

(No Model.)

E. WAGNER, Jr.
HEATER FOR CHEESE VATS.

No. 455,077.

Patented June 30, 1891.

Fig. 1.

Fig. 2.

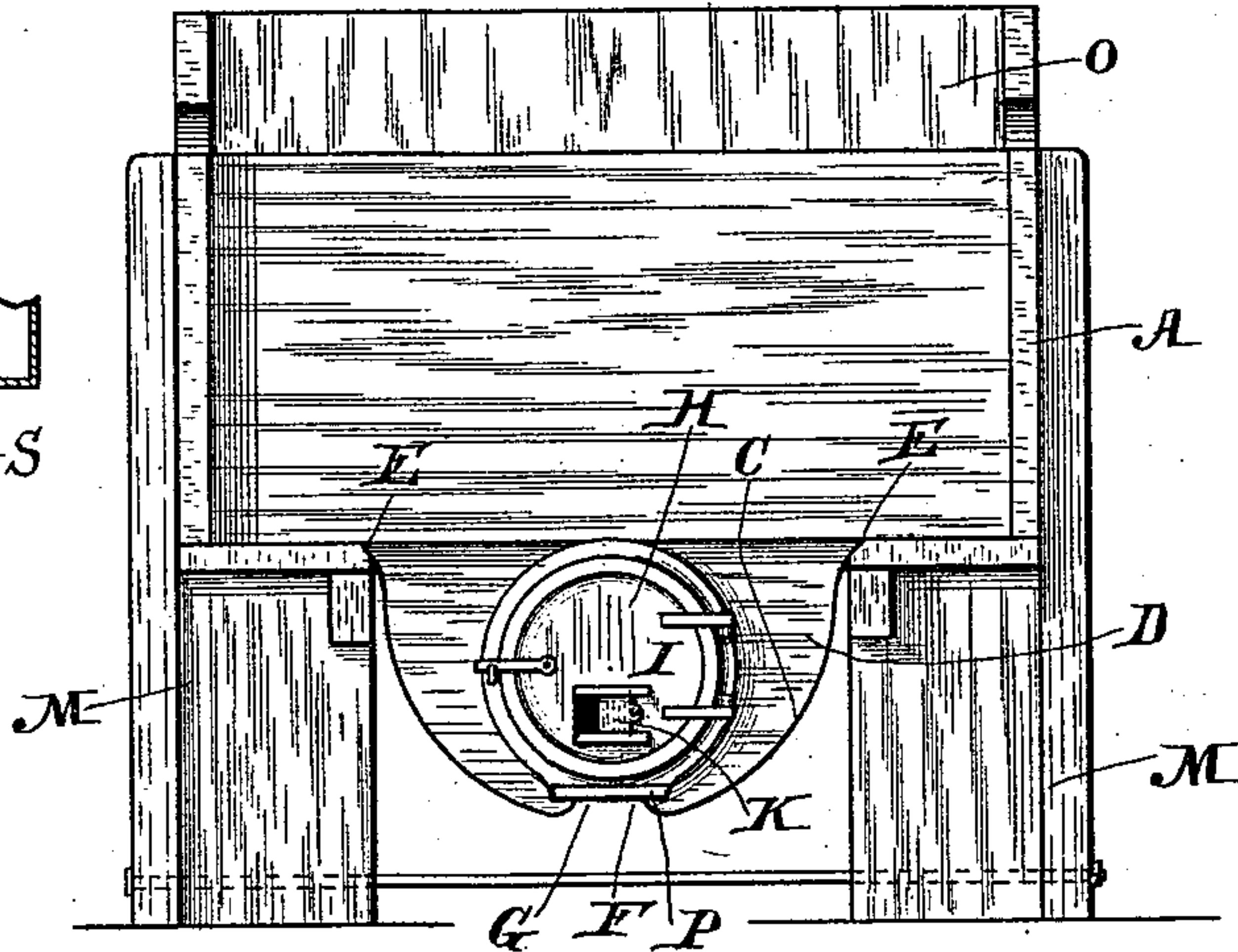
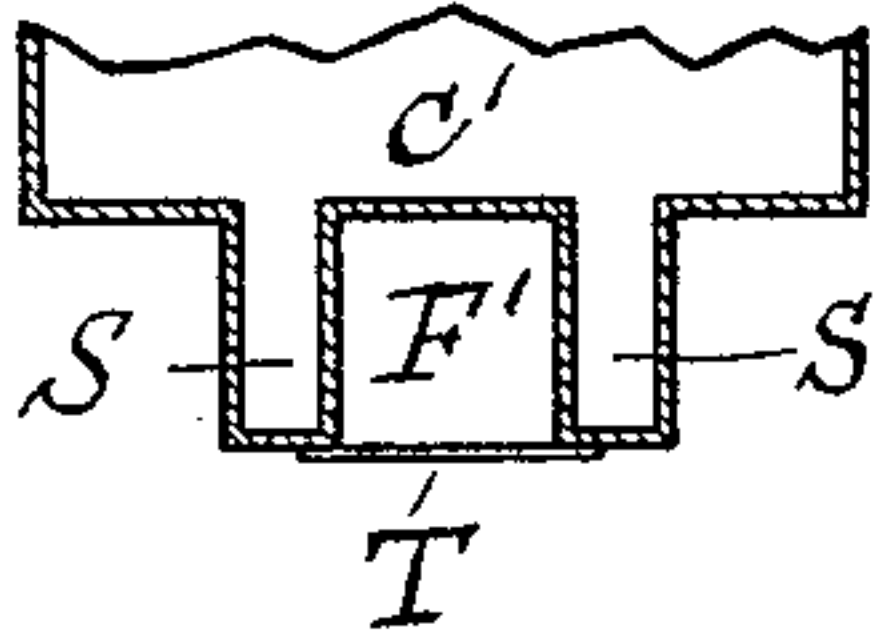


