

No. 626,751.

Patented June 13, 1899.

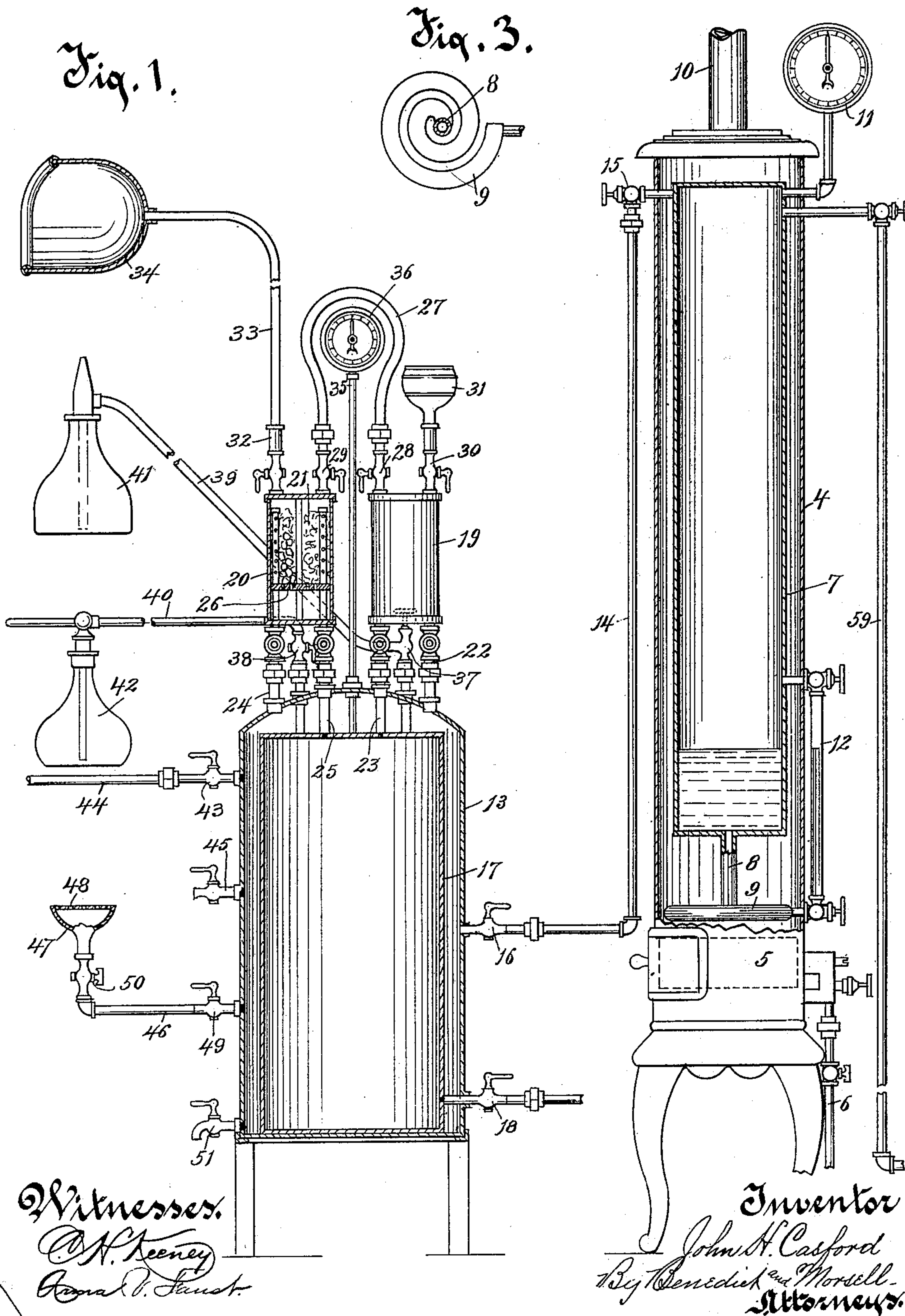
J. H. CASFORD.

INHALING AND SPRAYING APPARATUS.

