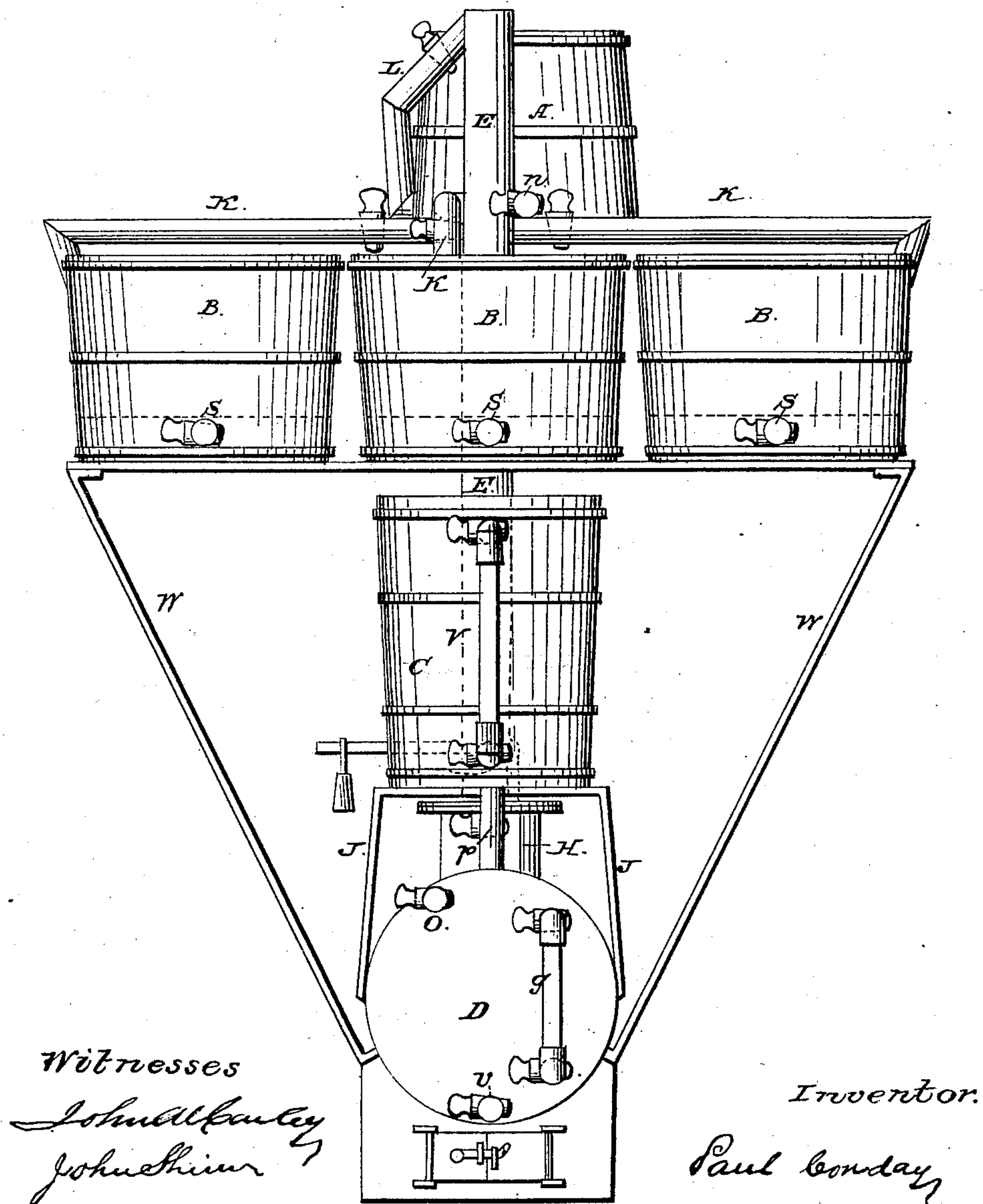


2 Sheets—Sheet 1.

P. CONDAY.
Fermenting Vat.

No. 82,208.

