

No. 753,990.

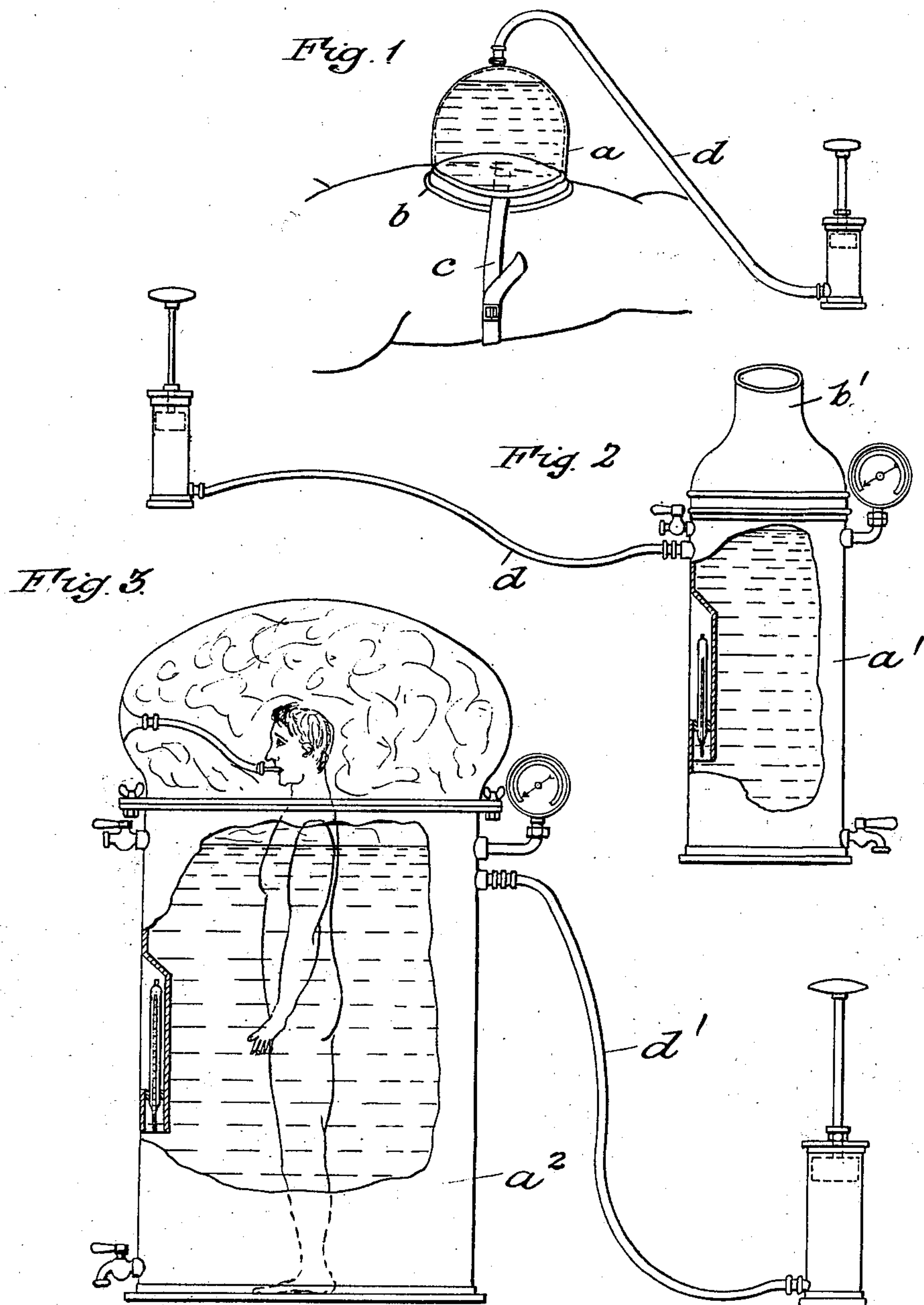
PATENTED MAR. 8, 1904.

J. LÜTJE.

METHOD OF AND APPARATUS FOR IMPREGNATING PARTS OF THE BODY
WITH MEDICAMENTS.