(Application filed Feb. 18, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

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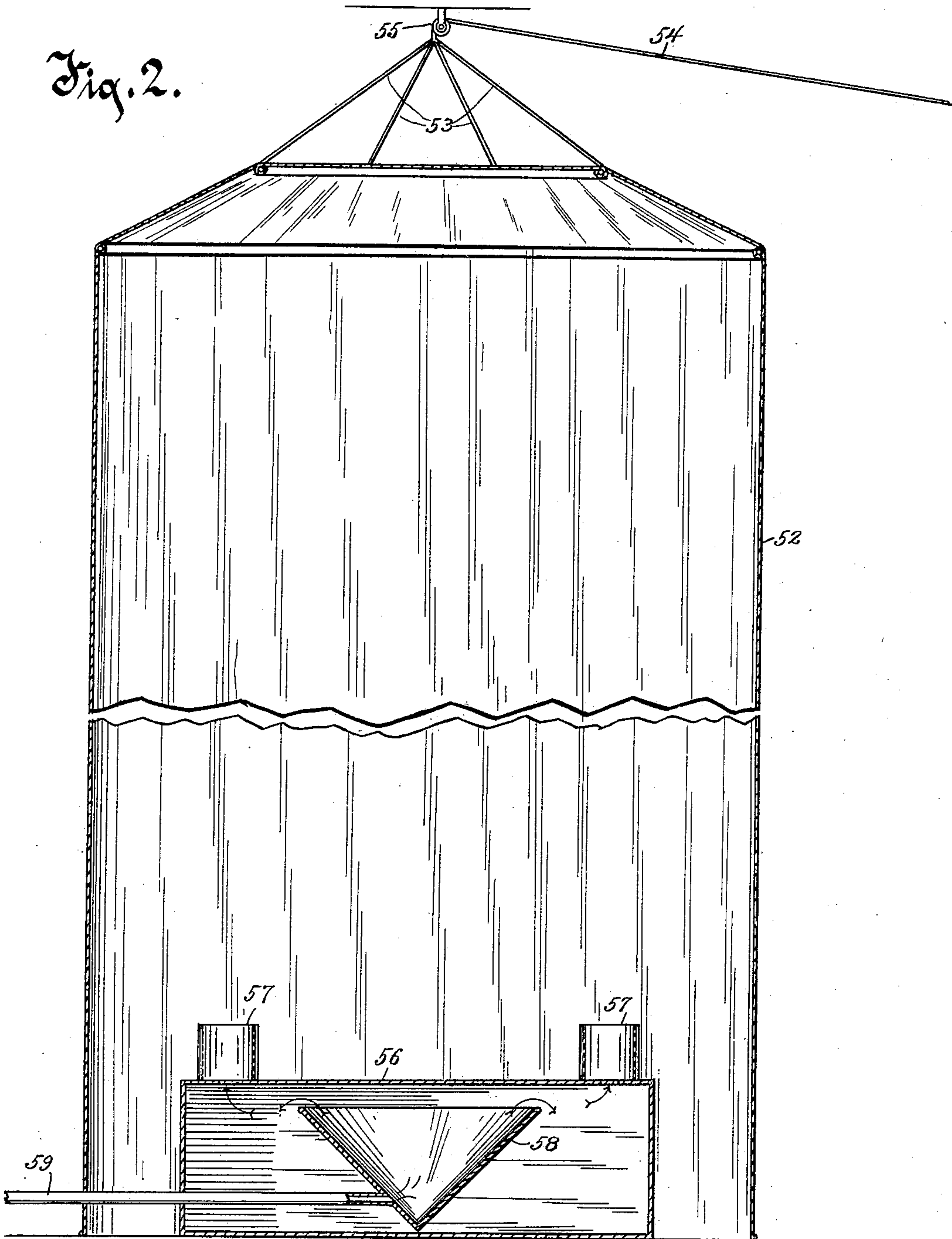
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2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN H. CASFORD, OF MILWAUKEE, WISCONSIN.

INHALING AND SPRAYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 626,751, dated June 13, 1899.

Application filed February 18, 1898. Serial No. 670,748. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. CASFORD, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful
5 Improvement in Inhaling and Spraying Apparatuses, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 My invention has relation to improvements in inhaling and spraying apparatuses for treating colds, catarrh, neuralgia, rheumatism, and kindred affections.

