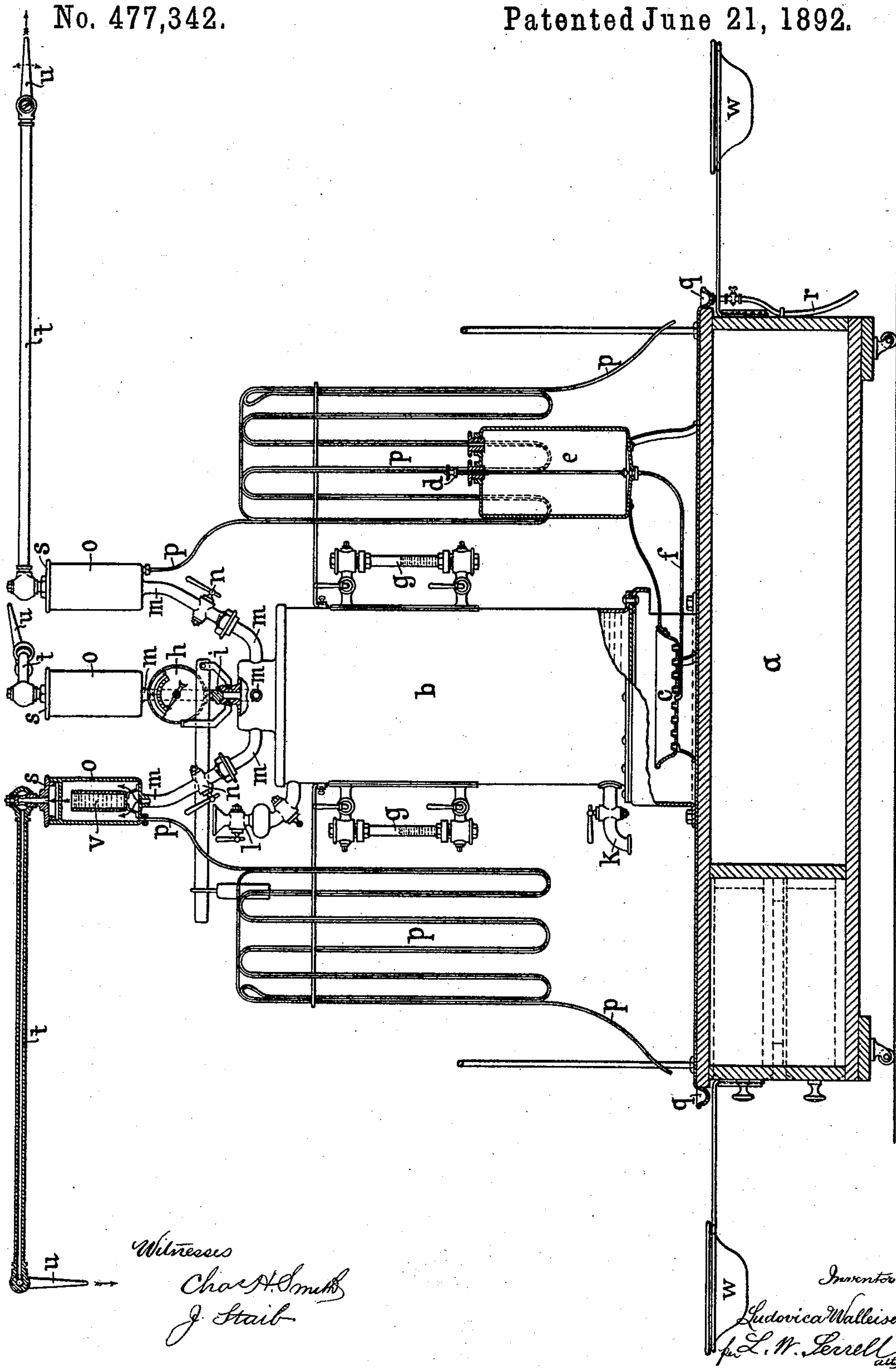


(No Model.)

L. WALLEISER.
INHALING AND DISINFECTING DEVICE.

No. 477,342.

Patented June 21, 1892.



UNITED STATES PATENT OFFICE.

