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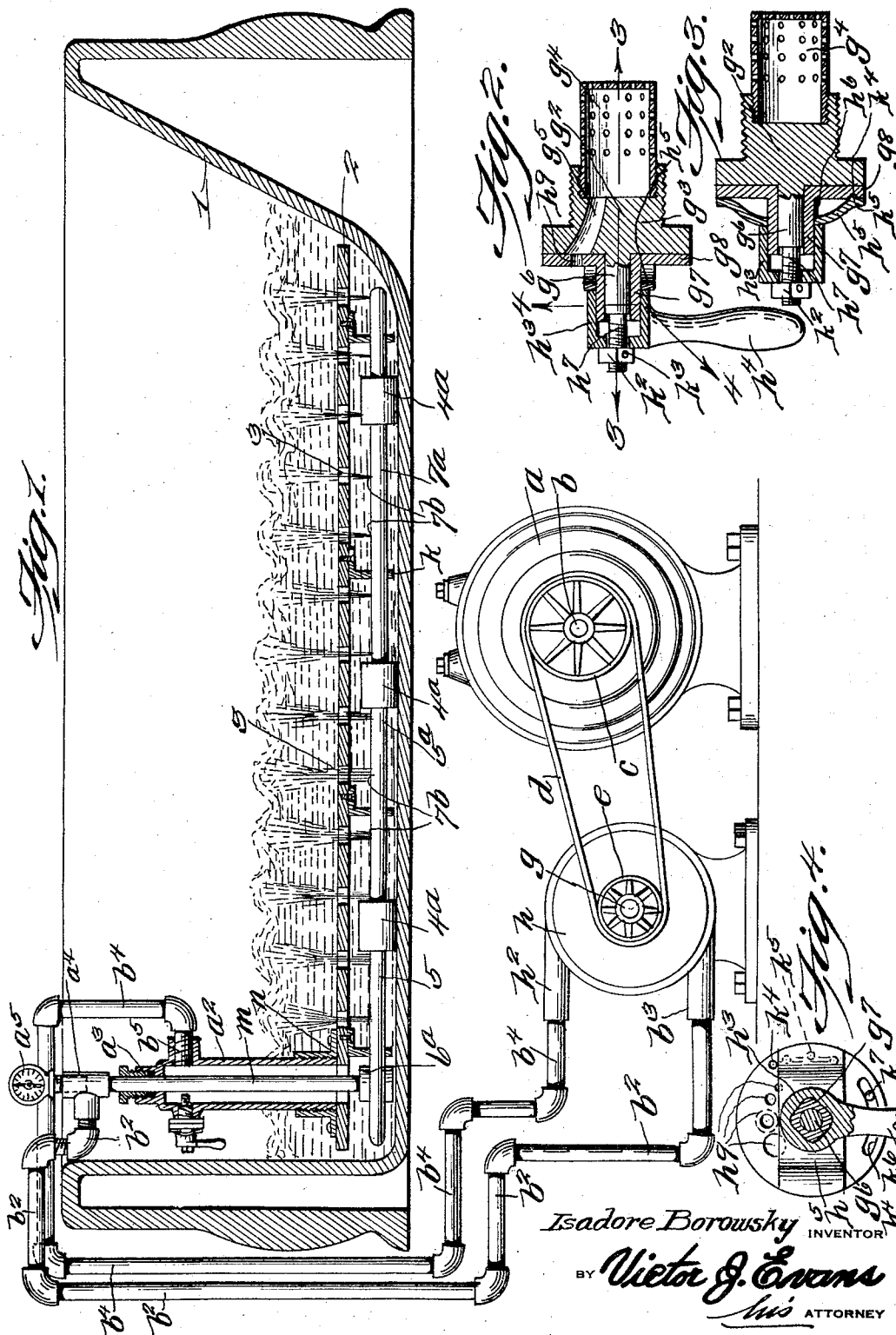
I. BOROWSKY

