

M. B. MILLS & C. E. DINEHART.
Feed-Cooker.

No. 219,968.

Patented Sept. 23, 1879.

Fig. 1.

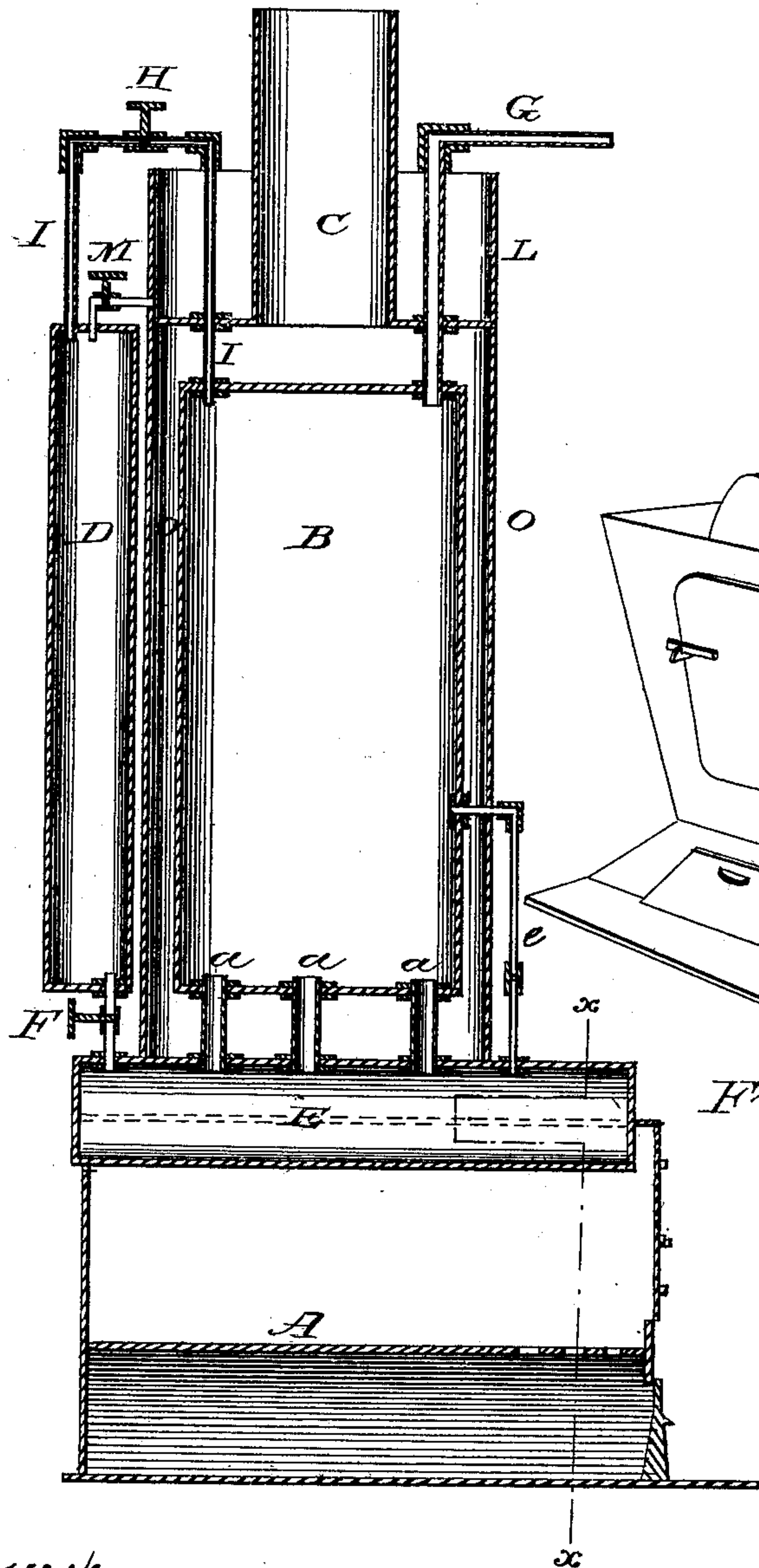


Fig. 2.

