

(No Model.)

G. W. SHEALEY.
STEAM BOILER.

No. 304,869.

Patented Sept. 9, 1884.

Fig. 1.

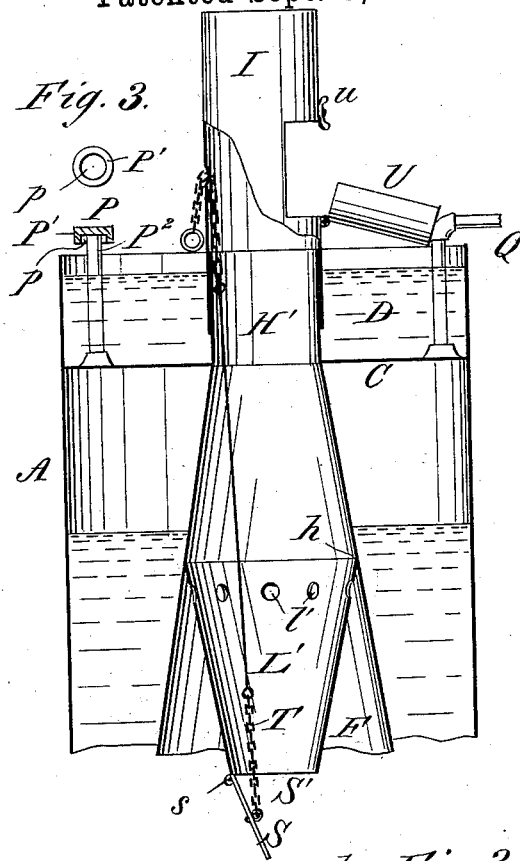
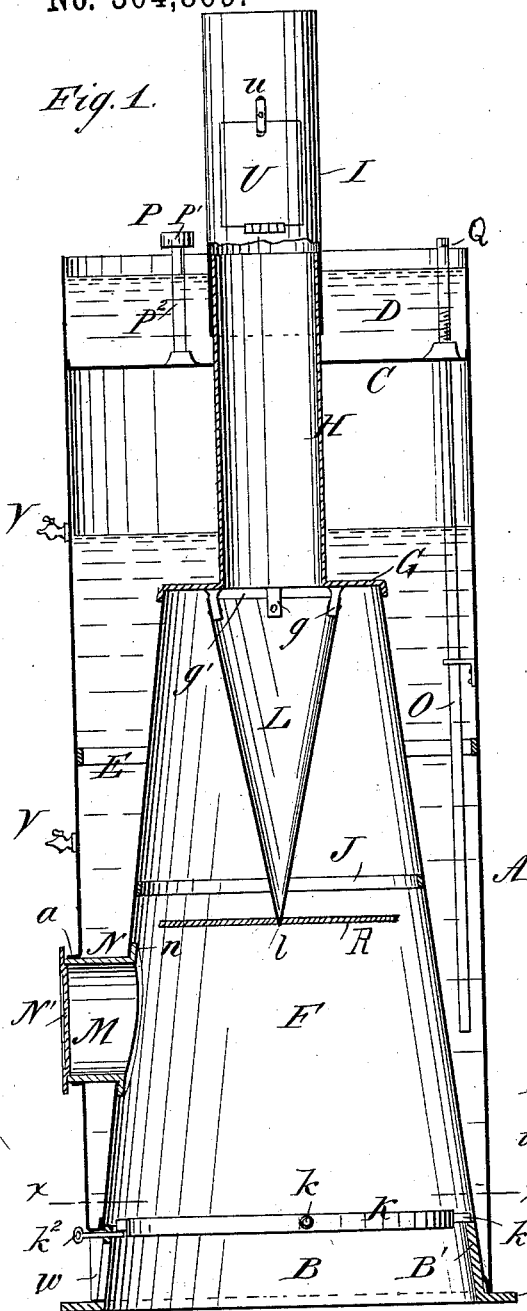
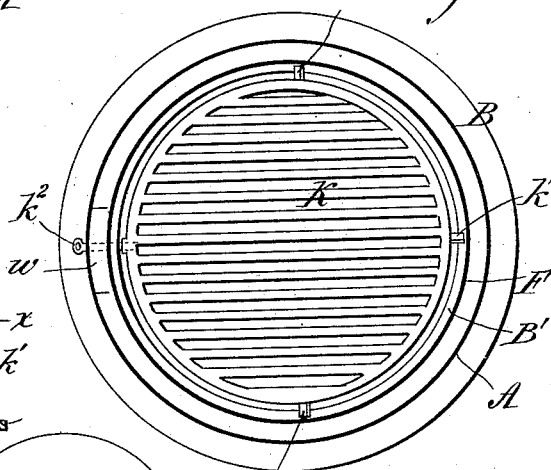


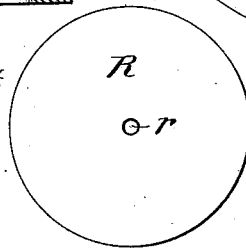
Fig. 2.



