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J. I. PITTMAN.
DISTILLING APPARATUS.
APPLICATION FILED MAY 26, 1904.

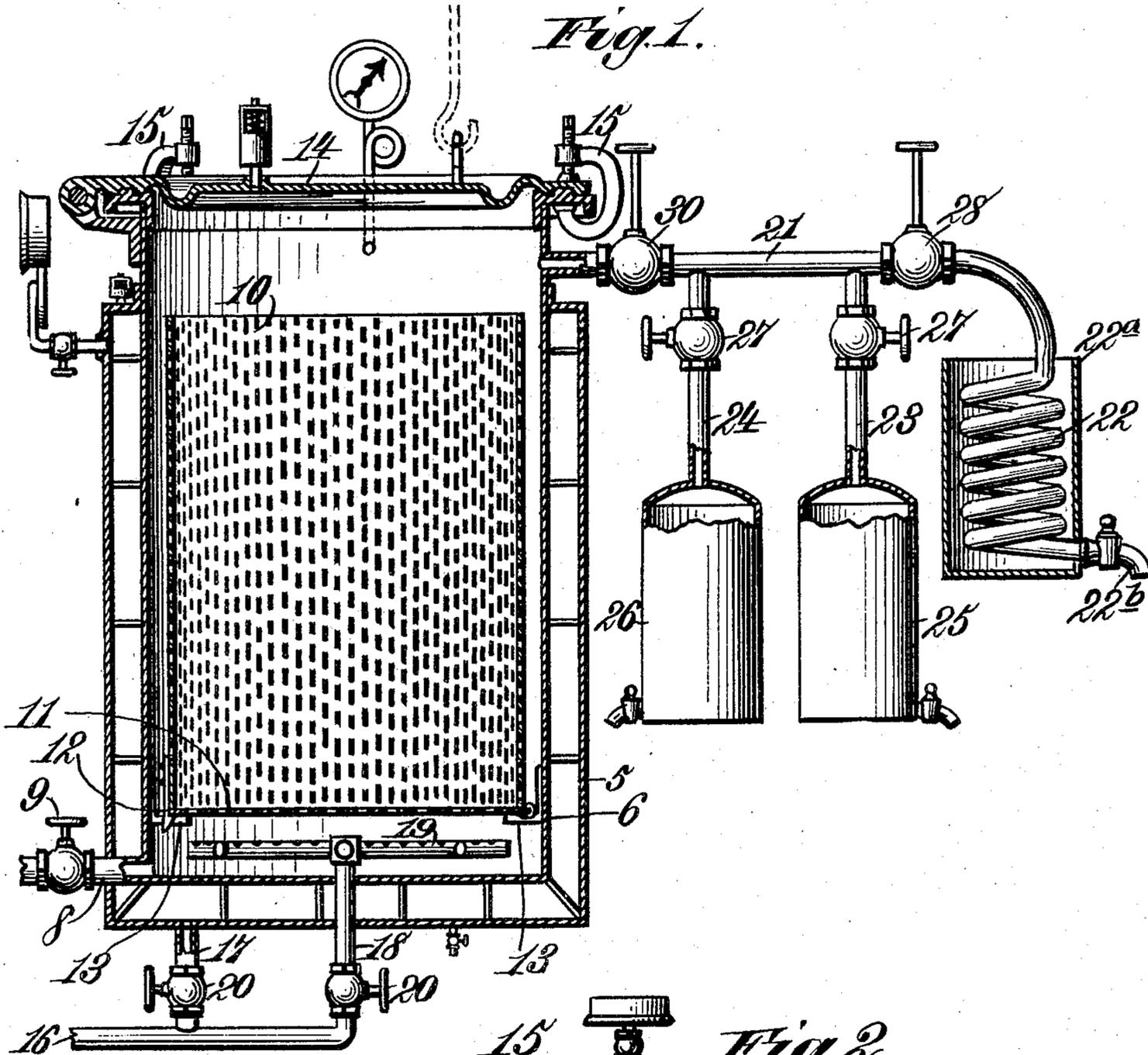


Fig. 1.

