

J. D. MEIGHER.
Still for Refining Petroleum.

No. 224,301.

Patented Feb. 10, 1880.

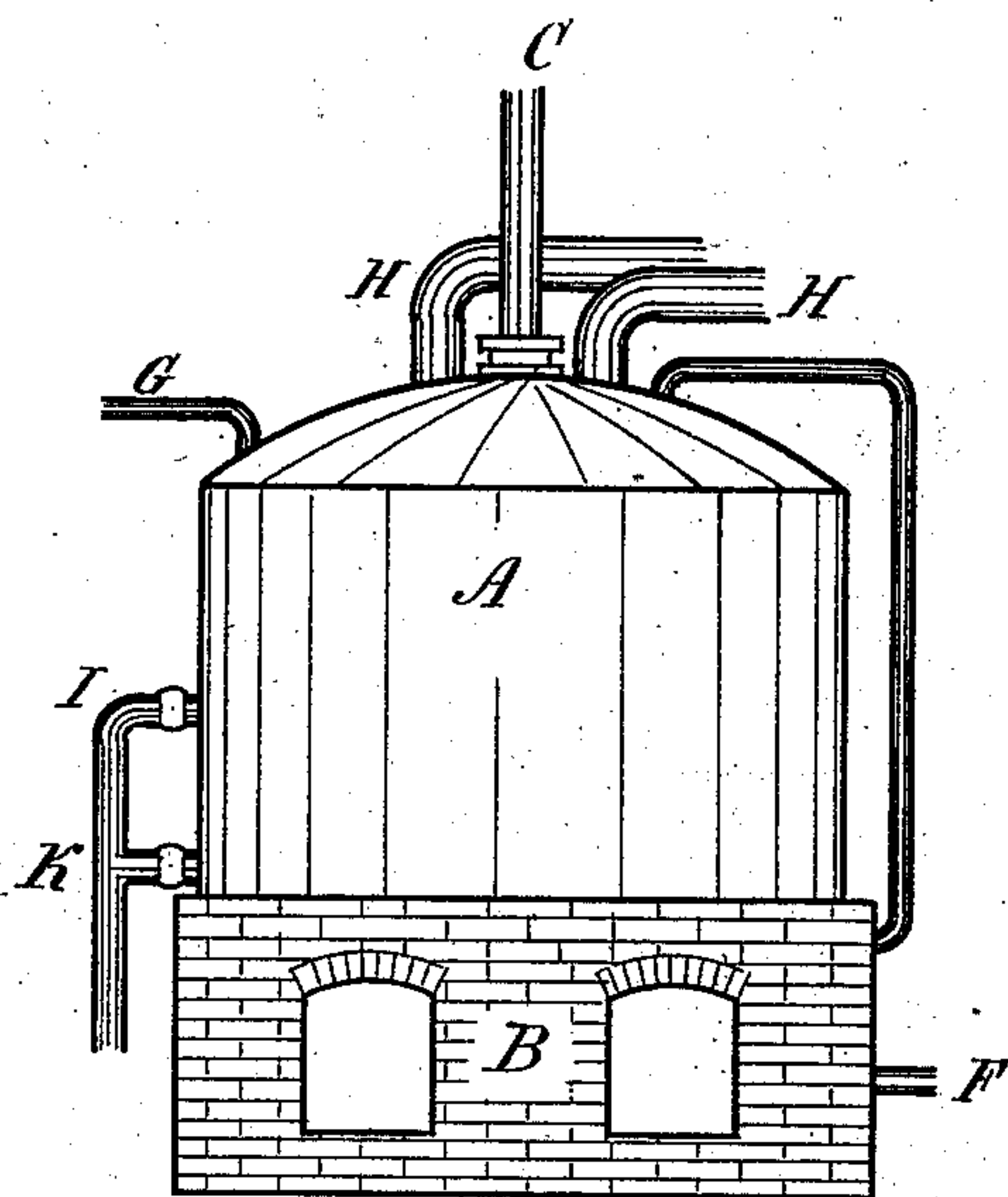


FIG. 1.