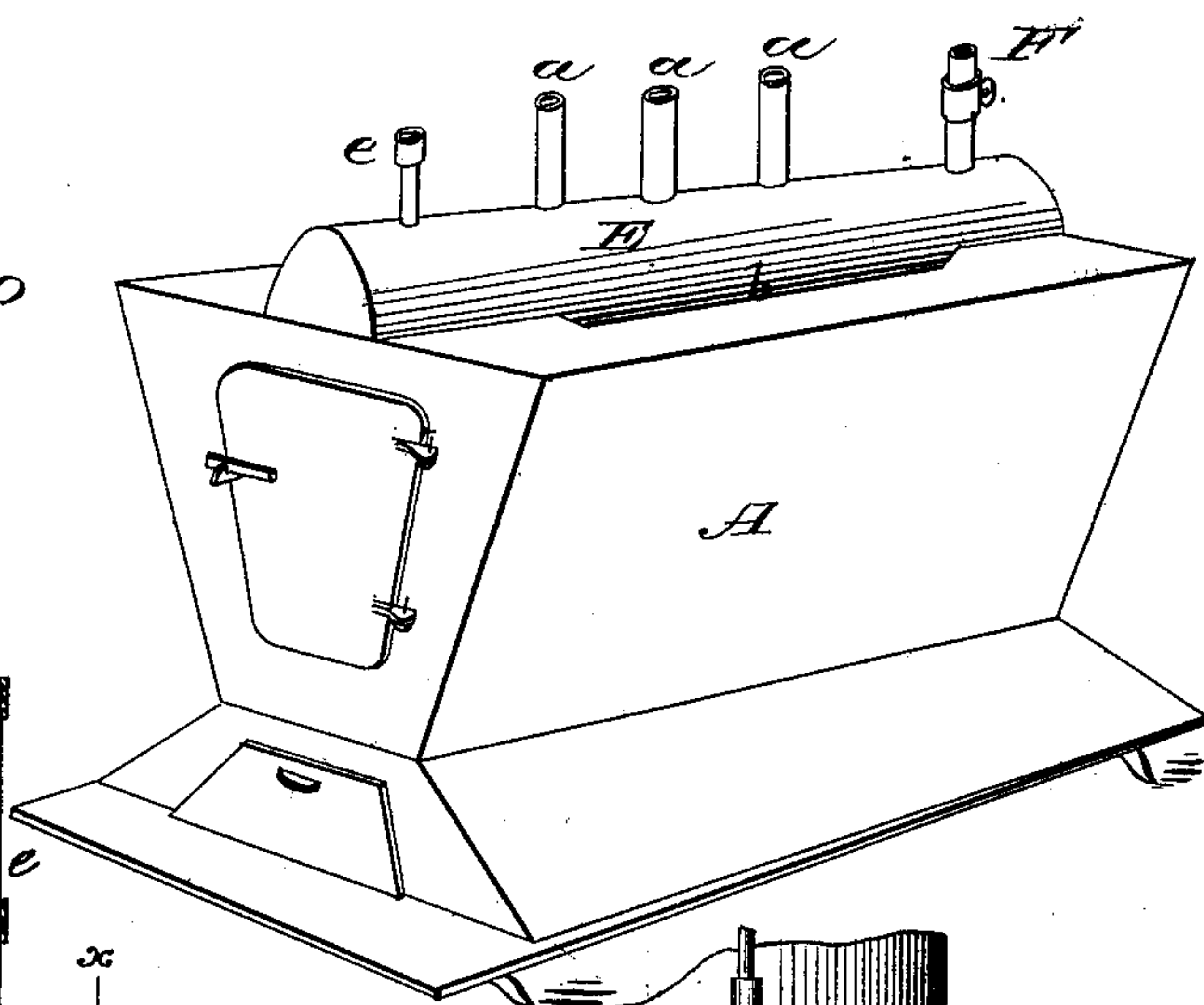