The object of the invention is to provide an
15 improved device whereby a convenient means is presented for administering medicated steam or medicated air or combined medicated steam and air or unmedicated steam or
20 air either to the throat, nostrils, or other part where local treatment is required, or the device may be utilized for the purpose of taking a medicated bath.

Having the above in view, the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the inhaling and spraying device, parts in section. Fig. 2 is a sectional
30 view of the hood and parts inclosed thereby, and Fig. 3 is a plan view of the steam-generating coil.

Referring to the drawings, the numeral 4 indicates the outer casing of the steam-generating apparatus, the lower portion thereof
35 forming the heating-chamber 5, which contains the burner, to which a valve-controlled fuel-feed pipe 6 leads. Within the casing is located a boiler 7, containing the water to be heated. The bottom of this boiler is provided
40 with a depending pipe 8, which connects at its lower end with a coil 9, said coil being directly over the burner, and hence being adapted to receive thereagainst the hot air and products of combustion, and thereby cause
45 the water to be quickly heated. The products of combustion are free to ascend upward in the space between the casing and the boiler and to find final exit through the pipe 10 at the upper end of the casing. The boiler has
50 connected thereto an ordinary steam-pressure indicator 11 and also a water-gage 12.

The numeral 13 indicates another casing,

which is located at a suitable distance from the steam-generator and which is connected to the boiler 7 by means of a pipe 14. The
55 quantity of steam passing into this pipe is regulated by means of a valve 15. The pipe has also arranged therein a cock or faucet 16 for admitting the steam into the interior chamber of the casing 13. Within said casing
60 13 is another casing 17, which latter casing forms an air-chamber, to which air is conducted from any suitable source of air-supply by means of a valve-controlled pipe 18. Above the casing 13 are two cylinders 19 and
65 20, respectively. These cylinders are lined with asbestos or similar material, as indicated by 21, which material is thoroughly saturated with the medicinal preparation. Each of these cylinders is connected, respectively, with the
70 outer casing 13 and inner casing 17 by means of valve-controlled pipes. The pipe leading from casing 13 to cylinder 19 is indicated by the numeral 22 and the pipe leading from casing 17 to said cylinder 19 by the numeral
75 23. The corresponding pipes leading from the casings 13 and 17 to cylinder 20 are indicated, respectively, by the numerals 24 and 25. The portions of the pipes 22, 23, 24, and
80 25 within the cylinders are perforated, as clearly shown in Fig. 1. These pipes also run through perforated horizontal partitions 26, located in the lower portions of the cylinders, which partitions form air-spaces therebeneath and also serve to keep the asbestos free
85 from the bottom. The cylinders 19 and 20 are connected by means of a pipe 27, provided with the two valves 28 and 29, located, respectively, in the pipe near the tops of the cylinders. Cylinder 19 has also extending
90 upwardly therefrom a valve-controlled pipe 30, said pipe formed at its upper end with a cup 31, which cup may be lined with asbestos or similar material and said material thoroughly impregnated with a medicinal compound. Cylinder 20 has extending therefrom a short valve-controlled pipe 32, to which
95 is attached a flexible tube 33. The end of this flexible tube has connected thereto a mouth-cup 34. Extending upwardly from casing 17 is a pipe 35, which pipe has connected to its upper end an indicator 36. Also communicating with and extending upwardly
100 from the casing 17 are valve-controlled pipes

37 and 38. These pipes have connected thereto, respectively, flexible tubes 39 and 40. Tube 39 connects at its outer end with a nasal atomizer 41, and tube 40 communicates

5 with a throat-spraying device or atomizer 42.
A short valve-controlled pipe 43 communicates with the steam-space of the casing 13, and this pipe has connected thereto by means of a coupling a longer pipe 44, which pipe
10 may extend to any suitable place and may be utilized when the valve is opened for directing a jet of steam upon any portion of the body of a patient. Another valve-controlled short pipe 45 connects with the steam-space of cylinder 13. By means of this short
15 pipe a spray of steam may be directed upon the body of a person standing directly in front thereof. Below pipe 45 is another pipe 46, which also communicates with the steam-space of the cylinder 13. This pipe at its
20 outer end is bent upwardly, and the extremity of this upwardly-bent portion is formed or provided with a cup 47, which cup is provided with a perforated top 48. The pipe 46
25 is provided with a valve 49 for admitting steam therein and another valve 50 for regulating the quantity of steam passing into the cup 47. This pipe is used more especially for directing a spray of steam onto the face
30 of a patient, the person standing in such position that the face will be immediately over the perforated top of the cup. Below the pipe 46 and communicating with the steam-space of the cylinder 13 is a faucet 51 for
35 drawing off the water of condensation.

