2 Sheets—Sheet 1.

D. MACHAMER & J. McCULLOCH.

Feed-Steamer.

No. 209,063. Patented Oct. 15, 1878.

Fig. 1.

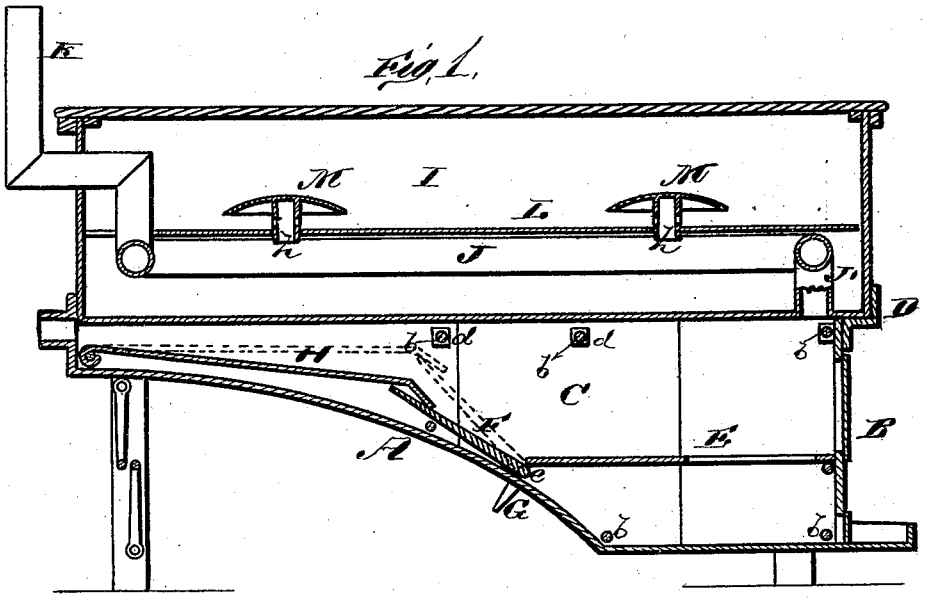
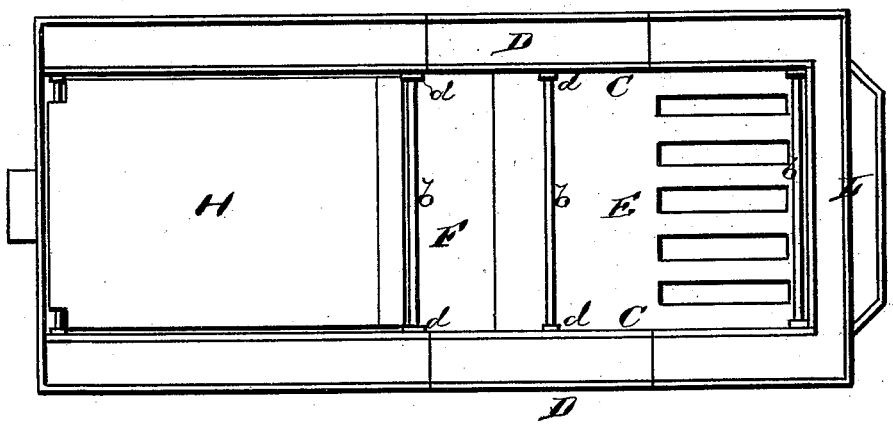


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

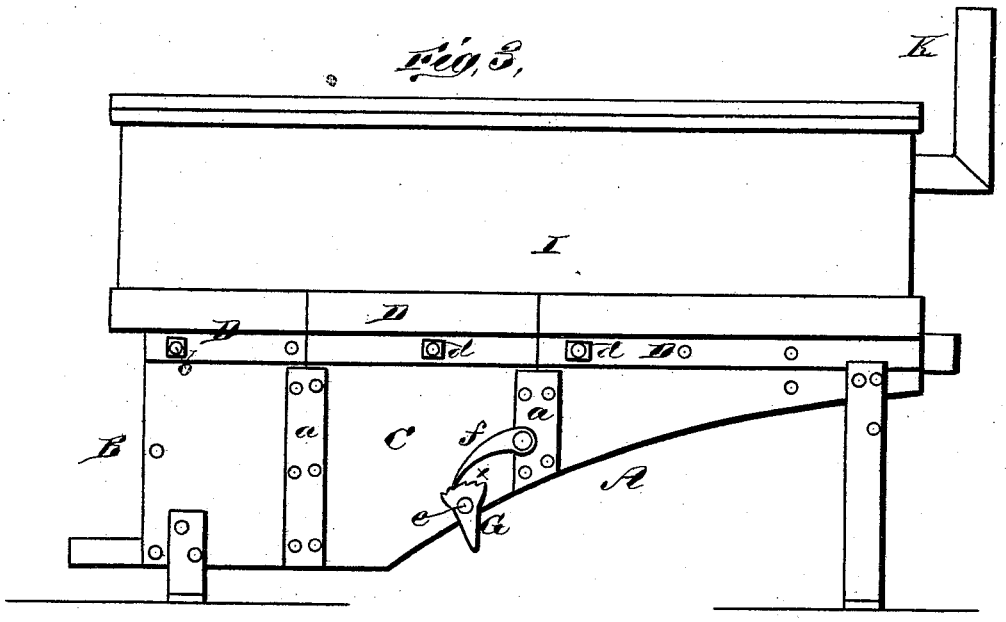
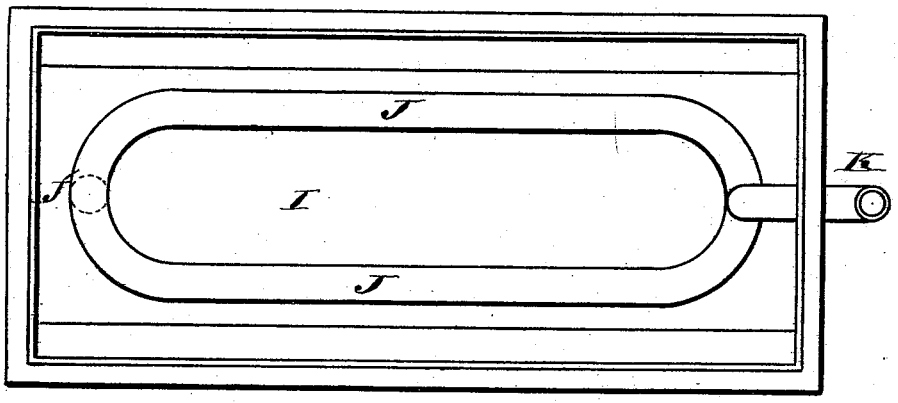


