No. 723,709. PATENTED MAR. 24, 1903.

C. H. McCORMICK.

STILL.

APPLICATION FILED DEC. 4, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

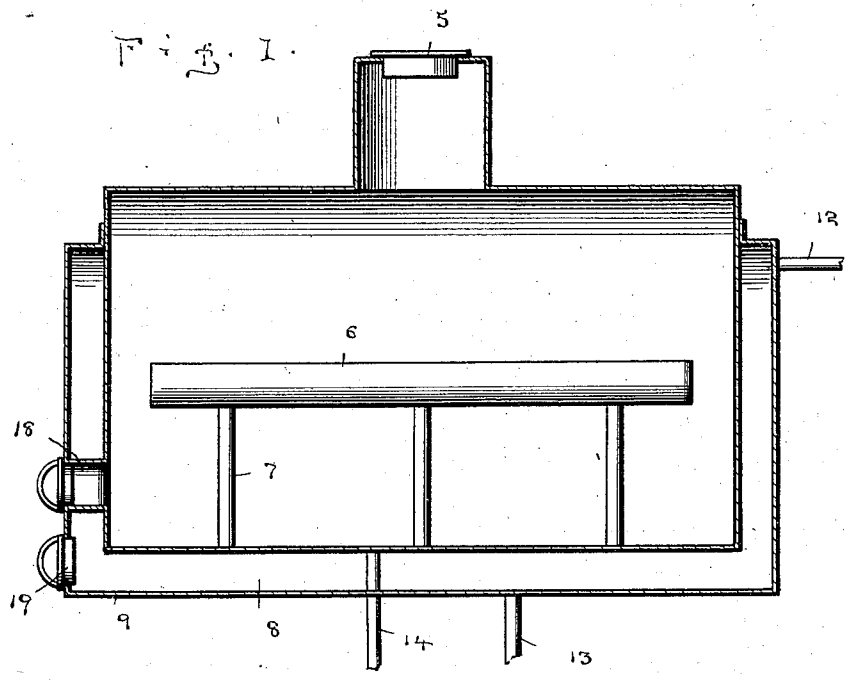
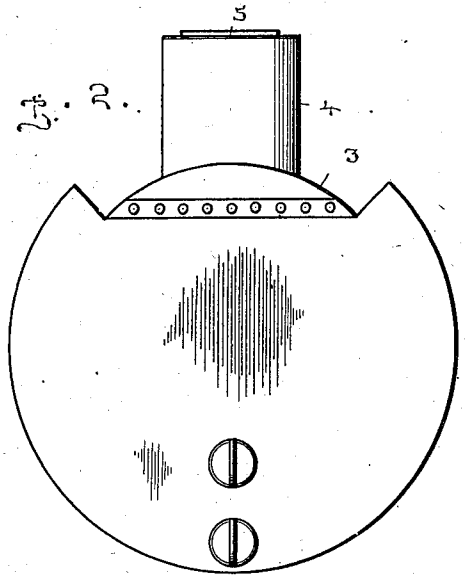


Fig. 2.



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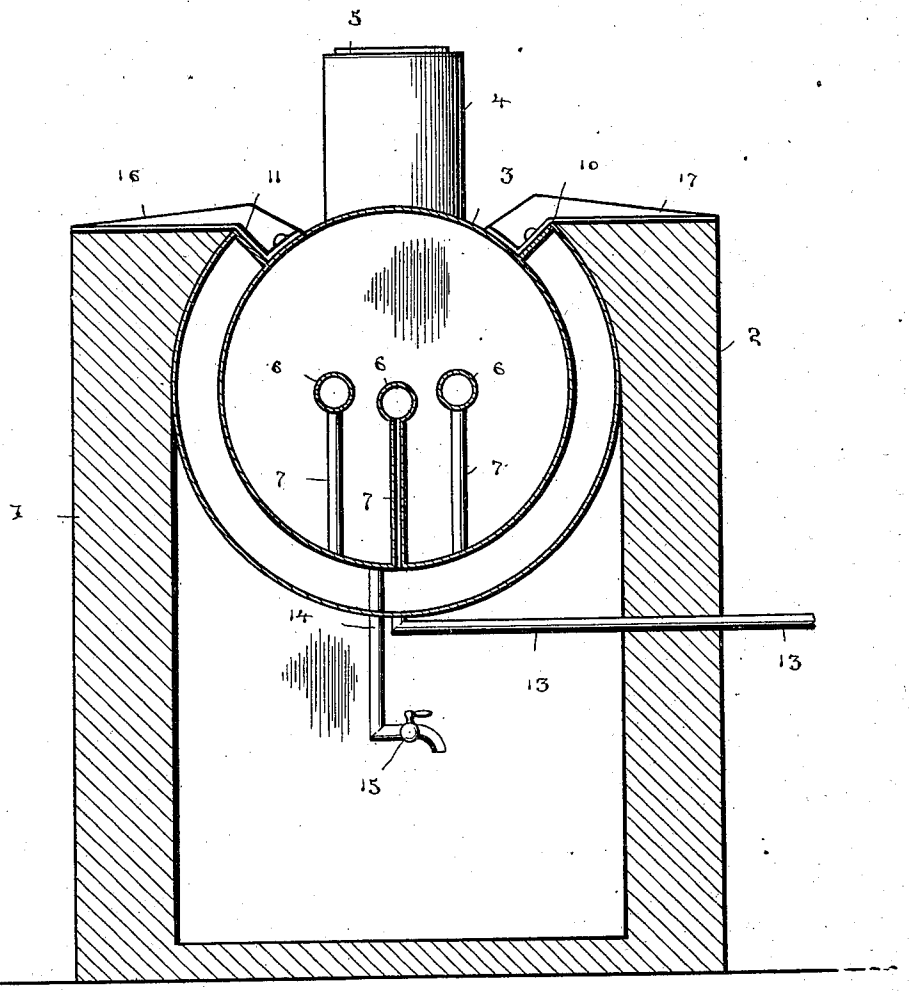
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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SPECIFICATION forming part of Letters Patent No. 723,709, dated March 24, 1903.

