

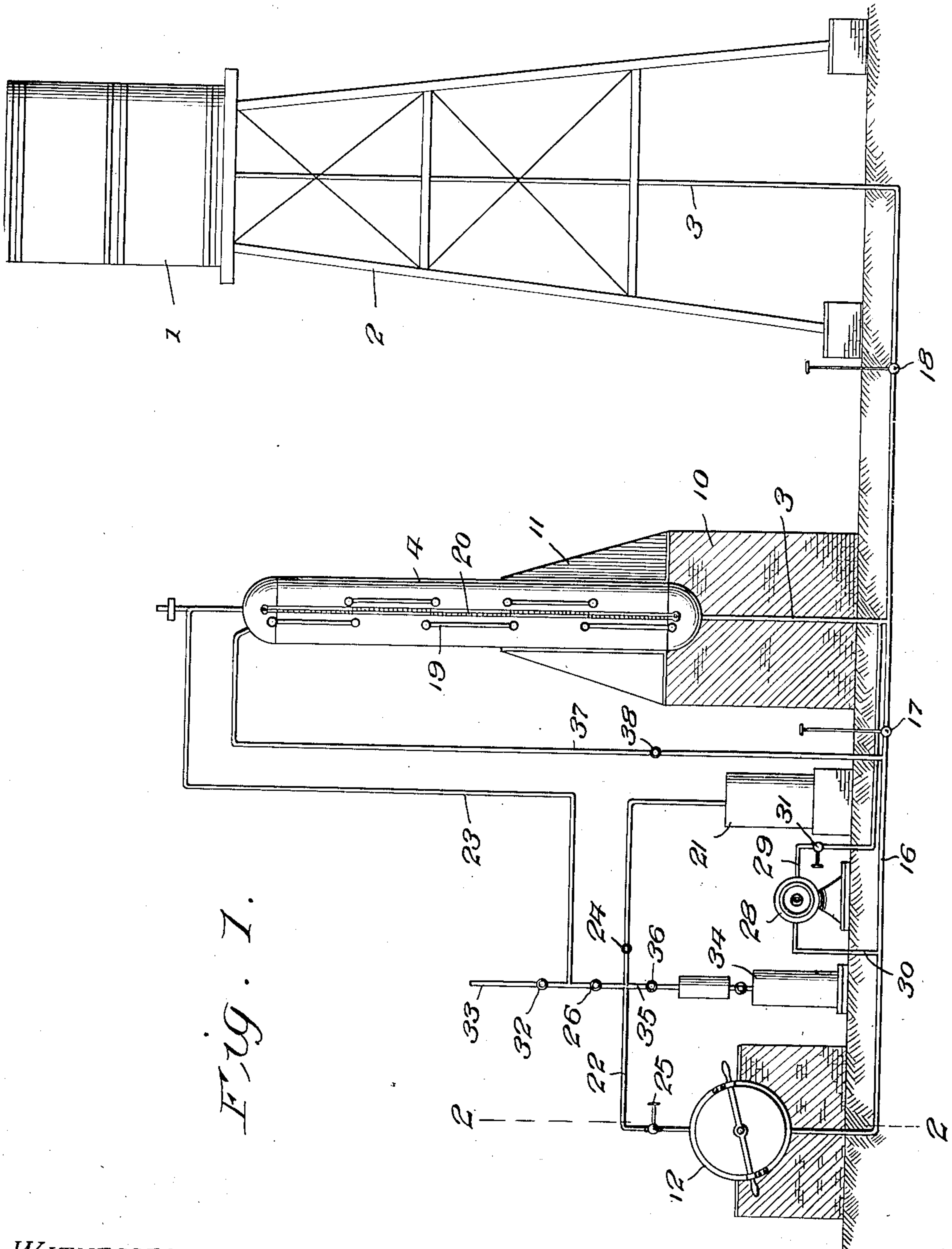
No. 887,583.

PATENTED MAY 12, 1908.

