2 Sheets—Sheet 1

J. M. HILL.

Steam Feed-Cooker.

No. 205,863. **Patented July 9, 1878.**

Fig. 1.

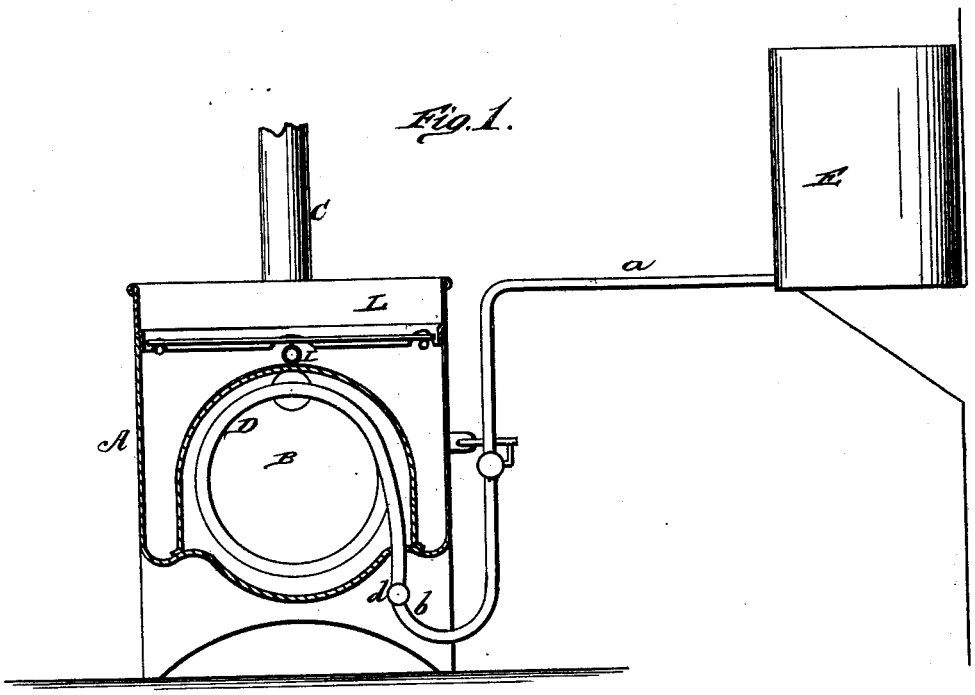
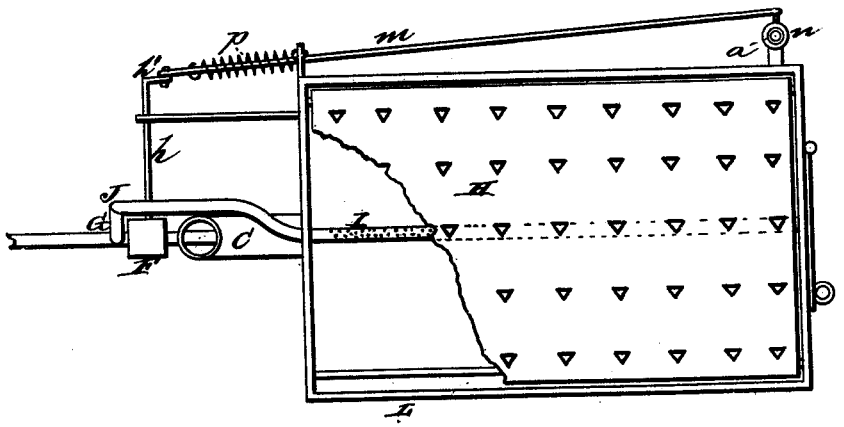


Fig. 2.



WITNESSES

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2 Sheets—Sheet 2.

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Fig. 3.

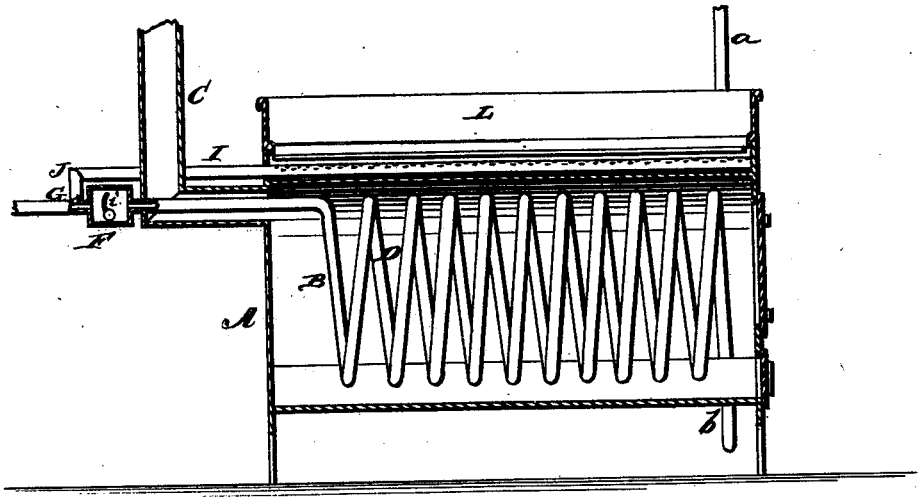
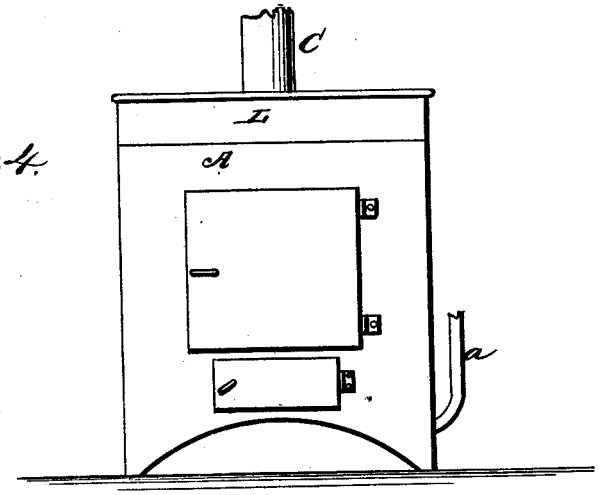