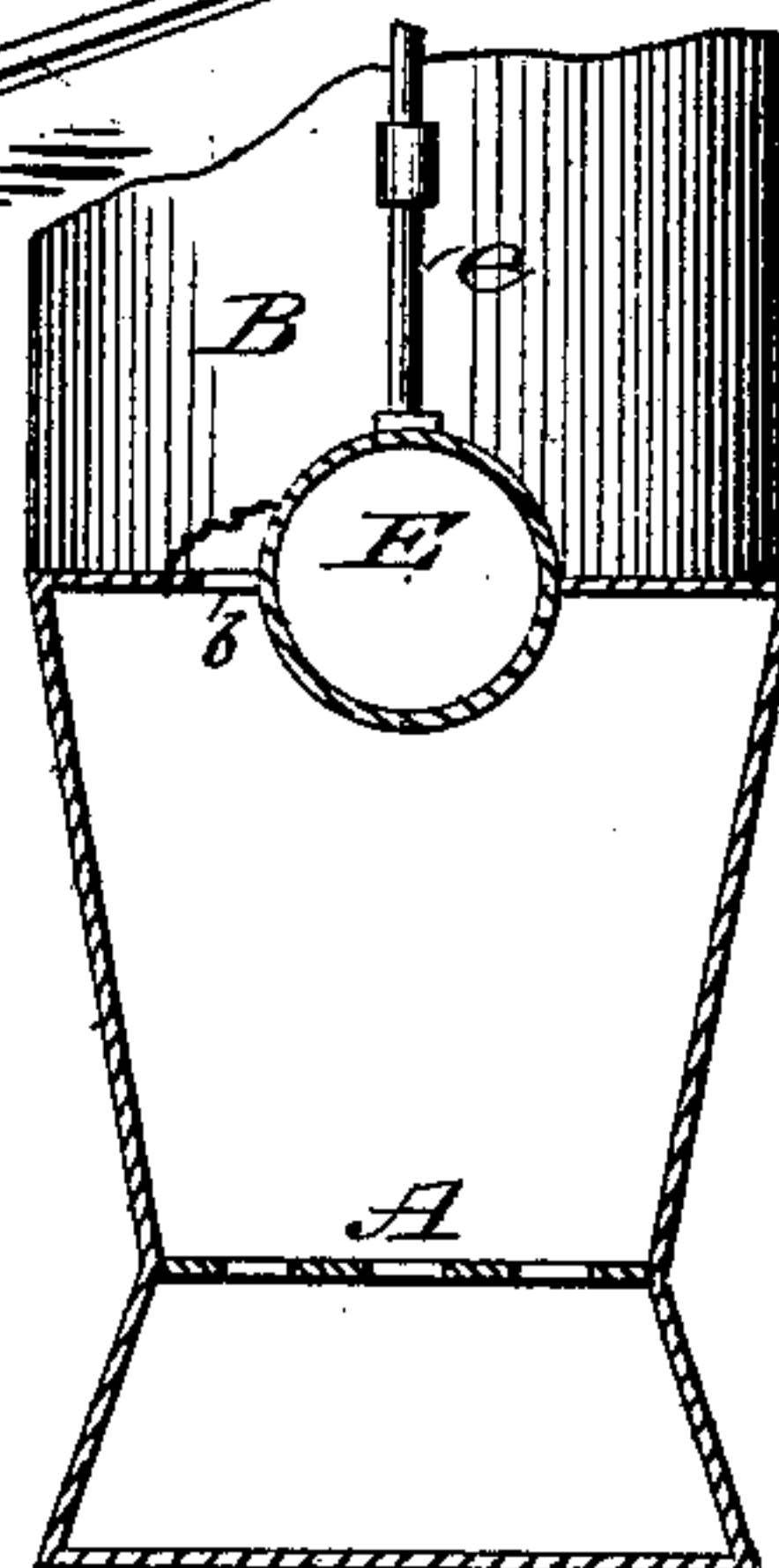