Fig. 2.

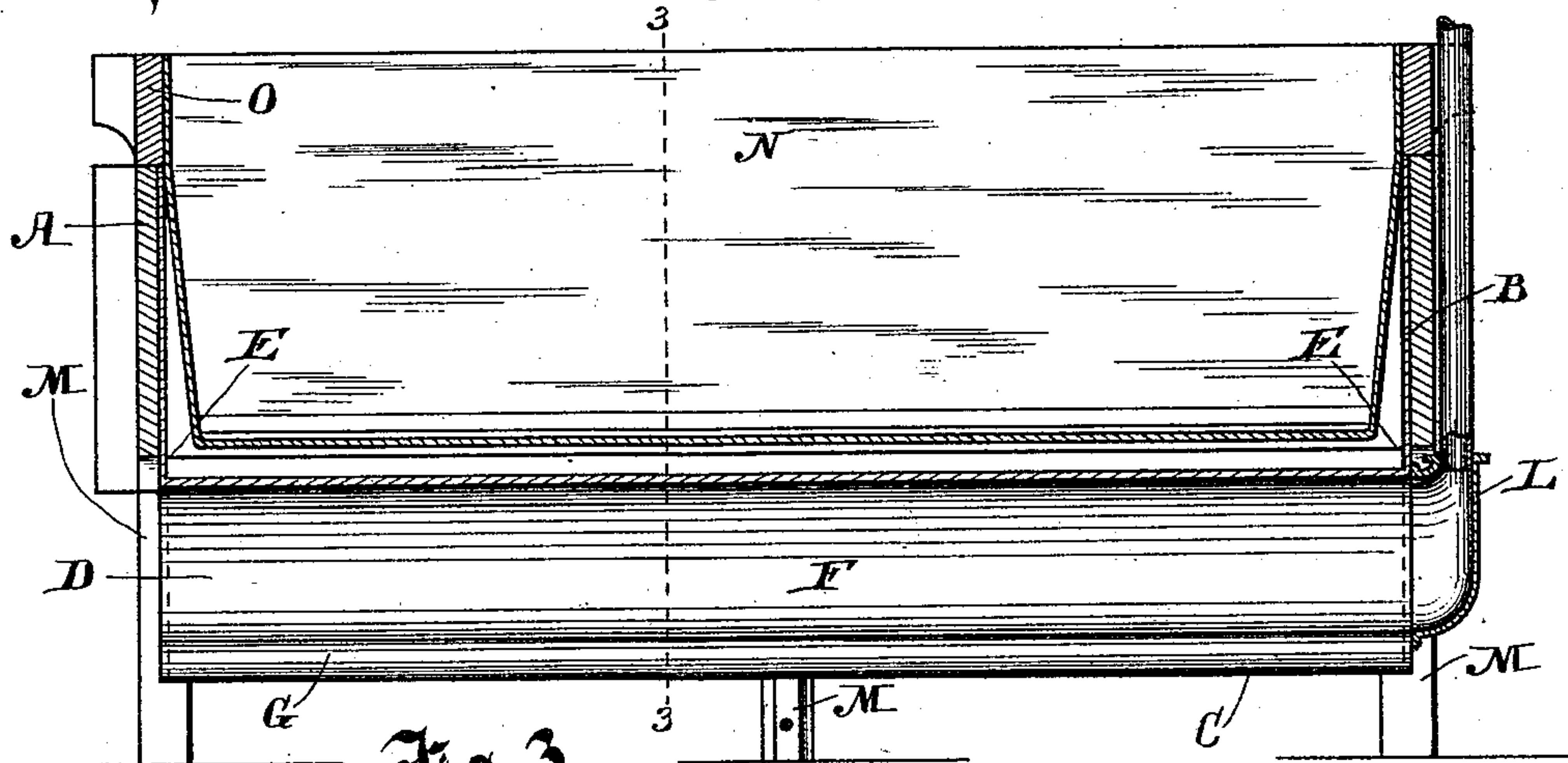