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES M. HILL, OF ANN ARBOR, MICHIGAN.

IMPROVEMENT IN STEAM FEED-COOKERS.

Specification forming part of Letters Patent No. **205,863**, dated July 9, 1878; application filed May 11, 1878.

To all whom it may concern:

Be it known that I, JAMES M. HILL, of Ann Arbor, in the county of Washtenaw and State of Michigan, have invented a new and valuable Improvement in Steam-Generators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a transverse vertical central section of my steam-generator. Fig. 2 is a plan view with water-tank removed. Fig. 3 is a longitudinal vertical sectional view, and Fig. 4 is a front view, of the same.

The nature of my invention consists in the construction and arrangement of a stationary and portable steam feed-cooker, as will be hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents the casing of the steam feed-cooker, in which is the horizontal cylindrical fire-box B, extending the entire length of the casing, and provided at the top front with suitable doors, and at the rear with an elbow smoke-pipe, C. Within the fire-box B is a coiled pipe, D, which lies close around the fire-box, and extends the entire length thereof.

E represents an elevated water-tank, from which the water passes downward through a pipe, *a*. This pipe extends below the fire-box, and then turns upward at *b* and connects with the front end of the coil D. In the pipe *b* is a check-valve, *d*, so arranged that the pressure of cold water from above will raise the valve and then pass into the coil, while in case there is any back-action of steam said check-valve *d* will close.

The steam is generated in the coiled pipe D, the rear end of which passes through the elbow of the smoke-stack C. This makes a very good and cheap arrangement for heating the water and generating steam.

The rear end of the coil-pipe D connects with a cylinder, F, at the upper side, and a T-joint, G, is screwed into said cylinder F, to make connection both ways, one to convey the steam for cooking or heating purposes at any distance away, and the other to be connected with a pipe, I, that runs back under the crown-sheet or perforated bottom H. The pipe I is connected with the center arm of the T-joint or elbow-coupling G by means of a short pipe, J, which screws into both, as shown. The upper side of the pipe I is perforated, and lies close to the top of the furnace or fire-box B, the perforations allowing the steam to escape and pass up through the feed-box L on top.

Suitable stop-cocks are to be arranged, so as to admit the steam through either pipe, to pass it off to a distance for cooking or other purpose, or to the pipe I for cooking on top of the furnace; or the steam may pass to both at one time.

A rod, *h*, runs into the globe F, and is within the same provided with a fan or wing, *i*. The rod *h* has a crank, *h'*, connected, by a rod, *m*, with a valve, *n*, in the water-supply pipe *a*. The steam presses square against the fan *i*, and, as the steam-pressure increases, the fan is turned back, rotating or rocking the rod *m*, thereby opening the valve or stop-cock *n* to let on more water. A coil-spring, *p*, on the rod *m*, draws the same back when the steam-pressure decreases, to shut off the supply of water.

The perforations in the bottom H are made preferably in diamond form, as shown.

The feed-box L is made flaring, and should be provided with a common board lid to cover the same.

I am aware that a coil-pipe for similar purposes is not, broadly, new, and that it is well known to perforate steam-pipes, and such features are not, broadly, sought to be covered by this application.

What I claim as new, and desire to secure by Letters Patent, is—

1. The coil-pipe D, arranged within the cylindrical fire-box B the entire length thereof, and communicating with the water-supply at one end, and having steam-exit at the other end, as herein set forth.

2. The combination of the tank E, having connecting-pipe provided with check-valve *d*, with the horizontal coil D, and return perforated steam-pipe I, arranged between the fire-box B and the perforated bottom H of the feed-box L, as and for the purpose specified.

3. The combination of the cylinder F, rod *h*, with fan *i* and crank *h'*, the rod *m*, with spring *p*, and the stop-cock *n* in the supply-pipe *a*, substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES M. HILL.

Witnesses:

DENSMORE CRAMER,

J. L. GRINNELL.