

(No Model.)

E. RICHMOND.

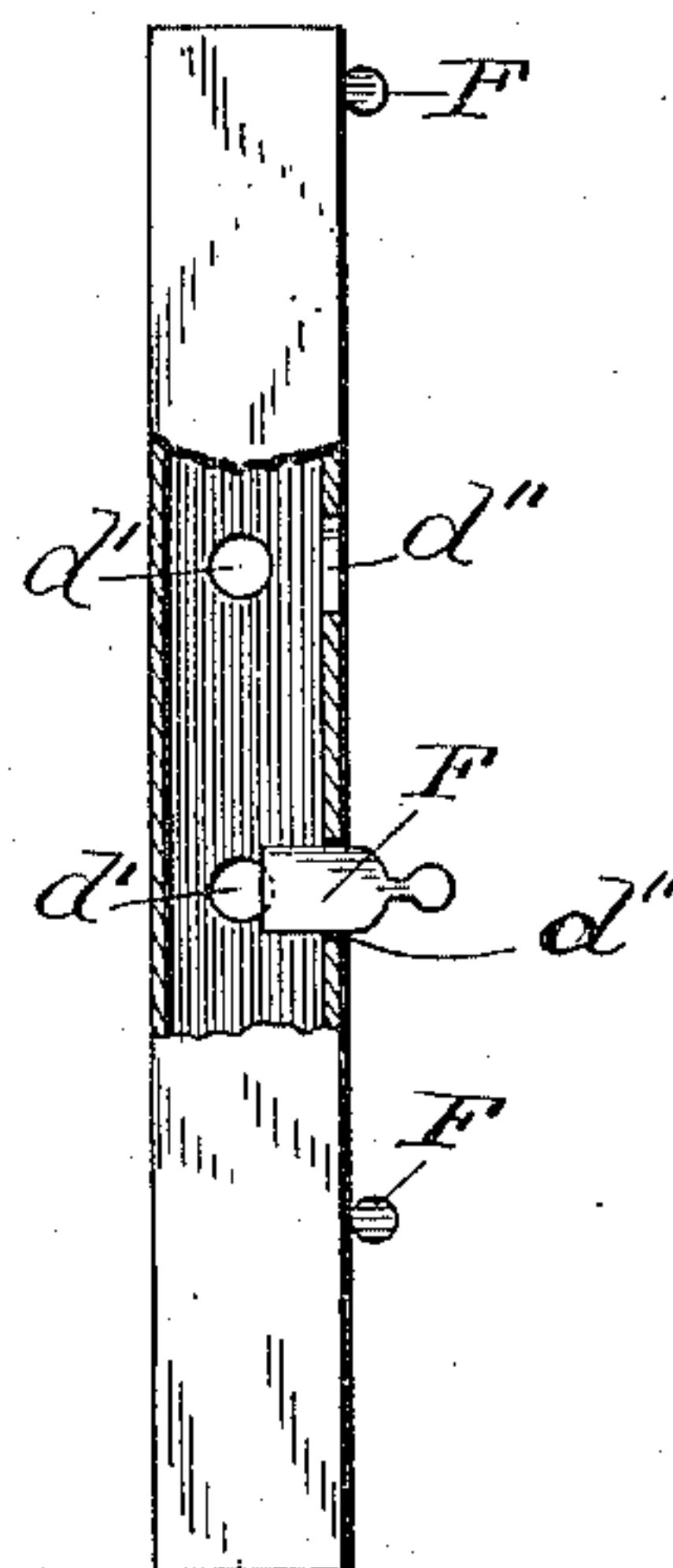