R. E. BRIGHT.
APPARATUS FOR TREATING TIMBER.

APPLICATION FILED JAN. 20, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

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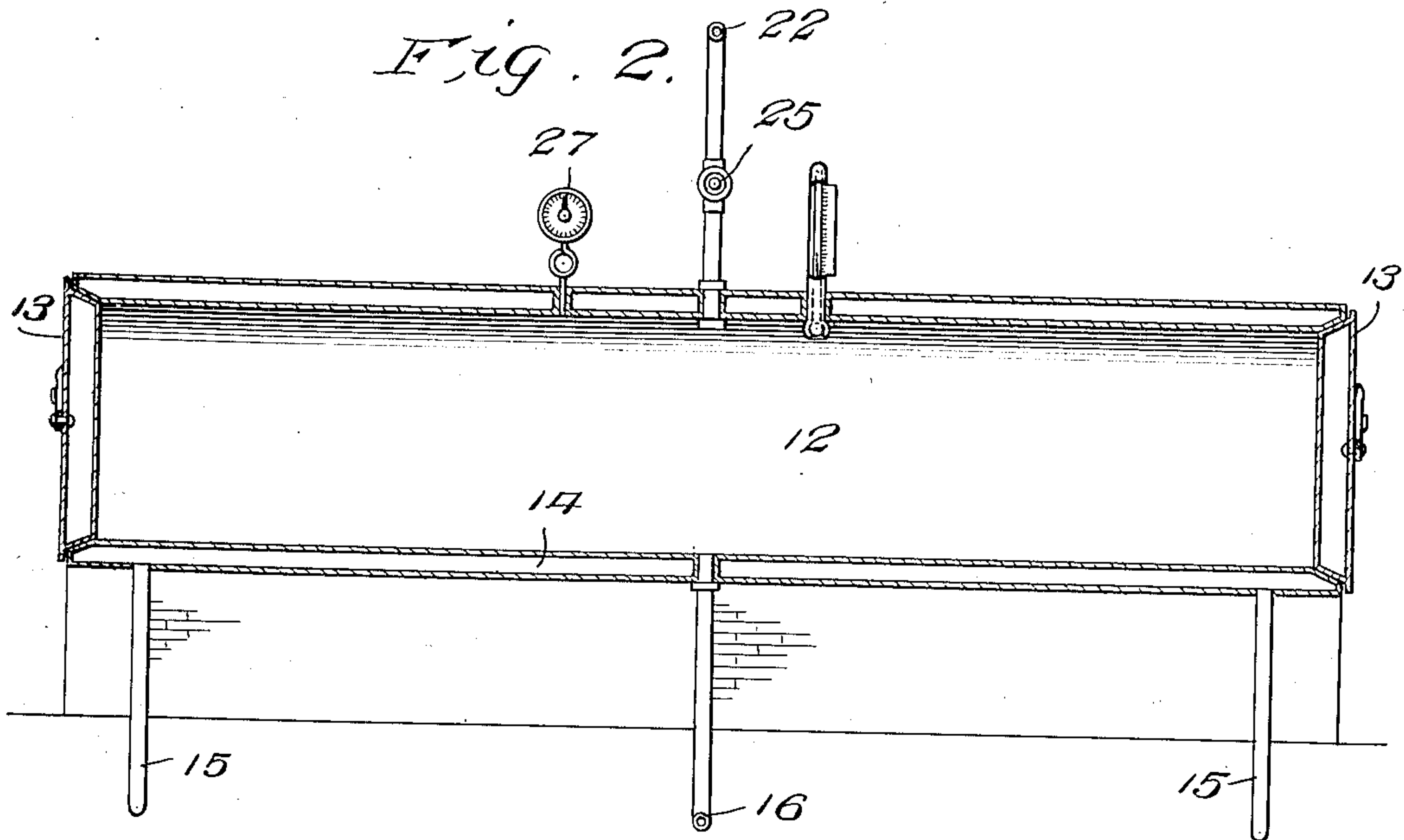
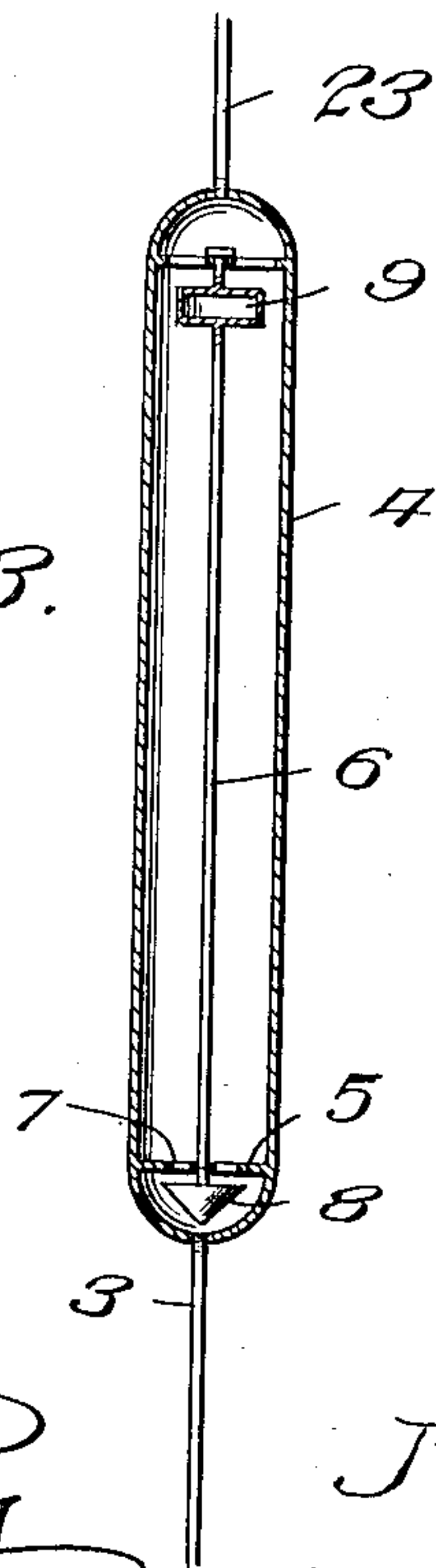