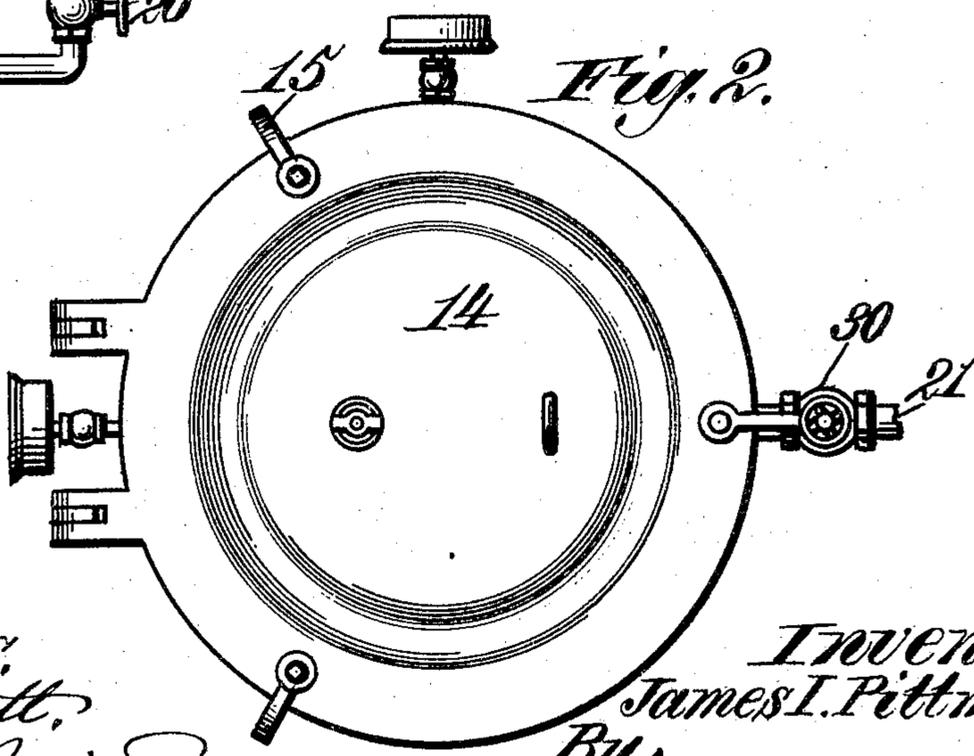


Fig. 2.

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UNITED STATES PATENT OFFICE.

JAMES IRA PITTMAN, OF VALDOSTA, GEORGIA.

DISTILLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 783,307, dated February 21, 1905.

Application filed May 26, 1904. Serial No. 209,902.

To all whom it may concern:

Be it known that I, JAMES IRA PITTMAN, a citizen of the United States, residing at Valdosta, in the county of Lowndes and State of Georgia, have invented new and useful Improvements in Distilling Apparatus, of which the following is a specification.

This invention relates to a distilling apparatus, and while the apparatus is not limited to any particular use it can be effectively employed for the distillation of wood to economically and quickly remove turpentine, alcohol, creosote, and other products from the wood and without the possibility of discoloring the turpentine.

In the drawings accompanying and forming a part of this specification I illustrate one simple and convenient organization, which I will fully describe hereinafter; but I do not limit myself to the disclosure thus made, for certain variations may be adopted within the scope of my claims.

Referring to said drawings, Figure 1 is a central sectional elevation of a distilling apparatus including my invention. Fig. 2 is a top plan view of part of the same.

Like characters refer to like parts throughout both views.

The apparatus is represented as including in its construction outer and inner casings, as 5 and 6, respectively, made from any desirable material and illustrated as being of cylindrical form. The bodies of the two cylinders and their bottoms, it will be seen, are separated to provide for the circulation of steam through the space between the two. The upper portion of the inner cylinder projects through and beyond the top of the outer cylinder and has at a point near its top and above the corresponding portion of the outer cylinder a discharge-conduit hereinafter more particularly described. From the body of said inner cylinder, at or near its bottom, a conduit, as 8, extends laterally and through the body of the outer cylinder. Through this conduit 8 the tar from the distilled mass is drawn off. The conduit 8 is provided with a valve, as 9, of some suitable type, which during the distilling process is closed. When the mass, however, incased in the inner cylinder 6 has been

wholly distilled, the valve 9 is opened to draw off the tar in said inner cylinder.

The wood to be distilled is introduced into a foraminous basket, as 10, represented as being of cylindrical form and usually made from perforated iron or steel. This basket has a drop-down hinged bottom, as 11, which upon the introduction of the wood to be distilled into said basket will be held positively closed by means of a latch, as 12, of some suitable form. By tripping the latch the hinged bottom 11 will be released, so that it can be swung open to permit the discharge of the distilled contents of the basket. During the distillation of the wood contained within the basket the latter rests upon brackets or lugs, as 13, riveted or otherwise suitably mounted upon the interior of the casing or cylinder 6, above the bottom thereof, thereby providing a simple and convenient way of removably supporting the basket. It should be stated that the body of the latter is separated from the inner surface of the inner casing or cylinder 6 the complete height of the basket in order to provide for the circulation of the steam between the two parts.

