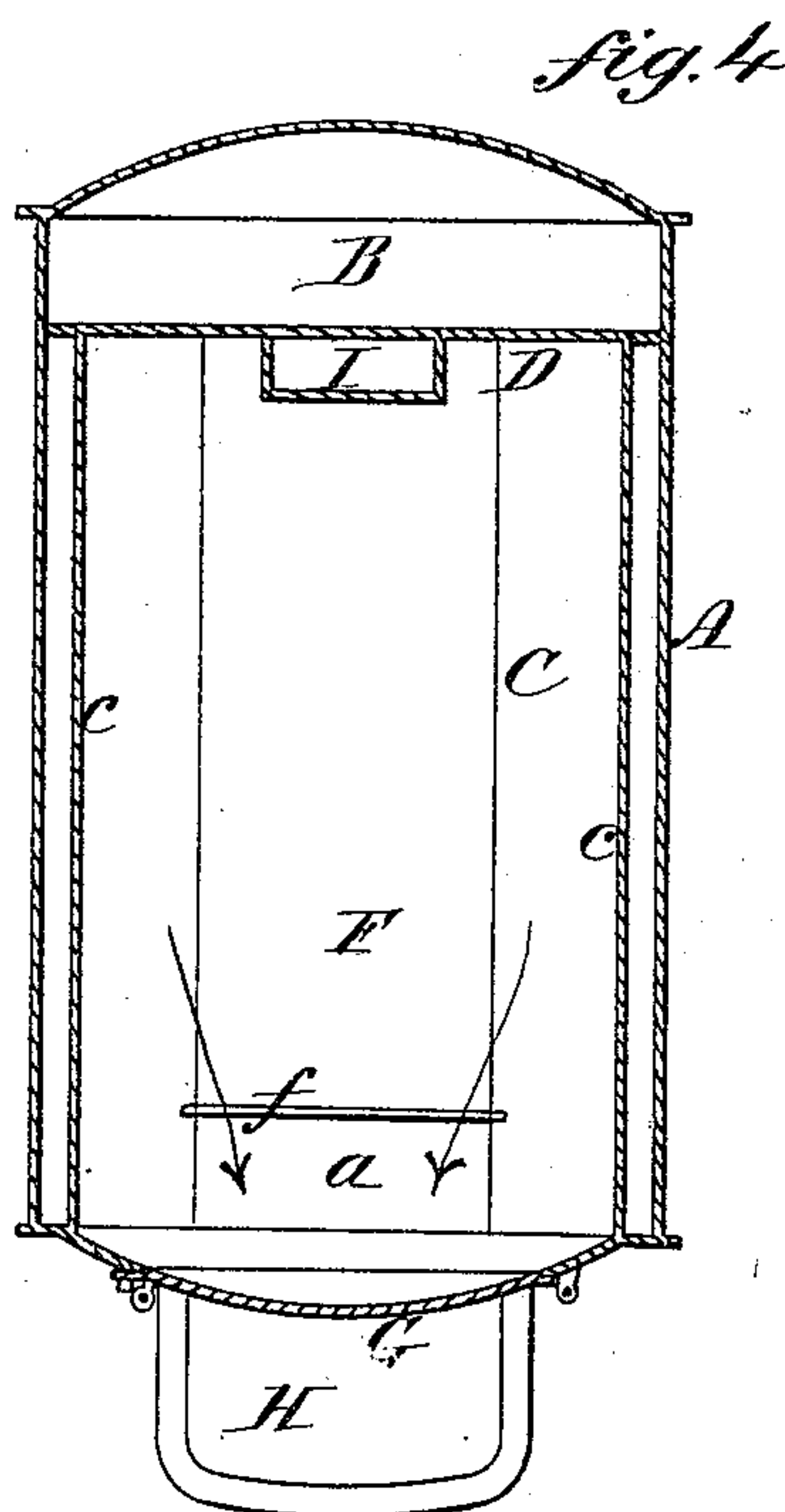
