

No. 608,228.

Patented Aug. 2, 1898.

C. E. SCHNÉE.  
GALVANIC BATH.

(Application filed Sept. 14, 1897.)

(No Model.)

Fig. 1.

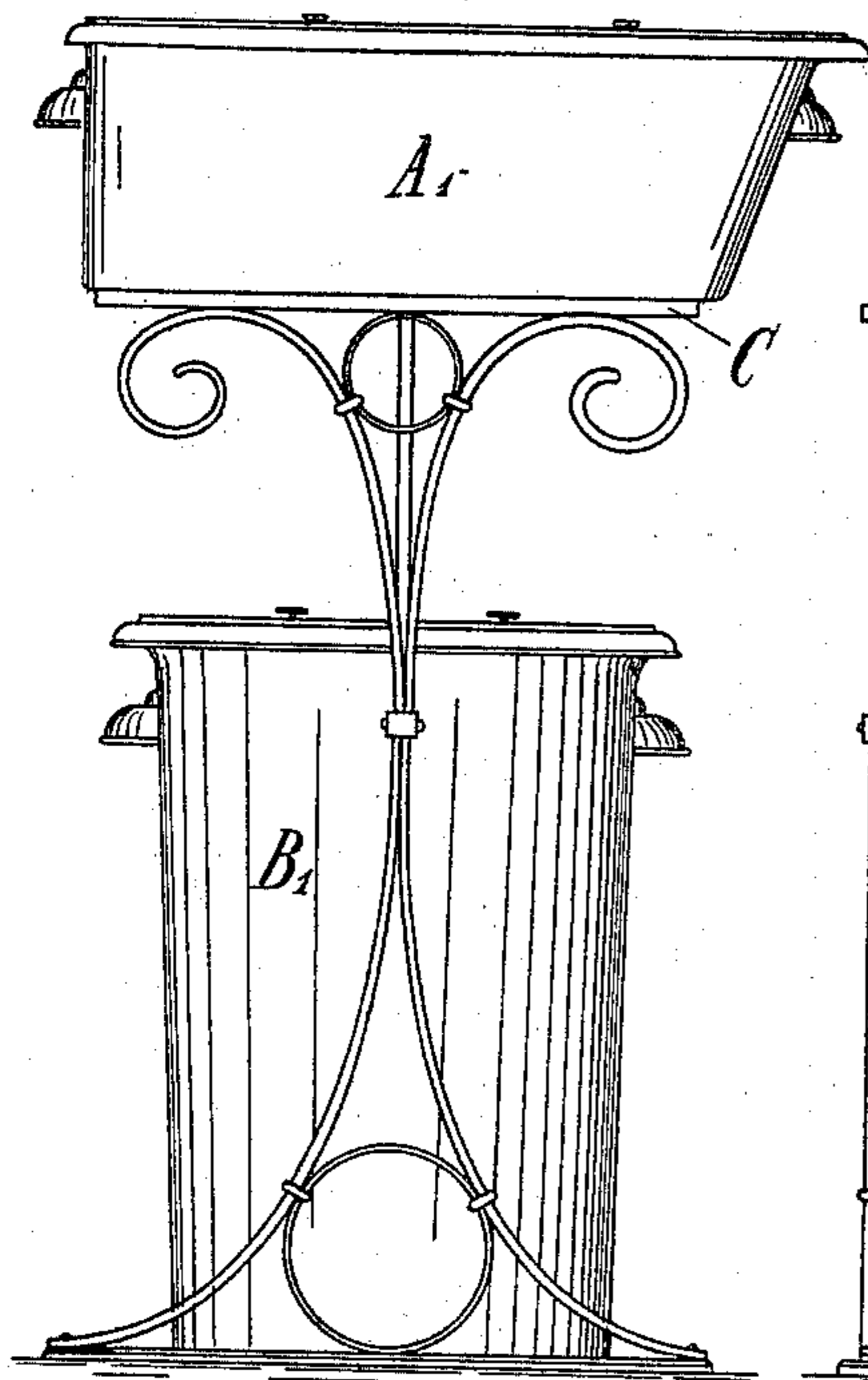


Fig. 2.

