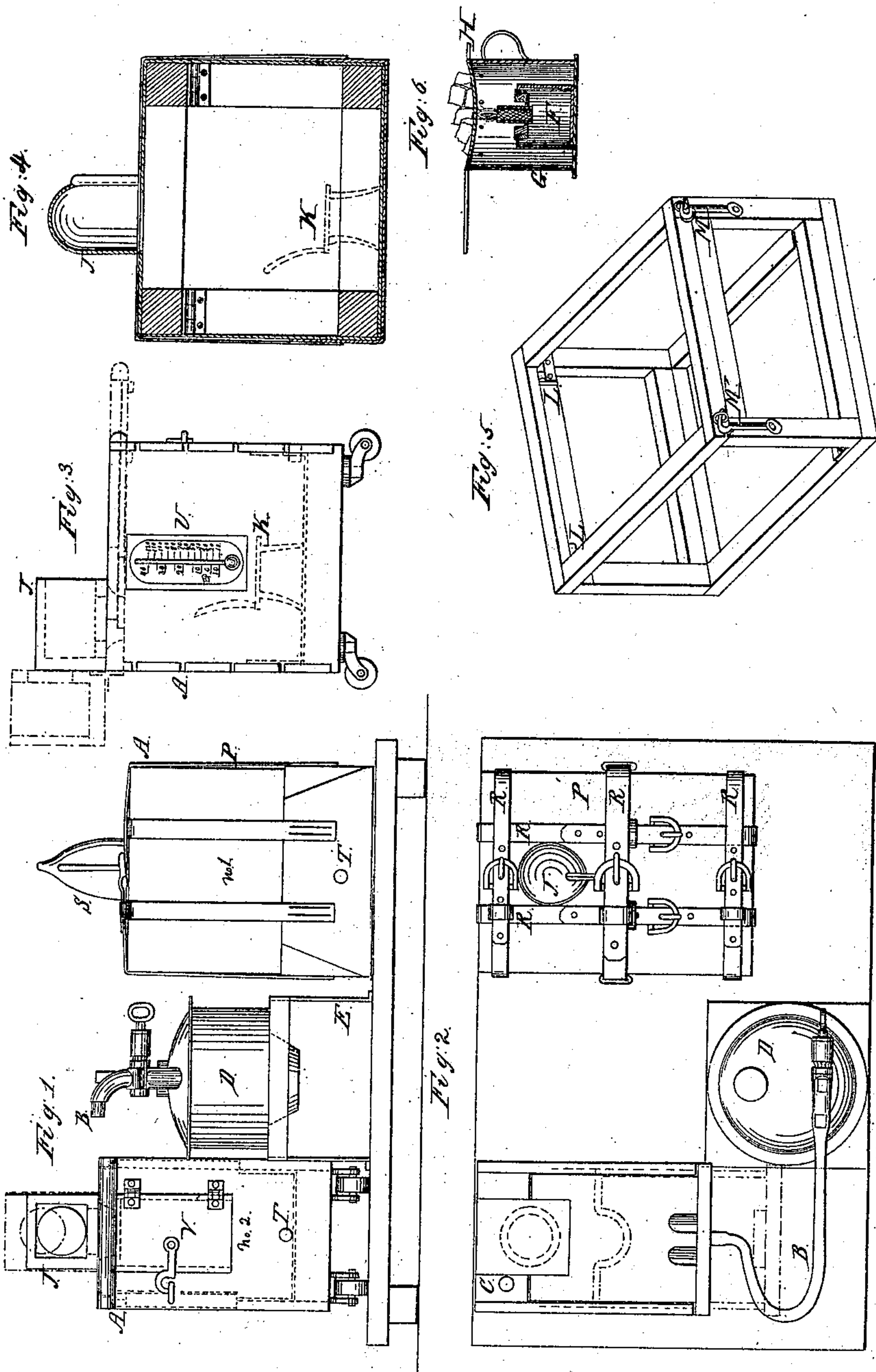


*J. Allen,
Vapor Bath,*

N^o 62,916.

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United States Patent Office.

JOHN ALLEN, M. D., OF NEW YORK, N. Y.

Letters Patent No. 62,916, dated March 12, 1867.

IMPROVED MODE OF APPLYING MEDICINES AND REMEDIAL AGENTS, AND APPARATUS THEREFOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN ALLEN, M. D., of the city and county of New York, in the State of New York, have invented new and useful Improvements in Medicated Vapor Baths, and in the Apparatus for and the Method of Administering the same; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my inventions consists in introducing medicines into a boiler or retort, or other vessel, containing water, and transmitting the combined vapors of the medicines and water into bath armors, a suitable apparatus into which the patient is placed to receive the bath, and also in the use of certain medicines as remedial agents.