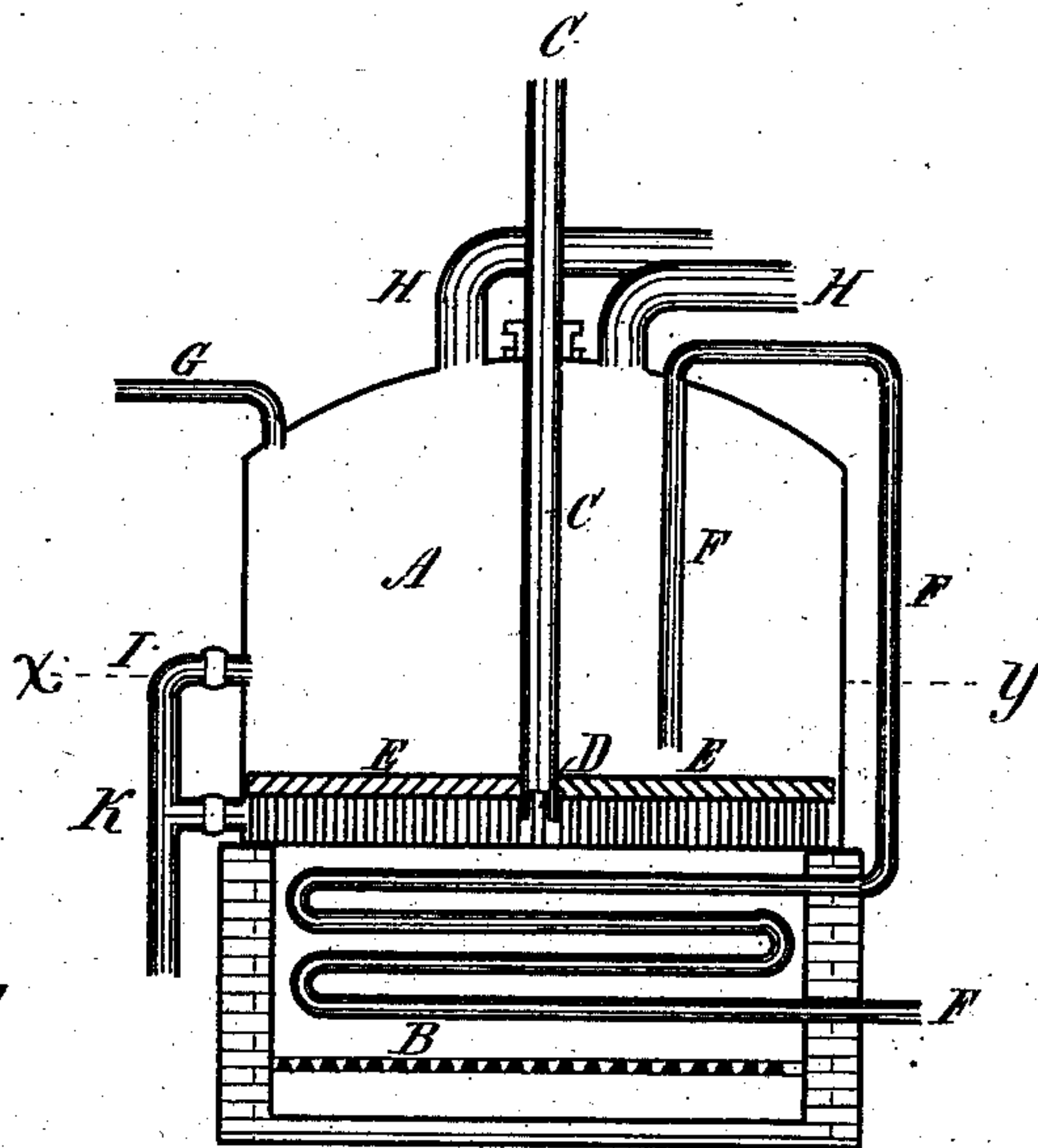


FIG. 2.