LUDOVICA WALLEISER, OF DRESDEN, GERMANY.

INHALING AND DISINFECTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 477,342, dated June 21, 1892.

Application filed April 10, 1891. Serial No. 388,404. (No model.)

To all whom it may concern:

Be it known that I, LUDOVICA WALLEISER, a subject of the King of Saxony, residing at Dresden, Saxony, Germany, have invented an
5 Improvement in Apparatus for Inhalation and Disinfecting Purposes, of which the following is a specification.

This improved apparatus is for the purpose of inhaling and disinfecting by creating a
10 spray, and it may be employed wherever there is no steam under pressure at disposal. It will prove to be very useful in hospitals and sanitary establishments, but may also advantageously be used in private houses for treating
15 sick persons, and it may furthermore be used for schools, institutes, workshops, &c., in which the air is to be disinfected or purified.

The apparatus is capable of generating steam, so that a steam bath may be produced
20 by it in any convenient room. Its main object, however, is to cause by the steam a spray or jet or several sprays or jets of liquid medicinal substances, the spray of steam mixed with medicinal substances being well adapted
25 for inhaling, disinfecting, and other purposes. I will first point out some of the difficulties inherent to apparatus hitherto used for the purposes indicated, and which difficulties the present invention is intended to avoid, as well
30 as furnishing some further advantages hereinafter stated. Where steam created by steam-boilers is not at hand, a small appliance has been in use for inhaling purposes, the same consisting of a vessel of metal or
35 glass for generating steam having an ejecting-pipe, in combination with a second vessel for receiving the medicinal substance to be converted into spray, this second vessel having a suction-pipe, the apertures of said
40 two pipes being arranged in a fixed position for atomizing the liquid and any deviation from the proper position proving fatal to the operation. The maintenance of the proper relative positions of the two pipes causes
45 sometimes considerable trouble. Moreover, said pipes with small diameter are subject to obstruction, the steam-generating vessel being thus subject to the danger of exploding. Again, such small apparatus generally de-
50 liver a cold and moist jet of spray created by

the liquid medicinal substance mixed with the ejecting steam. It is the cold moisture of such spray which proves to be particularly disadvantageous for a patient confined to bed. The heating of such old apparatus with a
55 lamp and the danger thereof prevents such apparatus being placed on the bed of the patient for use. The patient, therefore, is almost always forced to assume a sitting posture or an uncomfortable position while using
60 the apparatus. Moreover, the small apparatus, with its small jet of steam, requires the employment of a funnel for leading the spray direct to the patient. In order to continue the inhaling operation for a considerable pe-
65 riod of time, such apparatus requires refilling, particularly the small vessel with the medicinal substance. Therefore the inhaling operation is frequently interrupted. All these and several more disadvantages are well known
70 to those who have been compelled to make use of these appliances.

The improved apparatus, according to this invention, creates a warm and dry jet or spray. The products of condensation are led off be-
75 fore the steam issues from the apparatus. Any medicinal substances in liquid form may be converted into spray and in such a manner that the patient may assume or retain a convenient position of repose and is enveloped
80 by the spray of steam and medicinal substances or such spray is directed to a distinct part of the body. The jet-pipes of the apparatus may be directed to any place, and the entire apparatus being mounted on casters
85 may be pushed wherever required, from bed to bed, in order to deliver spray to the patients at a nearer or farther distance, and the patients can occupy themselves in any desired manner while undergoing treatment by the
90 apparatus.

The apparatus works without any danger. It may be provided with a great number of jet-pipes in order to issue numerous spray-jets at the same time to serve simultaneously
95 for several patients or for disinfecting large rooms.

The apparatus is capable of issuing several steam-jets, each mixed with a different medicinal substance, so that it may be used for
100

several patients simultaneously, each served by the apparatus with a differently-mixed spray.

In the drawing the apparatus is represented by an elevation partially in section.

On a box or basis *a*, provided with casters and handles, a steam-boiler *b* of any convenient construction is mounted, heated by the pan *c*. Into this pan spirit or any other burning liquid is supplied from the vessel *e* through the feed-pipe *f*, the supply of spirit being regulated by the screw-valve or cock *d*.