On Sheet 2 of the drawings I illustrate the manner in which the device may be utilized for giving a patient a vapor-bath. Referring to this sheet of drawings, the numeral 52
40 indicates a hood, to the top of which are secured a series of cords 53, which cords connect with a single cord 54, which cord 54 runs over a guide-pulley 55. By means of the cord 54 and the connecting-cords 53 the hood may
45 be raised or lowered. The hood when lowered is adapted to cover a casing 56, said casing provided with exit flues or tubes 57. Within the casing 56 is arranged an inverted cone 58. A pipe 59 connects this cone with the
50 steam-space of the boiler 7.

In the application of my invention the valves of the pipe 14 are regulated so as to admit the desired quantity of steam in the steam-chamber of the casing 13. The steam
55 in this casing, of course, has the effect of warming the air admitted to the cylinder 17. Now if it is desired to treat the patient with medicated steam the valve of either of the pipes 22 or 24 is turned so as to admit the
60 steam in either the cylinder 19 or 20. The steam admitted into the cylinder 19 becomes thoroughly impregnated with the medicinal preparation with which the asbestos lining is saturated. The valve of the pipe 30 is now
65 turned on, and the medicated steam is free to pass into the cup 31, from which it can be inhaled by the patient. If instead of medicated

steam it is desired that medicated air should pass into the cylinder 19, the valve of pipe 22 is closed and the valve of pipe 23 opened, or
70 if it is desired that both the air and steam should be medicated the valves of both pipes 22 and 23 are opened. The same arrangement exists in regard to cylinder 20. By
75 opening the valve of pipe 24 steam is admitted into the cylinder 20 and is medicated therein, or by closing the valve of pipe 24 and opening the valve of pipe 25 air is admitted
80 into said cylinder, or, again, by opening the valves of both pipes 24 and 25 air and steam are admitted into the cylinder and commingled and medicated. The perforated partition 26 in each cylinder causes the air or
85 steam or the commingled air and steam to pass slowly into the portion of the cylinder above said partition and to be equally distributed. The medicated steam or air, or both, pass out of cylinder 20 when the valve of pipe
90 32 is opened and flow finally through the flexible tube 33 into the cup 34, from which it can be inhaled by the patient.

If it is desired that unmedicated air be inhaled into the nostrils, the valves of the several pipes leading to the cylinders 19 and 20
95 are closed and the valve of pipe 37 opened. This will permit the air to pass into the flexible tube 39, and thence into the nasal atomizer 41, the tube of said atomizer being placed in the nostril in the well-known manner. On the other hand, if unmedicated air
100 is desired to be sprayed into the throat the valve of pipe 38 is opened and the air permitted to pass into the flexible tube 40 through the atomizer 42 and out through the nozzle of said atomizer into the throat.

Provision is also made for utilizing unmedicated steam. This may be done through
105 either of the pipes 43, 45, or 46 by opening the respective valves of said pipes. When the valve of pipe 43 is opened, the steam is free to flow through the pipe 44 and to be discharged at whatever point the said pipe leads
110 and directed against any portion of the body of the patient. When the pipe 45 is opened, the patient may stand directly in front of the same and have the steam directed against the part to be treated. When the pipe 49 is
115 opened, the patient inhales the steam through the perforated top of the cup 47.

In the use of the cylinders 19 and 20 it is
120 preferably intended that the asbestos lining of each should be saturated with different kinds of medicinal compounds or preparations. It is of course obvious, however, that, if desired, the same medicinal compound may
125 be used in each. It is also obvious that by the provision of the pipe 27 the two cylinders 19 and 20 may be put into communication with each other by opening the valves 28 and 29. When this is done, the medicated air or
130 steam or the commingled medicated air and steam is free to pass from one cylinder to the other and to be withdrawn therefrom.

