H. B. HEMPHILL.

WASHBOILER.

APPLICATION FILED DEC. 6, 1909.

970,922. **Patented Sept. 20, 1910.**

Fig. 1.

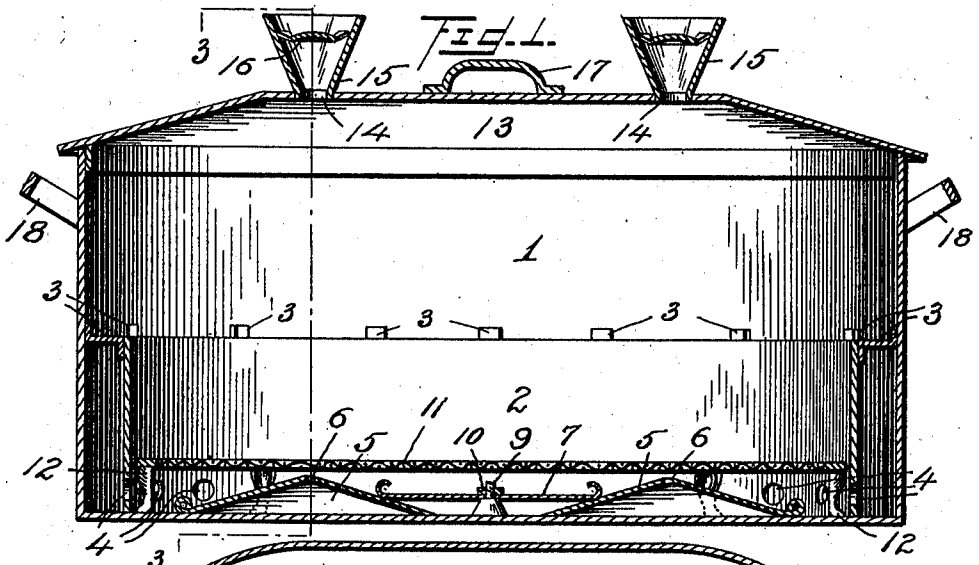


Fig. 2.

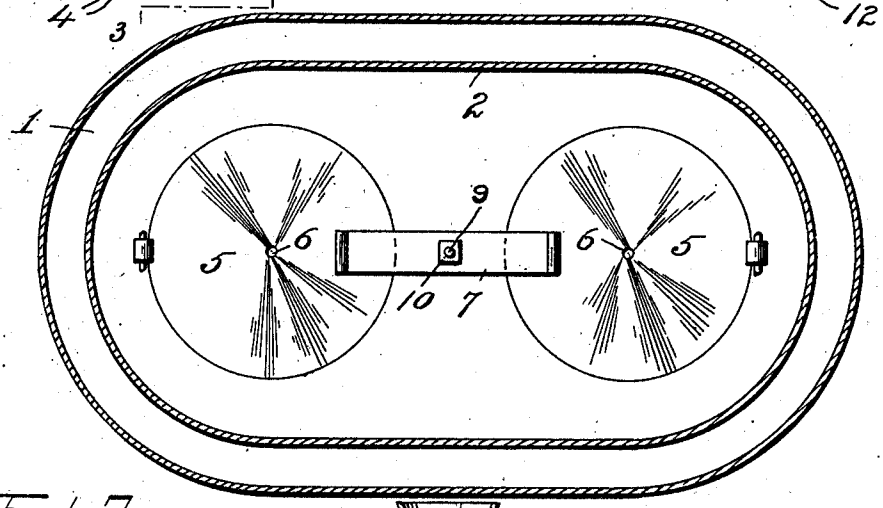
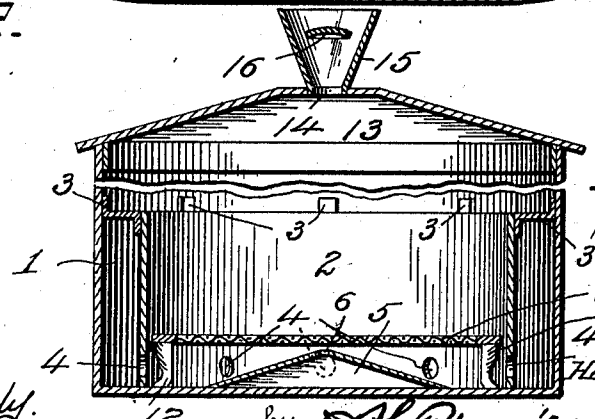


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY B. HEMPHILL, OF ELDORADO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ANDY MOORE AND WALTER CHAMBERLAIN, ONE-FOURTH TO ROBERT C. CROZIER, AND ONE-FOURTH TO CHARLES W. JOHNSON, ALL OF ELDORADO, ILLINOIS.

WASHBOILER.

970,922. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed December 6, 1909. Serial No. 531,610.