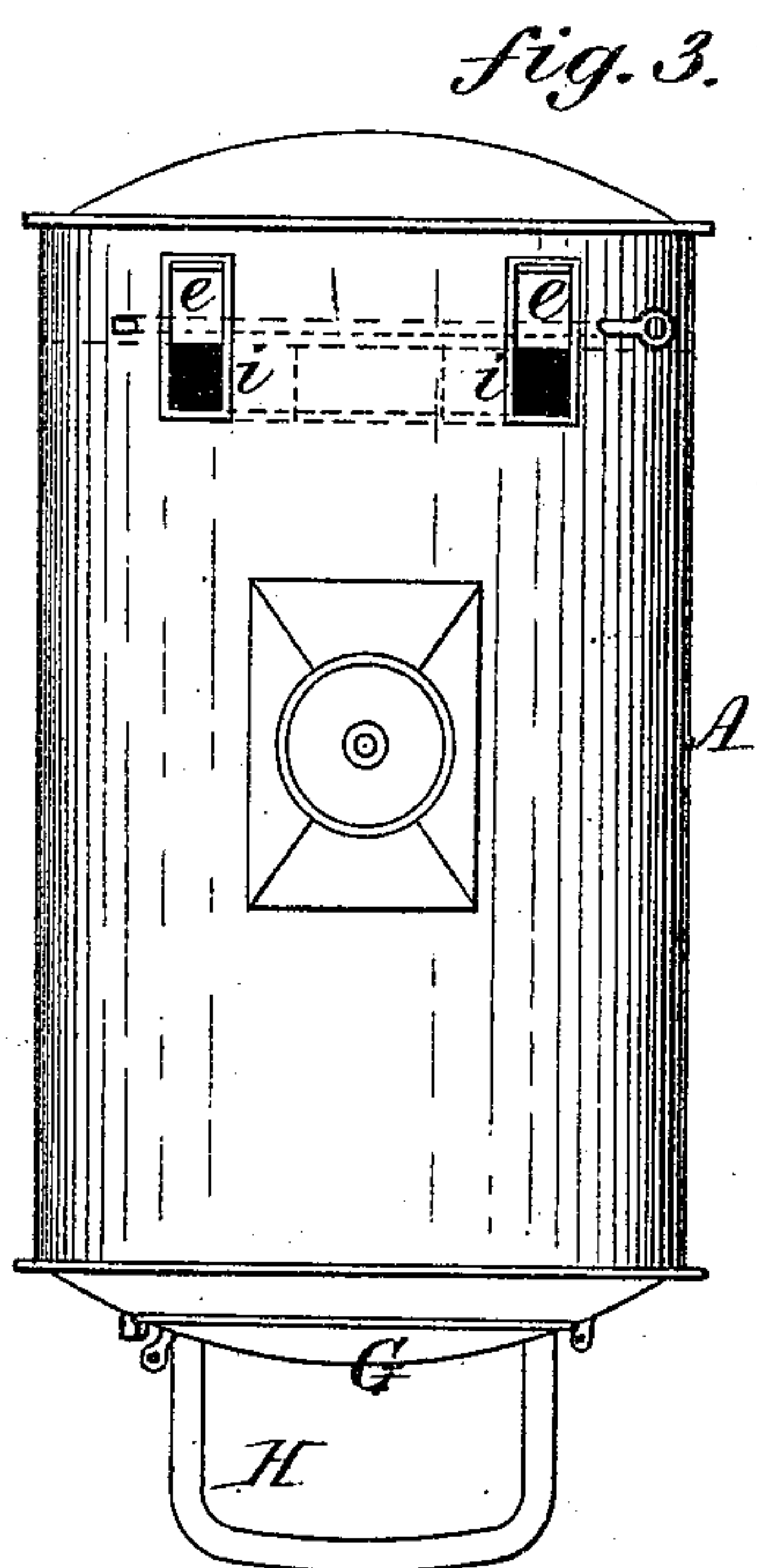
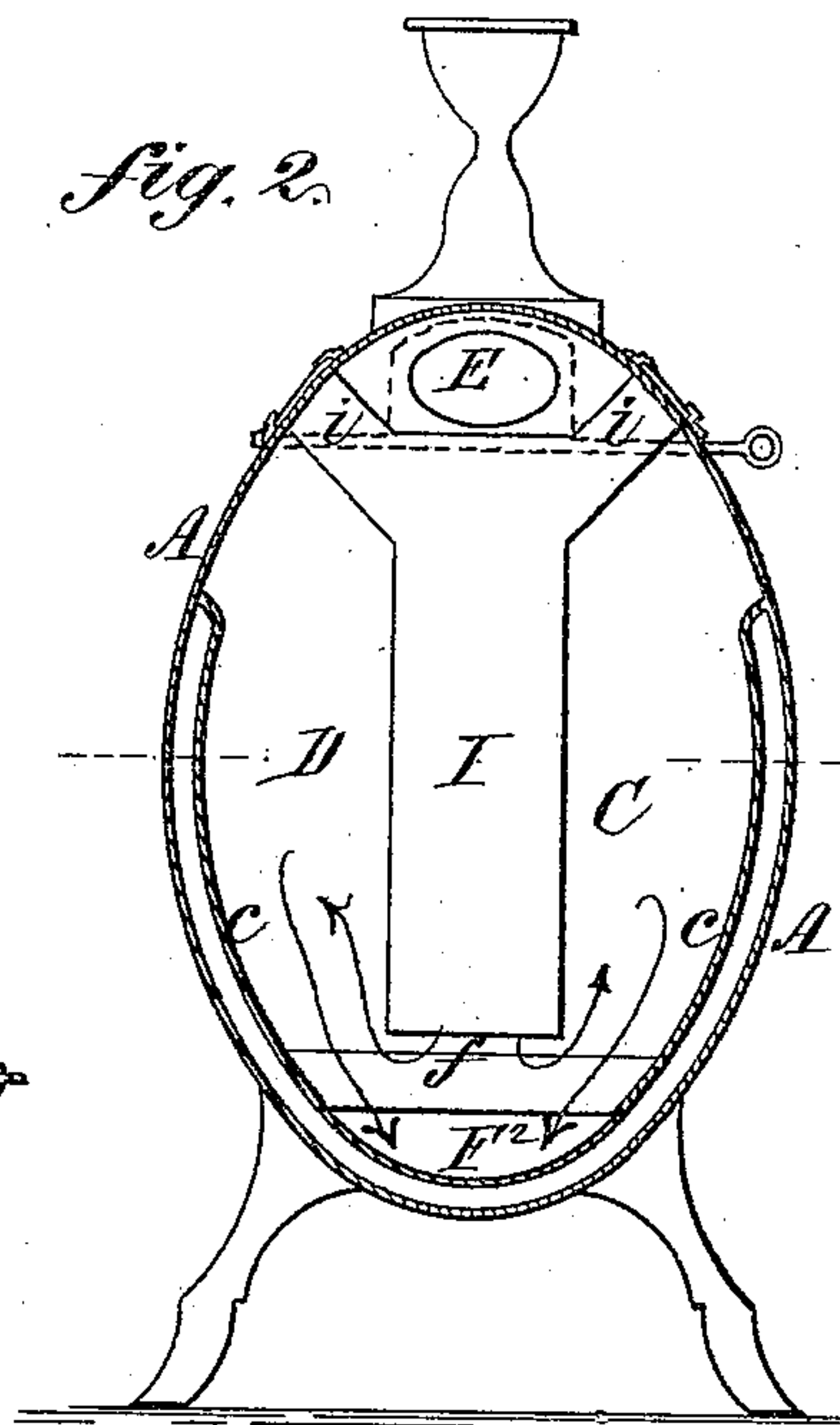
