

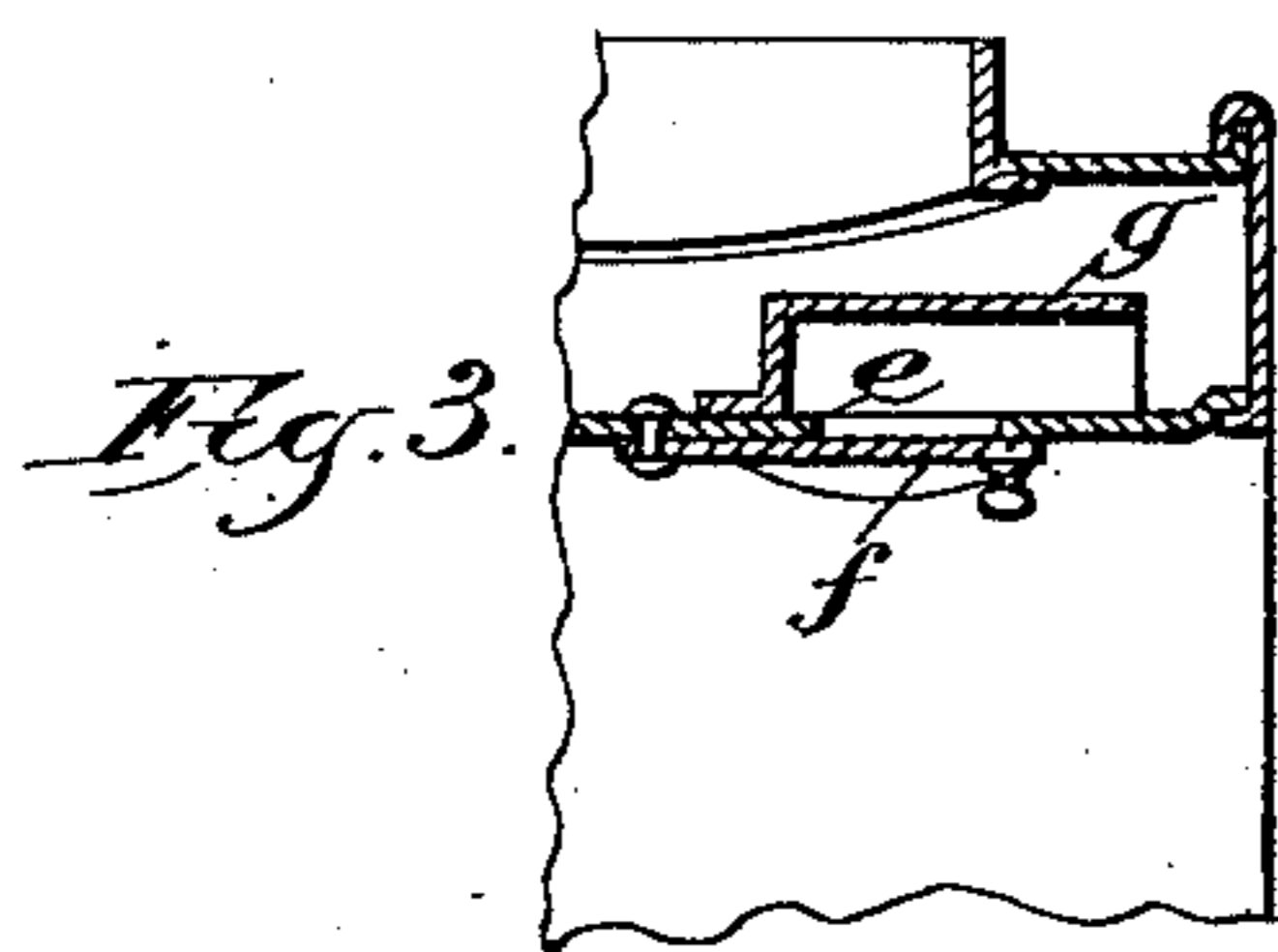