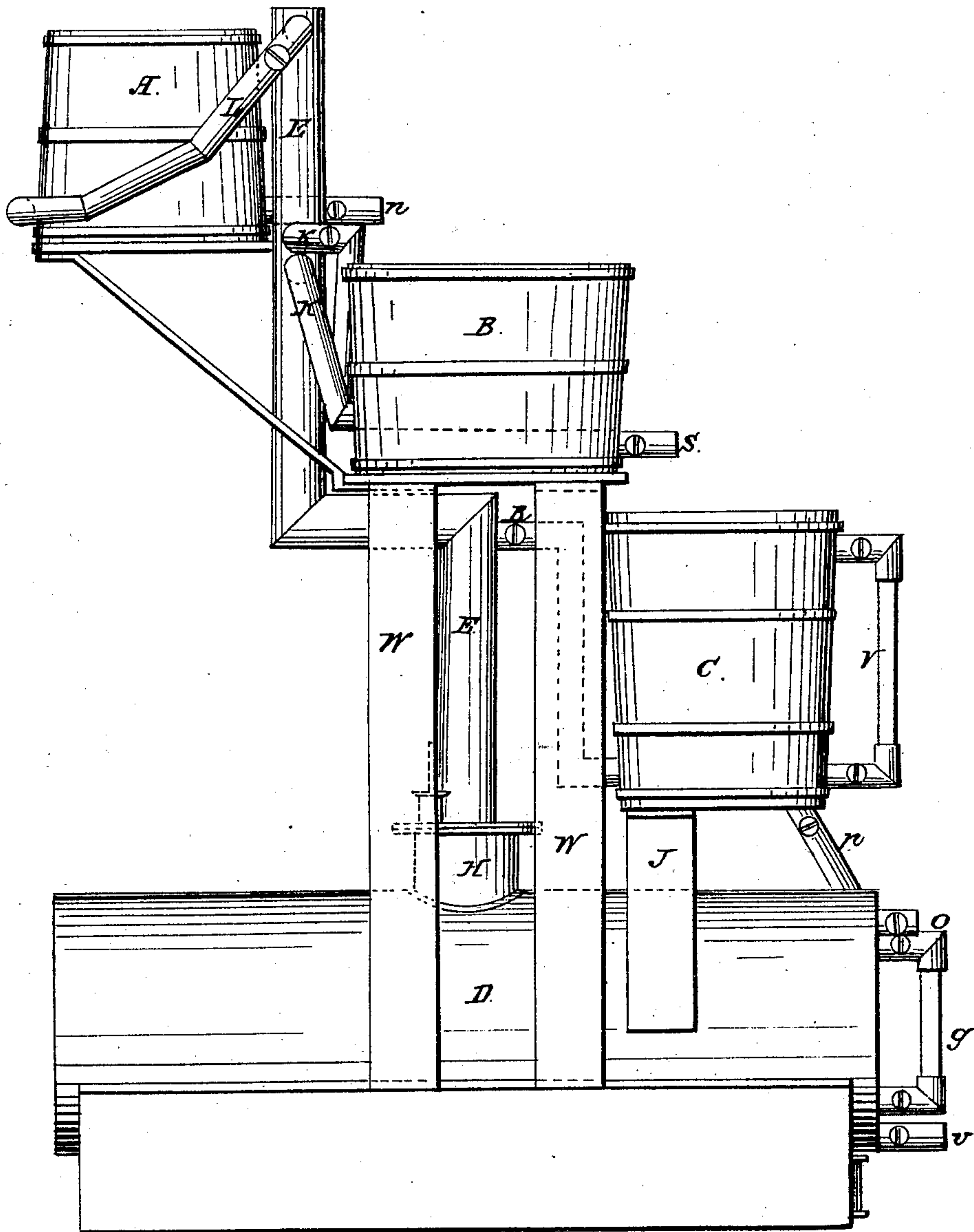
Patented Sept. 15, 1868.



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Fermenting Vat.

No. 82,208.

Patented Sept. 15, 1868.



Witnesses:
John A. Hawley
John Shinn

Inventor:
Paul Conday

United States Patent Office.

PAUL CONDAY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND CHARLES F. LEISEN.

Letters Patent No. 82,208, dated September 15, 1868.

IMPROVEMENT IN APPARATUS FOR BREWING MALT-LIQUOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, PAUL CONDAY, of Philadelphia city, and State of Pennsylvania, have invented new and useful Improvements in Apparatus for Brewing Malt-Liquors; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, and to the letters marked thereon.

The figure on sheet 1 represents a front view of the apparatus.

The figure on sheet 2 represents a side view of the apparatus.

Similar letters refer to like parts.

The nature of my invention consists in the arrangement of a steam-apparatus, that the steam of the liquor from the brewing-boiler may be used for the purpose of heating the water used in brewing, cooking the malt, or what is called the mash, and boiling the hops and wort, thus saving labor, fuel, and time, and the aroma that is lost in the old process of brewing.

That others may construct my improved apparatus, and operate the same, I will describe its construction and operation, reference being had to the drawings, and to the letters marked thereon.