Any convenient device for heating the boiler may be employed, such as gas conducted to the burner underneath the boiler by an india-rubber pipe. The boiler is provided with the usual appliances—viz., the water-gage *g*, the steam-gage *h*, safety-valve *i*, draw-off cock *k*, and feed apparatus *l*.

From the top or dome of the boiler as many pipes *m* are branched off as it is intended to have steam-jets issuing from the apparatus. Each pipe is provided with a cock or valve *n*, and each of the pipes ends within a dispersion-box *o*. Each box *o* is provided at the bottom with a pipe *p* for drawing off any products of condensation in said box. Said pipe after being conducted in several perpendicular convolutions terminates with its aperture over the surface of the box *a*, which may be covered with sheet metal and provided with a gutter *q* at its rim, in order to receive the products of condensation and to conduct them away through the pipe *r*. Each box *o* is provided at top with a threaded lid or cover *s*, from which passes the jet-pipe *t*, capable of being swung on the cover in any horizontal direction, like a gas-light arm. The end of the jet-pipe *t* is provided with a short nozzle-piece *u*, which may be turned into an inclined or vertical direction, so that the two pieces *t* *u* form together a swivel-joint admitting the spray jet to be directed in any desired direction.

Within the box *o* an imperforate vessel *v* is inserted, into which, if the cover *s* is removed from the box, the liquid medicinal substance may be poured by means of a funnel. The vessels *v* are much smaller than the boxes *o*, so that a steam-space is formed in each box around the vessel for the circulation of steam. If this vessel *v* is filled and the box *o* closed by the cover *s*, steam from the boiler may be admitted through the pipe *m* into the box *o*. The steam will surround the vessel *v*, thereby heating and evaporating the liquid within said vessel and carrying the products of evaporation through the jet-pipe *t* and nozzle *u*, which are directed at will.

The apparatus, if the heating-flame is duly adjusted, will work without any superintendence, as only the water-gage will temporarily require inspection to keep up the water-level in the boiler, if necessary. The patient in a reposing and comfortable position, or several

patients at the same time, receive the dry and warm spray mixed with the prescribed medicinal substance in an undisturbed manner. If the patient desires to interrupt the direct action of the jet of spray, he or his attendant or nurse may do this by simply turning down the nozzle *u*. Any droppings from this nozzle will be received by a dish *w*, carried upon a movable arm fixed to the basis of the apparatus.

By these dishes and by the arrangement of the condensing-pipes *p* the floor of the room is prevented from being soiled by any moisture, which is important in hospitals.

Box *a* may be provided with drawers for receiving or storing the loose parts of the apparatus when not in use.

It is a main feature in the working of my improved apparatus that the issuing steam jet will not be cold and moist. As in the apparatus hitherto used, it will prove to be warm and dry. This is owing to the fact that at all points of the apparatus where the steam is most liable to condense—viz., in the box *o*—the condensed water or liquid will be conducted away by the pipes *p*, which by their serpentine windings form several hydraulic traps, which prevent the steam from escaping. The advantage stated is also, owing to this further fact, that the liquid medicinal substance in the vessel *v* is heated by the surrounding steam and evaporated by heat instead of being atomized by a fluid under pressure.

I claim—

1. The combination, with the boiler *b* and the dome at the upper end, of the pipes *m* and cocks *n*, the dispersion-boxes *o* at the respective ends of the pipes *m*, the pipe for discharging water of condensation, the imperforate vessels *v* for medicinal substances within the boxes *o*, the removable caps or lids *s*, the swinging pipes *t*, and movable nozzles *u*, substantially as set forth.

2. The combination, in a medicinal or disinfecting apparatus, with a boiler, of a steam-pipe rising therefrom, a dispersion-box upon the end of said pipe, an imperforate vessel for medicinal substances within said box and smaller than the same, so as to form a steam-chamber around the vessel, a movable discharge-pipe connected to the top of said dispersion-box, and a serpentine pipe *p*, forming traps and connected to the lower end of the dispersion-box for discharging the water of condensation and preventing the escape of steam, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LUDOVICA WALLEISER.

Witnesses:

WILHELM WRESENHÜTTER,
PAUL DRUCKMÜLLER.