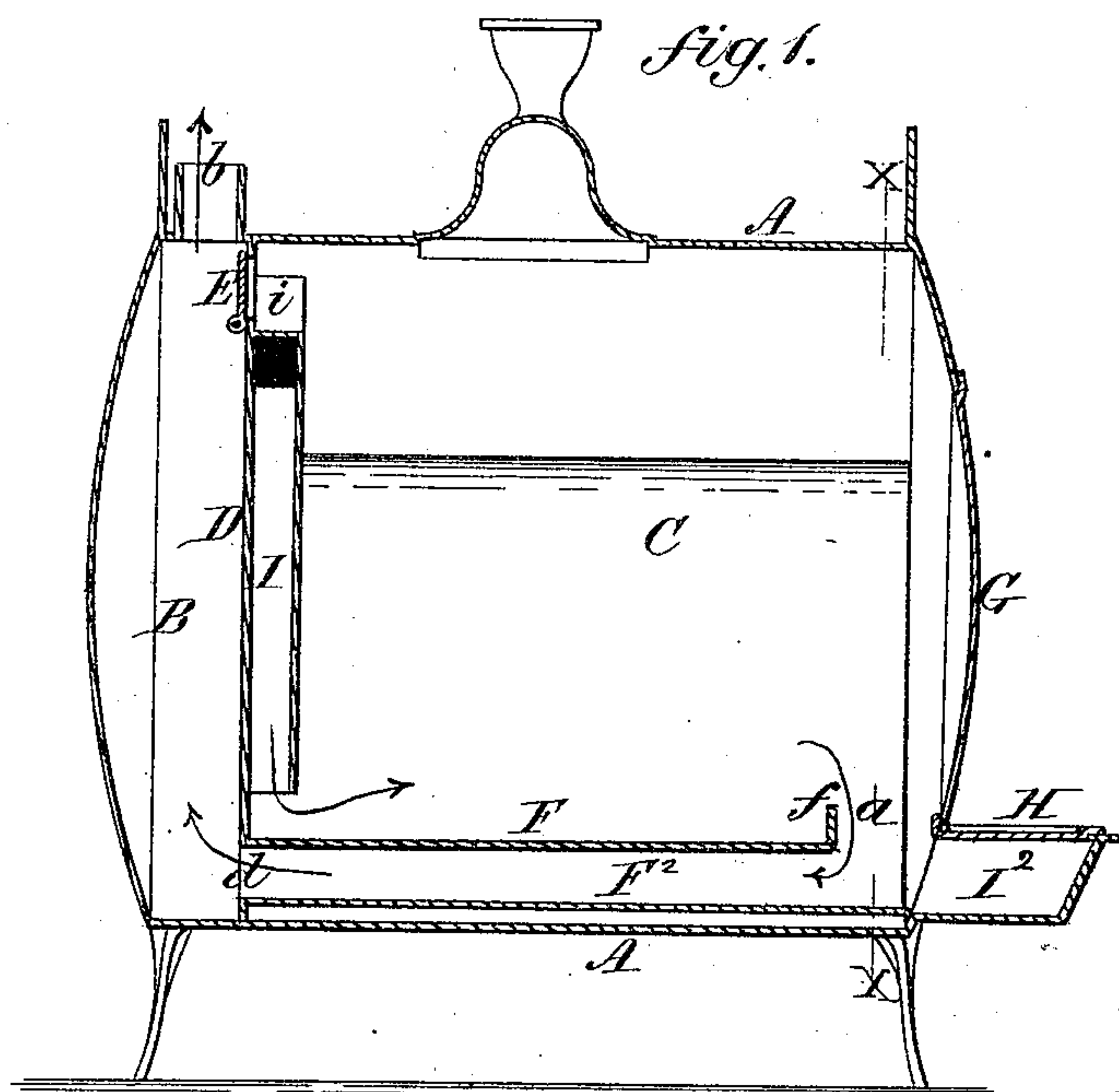


