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Patented Feb. 26, 1901.

O. SCHNEIDER.

ELECTRIC BATHING APPARATUS.

(Application filed July 12, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

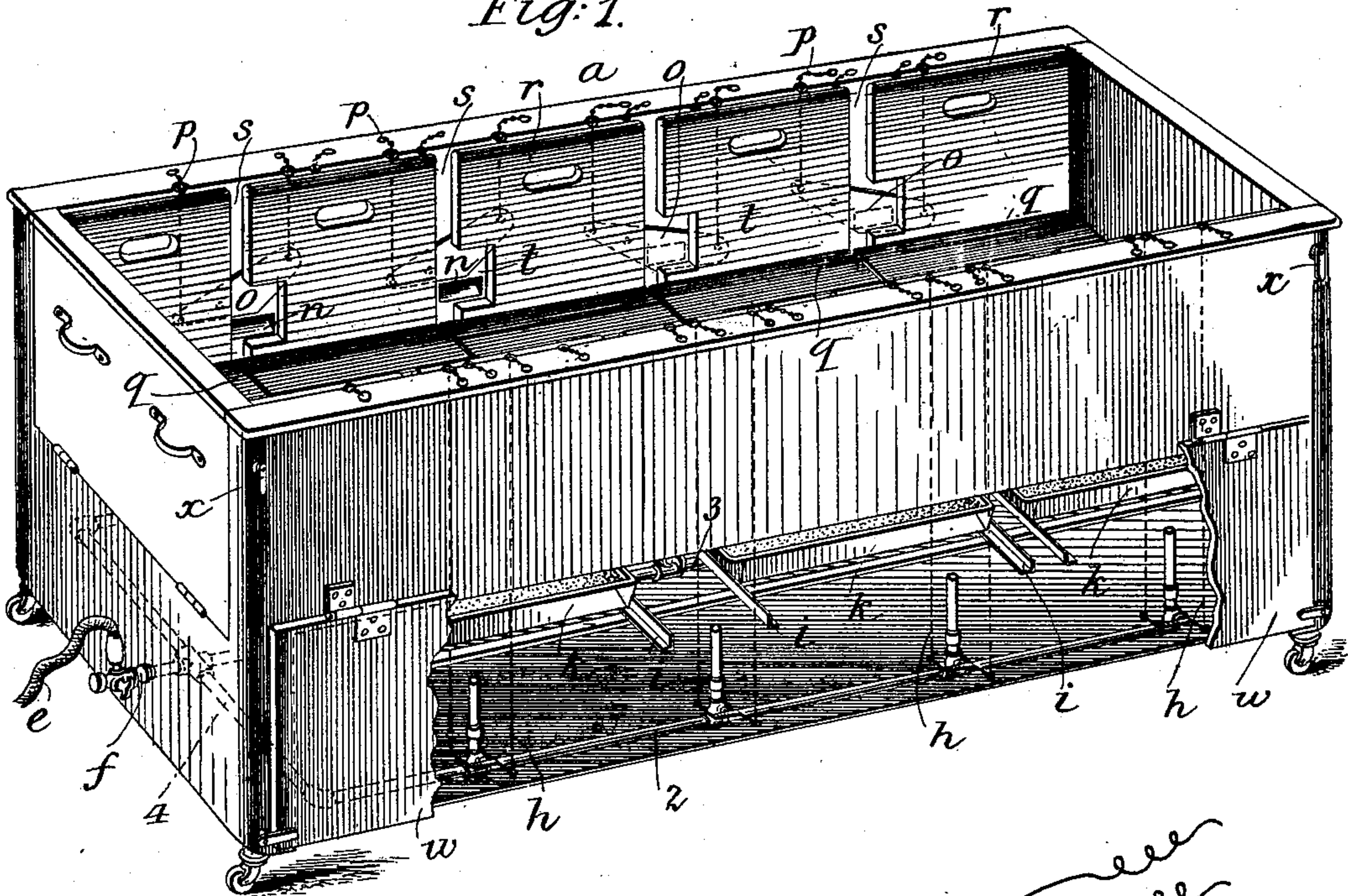
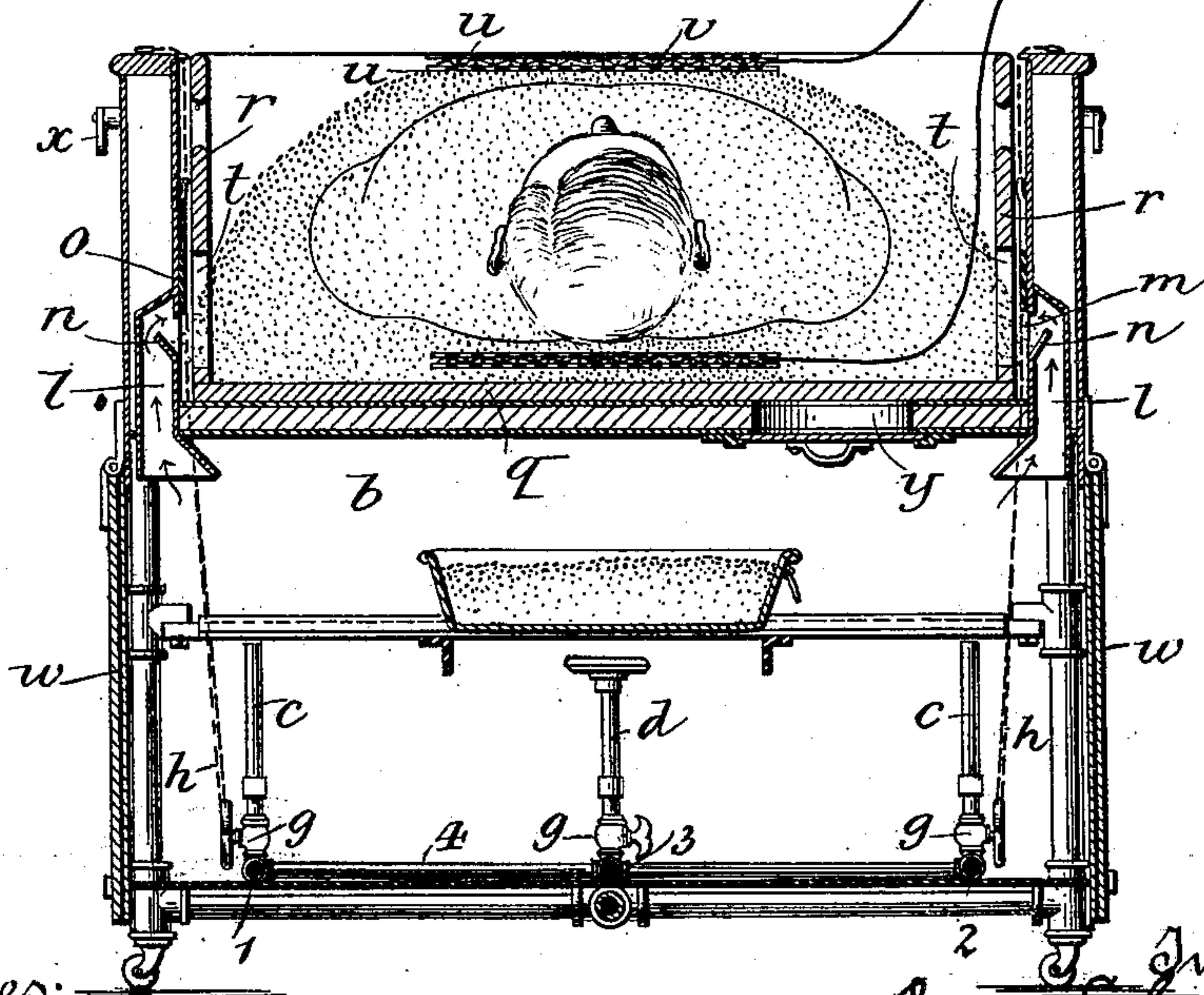


