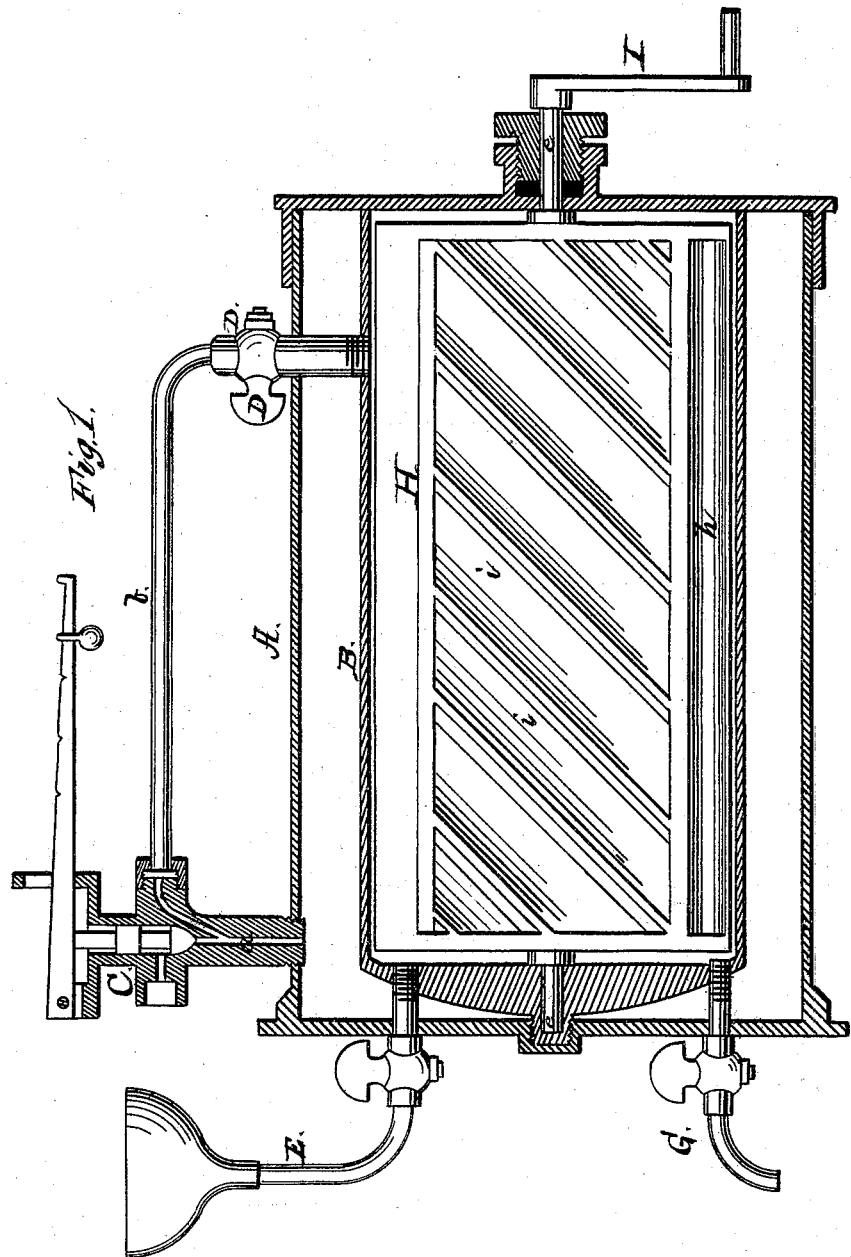


M. J. PALMER.  
SOAP-BOILING APPARATUS.

No. 169,472.

Patented Nov. 2, 1875.