WITNESSES:

Donn Twitchell
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Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE W. SHEALEY, OF MARSHALLTOWN, IOWA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 304,869, dated September 9, 1884.

Application filed February 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SHEALEY, of Marshalltown, in the county of Marshall and State of Iowa, have invented a new and Improved Steam Feed-Cooker and Boiler, of which the following is a full, clear, and exact description.

The object of my invention is to provide an economical and reliable feed-cooker and boiler for use in steaming food for stock and for other purposes; and my invention consists in details of construction and in combinations of parts, as will be hereinafter described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my improved feed-cooker and boiler. Fig. 2 is a sectional plan view of the same on the line *xx* in Fig. 1. Fig. 3 is a sectional elevation of the upper part of the boiler, and showing a modification of the fire-box and deflector; and Fig. 4 is a plan view of a deflector-plate.

A indicates the boiler, made of sheet metal, and secured at its lower end to a base, B, of cast-iron, having an upwardly and inwardly projecting flange, B'. The top C of the boiler is made of strong sheet metal, and is secured to the shell of the boiler a short distance below the top of the same, thereby forming a water-reservoir, D, on top of the boiler proper. At about midway of the length of the boiler an internal strengthening-band, E, is riveted to the shell. The internal conical fire-box, F, made of sheet metal, is secured at its base to the flange B' of the base B, and at its upper end to the cast-iron cap G, having a smoke-flue, H, attached to or made integral therewith, and extending through the head C and reservoir D. The smoke-stack I is attached to the flue H by a slip-joint. The fire-box is strengthened by an internal band, J, riveted thereto about midway of its height. A dumping-grate, K, rests by pivots *k* upon the flange B', and is retained in position by the stud *k'* and pin *k''*. A hollow conical heat deflector and preserver, L, is attached to the cap G by the hangers *g* in such manner that a smoke-passage, *g'*, is left from the fire-box to the flue.

The fuel-opening into the fire-box is formed by a short tube, N, having a flange, *n*, fitting to the inner side of the fire-box shell, which tube extends out through the boiler-shell, which has a flange, *a*, fitting around and secured to the tube N. A suitable door, N', hinged to the outer end of the tube, closes the opening. A feed-pipe, O, extends from the top of the boiler nearly to the bottom of the water-space, and is to be closed by a suitable valve or stop-cock, or otherwise. A safety-valve, P, of any suitable construction, may be used; but a weight, P', having a socket, *p*, and resting over the end of a pipe, P², as shown, is the form preferred. A steam-pipe, Q, is provided, which can be extended to a mash-tub feed-steamer set at any desired point. Gage-cocks V are provided at proper points, and a draft-opening, W, is made in the base B.

The deflector-plate R (shown in Fig. 4) is a circular sheet-metal plate, having an aperture, *r*, at its center, and is designed to be secured at said aperture upon the point *l* of the deflector L, and to be supported at its edges by lugs attached to the inside of the fire-box, the deflector R being of such diameter that a draft-space will be left between its periphery and the wall of the fire-box.

In the modification shown in Fig. 3, instead of using the cap G, the conical wall of the fire-box is continued upward to the top of the boiler, and has a straight part, H', extending through the reservoir D, for attachment of the smoke-stack I, and the deflector L' is attached by its base or wider portion directly to the wall of the fire-box extension at *h*, and is provided with a series of apertures, *l'*, near the point of attachment, for the escape of the products of combustion. The lower end, instead of tapering to a point, terminates in an opening, S', as shown, and a damper, S, is hinged to the deflector at *s*. A chain, T, passes through an aperture in the smoke-stack, and is attached at its lower end to the damper S, for regulating the draft. A door, U, is formed in one side of the smoke-stack above the top of the boiler, and is held closed by a button, *u*. This modification is more particularly intended for use upon the smaller sizes of boilers, in which corn-cobs and other light fuel is used. The opening S' gives a free draft and

allows the fuel to be fed into the fire-box through the door U.

It will be seen that this cooker and boiler has great working capacity, is easily operated, and is adapted to various kinds of fuel. The reservoir provides for a supply of hot water for the boiler, and as a whole the boiler is simple, yet strong, in construction, and will be found reliable and durable in use.

10 In the smaller sizes of boilers, which will be constructed of light iron, two strengthening-bands, J, will be used.

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

1. The combination, in a steam feed-cooker and boiler, of the boiler A, having its head C

set below the top of the shell, with the conical internal fire-box, F, the shell and fire-box being secured to a base, B, having a flange, B', 20 and the fire-box having a top, G, and smoke-flue H, and with the downwardly-tapering deflector L, attached to the top G by lugs g, substantially as specified.

2. In a steam feed-cooker and boiler, having 25 a conical internal fire-box, and provided with a downwardly-tapering deflector, L, the combination, with the said deflector L, of the deflector-plate R, substantially as specified.

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Witnesses:

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J. F. MEEKER.