APPLICATION FILED NOV. 1, 1902.

NO MODEL.



Witnesses

A. Madden
E. M. Moore

Inventor

Julius Lütje

by his Attorney *A. Madden*

UNITED STATES PATENT OFFICE.

JULIUS LÜTJE, OF ALTONA, GERMANY.

METHOD OF AND APPARATUS FOR IMPREGNATING PARTS OF THE BODY WITH MEDICAMENTS.

SPECIFICATION forming part of Letters Patent No. 753,990, dated March 8, 1904.

Application filed November 1, 1902. Serial No. 129,735. (No model.)

To all whom it may concern:

Be it known that I, JULIUS LÜTJE, a subject of the King of Prussia, German Emperor, residing at Altona, Germany, have invented certain new and useful Improvements in Methods of Impregnating Parts of the Body with Medicaments, of which the following is a specification.

It is assumed in modern science that medicaments dissolved in bath liquids do not penetrate into the blood through the skin when used in baths of the known kind—such as full-baths, hip-baths, shower-baths, and the like.

The object of the present invention is to render possible the penetration of medicaments dissolved in bath liquids by inclosing those parts of the body to be treated in an air-tight chamber filled with the bath liquid and then producing high pressure in said chamber. The said pressure causes the medicaments contained in the bath liquid to penetrate the skin. The absorbing or receiving capacity of the skin can at the same time be increased by heating it or the bath liquid, the pores of the skin being thereby opened.

In carrying out my invention any suitable apparatus may be used for conveying a medicament into the blood of a human body through the pores by applying pressure to the medicament surrounding the part of the body to be treated through a medium other than the medicament itself.

In the accompanying drawings I have illustrated various forms of apparatus for treating parts of the body or the entire body.

Figure 1 is a view of an apparatus for local treatment—for instance, as shown for treatment of part of the thigh. Fig. 2 shows in elevation an apparatus for treating an arm or leg; and Fig. 3 is a like view of an apparatus for treating the entire body, the vessel for receiving the arm or for containing the body being partly broken away in said Figs. 2 and 3.

Referring to Fig. 1, the chamber *a* is preferably of glass and is provided at its rim with elastic packing. A strap *c* serves to fasten the chamber to the part of the body to be treated. The chamber is filled with the medicated solution and air or liquid can be forced into the former through a tube *d*, connected to a pressure-pump, so that high overpres-

sure is produced in the chamber. This pressure forces the medicated solution into the pores of the skin and causes it to enter the blood. The shape of the chamber used to shut off the skin-surface must of course differ, according to the shape of the part of the body to be treated.

In Fig. 2 the vessel *a'* is of such depth and cross-sectional area as to conveniently accommodate an arm or leg and to admit of covering the same with the medicament. The vessel is provided with a flexible cap *b'*, as of rubber, adapted to be secured fluid-tight to the body and with a pressure-gage *f'* to determine the required or desired pressure on the medicated liquid in said vessel, which is connected by pipe *d'* with a force-pump *e*. The vessel is furthermore provided with a valved coupling *h* for supplying a hot or cold medicated liquid thereto, with a draw-off cock *i*, and with a thermometer *g*.

The apparatus shown in Fig. 3 is of the same construction as that shown in Fig. 2, except that the dimensions of the vessel *a''* are increased to conveniently accommodate the entire body and that it has a removable hood *k*, provided with an air-intake port, to which is connected a tube *l*, provided with a mouthpiece to supply respirable air to the patient.

I claim—

1. In the medical treatment of the body, the method which consists in covering the part to be treated with the medicament in liquid form and forcing the medicament into the pores of the skin by means of air under pressure acting on said medicament, substantially as set forth.

2. In the medical treatment of the body, the method which consists in placing the part to be treated in a closed chamber containing the medicament in a liquid form and forcing the same into the pores of the skin by means of air under pressure, substantially as described.

In witness whereof I have signed this specification in the presence of two witnesses.

JULIUS LÜTJE.

Witnesses:

E. H. L. MUMMENHOFF,
OTTO W. HELLMROTH.