To enable others skilled in the art to make and use my invention, I will proceed to describe the construction, operation, and means thereof.

Figure 1 represents a side elevation of the apparatus of the vapor bath.

Figure 2, a top view of the same.

Figures 3 and 4 are cross-sections of the bath armors.

Figure 5, the movable frame; and

Figure 6, the lamp with sulphur at top.

Apparatus.

The apparatus I use consists of the following-described parts and devices:

First. The bath armor A.

Second. The supply and escape pipes B and C, or flexible hose B, for conducting vapors from the boiler D to the bath armor A, and for discharging them from it.

Third. A metallic boiler, D, a glass retort, or other vessel, in which the vapors are generated.

Fourth. A gasoline stove, E, or other suitable device, the heat of which can be readily graduated for heating the boiler and its contents.

Fifth. The apparatus, consisting of a lamp, F, cup G, and pan H, or other device for vaporizing sulphur.

First. The bath armor A is made of a frame (as seen at fig. 5) and flexible casings, or of a wooden box, A, and head box, J, lined to make them tight, and a seat, K. The frame and casings are designated as No. 1, the box armor as No. 2. The frame is adjustable and portable and about three feet and six inches high, three feet long, and two feet and four inches wide; and is made of strips of board about four inches wide, three-fourths of an inch thick, framed in separate panels, and a side and an end panel, joined to each other by hinges, L, on the inner angle, and secured to the other side and end panel by hooks and staples, M, or other device, on the outer angles. This frame supports the casings. The casings are made in two parts, one of which is designated as the bed piece, N, and the other as the cover, P. The bed piece N is a sheet of rubber cloth, or other suitable material, which is impervious to air or vapor, made about six feet long by four feet wide, and provided with straps, R R, each of which is five feet long, more or less, on each side, and two like straps on each end, the straps on one side and those on one end having buckles on their ends into which the straps opposite are fastened. The cover P is made of like impervious flexible material as the bed piece, and has a hood, S, for the head. The body part is of the same shape as the frame, open at the lower end, closed on the sides and top excepting the face of the hood, large enough to slip over the frame easily, long enough to cover the entire frame and fold in upon the under side of it about four inches. The top may be made in a pyramidal, conical, or flat form, and terminating in a hood, which is open in front, and which may be shirred closely to the face, or may entirely cover both face and head, care being taken that the hood have sufficient capacity inside to permit the free circulation of vapor and free respiration of the patient when his head is covered. An orifice or a metallic inlet tube, T, is made or inserted in the cover near the bottom to receive the supply pipe B. If a tube be used, it should be inserted into a hole in the frame corresponding in position with that of the tube in the cover. Another tube, either flexible or rigid, is inserted in the top of the cover near one corner, and at the end opposite that in which the inlet tube or orifice is, for attaching the escape pipe C. A thermometer, u, is also placed in one side or top of the cover. The seat is an open-bottom or cane-seat chair or stool, K, the seat part of which is mounted on a screw pivot, so that it may be adjusted to the

height of the patient. Armor No. 2 is of the same form and dimensions, having the same attachments and general arrangement as No. 1, but, instead of a frame and external casings, I make a wooden box for the body part and a wooden hood or head box, J, having a glass front. The body part is made of boards about an inch in thickness, or other material, closed on all sides, except the top, and lined with sheet metal, rubber cloth, or other suitable material, to make it sufficiently tight to prevent the escape of vapor, having a door, V, in one end and a slide panel about eight inches square, with a glass plate in it six or seven inches square, and placed near the lower corner in the side, which will be upon the right side of the patient when facing the boiler. The cover is made in two parts, one of which is fixed; the other part slides in a groove in the upper edges of the sides of the body. The fixed part is about one-third the length of the slide part, and each has a half-circle cut out of it, so that when the two parts are closed together a circular aperture is formed about seven inches in diameter, or large enough to receive the neck of the patient and cloth packing to make it tight. The apparatus is mounted on casters. The hood or head box J is also made of wood, (inch-thick boards are suitable,) except the front, which is of glass, and is closed on all sides except the bottom, the edges of which are faced with cloth for packing to stop vapor, and when in use may be secured to the body of the apparatus by hooks and staples. Armor No. 1 is portable and can readily be taken apart and laid away or packed in a box of moderate dimensions for convenience of transportation. No. 2, on casters, can be readily moved into a closet when not in use.

Second. The supply and escape pipes.