Fig. 3.



Witnesses:

W. W. Norris
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UNITED STATES PATENT OFFICE.

MORTIMER B. MILLS AND CHRISTOPHER E. DINEHART, OF CHICAGO,
ILLINOIS; SAID MILLS ASSIGNOR TO SAID DINEHART.

IMPROVEMENT IN FEED-COOKERS.

Specification forming part of Letters Patent No. **219,968**, dated September 23, 1879; application filed
February 17, 1879.

To all whom it may concern:

Be it known that we, MORTIMER B. MILLS and CHRISTOPHER E. DINEHART, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Apparatus for Generating Steam for Cooking Food for Live Stock; and we do hereby declare that the following is a full, clear, and exact description of the same.

The object of our invention is to provide an improved apparatus for generating steam for cooking food for cattle, which shall have a large area of heating-surface within a small cubical space, and be adapted to economize heat to a high degree.

The construction and arrangement of parts are as hereinafter described, reference being had to accompanying drawings, in which—

Figure 1 is a vertical central section of the generator, and Fig. 2 a perspective view of the furnace and primary or smaller boiler connected therewith. Fig. 3 is a cross-section on line *xx* of Fig. 1.

The furnace A has a flat top, which is provided with a lengthwise recess to admit or receive the small primary boiler E, which is connected by tubes *a* with the vertical boiler or main heater B. A concentric drum, O, incloses the boiler B, and is set directly on the top of furnace A and heater E.

The boiler and drum are separated by a narrow space, to which the heat and products of combustion from furnace A have access by the communicating openings *b*, Fig. 2. The products of combustion escape from the upper end of the drum through the smoke-pipe C. The drum is extended upward around the latter, and thus forms an annular water holder or reservoir, L.

The flame and heat act on nearly the whole surface of the primary boiler E, and in passing upward come in contact with all sides of the main boiler B. Excessive radiation is prevented by the surrounding drum O, so that we thus economize fuel by securing as full an effect of heat as practicable without unduly impairing the draft of the furnace. The boiler E, being always hotter than the main boiler B, a circulation is constantly maintained in,

both through the tubes *a*, the colder current or currents setting downward and the hotter upward.

The steam generated in the boilers B E is conducted through pipe G to a suitable feed-cooker or vessel (not shown) for containing the food intended for the cattle.

We show in Fig. 1 an injector or feeder, D, for supplying water to the primary boiler E. The injector is arranged vertically beside the boiler B, and connected with the steam-space of the latter by pipe I, and with the reservoir L and boiler E by other pipes, having valves M F, respectively.

When the water-valves M F and steam-valve H are opened, steam will enter injector D and force water downward into boiler E.

To resupply the injector D, the valve M is opened to admit water from reservoir L.

A water-gage, *e*, is affixed to the front of the boiler.

What we claim is—

1. The combination of the horizontal primary boiler E and the furnace A, having an opening in its flat top to receive the same, the upper boiler, B, and its concentric drum O, set vertically over and on said furnace, and separated by a narrow space, the tubes *a*, connecting said heater and boiler, and the steam-pipe G, all as shown and described.

2. The combination, with boiler B, of the drum O, having an upward extension forming reservoir L, the smoke-pipe C, passing through the latter, the primary boiler E, placed beneath the boiler, and a pipe or tube, D, for conducting water from reservoir to heater, all as shown and described.

3. The vertically-arranged injector D, in combination with boiler B, the reservoir L, and primary boiler E, and connecting steam and water pipes, provided with valves, all as shown and described, for the purpose specified.

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Witnesses:

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W. W. NORRIS.