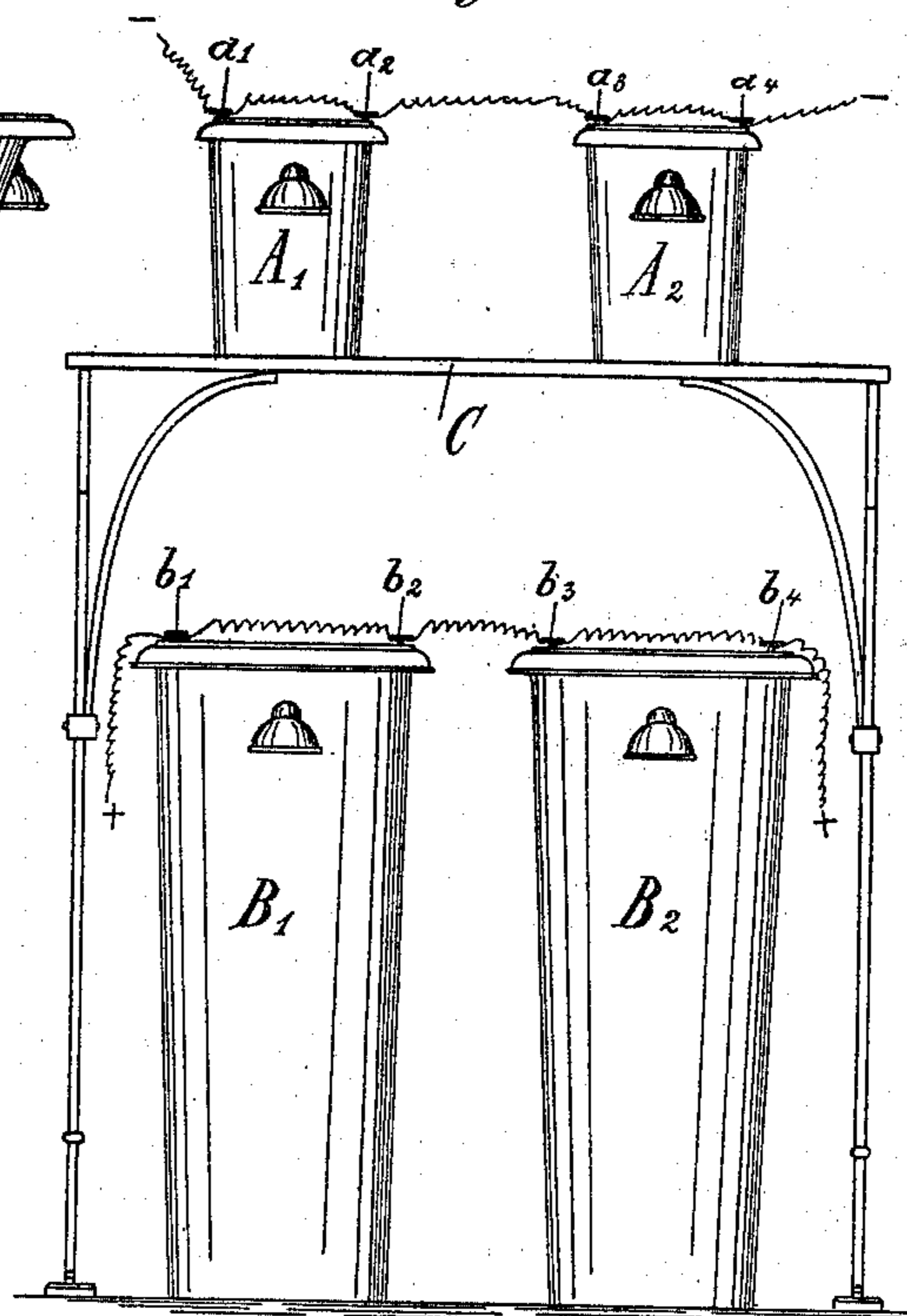


Fig. 3.