These are of two dimensions, one, the supply pipe B, which conducts the vapor from the boiler to the bath armor, is three or four feet long, and about three-fourths of an inch internal diameter, having a ferrule or tube of metal upon the end, which enters the armor, and which must be fitted closely into the armor when in use. The other is the escape pipe C to carry off vapors from the armor, and is made five or six feet long, or of any convenient length, and about four inches internal diameter. For the supply pipe I prefer India-rubber hose, and for the escape pipe rubber is also preferable for convenience of adjustment, but tin or other metal pipe, with an elbow in it, will answer the purpose. If rubber hose be used, the discharge of vapor can be regulated by tying a cord more or less tightly around it; if tin pipe be used, there should be a valve which will close either wholly or partially the orifice or tube.

Third. The boiler or retort.

For a metallic boiler I prefer copper. It may be made of any convenient form, and must have two openings, one of which, the supply orifice, should be upon or near the top, for the introduction of water and medicines, and closed with a screw-plug, or other suitable device; the other is the discharge orifice, and should be near the top, and, for convenience, upon the side or end of the boiler, and closed with a stop-cock, to which the supply pipe is attached when in use. A glass retort has the advantage of being non-corrosible, and, if used, may be safely heated by means of a sand bath. It should have like provision for receiving a charge of water and medicines, and for the discharge of vapor, as the boiler above described. The supply orifice may be closed by a glass stopper or cork, and the stop-cock can be adjusted to the beak by inserting the cock in a cork, and fitting the cork into the beak of the retort.

Fourth. The heater.

For the heater I prefer a gasoline stove, E. If a boiler be used for generating the vapors, it may be set upon the stove and receive the heat directly; if the retort be used, it may be set in a sand bath over a furnace or stove. The advantage of the gasoline stove is, that its heat, which is quite sufficient for the purposes of the bath, may be immediately diminished or entirely discontinued by turning a cock which regulates the feed.

Fifth. Apparatus for vaporizing sulphur.

This consists of the metallic cup G, (tin is suitable,) five or six inches internal diameter, six inches high, and perforated with holes near the top for the transmission of air, having a side handle. The spirit lamp F may also be of tin, with three or four wick-tubes, and of such dimensions that it may be readily set into and removed from the cup, and also allow a space of about an inch and a half between the top of the wick-tubes and the bottom of the plate which sets upon the top of the cup. The concave metallic plate H may be of iron, circular in form, and large enough in diameter to cover the cup G. Sheet iron is suitable material for the plate. The size or dimensions of the above-described apparatus, or any part thereof, can be varied as may be desired.

The Bath.

The administration of the vapor bath may be general or local, that is, it may be applied to the entire person or to parts only. The office of the vapor bath, medicated or simple, is to restore the equilibrium of the circulation, and to free the system from effete matter, the effect being a thorough depletion of the system; a leading object of the practitioner also being to place the patient in an artificial atmosphere suited to his particular requirements. Great care and a discriminating judgment on the part of the practitioner are required in administering it. People of an apoplectic habit, those having pulmonary tubercles or abscesses, and those subject to palpitation of the heart, cannot with safety breathe the vapors of the bath, particularly if medicated; and few persons breathing the atmosphere of the bath can endure a higher temperature than 110° or 120° of Fahrenheit. A vapor bath not medicated is exceedingly useful in many cases. It relaxes the system, produces profuse perspiration, and relieves the system of inflammatory action, whether local or general. Medicated vapor baths have been given in England with great success. Dr. Langston Parker, of London, gave as many as five or six a day for twenty years with impunity; and in this country they are recommended by many approved authorities, as Bumstead, Hammond, and others, though none seem to have appreciated their value as fully as Dr. Parker. They have been successfully used in cases of distortion of the spine, ankylosis, contractions of the muscles and tendons, long-standing dislocations, suppression of the urine from stricture, enlargement of the prostate gland, inflammation of the kidneys, ureters, bladder, and urethra; also, bilious colic, dropsy, tetanus, neuralgia, and

rheumatism, and also spasmodic action of the urethra, bladder, and other viscera, gravel, and many others. Baths will effectually destroy contagion. They have been successfully used in the early stages of small-pox without affecting the attendants; and hundreds of patients have been treated in the same apparatus without any ill effects following. It is believed that by a proper administration of baths once or twice a month, the lives of persons subject to inflammatory diseases may be prolonged on an average of at least ten years. No change of occupation or diet is usually required. The patient will constantly improve while under treatment. After the disease is cured, the tone of the digestive organs is not impaired, as is usually the case when a large quantity of medicine has been taken internally. An abnormal condition of the system may be induced by a too free use of powerful medicines taken internally that is more difficult of cure than syphilis. The medication of the vapors, the extent to which the bath is applied, and its duration, must be varied at the discretion of the physician, according to the particular effect desired; but the sulphur and mercurial baths are most relied upon to produce specific effects.