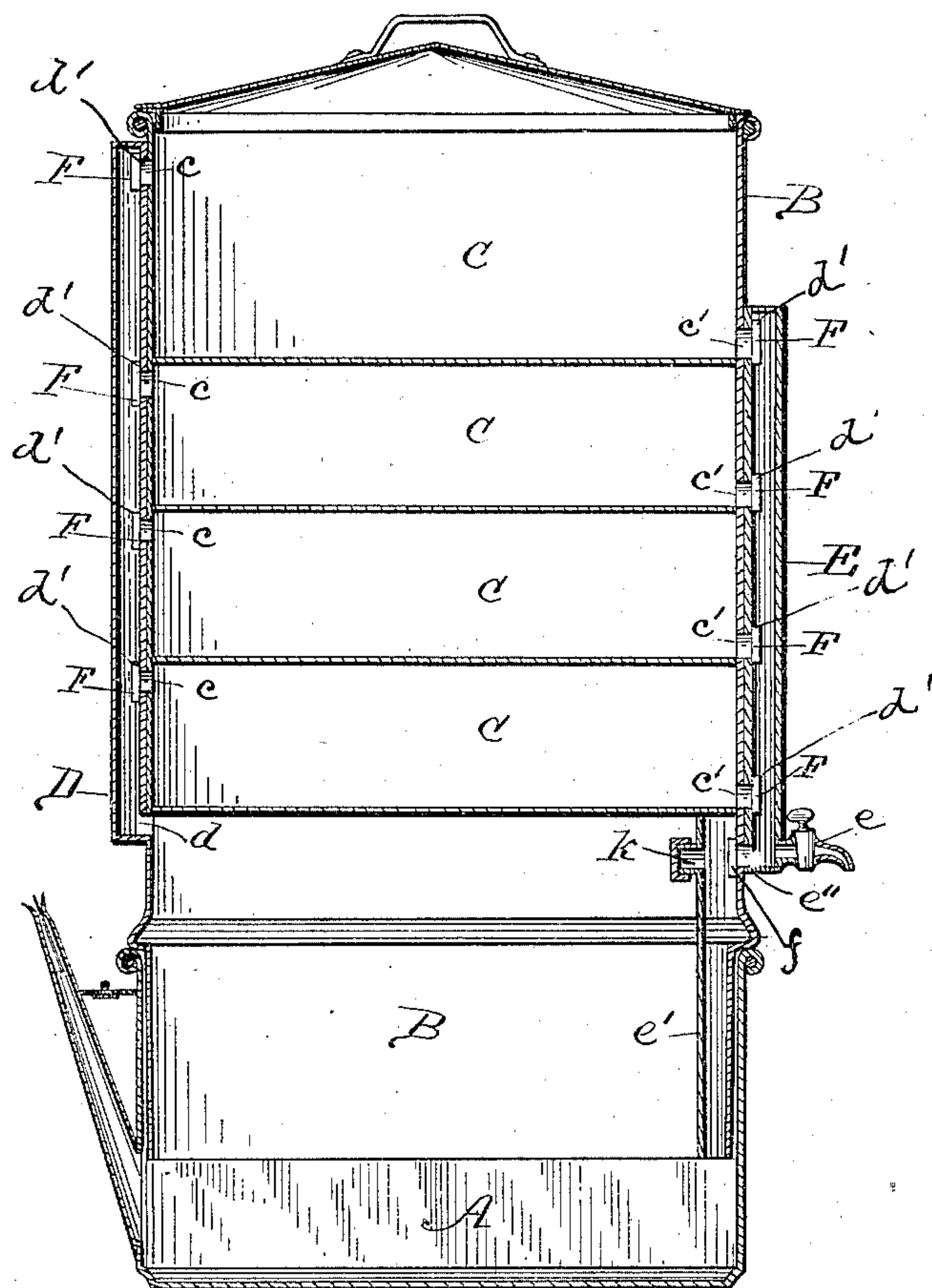
BOILER AND STEAMER FOR DOMESTIC PURPOSES.