D. C. PROCTOR.
HEATING-STOVE.

No. 176,998.

Patented May 2, 1876.



Witnesses:

Wm. Wagner.
J. H. Rutherford.

Inventor:

pro David C. Proctor
Johnson & Johnson
attys

UNITED STATES PATENT OFFICE.

DAVID C. PROCTOR, OF PEORIA, ILLINOIS.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **176,998**, dated May 2, 1876; application filed March 20, 1876

To all whom it may concern:

Be it known that I, DAVID C. PROCTOR, of Peoria, in the county of Peoria and State of Illinois, have invented a new and useful Improvement in Heating-Stoves, which improvement is fully set forth in the following specification.

My improvements relate, particularly, to that class of stoves, designed for burning wood, known as "The Todd Stove;" and they consist, essentially, in a certain novel construction and arrangement of parts for increasing combustion and the radiation of heat, and regulating them at will, as hereinafter fully explained.

In the drawing, Figure 1 is a longitudinal vertical section, Fig. 2 a transverse vertical section through line *x x* of Fig. 1, Fig. 3 a top view, and Fig. 4 a horizontal section, of a stove embodying my improvements.

The main body A, which consists of a horizontal barrel, elliptical or circular in section, is divided, near its closed rear end, into a small or smoke-draft chamber, B, and a large or fire chamber, C, by a transverse vertical diaphragm or partition, D. This diaphragm has an opening through it near the top, closed with an adjustable valve, E, for permitting, when desired, a direct draft from the fire-chamber into the pipe *b*, and especially when kindling the fire, and another opening, *d*, through the base of the diaphragm, below the plane of the horizontal floor F of the fire-chamber, between which floor and the bottom of the stove sufficient space, F², is left to act as a flue. The floor F, upon which rests the burning fuel, joins the diaphragm D tightly at its rear end, and the dead-air lining or double wall *c* of the stove at its sides, and extends forward within a short distance of the stove-door G, sufficient space, *a*, being left between its edge and the door to permit the free entrance of the escaping products of combustion into the space F² beneath the floor, and thence into the smoke-draft chamber B, said space *a* being thus made to act as a diving-flue. A raised ledge or guard, *f*, formed at the front edge of the floor, prevents the escape over it of ashes and coals, and the consequent choking of the diving-flue. The heated currents, when directed by the closing of the valve E, are caused to pass to the front