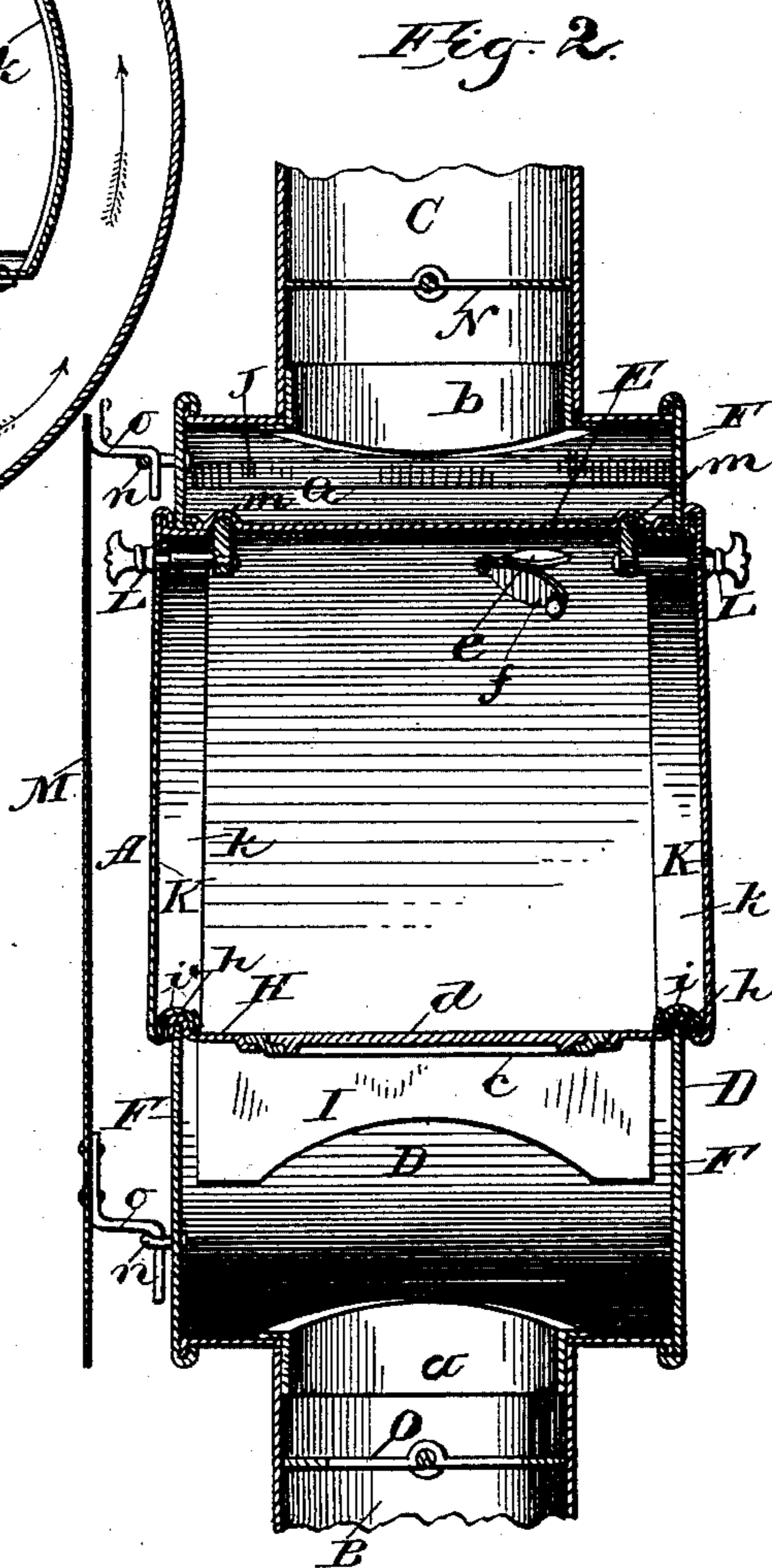