Fig. 3.



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APPARATUS FOR TREATING TIMBER.

No. 887,583.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT E. BRIGHT, a citizen of the United States, residing at Grenada, in the county of Grenada and State of Mississippi, have invented certain new and useful Improvements in Apparatus for Treating Timber; and I do hereby 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 new and useful improvements in apparatus for treating timber and my object is to provide means for forcing creosote oils, or like preparations through the timber, whereby decaying of the timber will be allayed.

A further object is to provide means for ascertaining the amount of the preparation or preservative absorbed by the timber.

A still further object is to provide automatic means for stopping the flow of the fluid from the reservoir into the compression tank.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claim.

In the accompanying drawings which are made a part of this application, Figure 1 is an elevation partly in section of my invention. Fig. 2 is a sectional view through the compression cylinder, and, Fig. 3 is a sectional view through the compression tank, showing the automatically-operated valve for stopping the flow of oil from the reservoir into the compression tank.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a reservoir, which is preferably placed at an altitude and supported in any preferred manner, as by a frame 2.

Extending from the reservoir 1, is a conveying pipe 3, which extends from the reservoir to a pressure tank 4, the upper end of the pressure tank being substantially in line with or below the lower end of the reservoir, so that the contents of the reservoir will flow through the conveying pipe 3 into the pressure tank by gravity and, in order to automatically stop the flow of the fluid from the reservoir when the pressure tank has been filled, I provide a partition 5 adjacent the lower end of the tank, through which extends a rod or chain 6, while that portion of the partition surrounding the rod is provided

with ports 7, through which the oil passes from the pipe 3 on its way into the tank 4. The lower end of the rod 6 has secured thereto a conical valve 8, which, when moved upwardly, closes the ports 7 and prevents the flow of oil into the tank, the upper end of the rod having a float 9 thereon adapted to raise the conical valve when the fluid engages the float, thereby automatically stopping the flow of the fluid from the reservoir to the tank. The tank 4 is supported upon any suitable form of foundation 10, which, if preferred, may be constructed of cement and the tank is held in a vertical position on the foundation by means of brackets 11.

Located at a suitable distance from the tank 4, is a cylinder 12, in which the timber is adapted to be placed for treating, the ends of the cylinder being closed by removable head 13, and, if it is desired to heat the cylinder during the treating process, a jacket 14 is placed around the cylinder into which steam may be introduced through suitable pipes 15. After the timber has been placed in the cylinder, the fluid from the tank 4 is introduced into said cylinder through an extension 16 of the pipe 3, said extension communicating with the conveying pipe at a point immediately below the tank 4 and the fluid is prevented from flowing through the extension 16 when the tank 4 is being filled, by means of a valve 17, while the fluid is prevented from flowing through the pipe 3 by means of a valve 18. The amount of fluid in the tank is readily ascertained by means of transparent gages 19, said gages being located adjacent suitably graduated scales 20 on the face of the tank and, by observing the gages, the amount of fluid remaining in the tank, or the amount removed therefrom, may be readily ascertained.