edge, and beneath the floor F, along it from front to rear, heating the entire bottom of the stove, and escaping through the opening *d* in the base of the diaphragm up into the smoke-draft chamber B, where it heats the entire rear end of the stove. H is the removable hearth, which permits the ashes and coals falling into the bottom of the stove to be taken out. Formed upon the front or fire-chamber side of the diaphragm D is a perpendicular flue, I, which runs down the middle of the diaphragm within a short distance of the floor or fire-bed F, giving free space for the passage of air. Just below the valve-opening E in the top of the diaphragm, the flue I is divided into diagonal branches *i i*, running upward on each side of the opening, and communicating at the top, through the wall of the stove, with the outer air, by openings closed with adjustable slides *e e*. When it is desired to increase the combustion of the fuel, these slides are opened, admitting a draft of air from the outside, which, as it passes down between the diaphragm and the wall of the flue, becomes highly heated therefrom, and passes from the open lower end of the flue through the fire, from rear to front of the fire-chamber, being thus drawn when valve E is closed, thence back through from front to rear, under the floor, and up through the smoke-draft chamber at the back, the whole surface of the stove being thus thoroughly heated. When the valve E is opened, the products of combustion escape directly into the pipe, as before stated. The slides *e e* can, of course, be regulated to admit the air in any desired quantity into the draft-pipe I.

It is evident that the draft-pipe I may be divided into two pipes, and made to pass down at each side of the inner surface of the stove-walls, terminating nearly on a level with the fire-bed, or constructed in any other suitable manner, so that the essential idea be preserved—namely, that of a top draft, communicating with the fire in the interior of the body of the stove at the rear of the fire-chamber. An essential advantage afforded by the position of the top-draft descending-flue is, that it occupies no appreciable space in the fire-chamber, as it forms a part of the back wall of such chamber, so that the hot air entering the fire-chamber thereby enables the

entire length of the fire-chamber to be utilized for the purposes of draft and combustion; and, by reason of the floor or fire-bed being made of less length than the clear length of the fire-chamber, I am enabled to form the entrance of the diving-flue by thus shortening the floor itself, and to place the entrance of the diving-flue at the end of the fire-chamber opposite to that at which the draft-pipe I is arranged; and, by reason of the arrangement of the draft-pipe at the inner or rear end of the fire-chamber, I am enabled to maintain and regulate a brisk fire with the door and hearth of the stove entirely closed, and thereby to dispense with all front draft and registers for regulating the same.

For the purpose of cleaning the stove I provide an ash-pan, I², of the ordinary kind, which, extending in front of the stove, forms a continuation of the bottom or diving flue.

I claim as new and of my invention—

1. The combination, in the stove-body A, of the diaphragm D, provided with an opening in the bottom, with the floor F, closed at its rear and sides, and extending nearly to the front of the stove, and forming, in conjunction with the bottom of the stove, a passage or flue beneath the fire-chamber, extending from front to rear of the body of the stove, substantially as set forth.

2. The combination, in the stove-body A, of the diaphragm D, provided with openings in the top and bottom, the former closed by means of adjustable valve E of the floor F, closed at its rear and sides, and extending nearly to the front of the stove, and forming, in conjunction with the bottom of the stove, a passage or bottom flue, extending from front to rear of the stove, substantially as set forth.

3. The combination, with the stove-body A, of the floor F, said floor being closed except at the front, and forming, in connection with the body of the stove, a flue passing lengthwise of the stove beneath the fire, and communicating at the rear, through the rear chamber, with the stove-pipe b, substantially as set forth.

4. In a stove, the floor F, arranged within the body and above the bottom thereof, having its rear and sides joined with the walls of the stove, and its front edge provided with a raised ledge or guard, f; substantially as set forth.

5. The combination, in a wood-burning stove, having a bottom, F, closed, except at the front end a of a rear end flue, I, communicating with the fire-chamber at its rear end only, and terminating near said closed floor, for the purpose set forth.

6. The combination, with the stove-body A, divided into a smoke-draft chamber and a fire-chamber, and provided with a floor or fire-bed, said fire-chamber communicating with the smoke-flue through a free passage beneath the bed from front to rear, of a draft-pipe, I, arranged to descend into the interior of the stove at a point opposite to the entrance of the diving-flue, substantially as set forth.

7. The combination, in the stove-body A, divided into a smoke-draft and a fire chamber by a transverse partition, provided with openings in the top and bottom, the upper one being closed with an adjustable valve, and a horizontal floor or fire-bed, forming, in conjunction with the bottom of the stove, a longitudinal flue beneath the fire-bed, communicating at the forward end with the fire-chamber, and at the rear with the smoke-draft chamber, of a vertical draft-pipe, communicating at the top with the outer air, closed with an adjustable slide or slides, and having its lower end descending to a point within a short distance of the fire-bed, substantially as set forth.

In testimony that I claim the foregoing I have hereunto signed my name before two subscribing witnesses.

DAVID C. PROCTOR.

Witnesses:

JNO. E. HUNTER,
FRANK F. PROCTOR.