Fig. 2.



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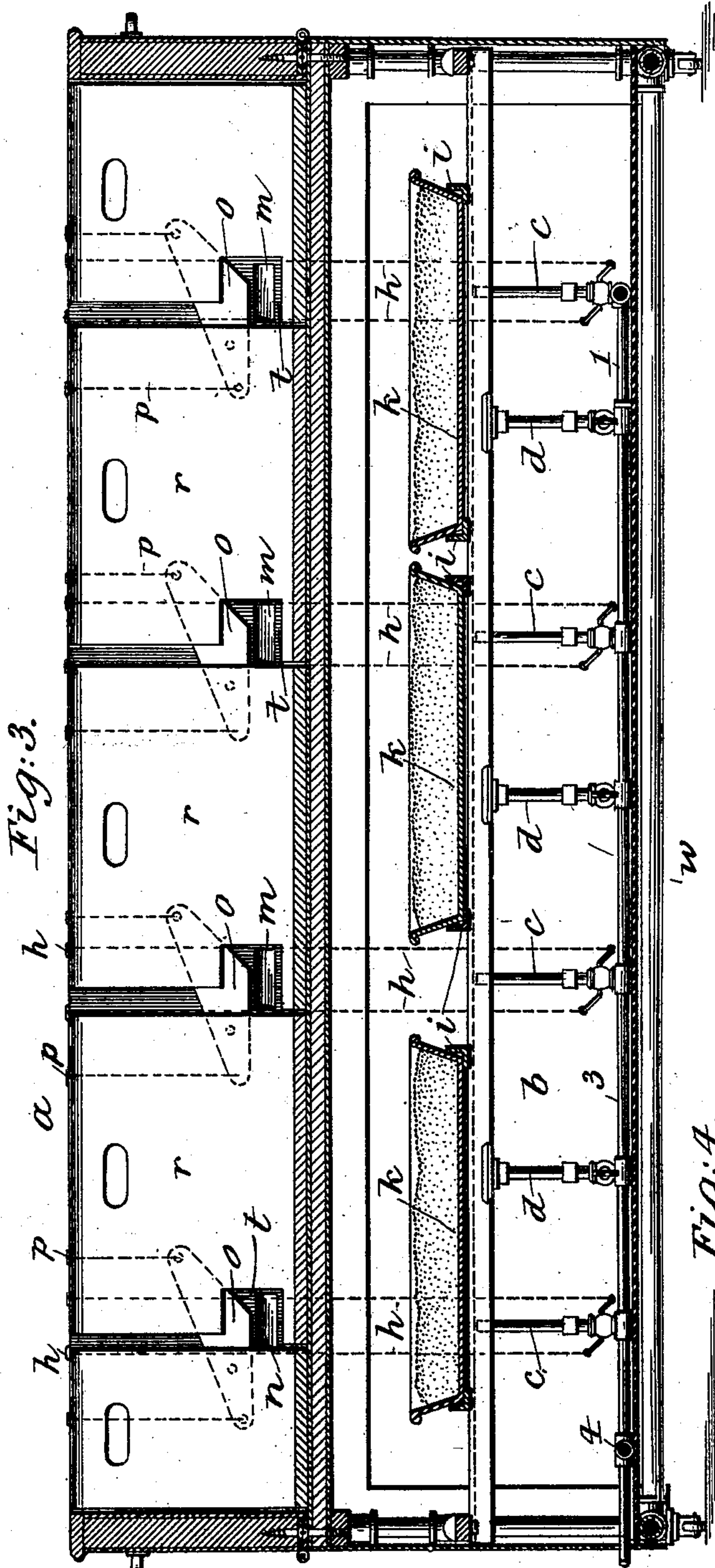
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