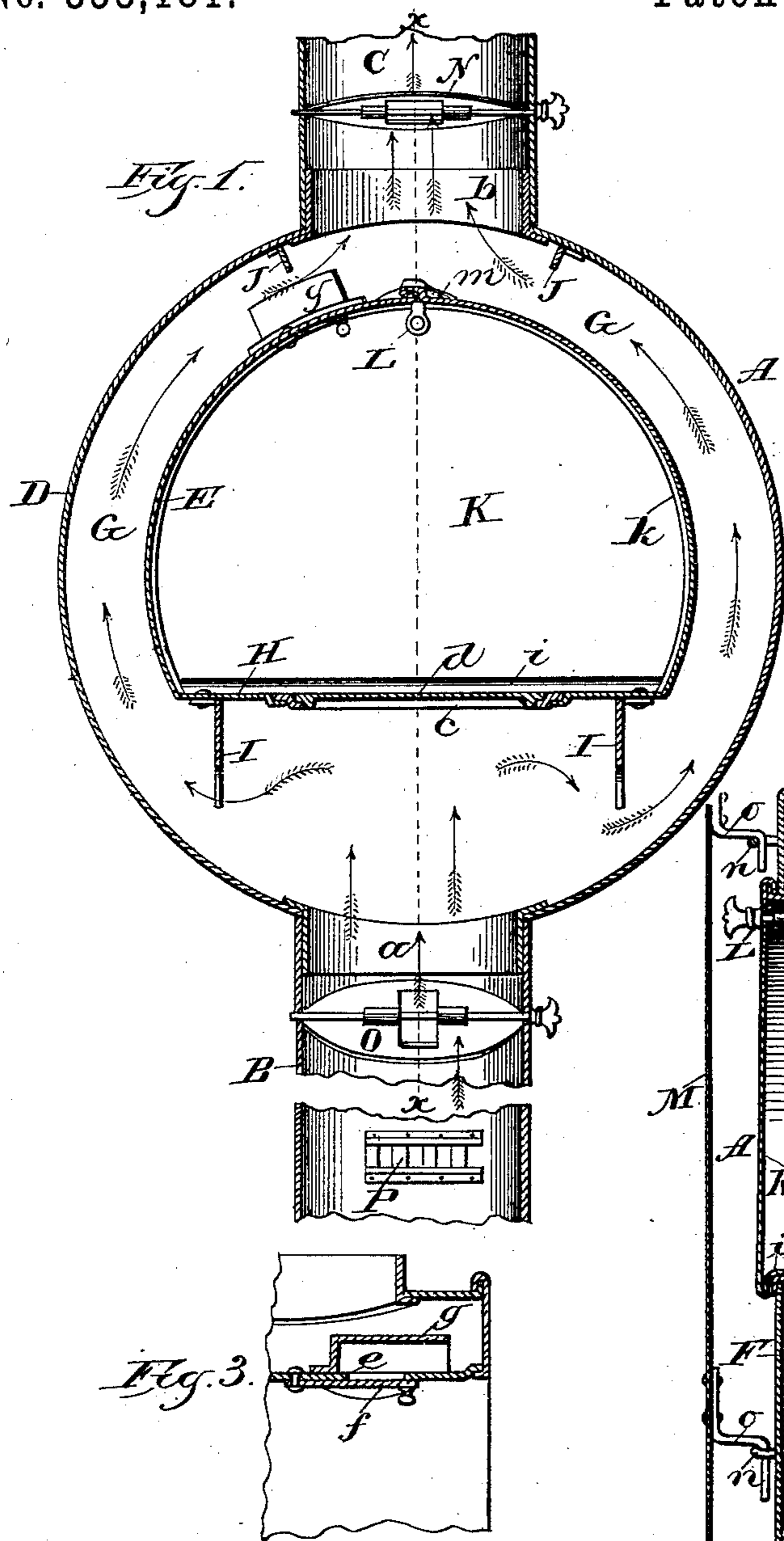
(No Model.)

