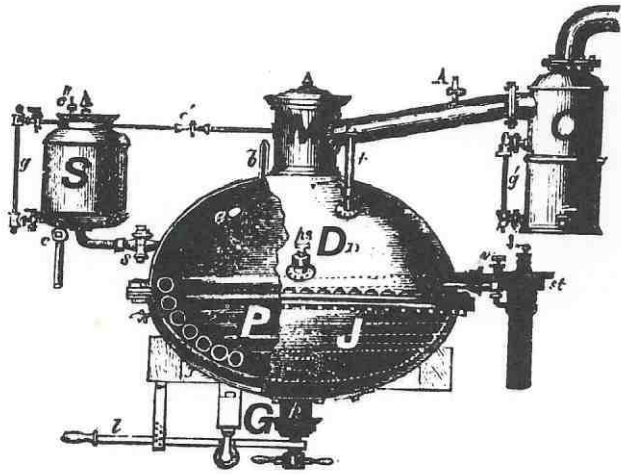


BIAS

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The drawing which forms the outside cover of the JOURNAL, together with those which serve to illustrate the articles on sugar refining and paper making, were taken from "Cyclopaedia of Useful Arts and Manufactures" edited by Charles Tomlinson and published in about 1853 by James S Virtue of London and New York. The use of this rare and valuable work was made possible through the generosity of Tony Woolrich



The smaller reproductions being generally self explanatory, it may help to precis Tomlinson's description of the Pontifex and Wood vacuum-pan.

This piece of, then very up-to-date equipment, stood in a prominent position at the Great Exhibition of 1851, and the main vessel was 8 feet in diameter and capable of boiling 80 tons of sugar in 24 hours.

It consisted of a copper pan with a cast iron jacket J and arrangements for admitting steam between the two.

Inside the pan was a copper coil P through which steam was also passed, to boil the juice. At the top

of the pan and of the inner jacket, there was a copper dome D fixed tightly by means of flanges and upon which a cylindrical section capped with a removable manhole M (for cleaning) was fitted. From here a pipe carried the vapour from the pan to the condenser O which caught any liquor boiling over from the pan.

The Sugar was run out of the pan through the outlet valve G, the amount which was allowed to enter was controlled by a 35 gallon measuring vessel S and the process operated at around 3 inches of vacuum and between temperatures of 145° and 190°F.