The Sulphur Bath.

In administering the sulphur bath, I use either form of armor. If No. 2 be used, the patient is to be seated in the box, his head remaining uncovered, the slide cover closed about his neck, and closely packed with clothes to confine the vapors in the box. The door, slide panel, and escape pipe are to be closed; then the supply pipe is to be adjusted to the boiler or retort, and to the inlet tube or orifice of the armor; then, having previously charged the boiler with water, and raised the heat under it, the stop-cock is to be opened, slightly at first, and the vapor admitted very gradually into the box or armor for about five minutes before introducing the sulphur; mean time, water to the depth of about an inch and a half is put into the cup to keep the spirit lamp and its contents cool, (which prevents too rapid evaporation of the spirit or fluid in the lamp.) The lamp is then placed in the cup, and the iron plate, containing about half a table-spoonful of flour of sulphur, is heated until the sulphur is fused; the lamp is then to be lighted, and the plate set upon the cup over the lamp, the sulphur ignited by a match, the slide panel withdrawn, and the sulphur apparatus placed within the armor near the corner, and the slide panel reclosed. The lamp will continue to burn until the sulphur is consumed, when it will be extinguished; but the patient remains subject to the action of the combined vapors. At the expiration of thirty minutes or less, at the discretion of the operator, the heat under the boiler is to be discontinued, the escape pipe adjusted to a window or chimney, the vapors discharged from the armor, and the patient liberated from the bath.

In using armor No. 1, the bed piece is to be spread upon the floor and the frame placed upon it; the patient then takes his seat, the cover is dropped over him and the hood adjusted closely to his face, leaving the latter exposed; the cover is drawn over the frame, and folded smoothly under it, excepting one side. Thereafter the process is the same as that above described, except that the sulphur apparatus is introduced into the armor under a raised corner of the cover, care being taken that the bottom of the cover be then smoothly folded under the frame at both sides and ends, the sides of the bed piece folded upon the sides of the cover and secured closely by the straps buckled over the top of the frame and cover, and the ends in like manner folded and secured. The sulphur bath is administered successfully in cutaneous diseases. It produces great irritation of the skin, which, however, soon subsides, but the patient should refrain from rubbing his skin when thus excited, as much friction then would produce inflammation lasting several days. The vapors or fumes of sulphur are irrespirable. This bath is also a very active and potent agent in medication, few remedies producing so sudden and powerful impressions upon the system; therefore great care is requisite in administering it, not only to keep the vapors confined in the armor until they are discharged into the open air, but also the condition of patients subject to its action should be closely observed, for they are sometimes liable to nausea and fainting. In such case the escape pipe should be opened, and if the bath then continue to be too oppressive, the sulphur should be extinguished and the patient released from the bath.

The Mercurial Vapor Bath.

This bath has been used in a great variety of diseases, and particularly in syphilitic cases, for which it is perhaps the only known specific. The value of this bath in syphilis is equal to that of vaccination in small-pox. In administering this bath, I adjust the apparatus as before, and put about two quarts of water into the boiler or retort, and add from one-half to one drachm of perchloride of mercury, (known also as corrosive sublimate,) together with about half a drachm of iodide of potassium to facilitate the action of the mercury, without limiting myself, however, to the quantities named, nor confining myself to the use of the iodide, nor to any particular description of medicine. The patient is to be wholly covered, (the hood being tied over his face, or the box with the glass front set over his head,) and allowed to breathe the combined vapors of water and medicines for about fifteen minutes, care being taken to regulate the heat under the boiler so that only the proper volume of vapors shall be transmitted into the armor; at the expiration of the time above named the hood or head-box, as the case may be, is to be removed, and the hood adjusted to the face, or the neck packed if the head-box has been used; in this state the patient should remain breathing atmospheric air about fifteen minutes longer, thirty minutes altogether being quite long enough for a patient to remain in this bath. If continued longer time, nausea and head-ache usually ensue and sometimes palpitation of the heart also. Whenever this latter symptom occurs, the flow of vapors should be checked, and if the palpitation do not subside immediately, the patient should be removed from the bath at once and wiped dry. This bath ought not to be administered oftener than on alternate days. The medicines thus vaporized enter the system through the lungs and absorbents of the skin and pervade the circulation; therefore in connection with this bath but little medicine is otherwise required. In syphilis, evacuants may sometimes be necessary, also some mild preparation of mercury or blue pill may be given once or twice a day, and the specific effect of mercury will soon be obtained. During this

treatment the usual local applications should be made. For the eruptions on the skin I apply the medicated solution taken from the boiler. The specific effect of mercury is frequently produced by a single administration of this bath, and it seldom requires more than two or three such administrations to produce tialism or salivation.