In treating timber, such as cross ties, piling, or the like, to protect the same against decay, I provide a fluid of creosote, or similar substance and direct the same through the pores of the timber, thereby thoroughly saturating the timber with the creosote and this result is accomplished by first opening the valve 18 and allowing the fluid from the reservoir 1 to flow into the tank 4 and, when the tank is properly filled, the pressure of the fluid on the float 9 will elevate the valve 8 and stop the flow of the fluid from the reservoir, when the valve 18 is closed. Air is then compressed into the cylinder 12 and upper end of the pressure tank 4 by means of

any suitable form of air compressor 21, the air from the compressor being conveyed, respectively, to the cylinder 12 and upper end of the tank 4 through pipes 22 and 23, the pipe 23 encountering the pipe 22 at any suitable point between the air compressor and cylinder and, when the air is being forced into the tank and cylinder, valves 24 and 25 in the pipe 22 and a valve 26 in the pipe 23 are opened.

The air compressor is kept in operation until the pressure in the cylinder and tank has reached from one to five atmospheres, when the compressor is stopped and the valve 24 closed, the atmospheric pressure in the cylinder being readily ascertained by means of a gage 27. After the proper atmospheric pressure has been attained, the valve 17 is opened, the pressure on the fluid being thus equalized, so that said fluid will descend and pass into the cylinder 12, while the air in the cylinder will pass through the pipes 22 and 23 into the upper end of the tank 4. After the cylinder has been completely filled with fluid, the valves 25 and 26 are closed and the pressure in the cylinder increased to from five to fifteen atmospheres, through the medium of a pressure pump 28, said pump being connected to that portion of the pipe 3 depending from the tank 4 by means of a pipe 29, while the pump is connected to the cylinder 12 through the medium of a pipe 30 extending from the pressure pump and into engagement with the extension 16, the connection of the pipe 29 with the pipe 3 and the connection of the pipe 30 with the extension 16, being on opposite sides of the valve 17.

As the fluid in the timber is absorbed by the timber, a new supply of the fluid is forced into the cylinder by the pressure pump 28, the supply being obtained from the tank 4 through the pipe 29. When the desired absorption has been reached, the pressure pump 28 is stopped and the valve 31 in the pipe 29 closed, after which the valves 24 and 25 in the pipe 22 and the valve 17 in the extension 16 opened and the air compressor 21 started, which will force the loose oil from the cylinder into the tank 4 through the extension 16 and pipe 3. The air compressor 21 is then stopped and the valve 17 closed and the air in the cylinder allowed to escape to the atmosphere by closing the valve 24 and opening the valve 26 and a similar valve 32 in the vent pipe 33 and, as soon as all the air is released from the cylinder, the valves 26 and 32 are closed and a vacuum formed in the cylinder through the medium of any suitable form of vacuum pump 34, said pump being connected to the pipe 22 by means of a coupling 35, which coupling is provided with a valve 36 to cut off communication between

the pipe 22 and vacuum pump, when said vacuum pump is not in use.

By forming a vacuum in the cylinder 12, the surplus oil is drawn from the timber, as it is only desired to thoroughly coat the cells of the wood with the fluid and, by retaining the vacuum in the cylinder from one to two hours, the surplus fluid will be thoroughly removed from the timber. When this result has been accomplished, the vacuum pump 34 is stopped and the valve 36 closed, when the fluid thus separated from the timber is returned to the tank 4 by starting the air compressor 21 and opening the valve 24, said fluid passing through the extension 16 and through a return pipe 37, said return pipe being provided with a valve 38, which is open during the returning process and closed as soon as the same is completed. When the surplus fluid has been returned to the tank 4, the air compressor is stopped and the valve 24 closed, when the valves 26 and 32 are opened and the air in the cylinder released through the vent-pipe 33. The timber in the cylinder is then ready to be removed and a new supply introduced into the cylinder for treatment and, by making a record of the gages before and after the fluid has been introduced into the timber, the amount of the fluid required to treat the timber, may be readily ascertained.

It will thus be seen that I have provided a very efficient means for thoroughly coating all of the cells of the timber with oil with a medium amount of time and labor and, while I have shown but one cylinder employed in connection with the pressure tank, it will be readily understood that any number of cylinders may be employed in connection with the tank, the operation thereof being substantially the same as when a single cylinder is used.

What I claim is:

An apparatus for treating timber with fluid comprising a reservoir for the fluid, a pressure tank in communication therewith, a receptacle to contain timber, means to convey fluid from the pressure tank to the receptacle, a pressure pump in communication with the receptacle, a vacuum pump in communication with the receptacle, an air compressor in communication with the receptacle, and means within the pressure tank for controlling the flow of fluid from the reservoir therethrough, all for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT E. BRIGHT.

Witnesses:

J. B. WOODSON,
E. C. BENTON.