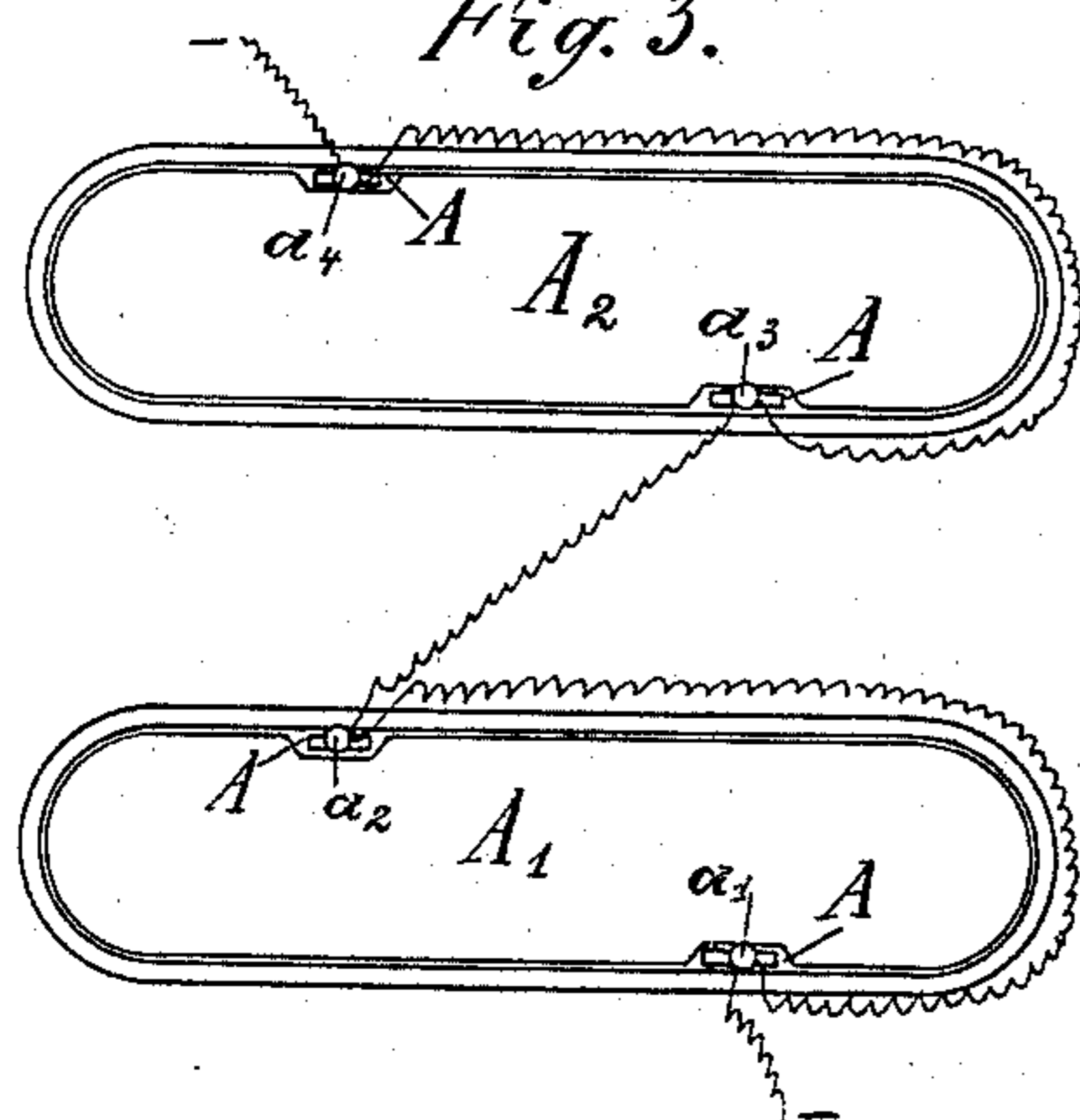