Local Vapor Bath.

Local applications of the vapor bath may be made by means of the cover of armor No. 1. An arm or a leg may be thrust into the opening in the hood and enclosed tightly by tying the cord in the edge of the hood around the limb, and the other end of the cover may be tied closely around the supply pipe, or the basket of a demijohn may be enclosed in the cover, the supply pipe inserted in the nozzle of the basket and the cover closely tied over them, and the vapors transmitted as before described. A like arrangement will suffice for a head bath in cases of neuralgia in the face by enclosing the head in the hood. The same relaxation, profuse perspiration, and equalization may be had locally as generally. A bath may be given by placing the patient in a chair or other seat and covering him with armor No. 1, and introducing the vapors as before described, but the objection to this course is, that if carried to a proper temperature the covering becomes heated and cannot be endured. In administering these baths I usually give some vegetable decoction as a drink, sometimes called a "decoction of the woods," having a tonic or sudorific effect, and administered according to the requirements of the case.

The room in which medicated vapor baths are administered should be large and well ventilated, and every precaution should be taken to prevent the vapors from spreading or circulating in the room, so that the patient may not be subject to their influence longer than is necessary, nor the operator injured by frequent inhalations of them. In almost all forms of disease there is more or less of congestion; and one of the most important offices of the vapor bath, whether medicated or not, is to equalize the circulation; and its influence when properly administered is sedative and relaxing, the patient frequently falling asleep under its operation. It produces copious perspiration, and the patient should therefore remain in a warm dry atmosphere long enough after leaving the bath for his skin to recover its usual tone. Medicated vapor baths have usually been given by fumigation, that is, by placing the medicine in the bath apparatus over a spirit lamp, and vapor of water was obtained in the same way. With such arrangement the principal operations were excluded from the observation of the operator, and the production of fumes and vapors could not be regulated with the needful degree of certainty, nor could the vapors be successfully confined in the apparatus commonly used. Failures were the frequent results of this mode of administration, and vapor baths were unwisely condemned for failures due to defective apparatus and want of proper attention to details in their administration. With my apparatus above described the production and flow of vapors are entirely under the control of the operator, as shown in the following summary:

1. The heat under the boiler can be checked or discontinued instantly by turning the stop-cock which feeds the stove.
2. The stop-cock in the boiler to which the supply pipe is attached entirely controls the flow of the vapor, so that much or little vapor may be admitted into the bath armor.
3. The escape pipe may be partially or wholly opened, so that the vapors may be partially or wholly discharged from the armor at any moment.
4. The sulphur can be extinguished at any moment by opening the slide panel in the wooden armor, or by raising a corner of the flexible cover.
5. The vapors can be securely confined in the apparatus until discharged into the open air.
6. Besides which, the condition of the patient may be known throughout the entire operation of the bath, for he is constantly within the observation of the operator.

Claims.

I do not claim broadly a vapor bath apparatus, for a variety of such have been used; nor do I claim medicated vapors, for these also have been administered; nor do I claim the use of mercury or sulphur as medicaments in vapor baths, for these have been so used; but what I do claim as my invention, and desire to secure by Letters Patent, is—

1. The peculiar construction and arrangement of the apparatus for administering vapor baths, substantially as hereinbefore described, and for the purposes set forth.
2. The peculiar construction and arrangement of the bath armor No. 1, the frame, flexible impervious casings and hood, and the armor No. 2, body and hood, or head-box with glass front, and thermometer, substantially as hereinbefore described, and for the purpose set forth.
3. The flexible supply and escape pipes combined and arranged with the apparatus, substantially as described, and for the purposes mentioned.
4. The gasoline stove, or other suitable device, the heat of which can be readily graduated, in combination with a boiler or retort for generating vapors for vapor baths, substantially as described.
5. The combination and arrangement of the cup with water in it, lamp and plate, constituting the sulphur vaporizing apparatus, substantially as described and for the purposes stated.
6. The introduction into a boiler or retort of medicines which are soluble in water, or which may be vaporized by a moderate degree of heat, particularly the perchloride of mercury (otherwise known as corrosive sublimate) and iodide of potassium, together or separately, and their compounds or equivalents for converting them into vapor, substantially as hereinbefore described, and for the purposes set forth.

JOHN ALLEN.

Witnesses:

CHAS. SEARS,
HENRY PALMER.