C. S. BURNS.
Feed-Cookers.

No. 196,628 Patented Oct. 30, 1877.

Fig. 1

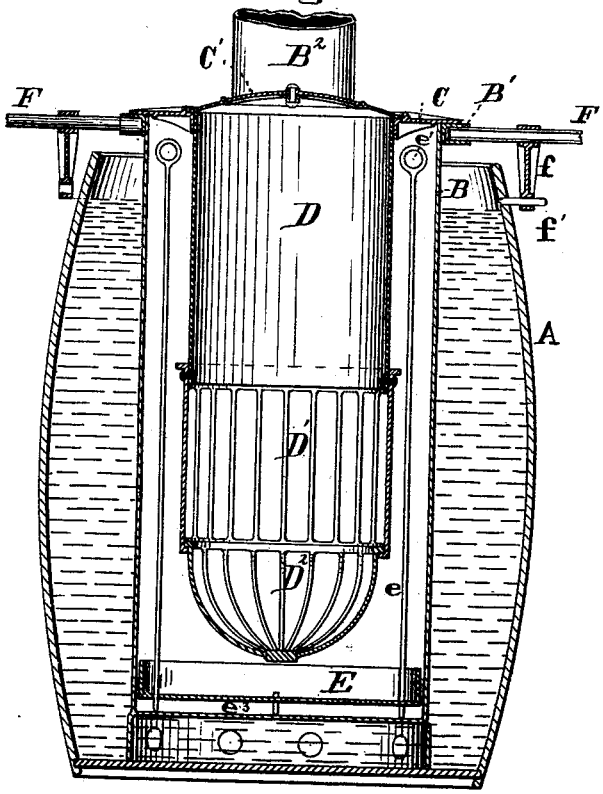


Fig. 2

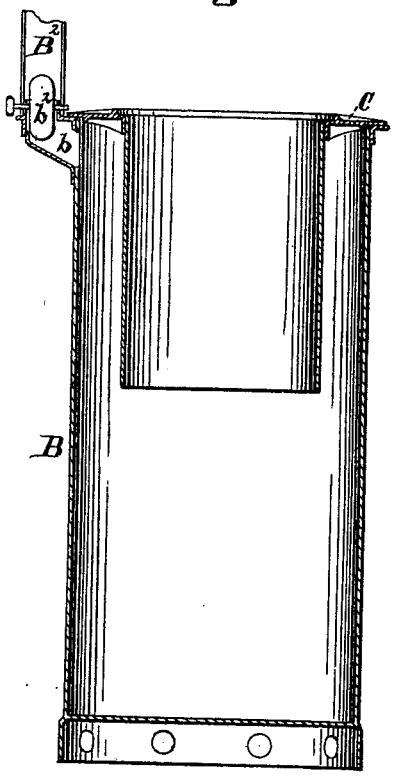


Fig. 3

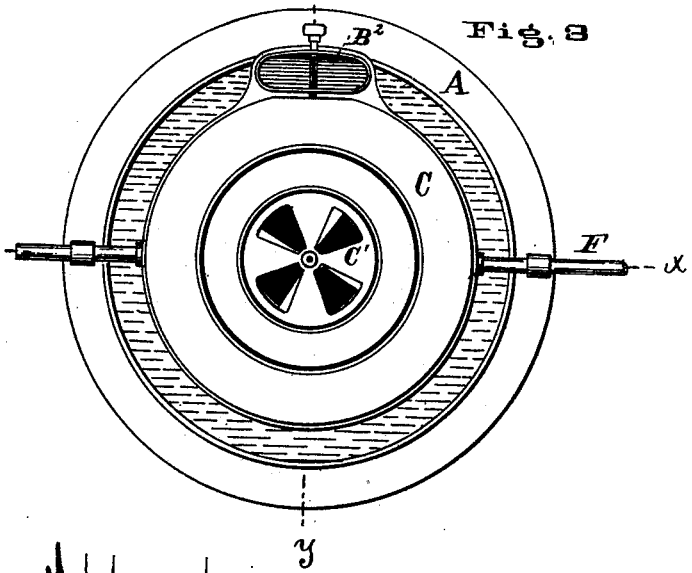
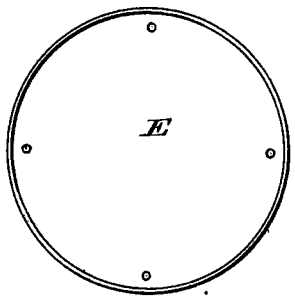


Fig. 4



Attest
Chas. F. Gessert.
D. McSmith

Inventor
Charles S. Burns
per F. Van Rensselaer
atty.

