G. A. WARD.

Feed-Cooking Apparatus.

No. 204,467. Patented June 4, 1878.

Fig. 1.

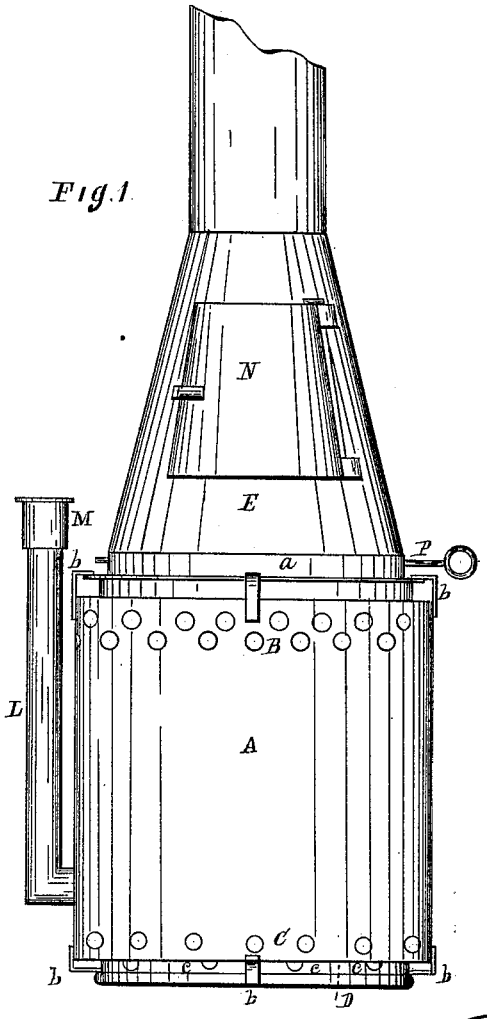


Fig. 2.

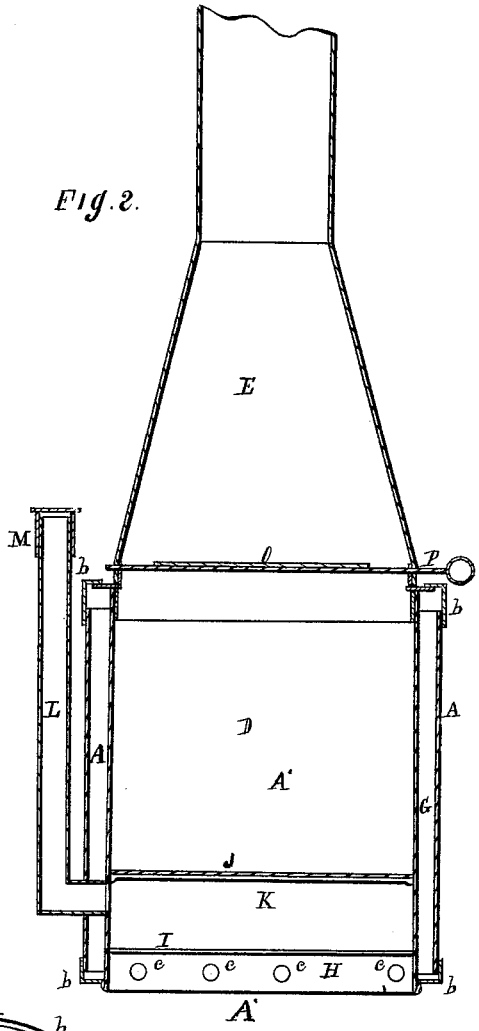
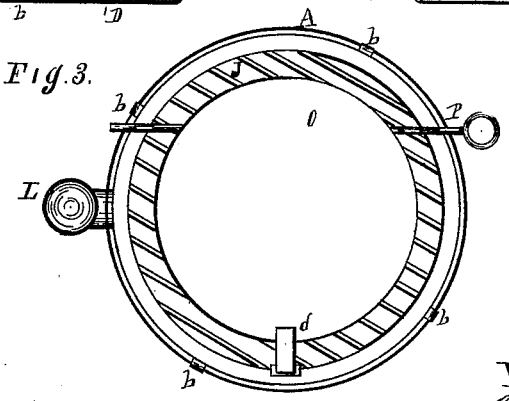


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE A. WARD, OF CONNEAUT, OHIO.

IMPROVEMENT IN FEED-COOKING APPARATUS.

Specification forming part of Letters Patent No. **204,167**, dated June 4, 1878; application filed February 25, 1878.