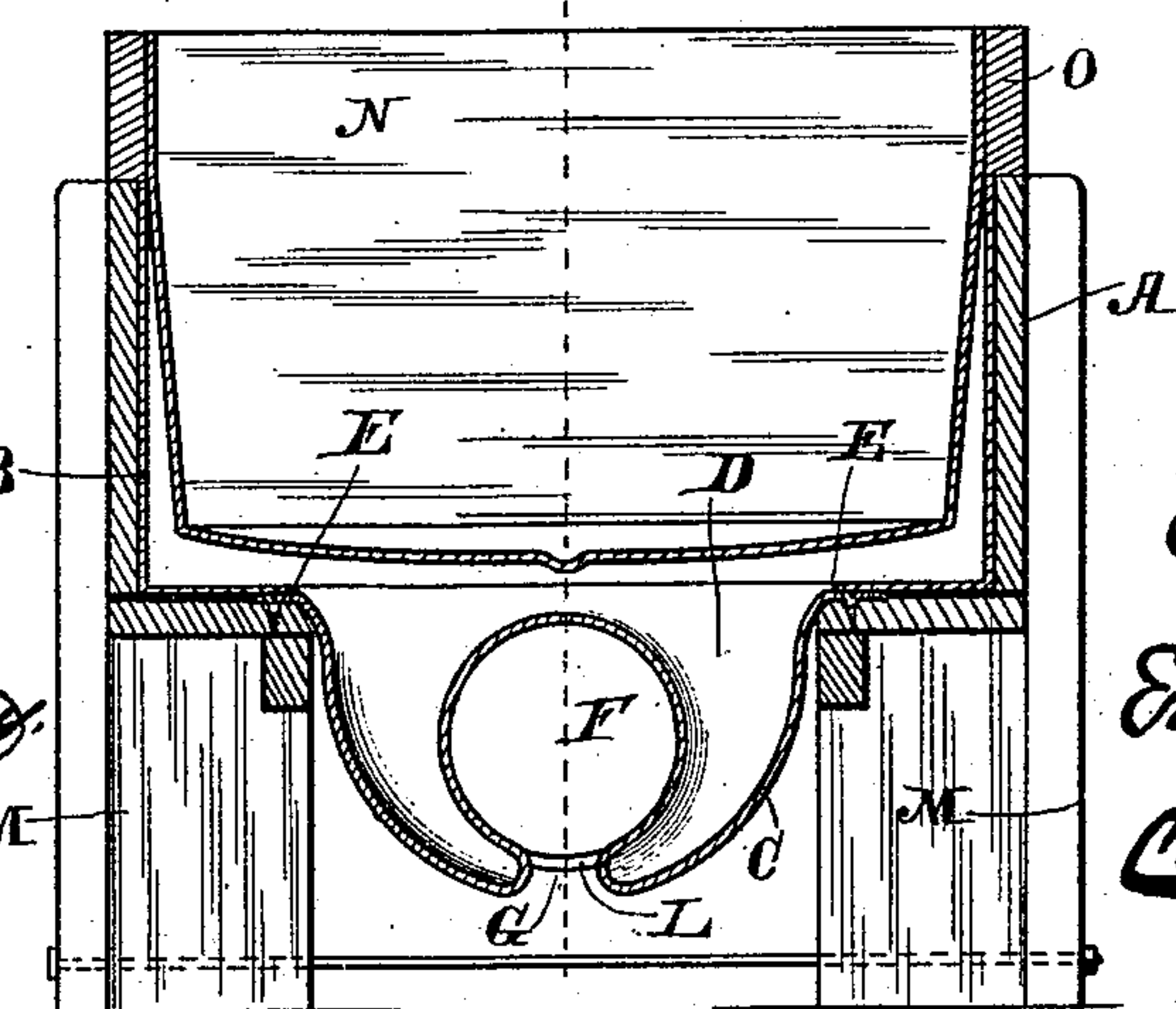


Fig. 3.