It will of course be evident that the two

cylinders 19 and 20 are not absolutely necessary, inasmuch as simply a single cylinder could be employed and successful results obtained. By the use of two cylinders, however, a greater capacity is secured, and at the same time said two cylinders may be put into communication with each other, if desired.

By the hood arrangement shown on Sheet 2 of the drawings provision is made for giving a vapor-bath, which may be a steam-bath, medicated-steam bath, or commingled medicated air and steam. If merely a steam-bath is desired, the valve in pipe 59 is opened, and the steam from the boiler 4 is thereby permitted to pass into the cone 58, thence into the casing 56, and out through the pipes or tubes 57 to fill the space confined by the hood. In order to secure a medicated-steam bath, the medicinal preparation is placed within the cone 58.

In order to secure a medicated-air bath, the valves of pipes 22 and 23 are opened and the valves of pipes 24 and 25 closed. Air is then forced into the casing 17 under a pressure greater than the steam-pressure. This air will pass through the pipe 23 into the cylinder 19, thence through the pipe 22 into casing 13, thence through pipe 14 into boiler 7, and thence from said boiler through pipe 59 into the receptacle 58. If desired, the circuit could be made through cylinder 20 by merely opening the valves of pipes 24 and 25 and closing the valves of pipes 22 and 23. If, again, it is desired to put both the cylinders 19 and 20 into circuit, then the valves of pipes 22, 23, 24, and 25 are opened. The compressed air will then pass from casing 17 through pipes 23 and 25 into the respective cylinders, thence from said cylinders through the pipes 22 and 24 into the casing 13, and then take the same course as previously pointed out; or, again, if it is desired that the circuit should be from one cylinder to the other then either the valves of pipe 22 or 24 are closed and also the valves of either one of the pipes 23 or 25 likewise closed and the valves of pipe 27 opened. The air under pressure would then pass from the casing 17 through either of the pipes 23 or 25, which may be left opened, thence into one of the cylinders, thence from said cylinder into the other cylinder through the pipe 27, thence from said cylinder through either the pipe 22 or 24, as the case may be, into the casing 13, and then take the same course to the receptacle 58 as before explained.

What I claim as my invention is—

1. In an inhaling and spraying apparatus, the combination, of a steam-boiler, an outer

casing in communication with said steam-boiler, an inner casing having an air-pipe leading thereto, a cylinder adapted to contain a medicinal preparation, and provided with means for discharging medicated steam or medicated air, and pipes connecting the respective casings with the cylinder.

2. In an inhaling and spraying apparatus, the combination, of a steam-boiler, an outer casing in communication with said steam-boiler, an inner casing having an air-pipe leading thereto, a cylinder adapted to contain a medicinal preparation, and provided with means for discharging medicated steam or air, or both, therefrom, and valve-controlled pipes connecting the respective casings with the cylinder.

3. In an inhaling and spraying apparatus, the combination, of a steam-boiler, an outer casing in communication with said steam-boiler, an inner casing having an air-pipe leading thereto, a valve-controlled pipe leading directly from the outer casing and adapted for discharging steam therefrom, a cylinder adapted to contain a medicinal preparation, and provided with means for discharging medicated steam or medicated air therefrom, and pipes connecting the respective casings with the cylinder.

4. In an inhaling and spraying apparatus, the combination, of a steam-boiler, an outer casing in communication with the steam-boiler, a casing within said outer casing, and having an air-pipe leading thereto, a cylinder provided with means for discharging medicated steam and air therefrom, pipes connecting said cylinder with the respective casings, and valve-controlled pipes leading, respectively, from the casings.

5. In an inhaling and spraying apparatus, the combination, of a hood, a steam-boiler, a pipe leading from said boiler to the hood, an outer casing, an inner casing therein, a valve-controlled pipe connecting the steam-boiler with the outer casing, an air-pipe leading to the inner casing, and adapted to discharge air into said inner casing at a pressure greater than the steam-pressure, and a cylinder adapted to contain a medicinal preparation, said cylinder having one valve-controlled pipe leading to the outer casing, and another valve-controlled pipe leading to the inner casing.

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

JOHN H. CASFORD.

Witnesses:

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