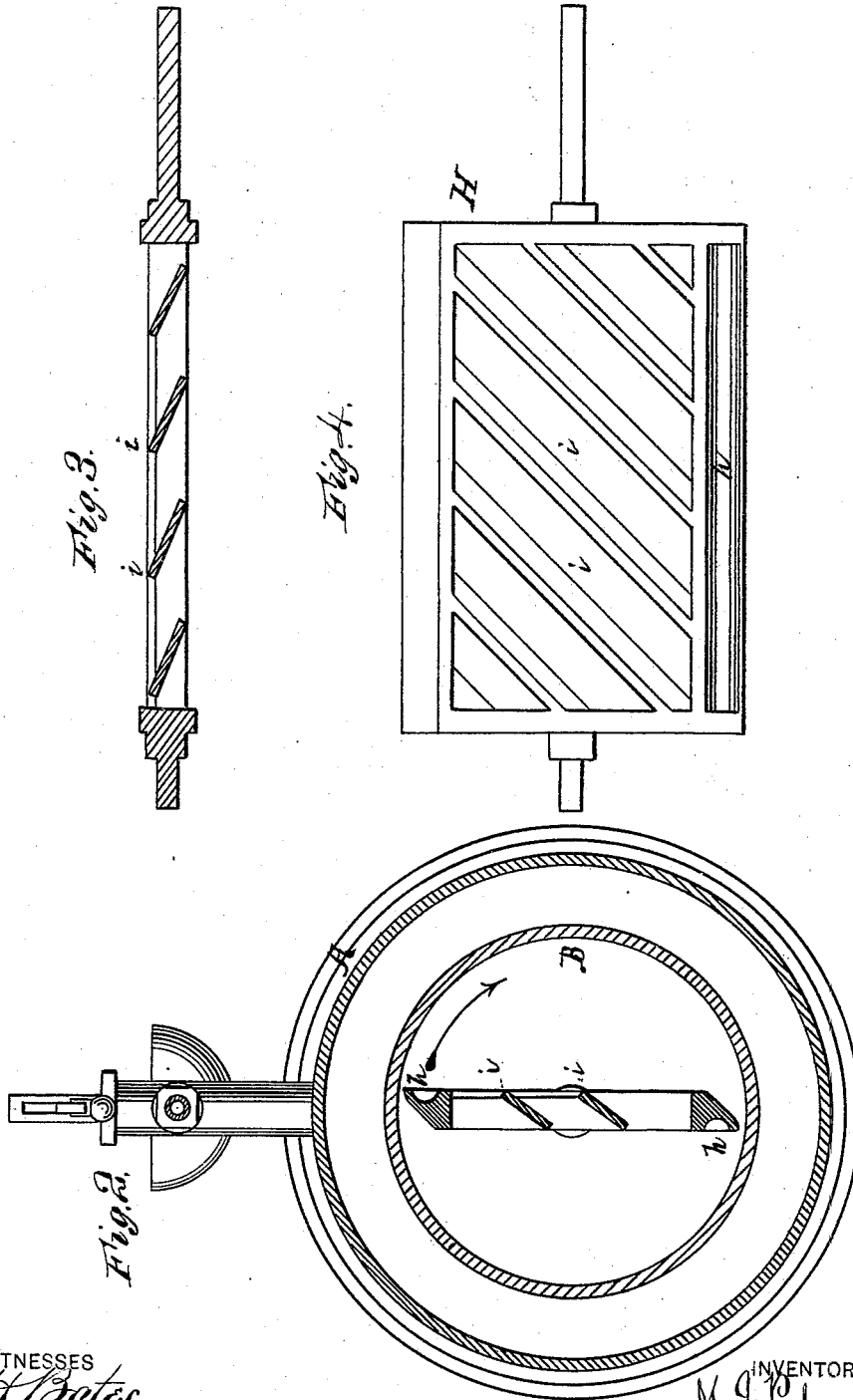
WITNESSES  
*C. H. Bates*  
*W. C. Chaffee*

*M. J. Palmer* INVENTOR  
*J. C. Lathrop* ATTORNEY

M. J. PALMER.  
SOAP-BOILING APPARATUS.

No. 169,472.

Patented Nov. 2, 1875.



WITNESSES  
*E. H. Bates*  
*W. C. Chaffer*

INVENTOR  
*M. J. Palmer*

*J. C. Lathrop*

ATTORNEY

# UNITED STATES PATENT OFFICE.

MILTON J. PALMER, OF DETROIT, MICHIGAN, ASSIGNOR TO HIMSELF AND ARCHIBALD O. GLASS, OF SAME PLACE.

## IMPROVEMENT IN SOAP-BOILING APPARATUS.

Specification forming part of Letters Patent No. 169,472, dated November 2, 1875; application filed October 6, 1875.

*To all whom it may concern:*

Be it known that I, MILTON J. PALMER, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in a Combined Steam-Digester and Manipulator; 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 the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a combined steam-digester and manipulator for the manufacture of soap, as will be hereinafter more fully set forth.

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 drawings, which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section of my machine. Fig. 2 is a transverse vertical section of the same. Figs. 3 and 4 show the agitator.

The object of my machine is the mixing of different chemicals or other substances to be subjected to the influence of steam and other heat. To this end I use a horizontal boiler, A, with an interior close mixing-chamber, B, in which latter I hold the materials to be operated upon by steam, (superheated or otherwise,) by which means the water heat and steam heat on the outside of the mixing-chamber are utilized. The boiler A is provided with a safety-valve, C, of any suitable con-

struction, and immediately below the valve-seat is a passage, *a*, connected, by a tube, *b*, with a stop-cock, D, leading through the boiler into the top of the mixing-chamber B, so as to admit steam from the boiler into said chamber. E is the inlet for the materials into the chamber B, and G is the faucet, through which the same may be drawn off. Within the mixing-chamber is the agitator H, hung upon suitable journals *e e*, one of which extends through the boiler, and is provided with a crank, I, or other suitable device for rotating the agitator. This agitator is constructed with concave floats *h h*, to carry in steam from above the materials. These floats are along the edges of the agitator, and in the center are inclined slats *i*, set diagonally across for the purpose of thoroughly mixing the materials.

As one side of the agitator strikes the mass it is thrown to the right, and as the other side strikes it it is thrown to the left and checked across, giving it the most thorough agitation.

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

The combination of a horizontal boiler, A, mixing-chamber B, tube *b*, inlet E, and agitator H, provided with concave floats *h* and slats *i*, set diagonally across, substantially as described.

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

MILTON J. PALMER.

Witnesses:

CLARENCE M. BARTON,  
GEORGE GARTNER.