Witnesses.

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HEATER FOR CHEESE-VATS.

SPECIFICATION forming part of Letters Patent No. 455,077, dated June 30, 1891.

Application filed January 17, 1891. Serial No. 378,092. (No model.)

To all whom it may concern:

Be it known that I, ERNST WAGNER, JR., of Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented a new and useful Improvement in Heaters for Cheese-Vats, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in that class of cheese-vats in which hot-water heaters are used for warming the milk of which the cheese is to be made.

The object of my invention is to provide a heater having a water receptacle or boiler which nearly surrounds the furnace or fire-box, whereby the maximum amount of the heat-supply is utilized, and in which the furnace is made removable and the heater is so constructed that repairs can be made in the heater and corrosion from condensation on the surface of the heater will be obviated.

In the drawings, Figure 1 is a front end view of a cheese-vat having my improved heater in connection therewith. Fig. 2 is a central longitudinal vertical section of the complete device shown in Fig. 1. Fig. 3 is a transverse vertical section on line 3 3 of Fig. 2. Fig. 4 is a transverse section of a modified form of the heater.

The heater consists of an oblong water-tight box A, having a metal lining B, the central portion of the bottom of the box A being omitted the entire length of the receptacle, and a central sheet-metal bottom C, of peculiar conformation, being secured water-tight to the lining B at its sides and ends and forming a continuation thereof, whereby the entire water-heating receptacle D is made water-tight. The central portion of the bottom C is throughout its entire length bent downwardly from near its edges to a distance preferably equal to or more than the diameter of the furnace, and medially is recurved upwardly, forming a central aperture F open at both ends, and by a narrow longitudinal passage-way G opening downwardly therefrom.

A fire-box or furnace H, conveniently constructed of heavy sheet metal in cylindrical form of such size as readily to be inserted in

and removed from the aperture F, is provided with a front door I, having a draft-opening closed by a slide K, and at its rear end with a removable smoke-pipe L. In this form the furnace is supported in the aperture F on the partially surrounding bottom C.

The receptacle D is supported on a frame M, and a tin or sheet-metal pan N, adapted to be received in the receptacle D, is at its upper edge made fast to the open box O, of the same horizontal size as the box A, on which it is adapted to rest and support the pan N in the receptacle D.

The receptacle D is adapted to receive and hold water, and the central portion C of its bottom is so constructed as to nearly surround the fire-box M, whereby the maximum amount of heat is utilized, and the furnace or fire-box H may be removed from the aperture F by disengaging the smoke-pipe L therefrom and withdrawing it endwise from its support in the bottom C. When so withdrawn, ready access may be had to any part of the interior of the aperture F through the passage-way G, whereby repairs of any kind can be made to the portion of the bottom C that forms the wall to the aperture F. This passage-way G also permits the water of condensation on the bottom C about the aperture F to run freely off from the metal and not be retained to produce corrosion when the heater is not in use and the water therein is cold. A hearth P is secured to the front end of the fire-box H.

In Fig. 4 a modified form of bottom for the heater is shown in outline, which is deemed to be within the spirit of my invention and an equivalent for the form shown in Figs. 1, 2, and 3. In this modified form the bottom C' is carried downwardly, forming two water-holding chambers S S, with a medial space F' for receiving the furnace, transverse bars T, affixed to the bottom, being provided for the support of the furnace.

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

1. In a heater for a cheese-vat, a water-receptacle the bottom of which is twice curved or turned downwardly and upwardly throughout its entire length, forming troughs or chambers in the receptacle at the sides, and a cen-

tral longitudinal channel or space for a fire-box between said troughs, substantially as described.

2. In a heater for a cheese-vat, the combination, with a water-receptacle having its bottom so formed as to provide downwardly-extending water-chambers longitudinally thereof alongside an intervening aperture, and a downwardly-opening passage therefrom throughout its length, of a removable fur-

nace adapted to be inserted in and removed from the aperture endwise, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ERNST WAGNER, JR.

Witnesses:

C. T. BENEDICT,
ANNA V. FAUST.