To all whom it may concern:

Be it known that I, GEO. A. WARD, of Conneaut, in the county of Ashtabula and State of Ohio, have invented a certain new and Improved Feed-Cooking Apparatus; and I do hereby declare that the following is a full and complete description thereof, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is an outside view of the cooking apparatus above referred to. Fig. 2 is a vertical transverse section. Fig. 3 is a plan view of the lower section of the apparatus, the upper section being removed that it may be seen.

Like letters of reference refer to like parts in the several views.

This invention is an apparatus for cooking feed for stock, which consists of a shell inclosing a fire-box. Between this shell and said fire-box is an annular space, open at the top and bottom.

At the upper end of the fire-box is a damper, and near the bottom, under the fire-grates, is a draft-tube, extending therefrom upward, on the outside of the shell, above the fire box. Said apparatus is used in connection with a barrel, in which it is placed for cooking the feed, as hereinafter more particularly described.

In the drawings, A represents the shell above alluded to, around the upper and lower edges of which is a series of perforations, B and C, Fig. 1. Within said shell is a fire-box or furnace, A^1, consisting of the lower section D and the upper section E, attached thereto at the circumferential band A in such a manner as to be detachable therefrom, for a purpose presently shown.

It will be observed that the fire-box or furnace is of less diameter than the shell, thereby forming an annular space, G, between said shell and furnace, as shown in Fig. 2.

The shell A is attached to the fire box or furnace A^1 by stays *b*. The fire-box extends above and below said shell, as seen in Fig. 2, which arrangement allows the apparatus to stand upon the base of the fire-box, extending below the shell.

In the lower end of the furnace is a recess, H, Fig. 2, open to the outside by perforations *c*. The bottom of the furnace is shown at I. J is the grate, and K the ash-pit. Said grate is shown more fully in Fig. 3. L is a draft-tube, opening into the ash-pit, and extending therefrom above the furnace, on the outside thereof, as shown in the drawings. The upper end of the tube or pipe is a cap, M, which serves as a damper for closing and opening the draft, as may be desired. The upper section E of the apparatus is the flue or chimney, in which is a door, N, whereby access is had to the lower section or furnace for feeding the fire therein. O, Figs. 2 and 3, is a damper, partially covering the upper end of the furnace or lower section. Said damper is operated from the outside by the handle P, which, when closed, is retained in a horizontal position by a finger, *d*, Fig. 3, falling upon the edge of the furnace, as shown in the drawings.

Having described the construction of the apparatus, the practical operation of the same is as follows: As aforesaid, the apparatus is for cooking feed for stock. To this end it is placed in a barrel or tank that is larger than the apparatus, and which reaches upward to about the level of the damper. Between the barrel and the furnace is thrown in the feed to be cooked, and which is not allowed to extend above the top of the shell. Water is then filled in among the feed, which flows into the annular space G around the furnace. Fire is now kindled therein by the use of any suitable material, fed through the door N from time to time, as may be required. The fire, being at the bottom of the furnace and at the bottom of the barrel and its contents, heats and boils the water in the annular space G, which, in consequence of a well-known law of heated fluids, ascends therein and flows over the top of the shell A, and through the perforations B onto the upper surface of the contents of the barrel, down through which it descends to the lower end of the shell, under which and through the perforations C it flows into the annular space, and again ascends therein, as before, and pours over onto the feed. This induced, heated current of water, passing upward through the annular space and down through the feed, cooks it in a short time, at the top as thoroughly as at the bottom. During this time the fire is regulated by the cap M, and also by the damper O. By virtue of the recess under the furnace, the heating of the

water is facilitated by the heat that may be under the furnace, and into which recess the water flows through the perforations *c*. The furnace, when the feed is sufficiently cooked, is taken from the barrel, for the removal of the cooked material, and for the purpose, if need be, of cleaning out the ash-pit. To this end the upper section E of the apparatus is taken off. The lower section of furnace can then be turned upward for emptying the ashes, &c., from the ash-pit, so that the apparatus may be again placed in condition, as and for the purpose hereinbefore set forth.

I am aware that it is not new to make feed-cooking stoves with two sections and a pipe for supplying air to the furnace under the ash-pit, and such arrangement, merely, I do not claim; but

What I do claim is—

In a feed-cooking apparatus, the furnace consisting of two sections, D E, provided with a grate and damper within said sections, and having a recess, H, below, and a shell, A, arranged in relation to section D as described, to form an annular water-circulating space, G, in combination with the draft-pipe L and outlet-pipe, substantially as and for the purpose set forth.

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Witnesses:

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