

H. E. SMITH.

APPARATUS FOR PRODUCING MEDICINAL VAPOR OR LIQUID FROM THE SMOKE OF GREEN WOOD.

(Application filed Dec. 9, 1901.)

(No Model.)

Fig. 1.

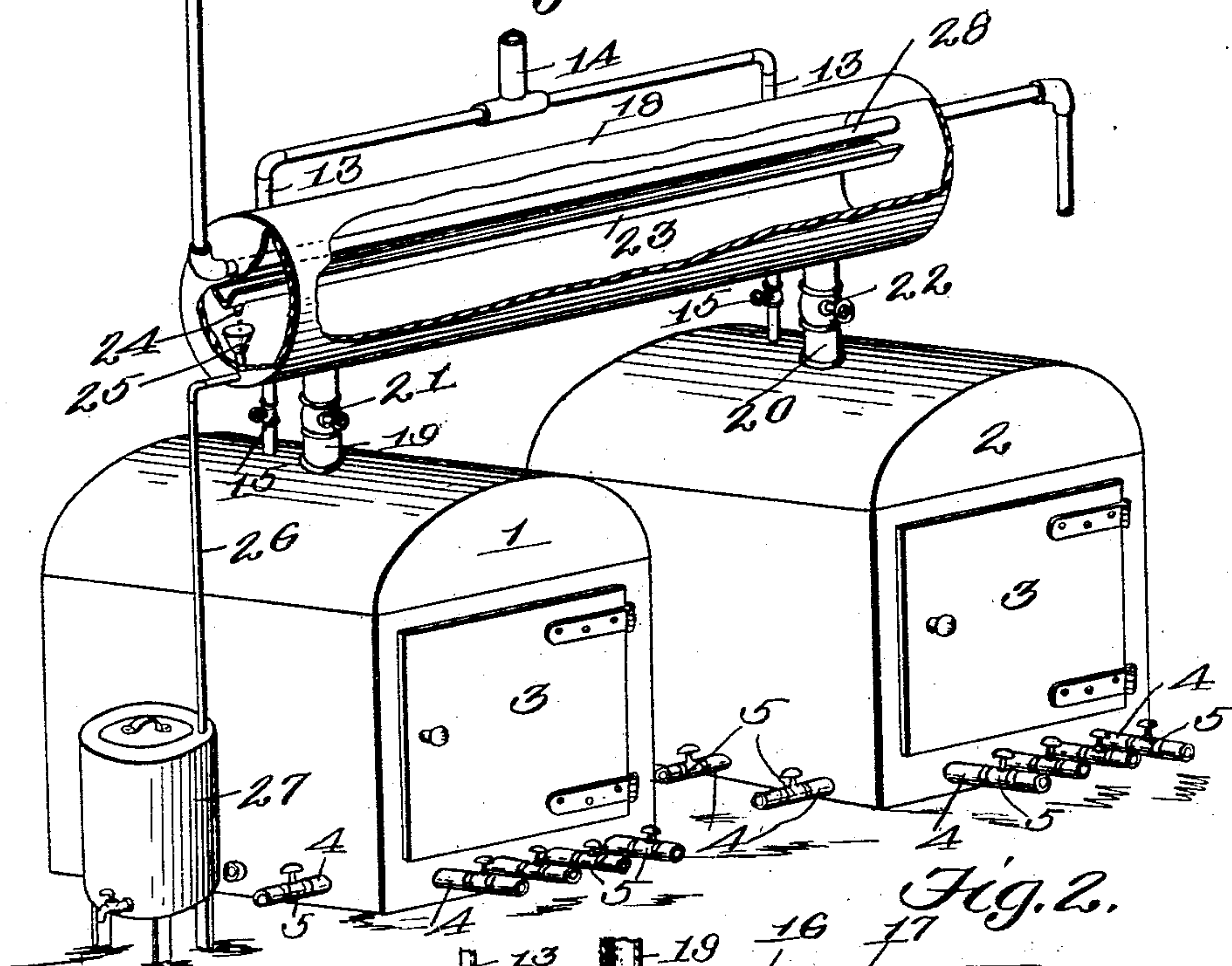


Fig. 2.