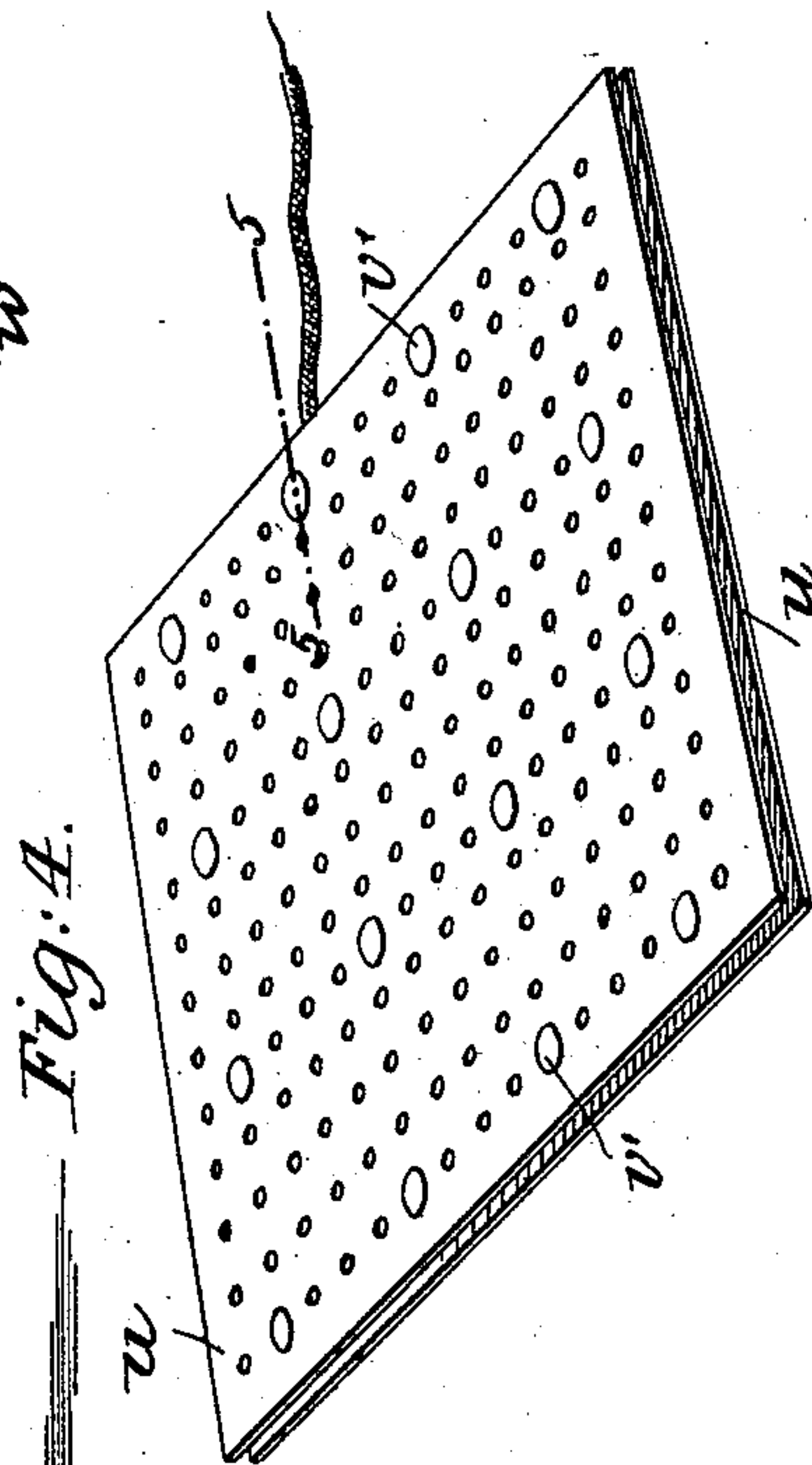
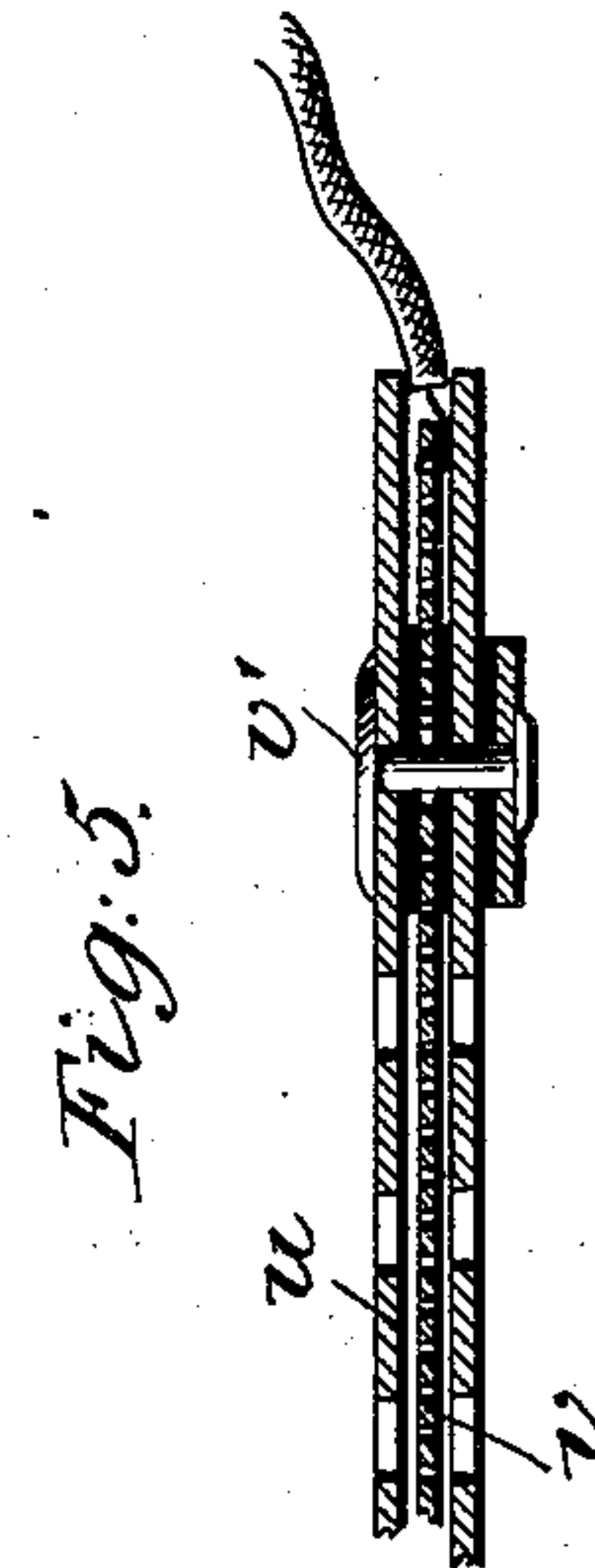
(Application filed July 12, 1900.)

