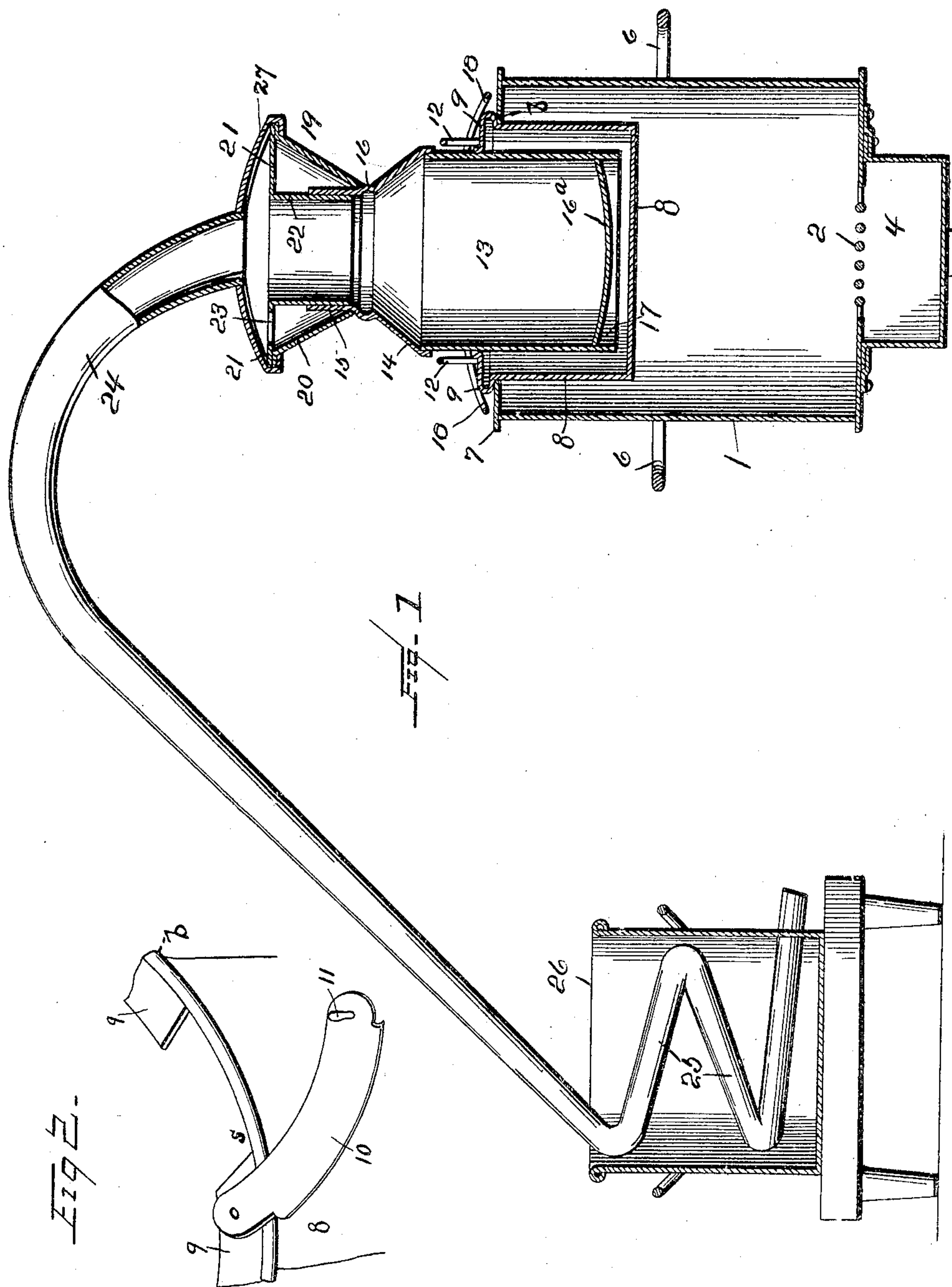


No. 807,577.

PATENTED DEC. 19, 1905.

J. PERNAT.
DISTILLING APPARATUS.
APPLICATION FILED MAY 3, 1905.



WITNESSES:

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JOHAN PERNAT, OF CLEVELAND, OHIO.

DISTILLING APPARATUS.

No. 807,577.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed May 3, 1905. Serial No. 258,663.

To all whom it may concern:

Be it known that I, JOHAN PERNAT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Distilling Apparatus, of which the following is a specification.

My invention relates to improvements in distilling apparatus; and the object is to improve the existing art by providing a cheap, efficient, and certainly-acting apparatus of the kind named and for the purpose intended which speedily vaporizes the material and condenses the vapors without any liability of burning or scorching during the process and without any loss of vapor in its passage to the condenser.

The invention resides in the novel construction of parts and their aggroupment in operative combination, as will be fully specified and the asserted novelty then particularly pointed out and distinctly claimed.

I have fully and clearly illustrated the improvements in the annexed drawings, to be taken as a part of this specification, and referring to which—

Figure 1 is a transverse vertical section through the furnace, the hot-water tank, the kettle disposed therein, the detachable hood in the mouth of the kettle, and the condenser, showing the still-pipe leading from the hood to the condenser. Fig. 2 is a detail perspective view of a portion of the hot-water tank, showing the pouring-space in the flange and the pivotally-mounted closure for the space.

In the drawings similar parts or elements appearing in different illustrations are designated by like reference characters.