D. VAN EVERA.

COMBINED HEATING DRUM AND OVEN.

No. 353,181.

Patented Nov. 23, 1886.



Witnesses:

E. G. Somers  
M. E. Oliphant

Inventor:

Dewitt Van Evera

By Stout & Underwood  
Attorneys.

# UNITED STATES PATENT OFFICE.

DEWITT VAN EVERA, OF MAQUOKETA, IOWA.

## COMBINED HEATING-DRUM AND OVEN.

SPECIFICATION forming part of Letters Patent No. 353,181, dated November 23, 1886.

Application filed February 1, 1886. Serial No. 190,547. (No model.)

*To all whom it may concern:*

Be it known that I, DEWITT VAN EVERA, of Maquoketa, in the county of Jackson, and in the State of Iowa, have invented certain new and useful Improvements in Combined Heating-Drums and Ovens; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a combined heating-drum and oven adapted to be connected to a stove or at some point along the line of pipe leading therefrom; and it consists in certain peculiarities of construction, as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 represents a vertical transverse section of my device; Fig. 2, a vertical section on line *x x*, Fig. 1; and Fig. 3, a detail view of the means for conducting the steam, fumes, &c., from the oven into the flue.

Referring by letter to the drawings, A represents my drum, preferably constructed in a circular form, its bottom being provided with an inlet-extension, *a*, to which I secure a joint of pipe, B, intended to be connected to a stove or at some point along the line of pipe leading therefrom. The top of the drum A has an outlet-extension, *b*, to which I secure a joint of pipe, C, that is in turn connected to the pipe leading to the flue; but, if desired, the parts *a b* may be omitted and the pipe-joints B C secured directly to the drum, to form in themselves the inlet and outlet extensions. The drum A is composed of an outer shell, D, and inner shell, E, such parts being of such relative dimensions that when united by end plates, F, a space, G, will be left between their opposing faces, and the products of combustion in the stove to which my device may be attached are carried up and around in said space by the draft from the flue-pipe. The shell E is formed with a horizontal base, H, said base being provided with an opening, *e*, adapted to receive a cooking utensil, said opening having a removable cover, *d*, similar to the ordinary pattern of stove-lid.

Depending from the under side of the base H are vertical transverse plates I, that serve to deflect and retain the heat and cause the same to come with full force against said base or such cooking utensil as may be placed thereon in the opening *e*. I provide the outer

shell with short inwardly-projecting transverse plates J, and locate said plates on opposite sides near the outlet, thereby deflecting the ascending heat against the top of the inner shell, thus increasing the radiation and effecting a saving of such heat as would otherwise escape into the flue. The shell E has an aperture, *e*, through which the steam, fumes, &c., escape into the space G, to be carried off through the outlet that leads to the flue-pipe when the drum is employed as an oven, this oven being formed by the interior of said shell, and doors K K, that are adapted to close its open ends.

The aperture *e* has a cover, *f*, pivotally connected to the shell E, this cover serving to close the aperture when the drum is employed as a heater. To prevent the products of combustion from entering the oven when the drum is thus employed, I cover the aperture *e* with a hood, *g*, preferably open at one end, said hood being shown in vertical section, Fig. 3. The base H of the shell E has its outer edges so united to the end plates, F, as to form semi-circular beads *h*, and the doors K K have the bottoms *i* of their flanges *k* correspondingly grooved to engage said beads, thus forming hinge-joints between the parts. The upper ends of the doors K K are provided with turn-buckles L, that engage depressions *m* in the top of the shell E, to retain said doors in their closed position. As shown by the drawings, the doors K K are removably connected to the drum, this construction being considered as preferable; but it is obvious that the doors may be permanently hinged to said drum, and, if desired in either case, one door only need be employed should such construction be found desirable.