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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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ELECTRIC BATHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 668,661, dated February 26, 1901.

Application filed July 12, 1900. Serial No. 23,308. (No model.)

To all whom it may concern:

Be it known that I, OSCAR SCHNEIDER, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Electric Bathing Apparatus, of which the following is a specification.

My invention relates to an improved electric bathing apparatus wherein the bather is subjected to the combined action of metallotherapeutic and a dry bathing medium—such, for example, as sea-sand or a combination of sea-sand and other electric conductor. Heretofore in apparatus of this character it has been customary to use two flexible metal sheets, upon one of which the body of the bather is supported, while the other one forms a covering, and between which an electric current is generated, heated sand being also packed around said metal sheets and bather while subjected to the electric action between the sheets; but it has been found in this construction of apparatus that the electric current is apt to burn into the flesh of the bather, particularly the affected or diseased parts, which are rendered more susceptible to electrical action by the very reason of such disease, thereby producing painful wounds, which at the time are unobserved by the bather or attendant.

One of the objects of my invention and improvements is to overcome this difficulty, the apparatus to be hereinafter described being so constructed and arranged that injury to the patient by burning is absolutely prevented, while the electrical action upon the body of the bather is materially improved in a very simple and inexpensive manner.

A further object of my invention is to provide simple and effective means whereby the heating devices used in connection with the apparatus to heat the sand or other conductor can be manipulated by the bather or attendant to regulate the degree of heat at will, so that the best results may be had and the varying weakness or strength of the bathers duly compensated for.

My invention consists substantially of a bath-tub adapted to receive the bather, metallic sheets interposed between perforated non-conducting plates and constituting two separate electrodes, upon one of which the

bather lies while the other forms a covering, and between which an electric current is generated.

My invention further consists of a bath-tub adapted to receive the bather, metallic sheets interposed between non-conducting plates and constituting two separate electrodes, upon one of which the bather lies while the other forms a covering, and between which an electric current is adapted to be generated, and heating devices whereby heat is introduced into the bath-tub.

My invention further consists of a bath-tub adapted to receive the bather, metallic sheets interposed between non-conducting plates and constituting two separate electrodes, one of said electrodes being arranged in the bottom of the bath-tub, an interposed dry packing of sand or other conductor between said electrode and the bather, and the other of said electrodes being arranged above the bather and upon an interposed dry packing, and a heating device whereby heat is introduced into the bath-tub.

