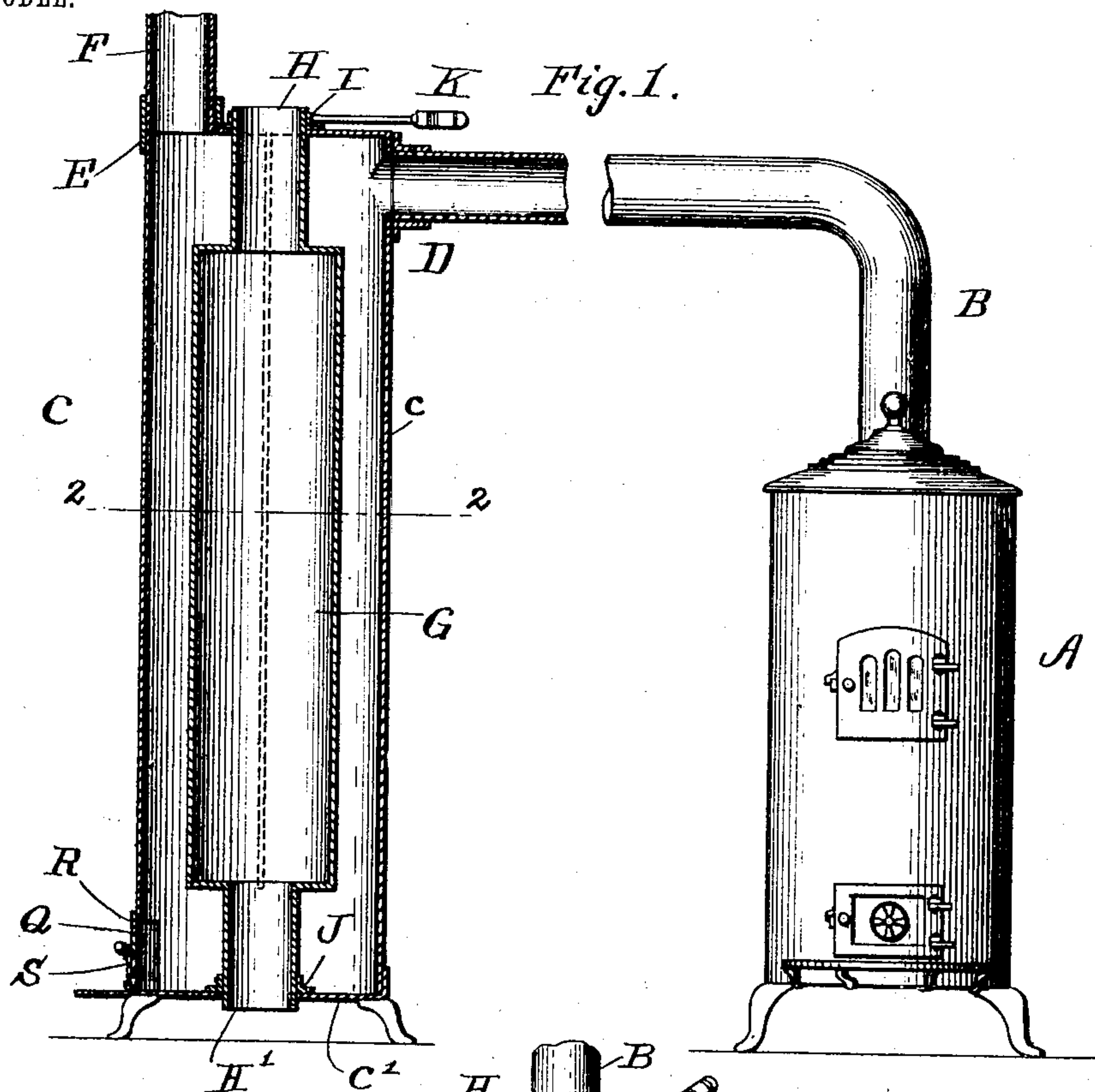
No. 765,092.

PATENTED JULY 12, 1904.

A. MACFADYEN.
HEAT RADIATOR.

APPLICATION FILED OCT. 19, 1903.

NO MODEL.



Witnesses:-

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AGNES MACFADYEN, OF PONCA, OKLAHOMA TERRITORY.

HEAT-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 765,092, dated July 12, 1904.

Application filed October 19, 1903. Serial No. 177,604. (No model.)

To all whom it may concern:

Be it known that I, AGNES MACFADYEN, a citizen of the United States, residing at Ponca, county of Kay, and Territory of Oklahoma, have invented certain new and useful Improvements in Heat-Radiators, of which the following is a specification.

The object of my invention is to provide a radiator or heating-drum which may be connected with a stove and receive therefrom the products of combustion, which while passing through the drum will heat it and cause it to radiate heat, which will largely increase the heat of the room in which it is placed, whether it be in the same room with the stove or in a separate room.

My improved radiator differs from others of this class in that it is so constructed that the soot which inevitably collects on it may be easily removed without taking the radiator apart.

In carrying out my invention I employ an outer and an inner drum with an annular space between them. The inner drum is shorter than the outer one, but has tubular projections at each end, which extend through the top and bottom of the outer drum. The inner drum is adapted to rotate within the outer drum about a vertical axis and is provided at its upper end with a handle for turning it. Vertical plates or scrapers are attached to the outer drum, and similar vertical plates or scrapers are attached to the inner drum, the arrangement being such that when the inner drum is turned about its vertical axis these scrapers will remove from the walls of the drum any soot which may have collected upon them. The soot thus detached falls to the bottom of the outer drum and may be removed through an opening therein.

