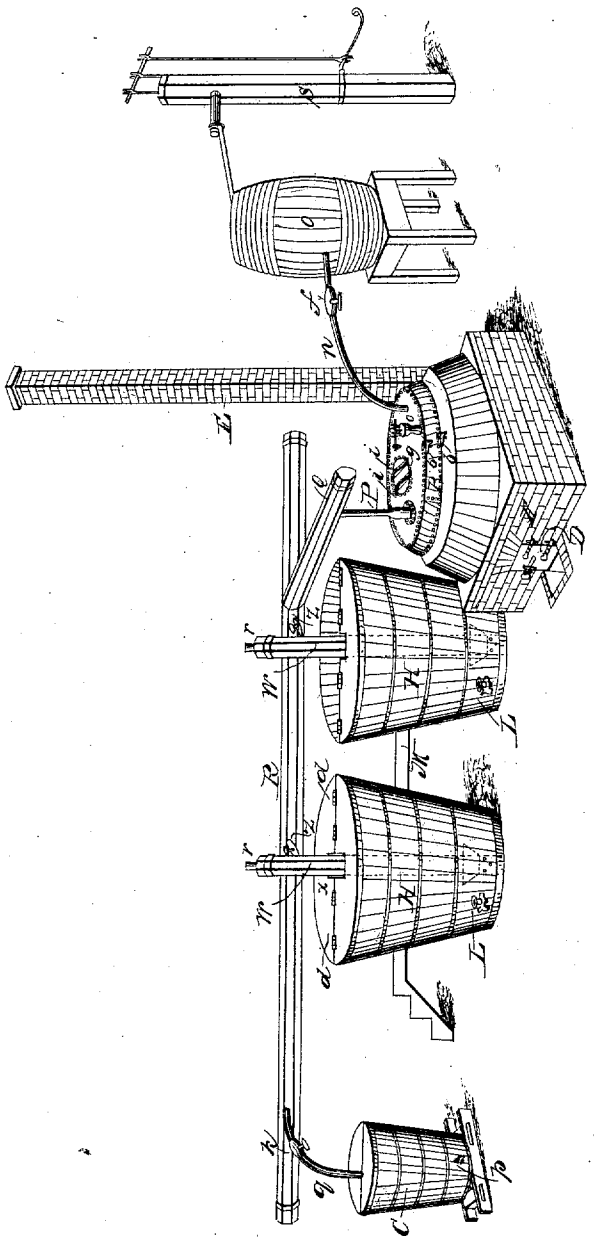
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B. ZOLL & J. DOYLE.

MAKING SOAP.

Patented July 19, 1830.



Bernard Gill and James Doyle of Baltimore Md.

Soap Boiling

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Bernard Gill and James Doyle themselves of their improvement in the art of making Soap by the application of Steam.

To all to whom these presents shall come. Be it known that We Bernard Gill and James Doyle of the City of Baltimore and State of Maryland have invented a new and useful improvement in the art of making Soap by the application of Steam to that purpose, and that the following is a full and exact description of the construction and operation of our said improvement as invented by us.

In the annexed drawing (F.) represents the fl—— D the fire door with the ash hole under it, and (E) the chimney. (B.) is the Steam Boiler with a safety valve at (a.) two stop cocks at b.b. for regulating the water line therein. a plate (g) secured by screw rods and strong iron cross bars c.c. so as to admit of its being removed, for the purpose of cleaning out the boiler and an iron steam pipe P. which conveys the steam from the boiler to the wooden conducting pipes Q.R. which latter may also be of copper or iron, but we find well banded wooden pipes to answer the purpose equally well if not better, for they are sufficiently strong to resist the pressure of the steam and more better to keep the heat. O. is a reservoir (which may be a large head or pipe) elevated upon a frame above the boiler and supplied from the pump (S) it communicates with the boiler by the tube (n) which has a stop cock at (f) for admitting water into the Boiler H.H. are large conical boxes which may also be of iron or copper, but we prefer wood. the number of which may be multiplied as occasion requires also their height may be regulated so as to suit the Building in which they are placed. each of them has a large stop cock at (L) and is covered with a close lid which is in two pieces and supplied with hinges (d.d.) so as to admit the halves (x.x.) to be opened. (W.W.) are wooden tubes connected by means of tubical tubes and stop cocks z.z. with the Conduct—— R. and descending through the lids or coverings of the vessels H.H. to——. bottoms on which they rest. are longitudinally perforated within [illegible] inch or two of their lower extremities as seen dotted in the drawing. they have a collar or flange immediately above the perforations

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for the purpose of giving the steam more circulation through the liquor contained in the Boilers and at the same time to prevent the Wooden plugs or faggots r.r. M is a stage or platform for the purpose of raising the workmen so as to enable them to stir the contents of the boilers H.H. The raw materials for making the soap being prepared in the common way are put into the Boilers H.H. after which the steam boiler B is filled with water from the reservoir and pumped. the steam arising from the boiler fills the conducting tube R. which being closed at both ends. in the stop cocks Z.Z. being opened the steam enters & descends the tubes W.W. and the steam pressure being increased if necessary it will continue to descend displacing the Ley &c till it escapes through the perforations at the foot of the tubes. this operation and stirring occasionally is continued. till the soap in the boilers H.H. is finished and fit to be dipped off. it is then formed in the usual way. the waste ley being discharged from the boilers through the cocks L L. The spiggots r.r. are intended to prevent accidents in very cold weather; for it sometimes happens that the soap or ley congeals in the tubes W.W during the night. a particular attention must be paid to taking out the spiggots r.r. removing the obstructions before the steam is admitted. The advantages of our method over the old way of boiling soap are. 1st. that it requires much less stirring and although the temperature of the liquor is kept up much higher than in the old way. the soap is not at all subject to being burnt which frequently happens during the process in the old way. it makes the soap brighter and saves a large percentage of fuel. there is also no risque of breaking kettles which is a very common accident in the old way of boiling. In addition to the soap boilers H.H. we also have connected with the conductor R a tallow melter (C) which is a wooden iron or copper vessel covered close and enclosing a worm (as dotted in the figure) which connects with the conductor R by the tube (g); the steam passing through the worm keeps the tallow in the melter in a perfect state for dipping or moulding candles, and the temperature can be increased or abated at will by shutting off more or less of the steam by the stop cock (k) the melter also has a stop cock (i.) for drawing off the tallow as it is wanted. also the top is contrived to be taken off for the purpose of introducing tallow. Now what we claim as our invention or improvement is the application of steam to making soap and the manner of using

[illegible] Bernard Zell Esqd.
[illegible] James Doyle Esqr.
Witnesses
John Shannon
Richard Gray

1256 Acres

Patented in Full Latin to Mrs