To all whom it may concern:

Be it known that I, HENRY B. HEMPHILL, a citizen of the United States, residing at Eldorado, in the county of Saline and State of Illinois, have invented certain new and useful Improvements in Washboilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in wash boilers.

The object of the invention is to provide a boiler of this character having means arranged therein whereby the water and steam are thoroughly agitated and caused to circulate throughout the boiler, thus greatly facilitating the heating of the water and the circulation thereof through the clothes in the boiler.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a boiler constructed in accordance with my invention; Fig. 2 is a horizontal sectional view of the same taken immediately above the agitating devices and below the screen arranged therein; Fig. 3 is a vertical cross section on the line 3—3 of Fig. 1.

Referring more particularly to the drawings, 1 denotes the boiler which may be of any suitable size and shape, but which is here shown and is preferably of the usual oblong form having rounded ends. Arranged in the boiler and soldered or otherwise rigidly secured to the bottom thereof is a partition 2 which is spaced about one inch, more or less, from the outer shell of the boiler to provide a chamber extending around and between the partition and the inner wall of the boiler. The upper portion of the partition 2 is secured to and held in spaced relation from the inner side of the boiler by means of a series of bracing strips 3, one end of which is secured to the outer side of the partition 2 adjacent to its outer edges, while the other ends are secured to the inner side of the boiler as shown. The strips 3 hold the upper portion of the partition 2 in position and also brace the entire structure. In the opposite ends of the partition 2 adjacent to the bottom thereof are formed a series of water circulating passages 4 through which the water in the boiler is caused to circulate.

Hingedly connected at their outer edges to the bottom of the boiler 1 adjacent to its opposite ends are hollow cone-shaped members 5 in the apex of each of which are formed small steam exit passages 6. These members 5 are held down in yielding engagement with the bottom of the boiler 1 by means of a flat metal spring 7, the opposite ends of which bear against the members 5 on the sides opposite their hinged connection with the bottom of the boiler. The spring 7 is secured midway between its ends on an upwardly projecting stud bolt 9 which passes through an aperture in the spring 7 and is adapted to receive a clamping nut 10, which is screwed down thereon and into engagement with the spring 7, thus clamping the latter to the block 8 whereby the spring will be held in operative engagement with the members 5.

Arranged in the boiler within the partition 2 immediately above the members 5 is a wire screen 11 which is preferably supported at a suitable elevation above the disks 5 by means of supporting lugs or feet 12 secured thereto and adapted to rest on the bottom of the boiler 1, and is adapted to support the clothes to be washed.

The boiler 1 is provided with a suitable cover 13 in which adjacent to its opposite ends are formed steam exhausting passages 14 which are surrounded on the upper sides of the boiler by steam exhausting funnels 15 secured to the upper side of the cover 13 as shown. The funnels 15 are provided on their inner sides with deflecting disks 16 which prevent the escape of water which might otherwise be splashed or forced out of the openings 14 by the action of the steam. The cover 13 is preferably provided with a suitable handle 17 and handles 18 are also provided on the opposite ends of the boiler.

In the operation of the boiler, the water confined beneath the cone-shaped members 5 will be quickly heated and converted into steam, the pressure of which will intermit-

tently raise the free edges of the members 5 against the pressure of the spring 7 and the escaping steam will pass upwardly through the water within the partition 2 and thus cause the latter to circulate rapidly through the boiler and down between the sides of the latter and the partition 2 and back into the chamber formed by said partition through the passages 4. As fast as the steam escapes from beneath the members 5, the surrounding water will rush in and the spring 7 will immediately close the members 5 and more steam will form which will again raise said members, thereby keeping up a continuous circulation of the water. A portion of the steam formed beneath the cone-shaped members will escape through the discharge passages 6 and assist in keeping up the circulation in the boiler. Said passages, however, are not sufficiently large to interfere with the rapid accumulation of the steam beneath the members 5 to operate the latter in the manner above described.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:—

1. In a wash boiler, a partition arranged therein and secured to the bottom thereof to provide a space between the boiler and the partition, said partition having formed in its opposite ends near its bottom a series of water circulating passages, members arranged on the bottom of said boiler and adapted to be lifted by the pressure of steam formed beneath the same, a spring to hold said members down in yielding engagement with the bottom of the boiler, and a screen arranged within said partition above said members.

2. In a boiler of the class described, a partition arranged therein and secured to the bottom thereof to form between itself and the sides of the boiler a continuous water circulating space, said partition having formed in its opposite ends adjacent to its bottom a series of water circulating passages, cone-shaped agitating members hingedly connected at one side to the bottom of the boiler and adapted to be actuated by the pressure of steam generated beneath the same, a spring to hold the hinged members down in yielding engagement with the bottom of the boiler, a screen arranged above said members and removably supported within said partition, and means to brace the upper portion of the partition and to secure the same in spaced relation to the sides of the boiler.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY B. HEMPHILL.

Witnesses:
ABRAHAM JONES,
JOHN RHINE.