D is a plain cylinder-boiler, made of copper, and set horizontally. This boiler is provided with a man-hole, H, safety-valve, glass gauge *g*, discharge-pipe *q*, and air-pipe *o*. From the man-hole H rises a large pipe, E. A is a wooden tub, for the water used in brewing. This tub is supposed to be supported by a proper scaffold or staging, or by the floor above the boiler. B B B are the mash-tubs, for cooking the malt. These tubs should be made of wood, and supported by a scaffolding that may be built up from the boiler, as shown in the drawings, so that they be convenient to receive water from the tub A, and discharge their contents into the tub C. The tubs B B B are fitted with false perforated bottoms or strainers and covers, as is usual in mash-tubs. The tub C is also made of wood, and supported above the boiler D, and below the mash-tubs. The support for this tub can be attached to the boiler, as shown in the drawings, or by any other suitable support, so that the tub C is in position to receive the wort from the mash-tubs B B B, and discharge the wort, after being charged with hops, into the copper boiler D. The tub C is provided with a glass gauge, V, and discharge-pipe, *p*. From the top of pipe E branches a small pipe, L, around to the back and bottom of tub A. From pipe E are also branch-pipes, K K K, leading to the back of tubs B B B, and entering just above the false perforated bottom, (shown by dotted lines in sheet 2.) From pipe E branches pipe R, communicating with the back and at the bottom of tub C. The branch-pipes, discharge-pipes, and gauge-glasses, are all provided with stop-cocks, as shown in the drawings.

The operation is as follows: Suppose the boiler D to be empty; heat is required to prepare the mash or wort for a brewing; water will be run from tub A, through the discharge-pipe *n*, into centre tub B, and through discharge-pipe *s* into tub C, and through pipe *p* into boiler D, the air-pipe *o* in the boiler being first opened, to allow the escape of air. When the glass gauge *g* shows the boiler two-thirds full, the discharge-pipes in the tubs A and C are shut, also the stop-cock in air-pipe *o*. Fire is then started under the boiler, and steam raised. The cock in pipe L is opened, which admits steam to the water in tub A, heating it to the proper temperature for mixing with the malt. (If desired, water may be used cold.) The malt is placed in the tubs B B B, and water run from the tub A on the malt, the quantity of water being regulated by the quantity of malt in the tubs. The tubs are then covered, and the stop-cocks in the branch-pipes K K K are opened, (either one or all, as is desired.) After the malt has been cooked properly, and converted into wort, the stop-cocks in the branch-pipes K K K are shut, and the wort is drawn off through the discharge-pipes S S S into the tank C, where the proper quantity of hops is added, and if more heat is required to boil the hops, stop-cock in pipe R, by admitting steam in the bottom of the tub C, will produce the proper boiling. Stop-cocks in the pipe containing the glass gauge V, having been opened when the wort was admitted in the glass, will show the height of the wort in the tub. After the wort and hops have been boiled the proper time, stop-cock in pipe R is closed. The fire is then withdrawn from under the boiler, and the remaining water in the boiler is drawn off through the discharge-pipe

g, the air-pipe having been previously opened to admit air. After the water has all run out of the boiler, the cock in pipe *g* is shut, and the cock in pipe *p* opened, allowing the wort from tub C to run in the boiler, (the capacity of the boiler to correspond with the tubs C and B B B.) The stop-cocks in pipes *o* and *p* are shut. The fire is then started under the boiler, and the glass tube *g* shows the color and changes in the liquor or beer during the process of brewing. The steam that rises, during the process of brewing, in the pipe E, will be used for heating the water in tub A, cooking the malt or mash in the tubs B B B, and boiling the hops and wort for the next brewing, as was done by the water in starting the brewery, as above described. After the wort in the boiler has boiled a proper time, and converted the wort into beer or other malt-liquors that may be brewing, the fire will be withdrawn from under the boiler, and the beer or other malt-liquors will be drawn off from the boiler into proper cooling-tubs, and a fresh quantity of wort will be run from the tub C. The steam from this liquor will be used for making a fresh quantity of wort for the succeeding brewing, and the steam of each brewing furnishes the heat for each succeeding wort.

The quantity of material, heat, and time, for cooking, boiling, and brewing, being under the control of the brewer, as also the size and form of the apparatus, may be varied. My invention remains the same, as I do not confine myself to any peculiar arrangement of apparatus.

Claim.

I claim an apparatus, so constructed that the steam rising from the brewing-boiler during the process of brewing may be used for the purpose of heating and preparing the wort for each succeeding brewing, as described.

PAUL CONDAY.

Witnesses:

JOHN A. HURLEY,
JOHN SHINN.