UNITED STATES PATENT OFFICE.

CHARLES S. BURNS, OF CINCINNATI, OHIO.

IMPROVEMENT IN FEED-COOKERS.

Specification forming part of Letters Patent No. **196,628**, dated October 30, 1877; application filed July 7, 1877.

To all whom it may concern:

Be it known that I, CHAS. S. BURNS, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Feed-Cookers; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section through line *x* of Fig. 3. Fig. 2 is a central vertical section of the outer cylinder B and the inner cylinder D, the elbow of the smoke-stack being shown permanently attached to the outer cylinder, in such manner that the inner cylinder may be removed without interfering with it. Fig. 3 is a plan view, and Fig. 4 is a plan view of the ash-pan.

Similar letters of reference indicate like parts.

This invention relates to that class of feed-cookers which are adapted to be used in connection with an ordinary barrel or cask; and consists mainly, first, in the combination of an outer cylinder, having a stove-pipe elbow permanently attached thereto, with an inner cylinder and grate-section, adapted to be readily removed from the outer cylinder; and, second, in the peculiar construction of the ash-pan and the handles by which it is removed.

A represents the barrel, and B the outer cylinder. The bottom of part B is closed, and all is water-tight. At the top is a cast-iron ring, B^1, to which the cylinder B is securely riveted. This casting ends at one side in an elbow, *b*, to which the smoke-stack B^2 is attached. It also contains the adjustable damper b^2, whereby the draft can be regulated. A circular head, C, fits on the ring B^1, and has in its center the ventilator C′.

The inner cylinder D is made of sheet metal, and is riveted to the head C. Below is the vertical grate D^1, and hanging to it is the basket-grate D^2. This makes parts D, D^1, and D^2 practically one piece, which can be removed in one operation.

Below the grate is the ash-pan E, having long rods *e* extending almost to the top, and terminating in eyes e^1. These rods extend below the bottom of the ash-pan a short distance to form two legs. The other two legs intermediate consist of short pieces inserted in the bottom plate. This construction leaves a space at e^3, wherein the heat circulates and transmits the heat to the bottom.

To the casting B^1 is attached the two short tubes F F, which form handles for the manipulation of the structure. The pendants *f f* are provided with eyes below, which slip over nails *f′ f′*, driven into the barrel.

The operation of my invention is as follows: The head C and grates D^1 D^2, which are attached to it, are all withdrawn and a fire kindled in the grate with any fuel that is most convenient. The entire parts can then be replaced in the position as seen in the drawing, and the damper adjusted to suit the draft. The air to support combustion enters the ventilator C and arrives at the fire through part D, while the smoke and gas escape through the space between parts D and B, finding its escape through cavity *b* and stack B^2. Should more fuel be required during one operation, this can be supplied by raising the ventilator or damper C′, which also serves to regulate the draft more accurately than the damper in the elbow, which is simply to be set as a check against the excessive passage of heat to the smoke-stack.

When the boiling is complete the two pendants *f f* are slipped outward, thus disengaging them from the nails *f′ f′*, when the entire structure can be removed, and afterward, also, the contents of the barrel.

The arms F F serve the purpose of convenient handles, whereby the operator can rotate the cooker in the barrel and push it down against the resistance of the feed.

It is of great importance to the proper working of a feed-cooker that the fire-grate and ash-pan can be removed and replaced at any time without disturbing the other parts.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the outer cylinder B, having the elbow *b* permanently attached there-

to, the cylinder D, and the grate-sections D^1 D^2, the construction being such as is described, so that the cylinder D and grate-sections can be removed from the outer cylinder without interference with the smoke-stack.

2. The ash-pan E, having legs *e* extended in an upward direction, as described, and provided with the handles e^1, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES S. BURNS.

Witnesses:
T. VAN KANNEL,
CHAS. F. GESSERT.