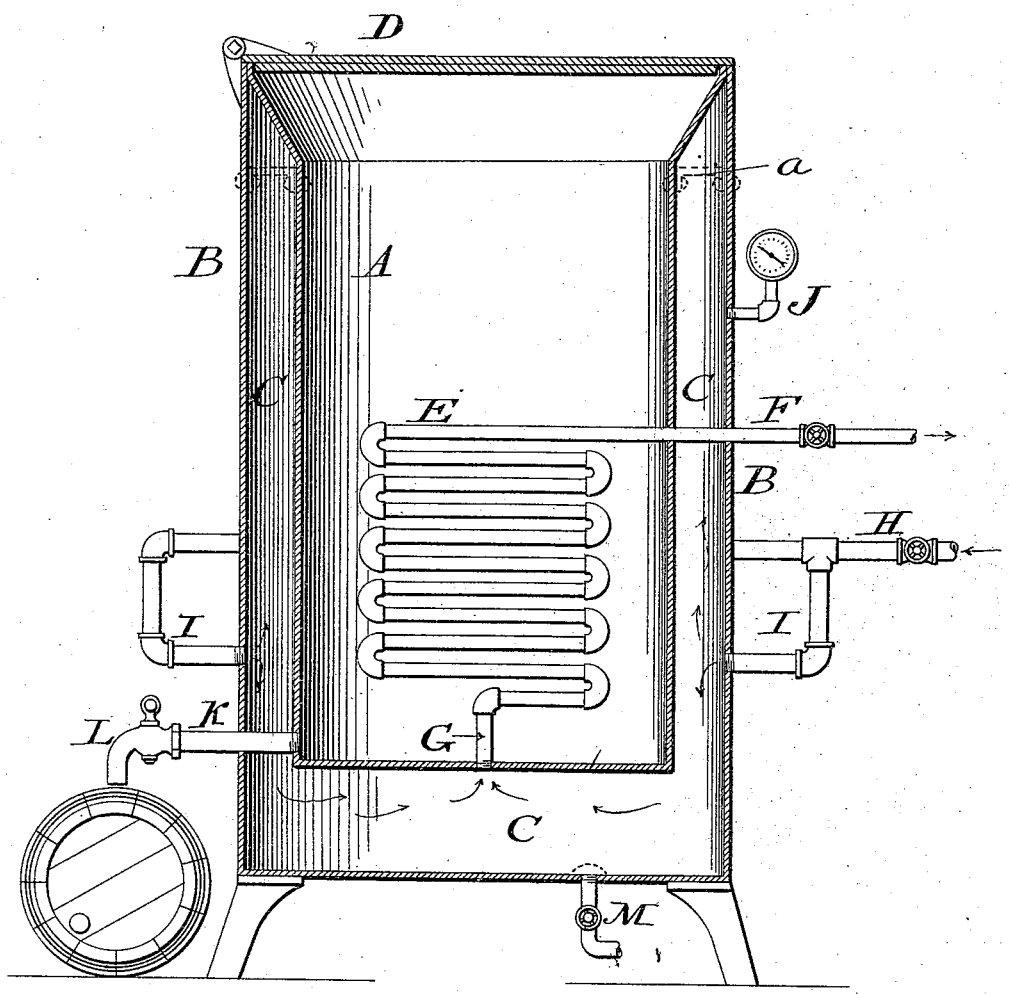
(No Model.)

A. JACK.

HEATER.

No. 492,726. Patented Feb. 28, 1893.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALEXANDER JACK, OF EVANSVILLE, INDIANA.

HEATER.

SPECIFICATION forming part of Letters Patent No. 492,726, dated February 28, 1893.

Application filed February 19, 1892. Serial No. 422,114. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER JACK, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

This invention relates to heaters designed for melting, boiling or rendering various substances, but more particularly those used to line barrels, casks, boxes, &c.

The drawing is a vertical sectional view of the heater.

A indicates a vessel into which the material or substance to be melted is placed, and B indicates a similar but larger vessel surrounding and set away from the sides of the vessel A so as to form a steam space or chamber C. The vessel A has an outwardly flaring mouth the edges of which are united to the outer vessel or jacket B so as to close the top or upper end of the space or chamber C. Of course the chamber could be closed at its upper end by other means,—for instance by an annular band as indicated by dotted lines *a* in the drawing, but the arrangement shown is preferred.

D indicates a door or cover hinged to the vessels A B and designed to close the same.

Mounted within the vessel A is a coil or manifold E from the upper end of which extends a pipe F, while from the lower end extends a pipe G which connects the said coil with the steam space or chamber C,—the pipe F extending out through the sides of both vessels A. B.

H indicates a steam-supply pipe connected at one or more points by branch pipes I with the steam space or chamber C, and J indicates a gage also in communication with said chamber.

K indicates a pipe or outlet extending from the bottom of the internal vessel A and out through the side of vessel B where it is provided with a valve, cock, or faucet L or other device for regulating the discharge of the melted material.

In the bottom of the vessel B is placed a valved pipe M through which the water of condensation is drawn off.

The operation of the heater is as follows: The material to be melted, boiled or rendered is placed within the vessel A and the valve in pipe H opened. Steam now enters through the pipes H I into the chamber C and heats both vessels A and B. The steam that enters the chamber C finds its way into the coil or manifold E through the pipe G and finally passes off through pipe F.

It will thus be seen that the material within the vessel A is subjected to heat both from without and within, and that all of the heat is fully utilized before being allowed to escape. It will also be seen that there is no chance or tendency of the material within the vessel A being scorched or burned, thereby lessening the chances of fire; as the steam which enters the coil will be at a lower temperature than that which first enters the steam space.

What is claimed is—

In combination with vessel A closed at its lower end; the vessel B surrounding but set away from the vessel A, to form a steam space C; a coil E within the vessel A and communicating at one end with the steam space and having its opposite end carried outside the vessels to afford an escape for the steam; a cover; and an outlet pipe K for the vessel A.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ALEXANDER JACK.

Witnesses:
D. B. KUMLER,
F. A. GUTHRIE.