

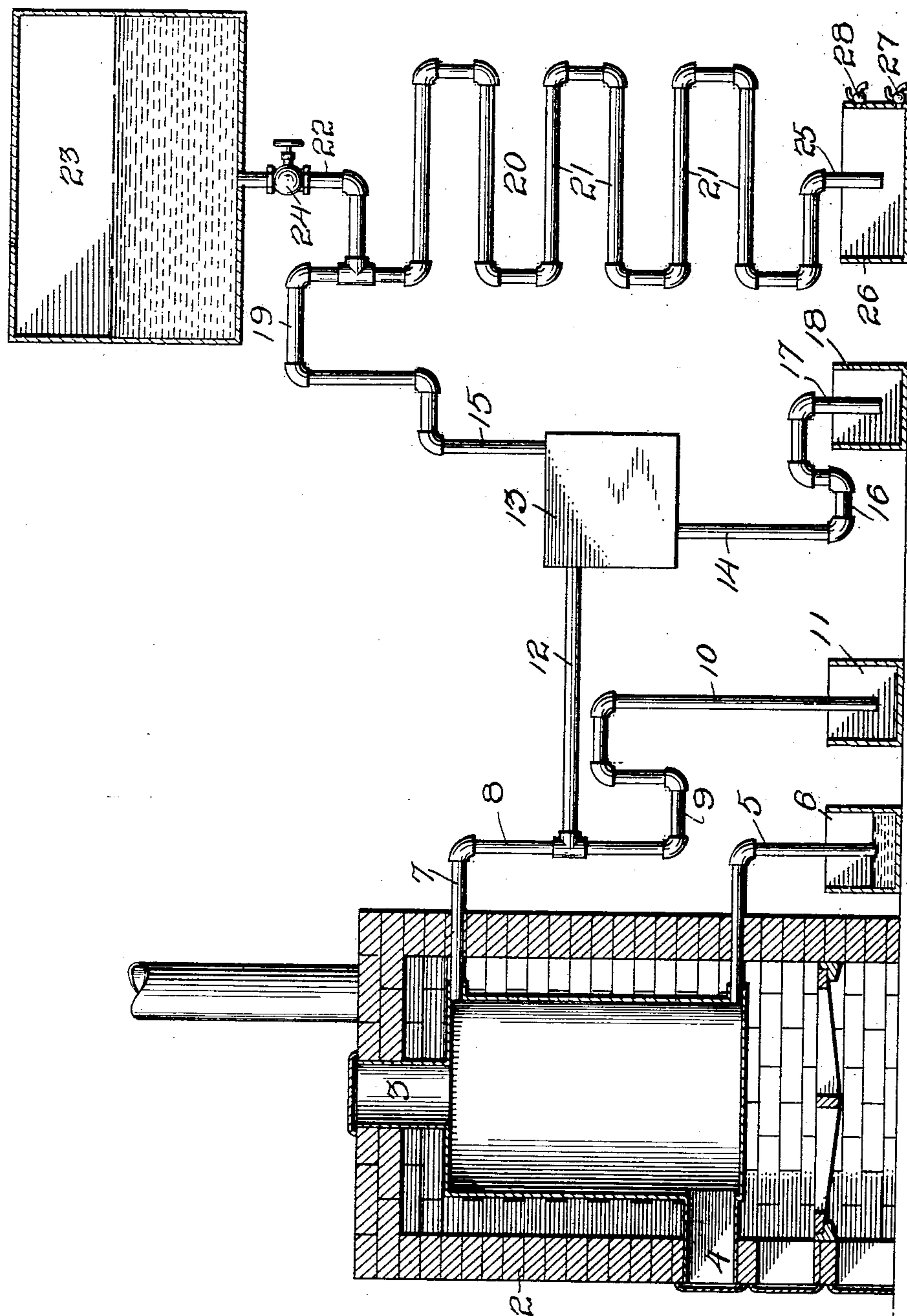
No. 751,698.

PATENTED FEB. 9, 1904.

J. W. SPURLOCK.
APPARATUS FOR WOOD DISTILLATION.

APPLICATION FILED OCT. 12, 1903.

NO MODEL.



Inventor

Jno. W. Spurlock.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. SPURLOCK, OF TYTY, GEORGIA.

APPARATUS FOR WOOD DISTILLATION.

SPECIFICATION forming part of Letters Patent No. 751,698, dated February 9, 1904.

Application filed October 12, 1903. Serial No. 176,721. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SPURLOCK, a citizen of the United States, residing at Tyty, in the county of Worth and State of Georgia, have invented certain new and useful Improvements in Apparatus for Wood Distillation; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in apparatus for wood distillation.