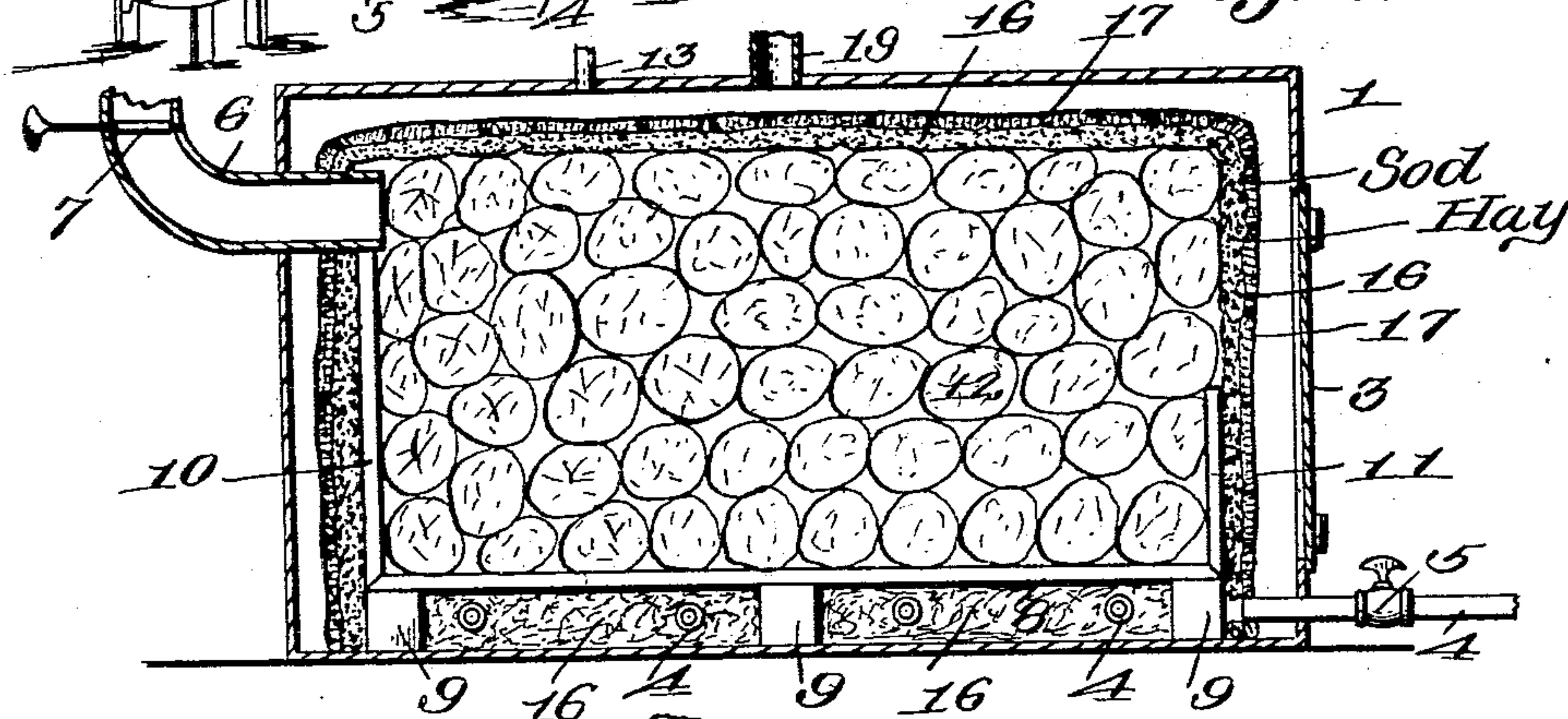
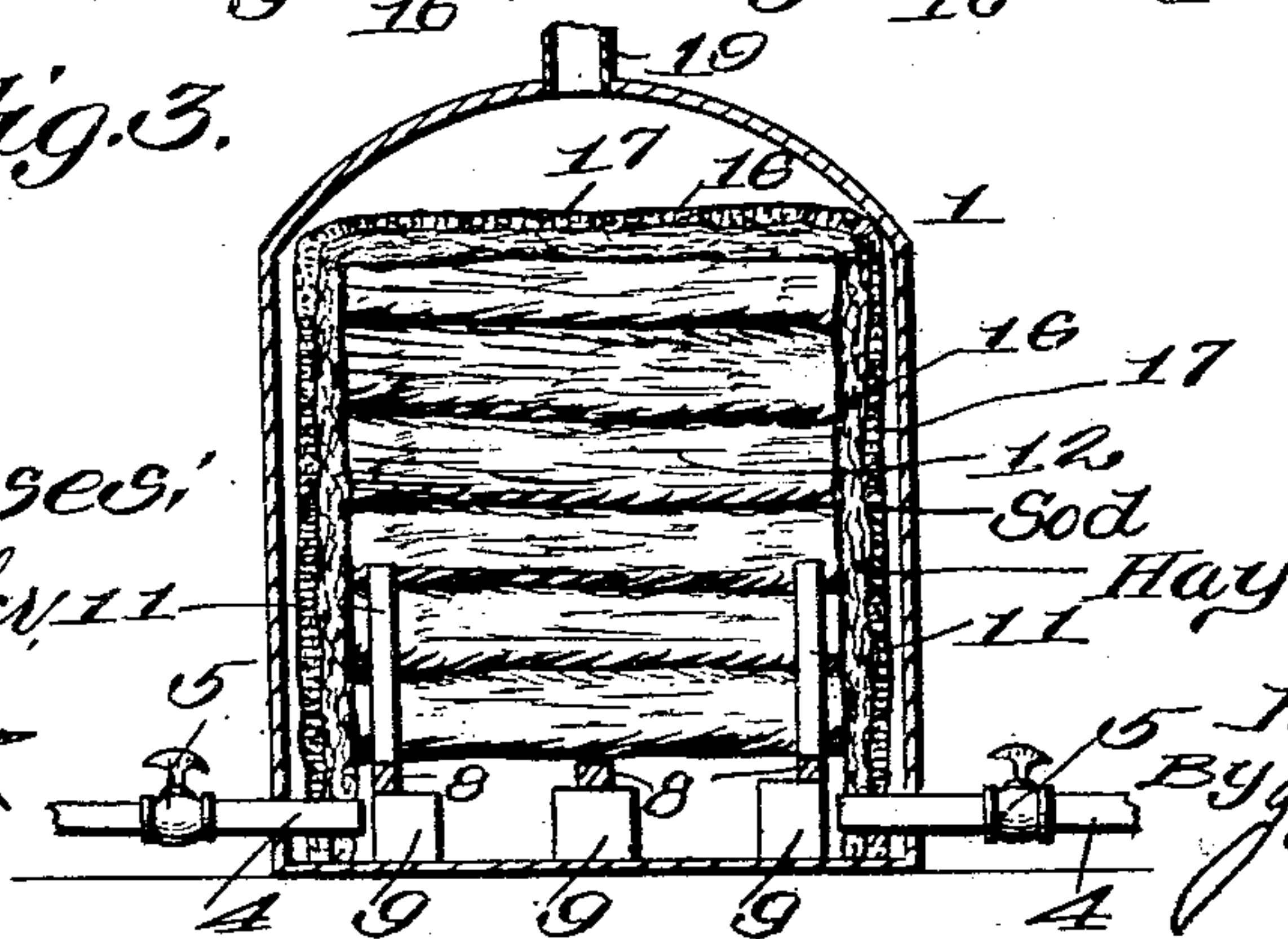