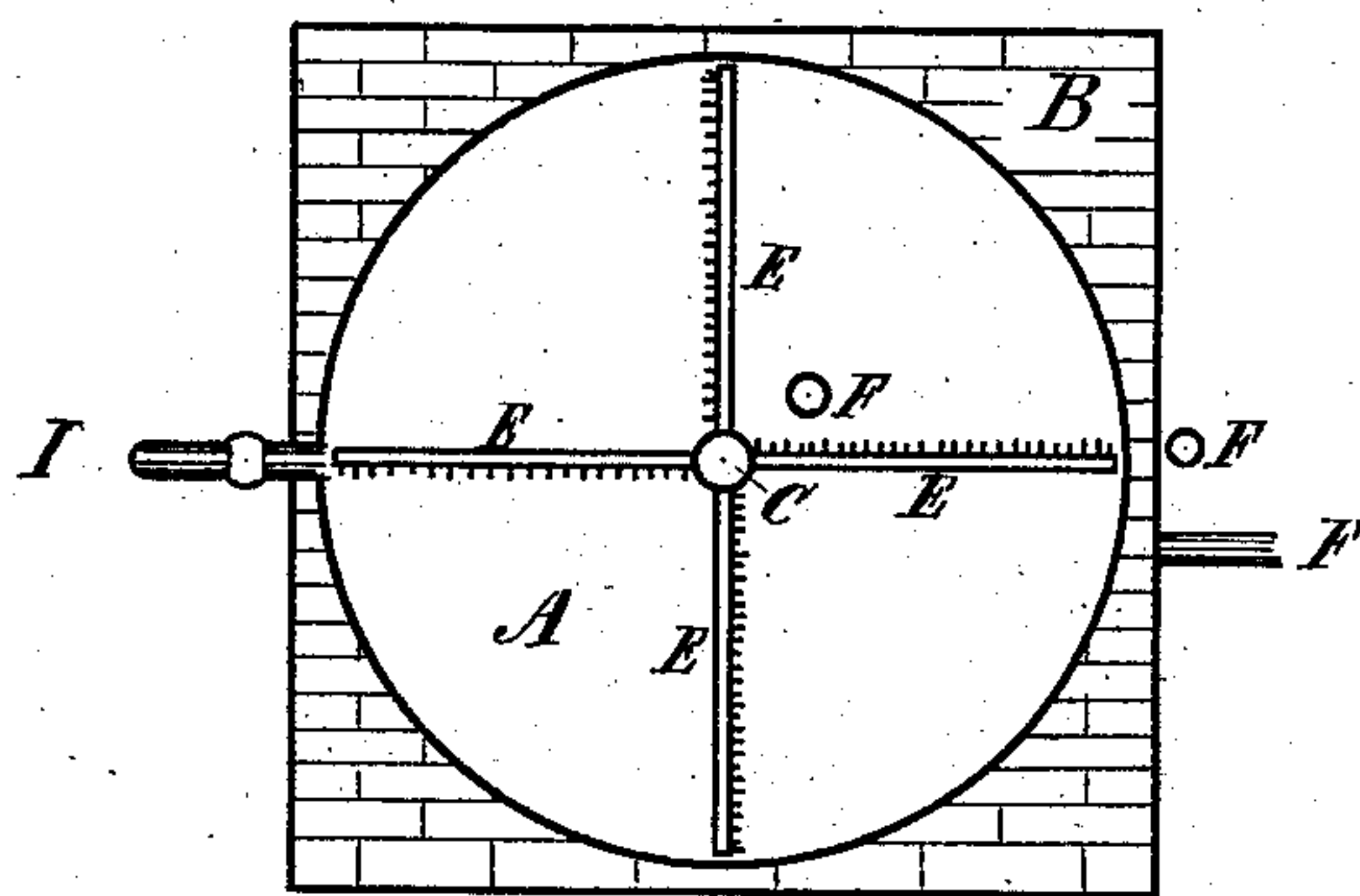


FIG. 3.