Fig. 4.



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UNITED STATES PATENT OFFICE.

DANIEL MACHAMER AND JOHN McCULLOCH, OF LENA, ILLINOIS.

IMPROVEMENT IN FEED-STEAMERS.

Specification forming part of Letters Patent No. **209,063**, dated October 15, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that we, DANIEL MACHAMER and JOHN MCCULLOCH, of Lena, in the county of Stephenson and State of Illinois, have invented a new and valuable Improvement in Feed-Steamers; and we 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 longitudinal vertical section of our food-steamer. Fig. 2 is a plan view. Fig. 3 is a side view, and Fig. 4 is a plan view of the vat.

The nature of our invention consists in certain improvements in a portable furnace and feed-steamer, as will be hereinafter more fully set forth, and pointed out in the claim.

The annexed drawings, to which reference is made, fully illustrate our invention.

Our feed-steamer furnace is composed of a continuous bottom plate, A, bent in the form substantially as shown, a front, B, having suitable doors for the fire-box and ash-pit, and sides C. These sides are made in sections, joined together by means of outside covering-strips, *a a*, riveted to them. Around the upper edges is a flanged rim, D, also made in sections and fastened to the furnace, the whole being firmly united by cross-rods *b b* at top and bottom, which rods are provided with nuts *d* both inside and outside of the furnace.

E is the grate upon which the fire is built. About midway in the furnace is a valve, F, extending across the same, and hinged at its lower end by a rod, *e*, which has a lever, G, on one end outside the furnace, as shown in Fig. 3 of the drawings. This lever is formed with ratchet-teeth *x* for a pawl, *f*, to take into, for the purposes of elevating or raising the hinged plate H, and retaining the same at any height.

The upper end of the valve F passes under the front end of a plate, H, which is hinged at the rear end of the furnace, and has its front end bent downward over the valve, as shown in Fig. 1 of the drawings.

By raising the valve F the plate H is also raised, whereby the heat and flame are caused to pass through the pipe J, and are concentrated close to the bottom of the pan or vat I.

By making the sides of the furnace in sections the plates are prevented from cracking.

The pan or vat I fits tightly over the furnace, and has within it two or more pipes, J J, as shown in Fig. 4, which run longitudinally in the same. At the front end these pipes unite in a single pipe, J′, which passes down through and opens through the bottom of the vat into the fire-chamber. At the rear end these pipes also unite and communicate with a smoke-pipe, K.

It will be observed that when the valve is raised the heat and products of combustion will pass up the pipe J′, and as they enter the pipes J they are divided, a portion passing to the right and the other portion to the left, thereby distributing the heat uniformly throughout the pipes, and heating the water in the vat more readily than can be done by ordinary means. The heat passes not only under the vat, but also through these pipes, thereby giving double heat.

On top of the pipes in the vat is fitted a plate, L, having one or more short tubes, *h*, through it. These tubes are perforated above the plate, and on their upper ends are attached caps M. This device allows the steam to escape from the feed, while the caps prevent the holes from clogging.

We are aware that a steam cooking apparatus with a flue and a valve to cause the heat and products of combustion to pass either under the bottom of the pan or through a flue in the pan have heretofore been used.

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

The pivoted or hinged valve F and hinged plate H, with means for holding the same at different heights, in combination with pipes J J′ and vat I, substantially as and for the purposes set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

DANIEL MACHAMER.
JOHN MCCULLOCH.

Witnesses:
HENRY WINGART,
JOHN GEISE.