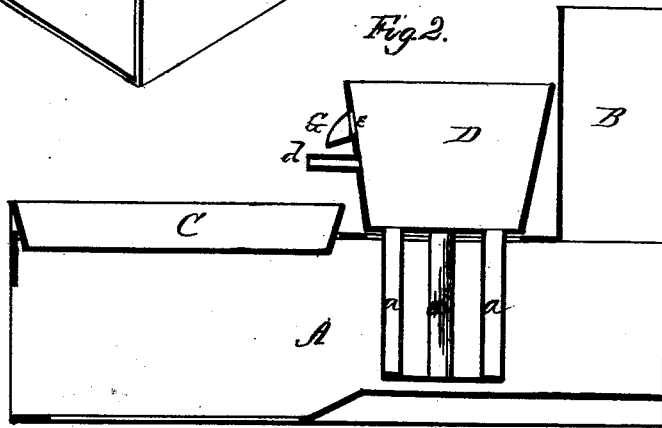
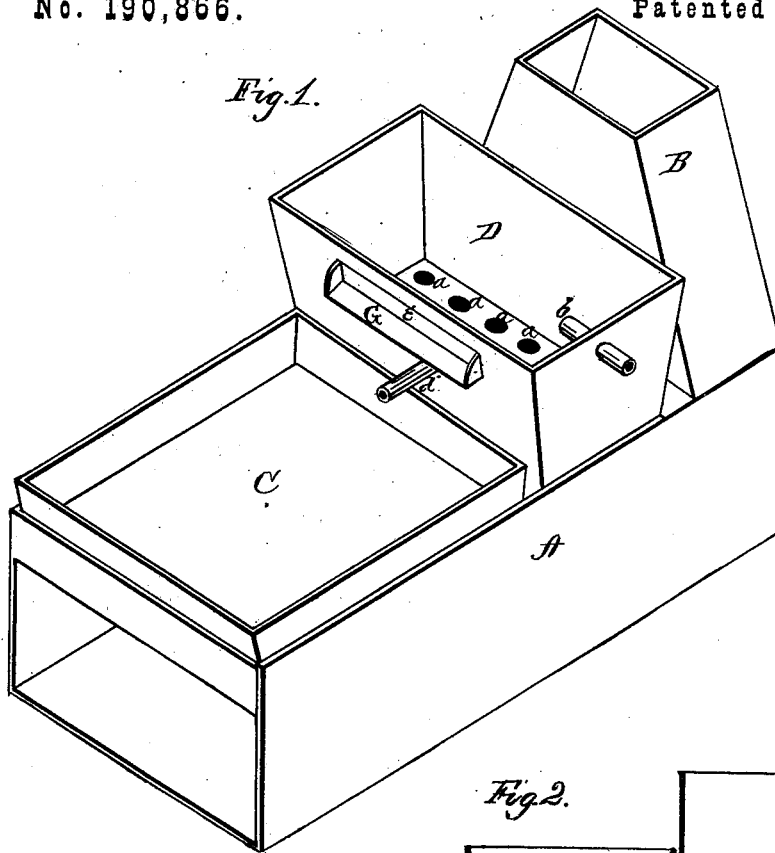


J. M. JACKMAN.  
SOAP-BOILER.

No. 190,866.

Patented May 15, 1877.



Witnesses.  
Frank L. Curand  
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# UNITED STATES PATENT OFFICE

JOHN M. JACKMAN, OF BARRE, VERMONT.

## IMPROVEMENT IN SOAP-BOILERS.

Specification forming part of Letters Patent No. 190,866, dated May 15, 1877; application filed May 10, 1877.

*To all whom it may concern:*

Be it known that I, JOHN M. JACKMAN, of Barre, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Heaters used in the Manufacture of Soap; and do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of a boiler and evaporating-pans.

My invention is used for evaporating the water from soap during its manufacture. The boiler is removable, and is provided with a series of vertically-depending tubes, located between the chimney and the fire-box of the furnace.

The boiler is provided, also, with a ledge or apron near its top edge, inclined from an opening made in the boiler. This apron communicates with one of the evaporating-pans. When the soap foams and is on the point of boiling over, this apron carries the mixture to an evaporating-pan, and thus prevents a waste of the liquid.

I am aware that evaporating-pans constructed with a deep boiler depending from one end of the same have been used in the manufacture of sugar.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which forms a part of this specification, and in which—

Figure 1 is a perspective view, and Fig. 2 is a longitudinal vertical section, of my invention.

A represents the arch with chimney B and one or more pans, C, usually employed in the manufacture of soap. Between the chimney B and the pan or pans C upon the arch is placed my heater D, which consists of an open vessel with flaring sides, and provided with a number of tubes, *a a*, extending downward from the bottom into the arch. These tubes are closed at their lower ends, and are arranged in parallel rows transversely across the arch, the tubes in each row being opposite the spaces between the tubes of the rows on each side.

The contents of the heater become heated by the waste heat, which would otherwise pass up the chimney.

By the arrangement of the vertical tubes *a a* the heat is retained longer to the pans in front, and gives a greatly-enlarged heating-surface without detriment to the draft of the chimney.

The tubes may be of any size, according to the size of the heater and depth of the arch, and they may be placed closer together or farther apart, according to the draft of the chimney and size of the arch.

*b* represents a tube through which the liquid soap passes into the heater from the vessel when the same is stored, and *d* is the pipe through which the soap passes from the heater to the pan or pans. Both of these tubes may be provided with stop-cocks to regulate the flow of soap.

Above the outlet-tube *d* in the front of the heater is an opening, *e*, with apron G, the object of which is, that in case the liquid should foam up, it will not pass over the top of the heater, but go through the opening, and be conducted by the apron to the first pan.

With a heater of this construction placed behind two pans, more evaporation will be caused than with four pans of the same size without the heater, and with no more fuel than would be required for two pans.

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

In a boiler and a series of evaporating-pans used in the manufacture of soap, the boiler D, provided with a series of vertically-depending tubes, the receiving-pipe *b*, and exit-pipe *d*, and also the opening *e* and ledge G, for conducting the overflow to the first exit-pan, in combination with the evaporating-pans, the furnace A, and chimney B, as heretofore described, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of February, 1873.

JOHN MARCH JACKMAN.

In presence of—  
EPHRAIM E. FRENCH,  
ORAMEL H. REED.