Fig. 3.



Witnesses:

C. D. Hesley, 11

J. B. Kiefer

Inventor

Hamilton E. Smith

By James L. Norrie

Atty.



# UNITED STATES PATENT OFFICE.

HAMILTON E. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR PRODUCING MEDICINAL VAPOR OR LIQUID FROM THE SMOKE OF GREEN WOOD.

SPECIFICATION forming part of Letters Patent No. 713,515, dated November 11, 1902.

Application filed December 9, 1901. Serial No. 85,268. (No model.)

*To all whom it may concern:*

Be it known that I, HAMILTON E. SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Apparatus for Producing Medicinal Vapor or Liquid from the Smoke of Green Wood, of which the following is a specification.

My invention has for its object to produce a novel apparatus for use in charring wood and filtering the resultant smoke, whereby to produce a vapor which may be inhaled without inconvenience, and to combine with such charring and filtering apparatus apparatus for use in procuring a liquid distillate of the smoke of the wood when such is desired. The vapor or the liquid distilled is intended for use in the treatment of throat and lung diseases, and ordinarily green pine wood will be used; but other woods possessing curative or healing properties may be employed, and the vapor may be utilized for other purposes, such as curing or flavoring meats or flavoring liquors.

With the above objects in view the invention resides in the parts and combinations of parts hereinafter described, and particularly pointed out in the claims.

In order to enable my invention to be clearly understood, I have illustrated the same in the accompanying drawings, wherein—

Figure 1 is a perspective view of the complete apparatus, portions of the smoke-drum being broken away. Fig. 2 is a longitudinal sectional view through one of the retorts, and Fig. 3 is a transverse sectional view of the same.