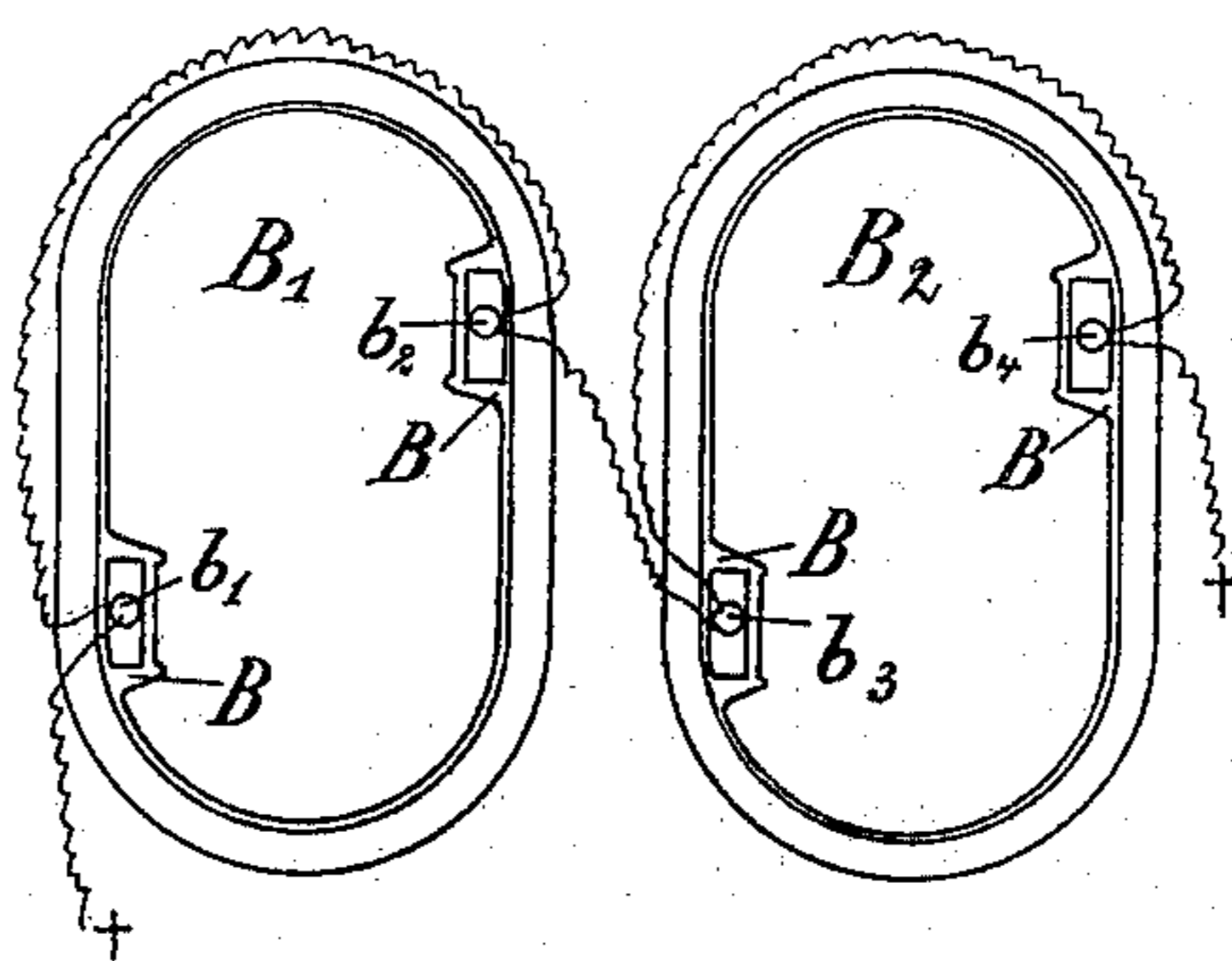