My invention further consists of the novel features of construction and arrangement of parts, all of which will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 represents a perspective view of an apparatus constructed according to my invention, parts being broken away to show portions of the interior. Fig. 2 represents a transverse section thereof, showing the bather in the bath-tub surrounded with the dry packing or sand and the electrodes in their relative position with respect to the bather. Fig. 3 represents a central longitudinal section thereof, the bather and sand being removed from the bath-tub. Fig. 4 represents a detail perspective view of one of the electrodes. Fig. 5 represents a detail sectional view taken on the line 5 5 of Fig. 4.

Reference characters herein used indicate corresponding parts in all the figures of the drawings.

Referring to the drawings, *a* designates my improved apparatus, which is herein shown as a bath-tub having a compartment *b* beneath, wherein the heating devices are arranged, said heating devices consisting of a plurality of burners *c* and *d*, which project

from a series of pipes 1, 2, and 3, of which the pipes 1 and 2 are arranged one on each side of said compartment *b* and extend along in the direction of its length, while the pipe 3 runs parallel therewith, but in the center of the compartment, as seen best in Fig. 2, the whole series being connected together at one end by a pipe 4 and receiving gas through a hose *e*, which connects with an extension *f* of the pipe 3 and with any convenient source of supply. (Not shown.) Each burner is provided with a governing-valve, and the valves on each of the outer pipes 1 and 2 are controlled by means of chains *h*, which are attached at one end to arms secured to and projecting beyond each side and forming part of the valve-stems. The opposite ends of said chains pass through eyes or other guides located at the upper inner edge of the side walls of the bath-tub and within convenient reach of the bather or attendant.

i designates a series of transversely-arranged tracks or guide-bars suitably supported within the compartment *b*, said guide-bars being adapted to support trays or pans *k*, which latter during the process of bathing are preferably filled with sand, so that the heat therefrom will serve to intensify the heat generated by the burners *c* and *d* in the compartment *b*.

l designates a series of flues or ducts which lead up from the compartment *b* and communicate with the interior of the bath-tub through the apertures *m*, and, as will be observed by reference to Figs. 1 and 2, these apertures *m* are each provided with a baffle-plate or extension *n*, which inclines upwardly and rearwardly, as shown, so as to prevent any possibility of the small particles of sand or other conductor from passing into the flues or ducts or otherwise clogging up the flues or interfering with the passage of the heat into the interior of the bath-tub.

In order to control the heat in the bath-tub, I provide gates or doors *o* for the flues or ducts *l*, said gates being pivotally secured to the side walls of the bath-tub, adjacent the apertures *m*, and being adapted to cover or uncover any or all of said apertures, as requirements may demand, by a manipulation of chains *p*, secured to each of the ends of said gates, as clearly shown in Fig. 1, wherein two of the apertures are shown closed and two open, and in Fig. 3, where all of the apertures are shown open.

It will be apparent that with the construction and arrangement as above described heat may be introduced into the bath-tub at any desired point and excluded altogether from other portions, which is a very desirable feature in that it permits of an economical expenditure of heat units in cases where it is only necessary to treat or bathe small or obscure parts of the body, as will be understood by physicians and others skilled in the art.

I provide the interior of the bath-tub with a series of removable trays, each composed of

a bottom portion *q* and side walls *r*, and when in position these trays constitute a lining which will prevent the accidental burning of the bather through contact with the heated metallic walls of the tub. These trays are preferably constructed of wood and practically cover the entire bottom of the bath-tub, their bottom portions *q* abutting each other, as shown; but the forward edge of each of the vertical portions *r* is offset with respect to its bottom, so as to leave a space *s* between each tray for the heat to enter the tub, and said forward edges are preferably further recessed, as at *t*, to provide for the spaces occupied by the apertures *m*, as clearly shown.

By reference to Figs. 1 and 3 it will be observed that the ends of the bath-tub are hinged to the body portion thereof, so that either end may be opened and the bather permitted to sit in an upright position, with his feet hanging over upon the outside, when it is desirable to treat only that part of the body which would under these conditions be confined within the tub, in which event all the apertures *m* could be closed except those nearest the bather.