No. 313,686.

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Fig. 1.

Fig. 2.



WITNESSES:

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BOILER AND STEAMER FOR DOMESTIC PURPOSES.

SPECIFICATION forming part of Letters Patent No. 313,686, dated March 10, 1885.

Application filed December 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, ENOS RICHMOND, a citizen of the United States, residing at Alloway, in the county of Salem and State of New Jersey, have invented certain new and useful Improvements in Boilers and Steamers for Domestic and Agricultural Uses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to domestic steamers; and its objects are to accelerate and economize cooking and cleansing by steam. It consists in a combination of pipes with suitable attachments to convey and remove steam to and from the steaming-chambers.

In the accompanying drawings, wherein like letters represent like parts, Figure 1 is a vertical section of the steamer mounted upon a boiler; and Fig. 2, a rear elevation of the pipes D and E of Fig. 1, showing the cut-off valves and the outlets for steam.

A is a boiler of any convenient form; but for the sake of uniformity and simplicity the description herewith will be confined to an oblong boiler.

B is a steam-chest of like outline with the boiler, fitting snugly within the boiler by means of the customary flange upon the bottom of the chest, supported upon the rim of the boiler by an offset running around the bottom of the chest, and closed at the top by the usual tight lid. The chest is arranged into the customary tight compartments, as C. The steam rising from the boiler enters the pipe D through the inlet *d*, (which is within the flange of the steam-chest,) and, ascending the pipe, fills each compartment through inlets *c*, and as fast as it condenses it escapes through vents *c'* into the pipe E, and is drawn thence through the faucet *e*, or is returned to the boiler through the offset-pipe *e'*, which is open at the bottom and has connection with the pipe E through the orifice *e''*. The pipes D and E are provided with orifices, as *d'*, connecting, respectively, with the inlets *c* and the vents *c'*.

In order to regulate the admission of steam to the compartments, I use an ordinary cut-off valve, F, whereby any of the inlets *c* may be wholly or partly closed at pleasure. A slot, *d''*, must be made in the pipe D to receive each valve; but the escape of steam through such slots will be practically unimportant.

Whenever rapid steaming is desired, the inlet *k* in the offset *e'* may be opened, whereby steam will enter said offset and ascend the pipe E, and pass into the compartments through the vents *c'*. As this need will not be habitual, it will not be inconvenient to lift the steam-chest out of the boiler to open the inlet *k*, which ordinarily will be kept closed by any suitable slide-valve or screw-cap. The valves described as applied to the inlets *c* will be also applied to the vents *c'* in the same manner, so that when the pipe E is used as a feed-pipe the supply of steam from it to the compartments may be regulated. When the condensed steam is to be withdrawn through the faucet *e*, the pipe *e'* should be cut off by a slide-valve, like the valves F, inserted at the junction of the pipes E and *e'*, and which valve is shown at *f* in Fig. 1.

I am aware that it is common in domestic steamers to provide a vertical steam-pipe outside the steam-chest to convey steam thereto from the boiler; but such pipe is either rigidly attached to both boiler and steamer, as shown in the patent to Welling, No. 275,302, thus preventing the automatic rise of the steamer under pressure of superabundant steam in the boiler, or the inlet to the steam pipe is outside the boiler, as shown in the patent to Brooks, No. 196,069, so that the pipe can only be fed through a vent formed at a fixed spot in the shell of the boiler, and requiring the formation of a tight joint between said vent and inlet; but in my construction, while the steam-pipe is outside, the inlet thereto is inside, the wall-lines of boiler, (see *d*, Fig. 1,) and receives the steam arising from the boiler without requiring a vent in the wall of the boiler or a tight joint with said vent, and the steam-pipe (see D, Fig. 1) being attached entirely to the steam-chest, (see B, Fig. 1,) the latter is free to rise and fall automatically within the boiler, according to the pressure of steam in said boiler.

Having thus described my invention, what I claim to be new and useful is the following:

1. The combination, in a domestic boiler and steamer, of the steam-chest B and the steam-pipe D, said steam-pipe being separate from and independent of the boiler, all in the manner and for the purposes hereinbefore set forth.

2. The combination, in a domestic steamer, of the pipe E, having a faucet, *e*, an offset-pipe, *e'*, and inlets *d'*, with the compartments C, having outlets *c'*, said pipe E being further provided with a vertical sliding valve, as at *f*, inserted and working at the junction of said pipe and offset-pipe, all in the manner hereinbefore described, whereby condensed steam may be withdrawn from said compartments and either discharged or returned to the boiler, as may be desired.

3. The combination, in a domestic steamer, of the pipe D, having an inlet, *d*, and outlets *d'*, with the compartments C, having inlets *c* and outlets *c'*, the pipe E, having a faucet, *e*, an offset-pipe, *e'*, inlets *d'*, and a vertical slid-

ing valve, *f*, like the valves F, inserted at the junction of said pipes E and *e'*, all in the manner hereinbefore described, whereby steam may be simultaneously supplied to and withdrawn from said compartments.

4. The combination, in a domestic steamer, of the pipe E, having a faucet, *e*, orifices *d'*, and an offset-pipe, *e'*, provided with an inlet, *k*, with the compartments C, having orifices *c* and *c'*, and the valves F, said pipe E having slots *d''*, and said inlet *k* being closed, as desired, by a suitable slide-valve or screw-cap, all in the manner hereinbefore described, for the purpose of supplying steam to said compartments through the pipe E when rapid steaming is required.

In testimony whereof I affix my signature in presence of two witnesses.

ENOS RICHMOND.

Witnesses:

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J. M. LAWTON.