Fig. 4.



Witnesses:  
William Schulz  
William Miller

Inventor:  
Carl Emil Schnée  
by his attorneys  
Roeder & Briesen

# UNITED STATES PATENT OFFICE.

CARL EMIL SCHNÉE, OF CARLSBAD, AUSTRIA-HUNGARY.

## GALVANIC BATH.

SPECIFICATION forming part of Letters Patent No. 608,228, dated August 2, 1898.

Application filed September 14, 1897. Serial No. 651,594. (No model.)

*To all whom it may concern:*

Be it known that I, CARL EMIL SCHNÉE, a subject of the Emperor of Austria-Hungary, residing at Carlsbad, in the Empire of Austria-Hungary, have invented new and useful improvements in galvanic hand-baths and foot-baths for directly introducing medicaments into the tissues of the human body, of which the following is a specification.

This invention relates to means for directly introducing medicaments into the tissues of the human body by means of hand and foot baths or arm and knee baths. For this purpose I do not use a single tub for receiving the body, but a number of tubs, so that a separate bath is supplied to each limb. In this way a great objection and danger heretofore connected with the use of galvanic baths is removed, as if the current led into the tub is too strong it is impossible that such current will act directly upon the sensitive portion of the human body, which would be the case were the entire body received within a single tub. At the same time the medicaments are supplied to the whole body and in a more rational manner than heretofore, although the extremities only are brought into direct contact with the medicinal solution.

The accompanying drawings illustrate an apparatus for carrying my invention into effect.

Figure 1 is a side view thereof; Fig. 2, a front elevation; Fig. 3, a plan of the hand or arm tubs, and Fig. 4 a plan of the foot or knee tubs.

To introduce the dissolved medicaments into the human body, I use a number of tubs  $A' A^2 B' B^2$ , composed of glass, porcelain, or other material not liable to be decomposed by chemicals or by electrolysis. These tubs are placed on an insulating-base C, formed of glass, rubber, or similar material, and are provided at their sides with grooves or guides A and B, formed of the same material as the body of the tubs.

The grooves are adapted for the reception of carbon plates carrying binding-screws  $a' a^2 a^3 a^4 b' b^2 b^3 b^4$ , by which they may be connected to the conducting-wires. The number and size of the tubs to be used depend upon the treatment prescribed by the physician and whether hand and foot baths or arm and

knee baths are to be combined. A separate tub is provided for each hand and for each foot, and the two hand-tubs are arranged above the foot-tubs, as shown. The seat or support of the patient should also be insulated.

The tubs are filled with lukewarm boiled or distilled water, and the medicaments are only introduced into the foot or knee tubs. The medicaments—such as corrosive sublimate, iodine preparations, bromine and lithium salts—are administered only in a dissolved form and in exact conformity with the diseases under treatment. Their introduction is effected by means of an electric current, and for this purpose the two carbon electrodes of each foot-tub are connected by the binding-screws  $b' b^2$  and  $b^3 b^4$ , and then the two tubs are connected with one another by screws  $b^2 b^3$ . The electrodes of the arm-tubs are connected in a similar manner. The positive current is now conducted only into the foot or knee tubs, because only through these can the medicaments be introduced into the system, while the negative current is conducted to the hand or arm tubs, the circuit being closed through the human body. If but a single kind of bath is desired—for instance, a foot or knee bath or a hand or arm bath—the positive current is conducted into one of the tubs and the negative current into the other tub.

For generating the galvanic current a galvanic battery of about forty elements is used. If the apparatus is supplied with an alternate-current generator, this current must be converted into a continuous current, which is effected by means of a continuous-current transformer, through which the alternate-current is conducted. This transformer is composed of a combination of an alternate-current motor with a continuous-current dynamo. For regulating the velocity of the motor, and consequently the secondary capacity of the dynamo, a bent-wire rheostat is used.

The construction of the transformer is not important for the purposes of this invention, as any apparatus may be employed by which an alternate current can be transformed into a continuous current.

For measuring the strength of the current a device with an element-counter or rheostat and a galvanometer is used. For changing

the direction of the current a commutator is used, which when a strong current is employed should only be used after the rheostat has first been turned back to zero.

5 What I claim is—

A galvanic bathing apparatus composed of upper and lower tubs, insulating-bases for supporting the same, a pair of electrodes projecting into each of the tubs, wires connecting  
10 the upper tubs and leading to the negative

pole, and wires connecting the lower tubs and leading to the positive pole of a source of electric energy, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

CARL EMIL SCHNÉE.

Witnesses:

HEINRICH CIFKEY,  
KARL KONDELISP.