The lower compartment *b* is normally kept closed by doors, as at *w*, which are hinged to each side of the body portion of the bath; but access can readily be had to said compartment by raising the doors upon their hinges, where they may be temporarily held by buttons, as shown at *x*.

y designates one of a number of openings in the bottom of the bath-tub, said openings being preferably provided with sliding covers, which when moved to uncover said openings will permit of the sand passing through and into trays or other receptacles placed there to receive it, whereby a simple means of emptying the bath-tub is provided.

Before proceeding to explain the operation of my invention I will describe the construction of the electrodes, with a special reference to Figs. 4 and 5. *u* designates two perforated non-conducting-plates, (preferably composed of fiber or analogous material,) between which is disposed a conductor-plate *v*, the same being secured in position by means of rivets *v'*, which are properly insulated therefrom, as clearly shown in Fig. 5. It will be apparent that when the electrodes are energized the current of electricity will pass through the perforations to the body of the bather in as effective a manner as if the metal itself contacted direct with the body; but the danger of burning, as hereinbefore mentioned, is absolutely prevented. The conductors used in the construction of the electrodes may be composed of any of the well-known metals, and need not be further described; but I prefer to use a perforated plate, as shown.

The operation and advantages of my invention will be readily understood.

The burners having been ignited and the trays properly arranged within the bath-tub, a layer of sand is preferably strewn over the bottoms thereof, and one of the electrodes

(which may extend the whole length of the tub) is placed thereon, after which another layer of sand is laid over the electrode. The bather now enters the bath-tub, and that part of his body which is to undergo treatment is covered with sand, upon which is placed the second electrode and between which an electric current is generated by means of galvanism, or a battery may be used for the purpose. It will be understood that after the sand is placed in position as above set forth it becomes moistened from the perspiration of the body of the bather, (the bather being subjected to the heat action hereinbefore set forth,) and when moistened the sand becomes an electric conductor, and being in contact with the surface of the body of the bather subjects the same to an electrical action at all parts thereof in contact with the sand.

It is of course apparent that the sand may be omitted and the bather subjected to hot-air treatment alone, the construction of the heating devices and the means of regulating the heat being such that the temperature may be raised or lowered to produce the desired effects.

It will be apparent from the foregoing description that my invention provides in a very simple and inexpensive manner an electric bathing apparatus, which is particularly well adapted for the purposes intended, that by its use the dangers of burning are absolutely prevented, and that the entire body or any portion thereof may be subjected to electric action by application of metallo-therapeutic and arenation simultaneously effected to the exclusion of all means of external moistening.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A bath-tub, comprising a main compartment adapted to receive the bather, and metallic sheets interposed between non-conducting plates and constituting separate electrodes between which the bather lies and between which an electric current is generated.

2. A bath-tub, comprising a main compartment adapted to receive the bather, metallic sheets interposed between non-conducting plates and constituting two separate electrodes, over one of which the bather lies while the other forms a covering, and between which an electric current is adapted to be generated, and heating devices whereby heat is introduced to the bath-tub.

3. A bath-tub, comprising a main compartment adapted to receive the bather, metallic sheets interposed between non-conducting plates and constituting two separate electrodes, over one of which the bather lies while the other of said electrodes forms a covering, a dry packing interposed between said electrodes and the bather, and a heating device whereby heat is introduced into the bath-tub and the sand heated.

4. A bath-tub, comprising a main compart-

ment adapted to receive the bather, two electrodes arranged in said tub and over one of which the bather lies while the other forms a covering, heating devices communicating with the interior of the main compartment, and means for controlling the supply of heat.

5. A bath-tub, for the purposes described, comprising a main compartment adapted to receive the bather, two electrodes arranged in said tub and over one of which the bather lies while the other forms a cover, a dry packing interposed between said electrodes and the bather, heating devices communicating with the interior of the main compartment, and means for controlling the supply of heat.

6. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather, a compartment beneath said main compartment, heating devices arranged in said lower compartment and from whence flues or ducts lead to the interior of said main compartment, means for opening and closing said flues or ducts to control the passage of the heat to the tub, two electrodes between which the bather lies and an interposed packing of sand or other conductor between said electrode and the bather.

7. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather, a lower compartment, heating devices arranged in said lower compartment, and flues or ducts leading therefrom to the interior of said main compartment.

8. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather, a separate compartment adapted to receive heating devices, flues or ducts leading from said latter compartment to the interior of said main compartment, and means for controlling the supply of heat thereto.

9. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather and a separate compartment, heating devices arranged in said latter compartment, flues or ducts leading therefrom to the interior of the main compartment, and gates or closures for said flues or ducts whereby the supply of heat to the tub is controlled.

10. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather and a separate compartment, heating devices arranged in said latter compartment, flues or ducts from said latter compartment to the interior of the main compartment, pivotal gates or closures for said flues, and means for operating the same whereby entrance of the heat to the main compartment is controlled.

11. A bath-tub for the purposes described, comprising a body portion adapted to receive the bather, and heating flues or ducts leading into the interior of said bathing-compartment.

12. A bath-tub for the purposes described, comprising a body portion having a bathing-

compartment therein adapted to receive the bather, and heating flues or ducts leading into the interior of said bathing-compartment, said flues or ducts being provided with baffle-plates, for the purpose set forth.

13. A bath-tub for the purposes described, comprising a body portion having a bathing-compartment therein adapted to receive the bather, heating flues or ducts leading to the interior of said bathing-compartment, and means for closing or opening said flues or ducts whereby the heat is controlled.

14. A bath-tub for the purposes described, comprising a body portion having a bathing-compartment adapted to receive the bather, heating flues or ducts leading into said bathing-compartment, and gates adapted to close said flues or ducts whereby the entrance of heat to said bathing-compartment is controlled.

15. A bath-tub, for the purposes described, comprising a main compartment adapted to receive the bather, a compartment beneath said main compartment, heating devices arranged in said lower compartment, closures for said lower compartment, flues or ducts leading from said lower compartment into the main compartment and provided with baffle-plates, and gates adjacent said flues or ducts for opening and closing the same, whereby the heat is admitted or excluded from the main compartment or any portion thereof.

16. A bath-tub for the purposes described, adapted to receive the bather and a dry packing and comprising a main compartment, a compartment beneath said main compartment, heating devices arranged in said lower compartment, flues or ducts leading from said lower compartment into the main compartment and provided with baffle-plates whereby the dry packing is prevented from entering said flues or ducts, pivotal gates adjacent said flues or ducts for opening and closing the same whereby the heat is admitted or excluded from the main compartment or any portion thereof, and means for moving said gates.

17. A bath-tub for the purposes described, comprising a main compartment adapted to receive the bather and having movable ends, a compartment below said main compartment, heating devices arranged in said lower compartment, said lower compartment having a plurality of sliding pans or trays sup-

ported therein, flues or ducts leading from said lower compartment into the main compartment, means for controlling said heating devices, and means for closing or opening said flues or ducts whereby the heat is excluded or admitted to the main compartment or definite portions thereof.

18. A bath-tub for the purposes described, comprising a main compartment, a lower space or compartment, with closures therefor, heating devices arranged within said lower compartment, ducts or flues leading therefrom to the main compartment, and means for independently opening or closing any or all of said flues or ducts.

19. A bath-tub for the purpose described, comprising a main compartment having movable ends, a compartment below said main compartment, heating devices arranged therein, flues or ducts leading from said lower compartment to the interior of the main compartment, and a series of removable trays adapted to fit into said main compartment to shield the bather from accidental burning by contact with the heated walls.

20. A bath-tub for the purposes described, comprising a main compartment, a compartment beneath said main compartment, heating devices arranged therein, flues or ducts leading from said lower compartment to the interior of the main compartment, openings in the bottom of the main compartment for emptying the same, and a series of open trays adapted to fit into said main compartment and having their vertical side portions provided with recesses, substantially as and for the purpose set forth.

21. A bath-tub for the purposes described, comprising a main compartment or tub adapted to receive the bather, a separate compartment, heating devices arranged in said separate compartment to the interior of the main compartment, and a series of removable trays adapted to fit into said main compartment whereby the bather is shielded against accidental burning by contact with the heated walls.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

OSCAR SCHNEIDER.

Witnesses:

J. R. LITTELL,
M. C. MATTES.