To prevent the heat from the drum doing injury to a wall or other object adjacent thereto, I provide a shield, M, adapted to be removably connected to one end of said drum, as shown by Fig. 2. Any means may be employed to unite the shield and drum; but one simple form consists of providing one of said parts with eyes *n* and the other with hooks *o*. To regulate and retain the heat in the drum I employ a damper, N, that may be located in the pipe C or in the extension *b*, as may be found desirable, said damper being provided with the usual perforations to permit the escape of smoke and gases.

At any point below the drum that may be convenient or desirable I locate a damper, O, that serves, when closed, to regulate and retain the heat in the stove. This latter damper I also provide with perforations for the same purpose as enumerated for those in the part N. Below the damper O, I may employ a check draft, P. This check-draft serves to admit cold air when it is desirable at any time to cool the oven or check the fire, and is considered a valuable feature in connection with my device.

To employ the drum solely as a heater the doors K K are let down or entirely removed, thereby permitting all the radiated heat to find its way into the apartment where the drum may be located, the aperture *e* being closed in this instance, as above described. When in use as a baking-oven or for boiling water, heating irons, &c., the aperture *e* may be opened and the doors K K are closed.

The products of combustion in the stove ascend in the direction of the arrows, Fig. 1, and are carried by direct draft around in the space G in opposite directions, the heat radiating from both shells, and the smoke, gases, &c., passing up the pipe C, the check-draft and dampers being operated to regulate the combustion in the stove and confine the heat at the particular point desired.

The several parts composing the drum may be made from one or more thicknesses of metal, as may be found necessary or convenient, according to the various uses to which the drum is applicable or the various fuels employed.

By the construction above described I provide a simple, easily-manufactured, and economical drum wherein a direct draft is attained, and which is capable of being directly attached to any pattern of stove or the flue-pipe thereof, and which in practice will be found a convenient and desirable article, as it can be readily employed either as a heater or oven without any particular change other than the opening or closing of its doors and regulation of the dampers, it being immaterial whether the said drum is located in the same apartment with the stove or in another above or adjacent thereto. Another advantage of my drum lies in the fact that it is applicable to any stove without regard to the particular fuel burned therein, as the draft is mainly direct.

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

1. A drum consisting of an outer and inner shell of different diameters secured to end plates, the outer shell provided with inlet and outlet extensions, and the inner shell having a horizontal base, and vertical transverse plates depending from said base, as set forth.

2. A drum consisting of an outer and inner shell of different diameters secured to end plates, the outer shell provided with inlet and outlet extensions, and the inner shell provided with a horizontal base having vertical transverse plates and a covered opening, in combination with suitable doors designed to close the open ends of said drum, as set forth.

3. A drum consisting of an outer and inner shell of different diameters secured to end plates, the former shell provided with an inlet and outlet extension, and the latter with an aperture leading to the draft-space between said shells, and a hood extended into said draft-space over the aperture, as set forth.

4. A drum consisting of an outer and inner shell of differing diameters secured at their ends to suitable plates, whereby a space is formed for the passage of the ascending products of combustion in opposite directions, the inner shell provided with an aperture having a hood extending into the draft-space, and a cover for the aperture pivotally connected to the outer face of said shell, in combination with suitable doors designed to close the open ends of said drum, as set forth.

5. A drum consisting of an outer and inner shell of differing diameters secured to end plates, the former shell having an inlet and outlet extension, and the latter shell provided with a horizontal base having a covered opening, depending deflecting-plates, and hooded aperture provided with a cover, in combination with suitable doors designed to close the open ends of said drum, and suitable dampers and check-draft for regulating and confining the heat, as set forth.

6. A drum consisting of an outer and inner shell of differing diameters secured to end plates, the former shell having an inlet and outlet extension, and one of the end plates provided with suitable eyes, in combination with a shield having hooks arranged to engage said eyes, as set forth.

7. In a drum consisting of an outer and inner shell of differing diameters secured to end plates, the outer shell provided with inlet and outlet extensions, and short transverse deflecting-plates located on opposite sides of the outlet, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

DEWITT VAN EVERA.

Witnesses:

N. E. OLIPHANT,  
MAURICE F. FREAR.