Referring now to the drawings, 1 2 indicate two retorts. These retorts are of metal, and each retort is provided with a door 3. Each retort is provided at the bottom with a series of air-inlet pipes 4, provided with valves 5, said pipes extending through the wall of the casing a short distance into the interior of the retort and being located at regular intervals along the four sides of each retort. From the rear end of each retort extends a smoke-pipe 6, having a damper 7, Fig. 2. Within the retorts are located three or more supports or grate-bars 8, which are held a slight distance

above the floors of the retorts by means of blocks 9, of fire-clay or similar substance. The grate-bars at the sides of the retorts are provided with upward extensions 10 11 at opposite ends to assist in keeping the logs 12 of wood in proper position in the retorts. From the top of each retort leads a pipe 13, which pipes connect with a common pipe 14, the purpose of which is to lead away the vapor or filtered smoke from the retorts. Each of the pipes 13 is provided with a valve 15. As thus far described the operation is as follows: The logs of green wood are placed within the retorts and are piled up on the grate-bars 8 to about the height indicated. The pile of wood is then covered with a thick mat of hay 16 and about the hay is placed a thick mat of turf or sod 17. The valves 15 in the pipes 13 are opened and the valves 21 22 in the pipes 19 and 20, hereinafter described, are closed. A fire is then started beneath the logs 12. Preferably this will be done only in one of the retorts, so that when all the wood has been charred therein a fire may be started in the second retort and the charring proceed therein while the first retort is being cleaned out and recharged, thus rendering the process continuous. After the fire has been started the door 3 is closed and the valves 5 and damper 7 are adjusted to insure a slow combustion or charring of the wood and so that only the minimum amount of smoke will pass out through the smoke-pipe 6. The greater part of the smoke generated will percolate through the layers of hay and turf and be thereby filtered or deprived of carbon particles, dust, and impurities and pass to the pipe 13 in the form of a thin or light vapor resembling smoke only in color and which may be freely inhaled without inconvenience. The pipe 14 will of course lead to a room or by means of branch pipes to rooms where the vapor may be discharged to be inhaled by the person or persons to be treated or where it may be used for any of the purposes indicated or for any other purpose for which it is suitable.

It will be seen that the inner end of the smoke-pipe 6 extends through the mat of turf and hay, so that only the raw smoke can escape therethrough, while the inner ends of the pipes 13 are located above the mat of turf and hay, so that no raw smoke can pass into



the same, but only the filtered smoke or vapor.

In order to produce the liquid distillate of smoke as an alternative process, I employ a horizontally-disposed drum 18, Fig. 1, which is connected at opposite ends to and communicates with the retorts 1 2 at the tops thereof by means of pipes 19 20, having valves 21 22. Located within the drum 18 is an inclined trough 23, having an outlet 24 located above a funnel 25 on the end of a pipe 26, which pipe leads through the drum to a suitable receptacle 27. Extending through the drum 18, from end to end thereof and immediately above the trough 23, is a pipe 28, which connects with a suitable source of cold-water supply. In the use of the apparatus just described the valves 15 in the pipes 13 will of course be closed. The operation is as follows: The valves 21 22 being open, the retorts 1 and 2 are charged and fired, as before described. The filtered smoke in the form of a vapor passing through the flues 19 20 (either or both) enters the drum 18 and comes in contact with the continuously-cooled pipe 28, where it condenses and falls in drops into the trough 23. From the trough 23 this liquid distillate falls into the funnel 25, whence it is conducted by the pipe 26 to the receptacle 27. Having thus fully described my invention, what I claim as new is—

1. In a device for generating wood-vapor, the combination with a retort having a closable opening, a series of valve-controlled air-inlet pipes located at the bottom of the retort, a smoke-pipe projecting some distance within the retort, whereby, when the retort has been charged with wood and the wood surrounded by a filtering medium, said smoke-pipe will extend through the filtering material to the wood for the purpose of per-

mitting the escape of a portion of the raw smoke, as described, a damper in said smoke-pipe and a pipe leading from the top of the retort for conducting away the filtered smoke, or vapor.

2. In a device for generating wood-vapor, the combination with two or more non-communicating retorts having each a closable opening, a series of valve-controlled air-inlet pipes located at the bottom of each retort, a smoke-pipe projecting some distance within each retort, whereby when the retort has been charged with wood and the wood surrounded by a filtering medium, said smoke-pipes will extend through the filtering material to the wood for the purpose of permitting the escape of a portion of the raw smoke, as described, a damper in each of said smoke-pipes, and a pipe leading from the top of each retort and connected to a common pipe, for conducting away the filtered smoke, or vapor.

3. An apparatus for the purpose described comprising a retort for generating smoke, a smoke-drum having valve-controlled communication with said retort, a trough located within said drum, a condensing-pipe passing through the drum and arranged above the trough, means for conducting the liquid of condensation from the trough to a suitable receptacle, and a valve-controlled pipe 13 leading from said retort whereby, in operation, filtered smoke may be passed into said drum to be condensed or may be passed through said pipe 13 in the form of a vapor.

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

HAMILTON E. SMITH.

Witnesses:

ROBERT MAYER,  
WM. A. SHRYOCK.