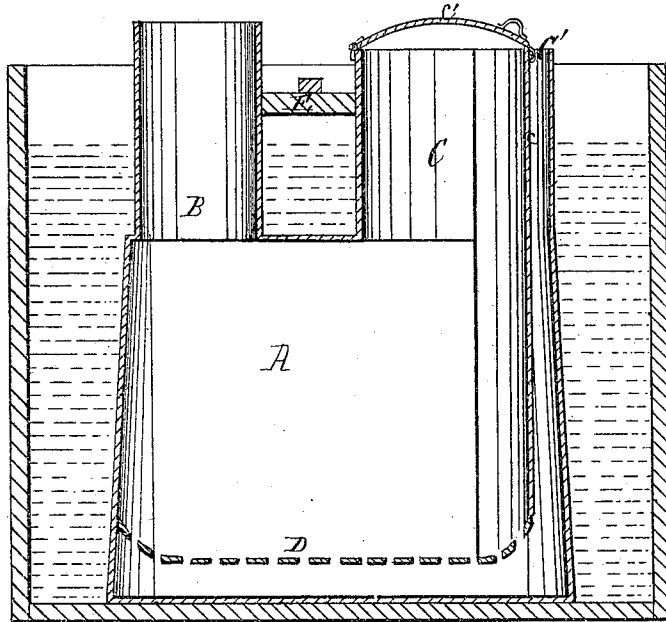


P. COLVIN.

Improvement in Boiler-Heaters.

No. 132,056.

Patented Oct. 8, 1872.



Witnesses
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UNITED STATES PATENT OFFICE.

PASCHAL COLVIN, OF PECATONICA, ILLINOIS.

IMPROVEMENT IN BOILER-HEATERS.

Specification forming part of Letters Patent No. 132,056, dated October 8, 1872.

To all whom it may concern:

Be it known that I, PASCHAL COLVIN, of Pecatonica, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Heaters; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

A want has long been felt in all agricultural communities of a cheap method of cooking and steaming food for stock, and for heating water expeditiously for various purposes. A heater which shall meet all the varied requirements of the farmer must be cheap and simple in its construction, must be portable, must be adapted for use in connection with either large or small tanks or other receptacles for the food or water, must be safe so far as firing building or exploding is concerned, and must require but little skill or care in its management or operation.

With a view to meet the above conditions, and to combine in one construction all of the recited advantages, I have made this invention, which consists in combining with a water-tight shell or combustion-chamber, a smoke-flue, a draft-flue, a suitable grate and fuel chamber or magazine, the parts being so constructed and combined that the combustion-chamber is adapted to be submerged in water, to the end that a fire may be maintained in said combustion-chamber for the purpose of heating the water and such feed or other material as may be desired.

In the drawing, which is a vertical longitudinal section of my invention as arranged within a tank, A represents the combustion-chamber, made by preference of galvanized iron or other sheet metal. B is the smoke-flue arranged at or near one end of the combustion-chamber. In practice I provide this flue with a damper for controlling the draft. C is the fuel-opening arranged at the opposite end of the chamber. C' is the draft-flue. As a matter of convenience in construction I usually form this draft-flue by dividing the fuel-opening by means of partition c; but, when preferred, this draft-flue may be made separate, and connected at its lower end with the lower part of the combustion-chamber. c' is a lid or door closing the fuel-opening, but not the draft-

flue. D is the grate arranged in the combustion-chamber at a short distance above the bottom. The lower end of the draft-flue opens under the grate D. E is a bar extending from the smoke-flues B to the fuel-opening C.

If it is desired, feet can be added, so as to keep the heater from the bottom of the tank; but under ordinary circumstances they will not be needed, as the water will always circulate on all sides of the heater, and thus prevent burning.

In using my improved heater I build a fire in the combustion-chamber, applying a sufficient length of pipe to smoke-flue B to insure a proper draft. I place the heater in a suitable barrel, box, or other convenient receptacle, and place the water and other material to be heated around and over it. When necessary the heater can be secured down in place by weights, or by means of a bar placed transversely of bar E, or resting upon the upper surface of the combustion-chamber between the smoke-flue and the fuel-opening. The bar E can also be used for removing the heater or for moving it from place to place. As the entire fire-surface of the heater can be submerged it will be seen that a large body of water can be heated in a short time. It is also apparent that as it (the heater) is entirely surrounded by water, there is no danger of fire dropping out and setting fire to the building.

This device will be found very convenient, from the fact that a single one can be used for all of the ordinary purposes for which the heating of water or cooking or steaming of food may be required upon a large farm.

Although I regard sheet metal as being the better material for the combustion-chamber, yet the smaller sizes may, perhaps, be cast to advantage; hence I do not wish to be limited to any particular method of manufacture.

I am aware that a heater or furnace submerged or partially submerged in a tank of water, broadly considered, is old; hence I do not wish to claim it under any or all constructions or arrangements. But my invention has, it is believed, some advantages over those in general use, as it can be cheaply made, having but a single shell; is very durable, being entirely submerged when in use, except the smoke and feed flues; and is constructed with especial reference to its portability, having a

bar, E, by which it can be carried from place to place, and by means of which it can be readily secured in a submerged position by a transverse bar, the ends of which are fastened to the tank by staples, cleats, or in any other desired manner.

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

The herein-described heater, consisting of

the single shell A, the smoke-flue B, the fuel-passage C, the draft-flue C' inclosed within the shell, and the bar E for carrying or securing the heater in position, substantially as set forth.

This specification signed and witnessed this 28th day of March, 1872.

PASCHAL COLVIN.

Witnesses:

N. E. BABCOCK,
G. W. FORD.