A. B. Howland
J. H. Beach

WITNESSES.

James D. Meigher
By Joseph Smith
Atty.

INVENTOR.

UNITED STATES PATENT OFFICE.

JAMES D. MEIGHER, OF TITUSVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JOHN A. COUTANT, OF SAME PLACE.

STILL FOR REFINING PETROLEUM.

SPECIFICATION forming part of Letters Patent No. 224,301, dated February 10, 1880.

Application filed April 22, 1879.

To all whom it may concern:

Be it known that I, JAMES D. MEIGHER, of Titusville, Crawford county, Pennsylvania, have invented an Improved Still for Refining Petroleum or Hydrocarbon Oils, of which the following is a specification.

The object of my invention is to prevent all coking or burning of the oil while being vaporized, prevent chilling, preserve a uniform heat through the whole mass, cause more rapid vaporization, and preserve the color of the products, and, in making lubricating-oils, to prevent them from chilling and becoming black and stringy.

This I accomplish by the agitation of the whole body of oil by mechanical contrivance while being vaporized by heat, and at the same time I introduce a current of heated air into the oil, and in that manner assist the vaporization and facilitate the flow of vapor through the pipes into the condenser.

In the drawings, Figure 1 is a view of the still; Fig. 2, a vertical section through the center; and Fig. 3, a horizontal section on line *x y*, just above the bottom of the still.

A is the still; B, the setting or fire box; C, a vertical shaft passing through a packing-box in the top of the still and kept in position at the bottom by the pin D. Attached to this shaft are the arms or paddles E E, reaching very nearly to the outside of the still, and provided on their lower edge with a steel brush or comb. These arms are adjusted to revolve near the bottom of the still, so that the steel brush is constantly scraping the bottom, whatever may be the inequalities.

F F is an air-pipe coiled inside the fire-box B, and conducted so that the discharge is inside and near the bottom of the still. G is the feed-pipe; H H, vapor-pipes; I and K, discharge-pipes.

The still, being filled with crude oil to the desired height, the fires are started in the furnace. The shaft C and paddles E E are set in motion, which keeps the body of oil in constant agitation, and the steel comb prevents any adhering to the bottom and burning. At the

same time a current of air is forced through the pipe F, and, becoming heated in its passage through the coil, is discharged into the oil, thus assisting to agitate and heat it, improve the color, and at the same time facilitate the passage of the vapor through the pipes H H.

As the quantity of oil is reduced by vaporization fresh oil is introduced through the pipe G. As the residuum (either tar or lubricating-oil, as may be desired) collects in the still, it may be drawn off through the pipe I without stopping the operation of the still; or the machinery may be stopped, fires drawn, and the still entirely emptied through the pipe K.

I disclaim the invention of revolving arms or paddles used for the purpose of agitating the oil, only to use it as a part of the combination herein described.

The process of continuous distillation is not new; neither is the introduction of hot air into the still for the purpose of lugging over the vapor; but my combination of mechanical forces with hot air discharged into the body of the fluid and furnace-heat, increases the agitation of the oil, prevents burning, and produces certain effects upon it, making both the distillate and residuum more valuable, as hereinbefore described.

I claim as my invention—

A still for refining petroleum or hydrocarbon oils, consisting of the vessel A, central revolving shaft, C, with arms E E, the arms being provided with a steel brush or comb on their lower edge, and so adjusted that the brush shall be constantly in contact with and scraping the bottom of the still, hot-air pipe F F, feed-pipe G, vapor-pipes H H, discharge-pipes I and K, and furnace B for continuous distillation, substantially as described, and for the purposes herein set forth.

JAMES D. ^{his} × MEIGHER.
mark.

Witnesses:

J. B. PASTORIUS,
SAMUEL GRUMBINE.