Reference being had to the drawings, 1 designates the furnace, which is made circular in cross-section, as indicated, and of such size and capacity as to meet the uses it is intended to fulfil. The furnace is provided with a grate 2 and an ash-pan 4, of suitable construction and make, and may be mounted on any proper support. It is also provided with handles 6, rigidly secured to opposite sides, whereby it may be lifted and carried when required. The furnace is made of metal and formed with an inwardly-extending annular flange 7, surrounding a circular opening, wherein is suspended the hot-water tank 8. This tank 8 is of less diameter than the furnace, as indicated, so that the heat may have face contact with its sides, and is

formed with an inwardly-directed annular flange 9, extending horizontally and surrounding a circular opening. The flange 9 is formed with an annular bead *b*, upon which the tank rests when positioned in the furnace, and is cut away for a suitable distance to afford a pouring or filling space *s*, whereby water may be supplied to the hot-water tank. The pouring-space *s* is closed by a plate 10, pivotally secured to the flange to swing on a horizontal plane, and at the other end is provided with a finger-piece 11, by which the plate is manipulated. The tank 8 is provided with handles 12, diametrically opposite to each other, by which it may be lowered into position and lifted therefrom.

13 designates a kettle made of sheet-copper, cylindrical in shape and of such capacity as may be required. In this kettle is deposited the material or mash which is to be subjected to the process of distillation by evaporation. The kettle is formed with an inwardly-extending breast or crown 14 and a vertical cylindrical neck-piece or extension 15, having an annular shoulder or bead 16 at its base, upon which the base edge of the hood lodges, as indicated in the drawings. The bottom 16^a of the kettle 13 is concaved, and around the perimeter is a downwardly-extending flange 17, the lower edge of which reaches below the center of the concave bottom, so that when the kettle is lifted from its position it will stand square and firm wherever it may be placed. To the kettle 13, diametrically opposite to each other, are rigidly secured handles 18, which engage over the handles 12 on the tank 8 and lodge on the edge of the tank, as indicated, whereby the kettle is supported within the tank.

19 designates a hood positioned on the neck of the kettle, detachable therefrom, and made with an inverted conical body 20, the lower open end of which fits snugly about the neck 15 of the kettle and rests on the annular bead 16, as shown. The top 27 of the hood which is secured to the body 20 is arched or rounded, and at its junction with the conical body is mounted and secured a horizontal partition or diaphragm 21, carrying a centrally-arranged pipe 22, opening through the diaphragm and leading from the kettle when connected therewith, as shown. This pipe 22 telescopes with the neck of the kettle, which it fits snugly and as near steam-tight as may be. In the diaphragm is made a small aperture 23, through which the vapor

which may be forced up through the interstice between the telescoping pipes escapes and is carried onward with the main flow of vapor through the pipe 24, which terminates
 5 in a worm 25, located in a condenser or cooling-tank 26, and whence the condensed liquor escapes to be delivered to any suitable receptacle.

Under the present and ordinary construction and arrangement of a detachable kettle and the still-pipe the united parts are wrapped or packed to prevent leakage of the valuable vapor into the air and consequent loss thereof, a condition which is remedied by making
 10 the aperture in the diaphragm of the hood, since the vapors escaping through the connection of the parts rise through the aperture in the diaphragm and coalesce with the direct flow, so that none of the valuable products are lost.

The apparatus may be utilized wherever it is desired to produce alcoholic vapors from the material or mash contained in the kettle 13, and the process may be stated as follows:
 25 The several members of the apparatus being arranged in operative relation, as shown in Fig. 1 of the drawings, fuel is supplied to the furnace, water is filled into the tank 8 through the pouring-space, and the material from
 30 which the vapors are to be produced placed in the kettle. The hood can then be arranged in position. The fire can then be started. The products of combustion rising and contacting with the tank 8 speedily produce
 35 ebullition of the water therein, which surrounds the body of the kettle 13, causing the material in the latter to throw off vapor, which ascends through the hood and thence to the worm, where the vapor is condensed in
 40 a well-known manner and with well-known results. In the progress of the vapor from the kettle the telescoping joint of the hood and the kettle is encountered, more or less of the vapor is forced up between the parts,
 45 which, as stated, would be lost were it not

for the chamber formed in the conical body and under the diaphragm into which the vapor escapes, and thence discharges through the aperture 23 and is mixed with the main column of vapor rising from the kettle. 50

What I claim is—

1. In a distilling apparatus, the combination with a furnace and a condensing-tank, of a water-tank disposed in the furnace, a kettle of less diameter than the water-tank
 55 disposed therein and formed with oppositely-placed handles adapted to rest on the edge of the said tank, said kettle being provided with a vertical neck-piece, a hood having an inverted conical body, a diaphragm secured
 60 under the hood and provided with an aperture, and a downwardly-extending pipe opening through the diaphragm and adapted to telescope with the neck-piece of the kettle, and a still-pipe leading from the hood into
 65 the condenser.

2. In a distilling apparatus, an evaporizing-kettle having a vertical neck-piece, and an annular head at its base, a hood having an inverted conical body adapted to engage over
 70 said neck-piece and rest on said head with its lower edge, a diaphragm secured across the interior of the hood and provided with a vapor-aperture, and a pipe opening through the diaphragm and into the kettle and fitting
 75 within the neck-piece of the kettle.

3. A hood for an evaporating-kettle comprising an inverted conical body and an arched roof, a diaphragm secured across the interior of the hood and provided with a vapor-aperture, and a vertical depending pipe
 80 secured to the diaphragm and opening there-through.

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

JOHAN PERNAT.

Witnesses:

PETER PADERONIÉ,
 FRANK KOVERES.