In the accompanying drawings, Figure 1 shows a front elevation of a stove and a vertical central section through my improved radiator. Fig. 2 shows a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the radiator with one-half of the outer drum removed.

The stove A is of ordinary construction and has attached to it a pipe B, through which the smoke and other products of combustion pass

to the radiator C. This radiator consists of an outer drum *c*, having a detachable connection at D with the smoke-pipe B, and having a connection at E with a smoke-pipe F, which may pass to the chimney. The inner drum G is located centrally within the outer drum. It is of considerably smaller diameter than the outer drum and is also somewhat shorter, thus leaving an annular space between its outer periphery and the walls of the outer drum and a space between its upper and lower ends and the upper and lower ends of the outer drum. The inner drum is formed with tubular projections H H', which extend through openings in the upper and lower ends of the outer drum. A collar I is attached to the projection H above the top of the outer drum and rests on this top and suspends the inner drum within the outer one. A similar collar J is attached to the projection H' inside the outer drum and also serves to support the inner drum.

K indicates a handle attached to the outer end of the projection H, by means of which the inner drum may be rotated.

To the inside of the outer drum are attached two vertical plates or scrapers L M, which extend from the bottom of the inner drum to the top of the outer drum, being widened above the top of the inner drum, as indicated in Figs. 1 and 3, so as to fit closely the top of the inner drum and the periphery of the projection H. These scrapers L M are placed on diametrically opposite sides of the outer drum. Vertical plates or scrapers N O are attached to the inner drum and extend from top to bottom thereof and also extend across the annular space P to the inner surface of the outer drum. The scrapers L M N O overlap in the manner indicated in Fig. 2.

At the lower end of the outer drum an opening Q is formed, closed by a door R, which may be provided with any suitable damper S.

The products of combustion pass from the stove A through the pipe B to the interior of the outer drum at the upper end thereof on one side of the partitions L M. They then pass downwardly on one side of these partitions to the bottom of the inner drum, then pass laterally beneath the inner drum and up on the opposite side of the partitions L M to

the smoke-pipe F. Thence they pass directly to the outer air or to a chimney. In this way the products of combustion are made to traverse a circuitous path, which will cause both
5 drums to become highly heated. Heat is radiated from the outer drum, and as air may pass through the interior of the inner drum heat may be derived from the inside of the radiator.

10 I find that a radiator made in this way largely increases the heat of a room, and fuel is thus materially economized.

In order to clean the drum, it is only necessary to turn the handle K one or more times,
15 so as to cause the scrapers N and O to detach the soot from the inner surface of the outer drum, while the scrapers L and M at the same time detach the soot from the surface of the inner drum. The soot falls to the bottom of
20 the outer drum and may be removed through the opening Q.

Heavy foul air will be drawn into the outer drum through the damper S, if this be left open.

25 The radiator is so constructed that it may be easily put together or taken apart. The outer drum is detachable from the smoke-pipes B and F, and when thus detached and when the collar I and handle K are removed
30 the outer drum may be lifted away from the bottom piece *c'* and thus withdrawn from the inner drum G. Then the inner drum may be lifted off from the bottom piece of the outer drum. It is rarely necessary, however, to
35 thus detach the parts, as the drums may be kept clean by the scrapers, which are operated from the outside in the manner before described.

My improved radiator while efficient is
40 simple and may be made at small cost and requires little repair.

I claim as my invention—

1. In a heat-radiator, the combination with
45 an outer drum having entrance and exit ports, an inner drum of smaller diameter mounted within the outer drum and rotatable therein, scrapers dividing the space between the drums into two chambers one of which communicates with the entrance-port and the other with the

exhaust-port and which connect with each
50 other at that end of the drums opposite the entrance-port.

2. In a heat-radiator, the combination of an outer drum having entrance and exit ports, an inner drum of smaller diameter mounted
55 within the outer drum and rotatable therein, scrapers secured to opposite sides of the outer drum and dividing the space between the drums into two chambers, one of which communicates with the entrance-port and the other
60 with the exit-port and which connect with each other at that end of the drums opposite the entrance-port, and scrapers secured to the inner drum and coöperating with the first-mentioned scrapers to clean the walls of the
65 drums.

3. In a heat-radiator, the combination of an outer drum having entrance and exhaust ports, an inner drum of smaller diameter rotatable
70 about a vertical axis and open from top to bottom to allow air to pass through it, scrapers radiating laterally from the inner drum dividing the space between the drum into separate chambers and engaging the walls of the outer
75 drum, a communication between said chambers at that end of the drums opposite the entrance-port and scrapers attached to the walls of the outer drum engaging the inner drum.

4. A heat-radiator, comprising an outer
80 drum, an inner drum of less diameter than the outer drum, and of less length than said outer drum, tubular projections from the opposite ends of the inner drum which project through
85 the top and bottom of the outer drum, a handle attached to the top tubular projection outside the outer drum, scrapers radiating from the inner drum and engaging the walls of the outer drum, and scrapers attached to the outer
90 drum and engaging the vertical surface of the inner drum and the upper tubular projection thereof.

In testimony whereof I have hereunto subscribed my name.

AGNES MACFADYEN.

Witnesses:

MALVINA I. ADAMS,
EUGENE WETZEL.