The top for the inner casing or cylinder 6 is denoted by 14, and it is represented as consisting of a cover hinged in place in any desirable way and adapted when closed to be fitted in place in a steam-tight manner. When closed, the cover is thus maintained in a positive manner by a catch, as 15. By opening the top or cover 14 the foraminous or perforated basket 10 can be removed to discharge its contents in the manner previously indicated and to resupply it with a new charge of wood, after which the newly-filled basket can be put into place within the inner casing 6, following which the cover or top of the latter will be closed.

A steam-supply pipe is represented at 16, it having branches, as 17 and 18, the branch 17 extending through the bottom of the inner casing 6 in order to supply steam into the space between the two casings or cylinders 5 and 6. The branch 18 extends through the bottoms of both casings, and its head is furnished with a spider-like part 19, the branches or arms of which are perforated upon their

upper sides for the emission of steam. Each of the branches 17 and 18 is furnished with a valve, as 20, of some suitable form.

A conduit, as 21, for carrying off the vaporous products from the mass of wood in the basket 10 is shown as leading from the upper portion of the inner casing or cylinder 6, the conduit terminating in a condensing coil or worm, as 22, fitted in the water-tank 22^a and having a draw-off cock, as 22^b. Pipes, as 23 and 24, respectively communicate with the conduit 21 at points between the casing or cylinder 6 and the coil 22 and are also connected with receivers, as 25 and 26, respectively, the receiver 25 being adapted to receive wood-alcohol distilled from the wood in the basket 10, while the receiver 26 serves a like purpose for creosote. Each of the pipes 23 and 24 is provided with a valve, as 27, of some suitable kind. At a point between the pipe 23 and the coil 22 the conduit 21 is provided with a valve 28, while said conduit is further provided with a valve, as 30, between the pipe 24 and the casing 6, each of said valves being of any desirable type.

Each of the casings 5 and 6 is provided with a gage and with a pop-valve, which may be of the ordinary kind, while the outer casing or cylinder 5 is furnished with a draw-off nipple or drip device for the condensed steam that accumulates in the space between the two casings.

Initially in the operation the valves 9 and 27 are closed, while the valves 28 and 30 are opened. When this is done, steam is admitted into the inner casing 6 by the opening of the valve 20 in the conduit or branch 18 of the steam-pipe 16, so that such steam can directly act against the wood in the basket, which, as will be understood, has been filled with wood prior to the operation of the several valves. It will be understood that the cover 14 is closed and held closed by the locking device or latch 15. The valve 20 in the pipe 17 is opened, so as to supply steam to the space between the two casings 5 and 6. The steam supplied to such space being of proper temperature will remove all the turpentine-vapor from the wood in the basket, the steam that had been supplied directly to the wood in the basket serving to keep the wood moist during distillation. When I find that all the turpentine has been removed from the wood, the vapors of course passing into the conduit 21 and from thence into the coil 22, I cut off the supply of steam to the casing 6 by closing the valve in the branch pipe 18 and also close the valve 28. I then open the valves 27 and 30. The supply of heat by way of steam through the branch pipe 17 is con-

tinued in order to distil off the wood-alcohol and creosote in the wood in the mass, such products flowing from the wood into the conduit 21 and from thence into the pipes 23 and 24 to their proper receivers 25 and 26. When all wood-alcohol and creosote have been removed, I shut the valves 27 and 30 and then draw off the tar or residue that may have settled to the bottom of the casing or cylinder through the conduit or pipe 8, the valve 9 in said pipe having been of course previously opened. When the tar is removed, said valve 9 is closed, following which the cover 14 is opened to effect the removal of the basket 10, containing the distilled mass of wood. The mass of wood is discharged from the basket, after which a new supply of wood is introduced thereinto and the operation repeated.

Having thus described my invention, what I claim is—

1. In a distilling apparatus, inner and outer casings the inner casing extending from the outer casing and having means therein for supporting a material-receiving basket, a conduit leading from the extended portion of the inner casing, receivers, valved pipes connecting the receivers with said conduit between said coil and inner casing, and valves in said conduit at opposite sides of said pipes.

2. In a distilling apparatus, the combination of inner and outer casings separated from each other to provide a space for steam, a pipe having branches opening into the interiors of the respective casings, a valved pipe extending from the bottom of the inner casing and out through the outer casing and serving to draw off the tar from said inner casing, means in the inner casing for removably supporting a material-containing basket, and a conduit for the vapors leading from the inner casing.

3. In a distilling apparatus, inner and outer casings, the inner casing extending above the outer casing and having a hinged top, a conduit leading from the upper extended portion of the inner casing and provided with a condensing device, a pipe for steam extending into the inner casing and provided with a tubular spider-like part, the arms of which are perforated for the emission of steam, a steam-pipe leading into the interior of the outer casing, and a draw-off pipe for the tarry products, extending from the bottom of the inner casing outward through the outer casing.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES IRA PITTMAN.

Witnesses:

J. W. PINKSTON,
R. P. SWEAT.