Application filed December 4, 1902. Serial No. 133,898. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. McCORMICK, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented new and useful Improvements in Stills, of which the following is a specification.

This invention relates to the general class of stills, but is particularly designed for use in distilling pitch or other similar material; and the object of the invention is to provide a still which will effectively separate the coarser constituents from the finer ones in a more perfect manner than has been accomplished heretofore. In most of the stills now generally employed for this purpose the fire is located immediately beneath or adjacent to the still, making it practically impossible to regulate the temperature within the still. Much inconvenience also results from the fact that the fires frequently have to be drawn to cool off the still to prevent an explosion. By the peculiar novel arrangement provided by me these serious defects will be obviated and a more perfect still will be provided.

In the drawings, Figure 1 represents a vertical longitudinal sectional view through a still constructed in accordance with my invention. Fig. 2 is an end view of the same, and Fig. 3 is a vertical cross-sectional view through the still and its support.

The reference-numerals 1 and 2 designate the two side walls of a support for the still, which may be constructed of masonry or in any suitable manner. The still comprises a cylindrical receptacle 3, provided at its top with an entrance dome 4, normally closed by a plug or cap 5. Arranged within the receptacle 3 are a series of parallel tubes 6, each of which is supported above the bottom of the receptacle 3 by a plurality of smaller tubes 7, which are vertically arranged and in communication with the steam-space 8, formed by the outer shell or casing 9. The outer casing conforms to the shape of the receptacle 3 for a portion of its circumference and is connected at its ends by means of inturn flanges 10 and 11. By this means the receptacle 3 is mainly enveloped or disposed in concentric relation to an annular chamber for a purpose which will be presently explained, and at the same time the top portion of the receptacle 3 is rendered freely accessible and the cost of manufacture of the entire device is reduced without detracting from the efficiency thereof. As will be seen by reference to Figs. 2 and 3, the outer casing or shell does not extend entirely around the receptacle 3, but terminates near the top thereof, forming an arcuate steam-space 8. A suitable supply-pipe 12 is in communication with a steam-boiler (not shown) and discharges into the steam-space formed by the receptacle 3 and the outer shell 9, whereby steam can be admitted into the space 8 to pass up through the vertical pipe 7 and into the horizontally-arranged tubes 6, so as to heat the interior of the receptacle 3 to a determined degree. In order to discharge or utilize the dead steam, I provide an outlet-pipe 13, depending from the bottom of the outer casing 9, both of the pipes 12 and 13 being provided with valves whereby the supply and exhaust can be controlled. A third pipe 14 leads from the bottom of the receptacle 3 and is provided with a valve 15, so that the refined products can be drawn off into buckets or receptacles provided for its reception. The supporting-arms 16 and 17 can be fastened to the exterior casing at any suitable point; but preferably they will be riveted to the flanges 10 and 11 and will rest upon the top edges of the supports 1 and 2.

The reference-numerals 18 and 19 designate two manholes for the receptacle 3 and the outer shell 9, respectively. These manholes are for the purpose of permitting access to the interior of the receptacle and outer shell, whereby foreign substances can be removed therefrom or for the purpose of repairing the same. It will be observed that all of the heat provided for the interior of the receptacle 3 will be furnished by the temperature of the steam, whereby the heat will be evenly distributed over the side and end walls of the receptacle and in the interior thereof through the medium of the vertical pipes 7 and the horizontal tubes 6. The steam-boiler furnishing the heat may be of any desired construction and will be located at a point distant from the still, so as to diminish the liability of an explosion which might occur if the fire was in close proximity to the still. The supply of the steam can be controlled by

suitable valves, whereby the temperature within the still can be regulated.

It will be apparent that a still constructed in accordance with my invention will be cheap, durable, and efficient and will readily serve the purpose for which it is intended.

Having thus described the invention, what is claimed as new is—

In a still, the combination of an inner shell or casing provided with a series of longitudinal parallel tubes 6 at the center thereof of less length than the shell and individually connected with the bottom portion of the shell by pipes 10 to provide a greater heating area within the shell or casing, each tube being independent of the others, an outer shell or casing mainly surrounding the inner shell or casing and having its upper terminals inwardly directed and secured to the upper portion of the outer surface of said inner shell or casing to expose the top of the latter, the upper part of the inner shell or casing exposed by the outer shell or casing having an entrance-dome, the pipes connected to the tubes 6 opening through the lower portion of the inner shell or casing and forming means of communication with the chamber provided by the outer shell or casing, and supply and exhaust pipes respectively connected to the lower portion of the outer shell or casing and the similar portion of the inner shell or casing.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES H. McCORMICK.

Witnesses:
B. R. PAXTON,
J. F. D. BLACK.