The object of my invention is to improve and simplify the construction and operation of apparatus of this character, and thereby render them more efficient in use.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claim.

The figure in the accompanying drawing is a diagrammatical section through my improved apparatus for distilling creosote, spirits of turpentine, tar, &c., from pine and other woods.

Referring to the drawing by numerals, 1 denotes a retort, preferably cylindrical in form, mounted in a furnace 2 and provided with a filling-opening 3 and a removal-opening 4. Pine-knots or other resinous woods to be distilled are deposited in the retort through the opening 3, and the coke after distillation is removed through the opening 4. These openings are both covered by steam or vapor tight closures to prevent the escape of the vapors arising from the wood when the fire upon the furnace-grate heats the retort.

5 denotes a pipe tapped into the lower end of the retort and extending through the furnace-wall and then downwardly into a tank or container 6, in which its lower open end is sealed by the liquid contained in said tank. In starting the apparatus said pipe is sealed with water to prevent the escape of vapor; but as soon as the process gets under way the liquid tar, which is drawn from the wood by the heat, passes through the pipe 5 into the tank 6, where it is collected.

7 denotes a pipe tapped into the upper end

of the retort and extending through the furnace-wall and then downwardly, as at 8, its lower portion having a return-bend 9, which forms a liquid seal for its open end 10, which discharges into a tank or container 11. The pipe 9 has a filling connection 9', closed by a cap 9". The vapors arising from the heated wood in the retort and passing out through the pipe 7 contain creosote which, requiring a high degree of temperature to be kept in the form of vapor, will condense in the pipes 7 and 8 and pass through the liquid seal 9 and pipe 10 into the tank 11. The end of the pipe 10 is sealed to prevent the escape of vapor when the apparatus is started by filling the return-bend 9 through the connection 9' with water, which is soon displaced by creosote.

12 denotes a pipe tapped into the pipe 8 and discharging into the upper portion of a closed separator box or receptacle 13, in which the vapor which is not condensed in the pipes 7 and 8 circulates and deposits any foreign matter which it may contain. By permitting the vapor to circulate and lag in this receptacle all of the more easily condensed portion will be deposited and will pass off from said receptacle through a pipe 14, tapped into its lower end, while that portion of the vapor which contains the spirits of turpentine and oil of tar and which is not so easily condensed will pass out of the receptacle through a pipe 15, tapped into the upper end of the same. The pipe 14 is provided with a return-bend 16, forming a liquid seal, and has its open end 17 discharging into a tank or container 18, which collects the foreign substances condensed in the separator 13.

The pipe 15 is formed with an upwardly-projecting return-bend 19 and then discharges into a condenser 20 in the form of a series of pipes 21, connected at their ends to provide a continuous circuitous passage. Tapped into the downwardly-extending arm of the return-bend 19 is a pipe 22, which leads from a water-tank 23 or other suitable source of water-supply and is provided with a valve 24 for controlling the discharge of water. The water entering the pipe 15 is prevented from passing to the separator 13 by the return-bend 19, and hence passes with the vapor into the condenser 20. In the passage of the water and

vapor through the condenser-pipes 21 the vapor is cooled by the water and condensed into turpentine and oil of tar. The condenser discharges through a pipe 25 into a tank or container 26. The water, which has a greater specific gravity than the combined turpentine and oil of tar, settles to the bottom of the tank and is drawn off through a cock 27, while the other substances settle on top of the water and are
10 drawn off through a cock 28, disposed above the cock 27. The oil of tar and turpentine may be separated from each other by using an ordinary still.

From the foregoing description, taken in
15 connection with the accompanying drawing, the operation and advantages of my invention will be readily understood.

Having thus described my invention, what I claim as new, and desire to secure by Letters
20 Patent, is—

An apparatus for distilling wood, compris-

ing a retort, a tar-pipe leading from the lower end of said retort, a vapor-pipe leading from the upper end of said retort, a creosote-discharge pipe leading from said vapor-pipe, a 25 separator connected to said vapor-pipe, a liquid-discharge pipe leading from the bottom of said separator, a series of condenser-pipes forming a circuitous passage, a vapor-discharge pipe leading from the upper end of 30 said separator to said condenser-pipes, a valve-controlled water-discharge pipe tapped into said vapor-discharge pipe below its uppermost point, and a tank or container adapted to receive the discharge of said condenser-pipes, 35 substantially as described.

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

JOHN W. SPURLOCK.

Witnesses:

R. T. KENNEDY,

L. G. YOUMANS.