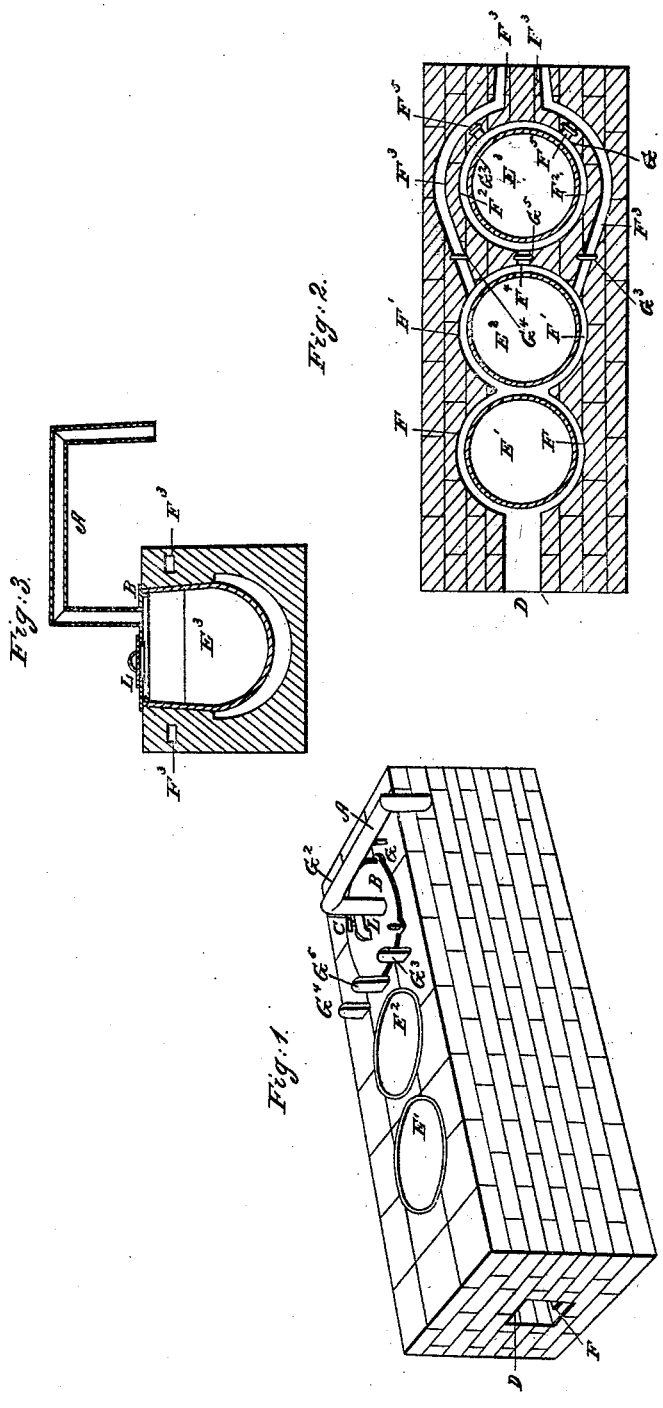
D. B. TURNER.

Mode of Making Pot Ash.

No. 2,263. Patented Sept. 18, 1841.



UNITED STATES PATENT OFFICE.

DANIEL B. TURNER, OF FLORENCE, OHIO.

MODE OF SETTING POTASH-KETTLES.

Specification of Letters Patent No. 2,263, dated September 18, 1841.

To all whom it may concern:

Be it known that I, DANIEL B. TURNER, of Florence, in the county of Erie and State of Ohio, have invented a new and useful Improvement in the Mode of Making Potash, which is described as follows,—reference being had to the annexed drawings of the same, making part of this specification, in which—

Figure 1 is a perspective view and Fig. 2 is a horizontal section through the flues and pots—and Fig. 3 is a transverse vertical section through the center of the covered boiler.

Similar letters refer to corresponding parts in the figures.

In the old process of making potash six boilers and three furnaces have been used—one furnace having been kept constantly in operation during the day for heating the boiler containing the weak lye for wetting down the leach and the other two furnaces kept in operation for heating the four boilers containing the lye to be boiled down into potash.

My improvement is designed to do away with all the fires and furnaces except one whereby I reduce labor, curtail expenses, and quicken the operation of making potash, and obtain a greater yield of the article which I effect in the following manner: Instead of the three furnaces I construct only one in which the boilers are placed and heat the weak lye by means of steam conveyed from one of these boilers to the vessel containing the weak lye through a tube of wood or metal inserted into a head B fastened on the top of said boiler and made steam tight by flange, rim, and gasket which head is secured by screws fastened to the sides of the boiler and passed through apertures in the head having nuts screwed on said screws firmly upon the head—said steam pipe being furnished with a cock C for shutting off the steam at pleasure from the weak lye boiler and suffering it to escape. This closed boiler when not used for heating the weak lye is used for boiling down the lye in the manner of the two forward boilers a round aperture (furnished with a lid L) being made in the top to pour in the lye and let off the steam.

The furnace is made oblong of any required length according to the number of boilers to be used.

The grate K is arranged in the front of the furnace and is supplied with wood through an opening D in the front end.

The furnace under and around the boilers is made concave of greater diameter than the boilers and of corresponding shape with its convex surface the spaces between the masonry and boilers forming flues F around them having two curved branch flues F^3 extending from the center flue F′ through the brick work or masonry between the outside thereof and the flue F^2 around the covered boiler to the rear where they pass out of the masonry in two parallel straight lines which form the outlets. These branch flues are for the purpose of allowing the smoke to escape when its course is stopped by the valve G^5 being shut which closes the flue F^4 which leads from flue F′ into flue F^2 around the covered boiler E^3. There are two straight branch flues diverging from the flue F^2 around the covered boiler E^3 and leading into the the curved branch flue F^3 each provided with a valve G′ G^2 for opening and closing the draft through said flues or either of them, at pleasure or partly closing them in order to reduce the draft. The curved branch flues F^3 are also provided with valves G^3 G^4 for stopping the draft through said flues when the heat is desired to circulate around all the boilers. And for opening the draft through said flues when it is not required to circulate around the covered boiler E^3; in which case the valve G^5 must be shut down. When this valve is open the valves G′ and G^2 must also be open. These three valves may be used to regulate the heat under the boiler E^3 by closing them more or less at pleasure. And the valves G^3, G^4, G^5 may be used in the same way and for the same purpose for regulating the heat under the boilers E′ E^2. All the valves are plain flat plates moving vertically in grooves in the masonry across the flues to which they belong and effectually close them when shut down.

The boilers E′ E^2 are made in the usual manner. The third boiler E^3 is covered as before described—there may be more or less boilers as required:—the two forward boilers E′ E^2 are used to boil down the liquid and to melt the solids. In melting down the solids the damper or valve G^5 is partly closed and the valves G^3 G^4 are opened which turns the heat from the covered boiler and prevents it from becoming too hot while

heating the forward boilers to a red heat to melt down.

What I claim as my invention and which I desire to secure by Letters Patent is,

Making the furnace with the two curved lateral or branch flues F^3 in combination with the connecting flues F^4 F^5 furnished with dampers for regulating the degree and changing the direction of the heat under and around the boilers as before described.

DANIEL B. TURNER.

Witnesses:

EDM. MAHER,

D. R. MORSELL.