1,896,938

BATH APPARATUS

Filed April 18, 1930

4 Sheets-Sheet 1



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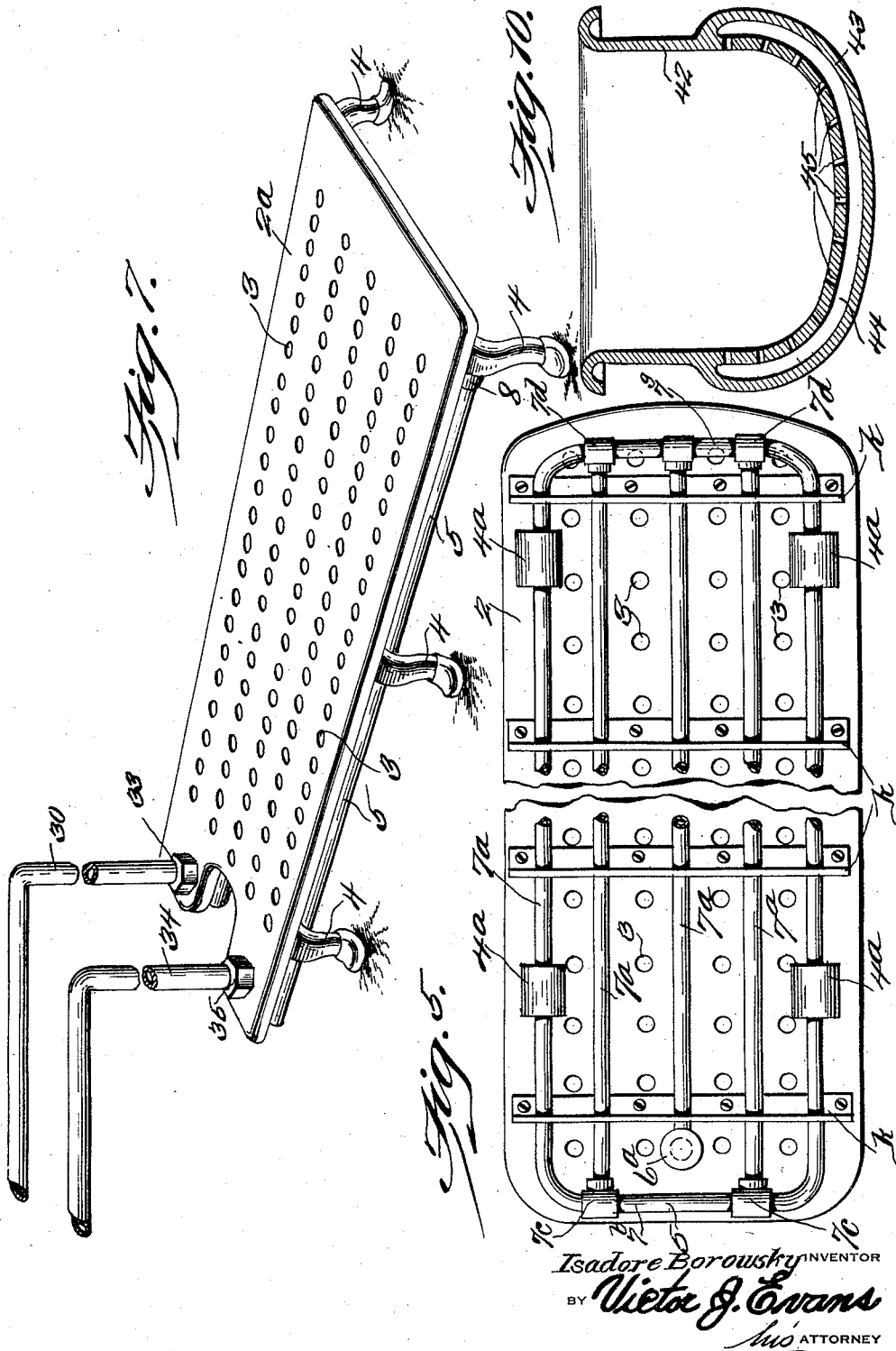
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BATH APPARATUS

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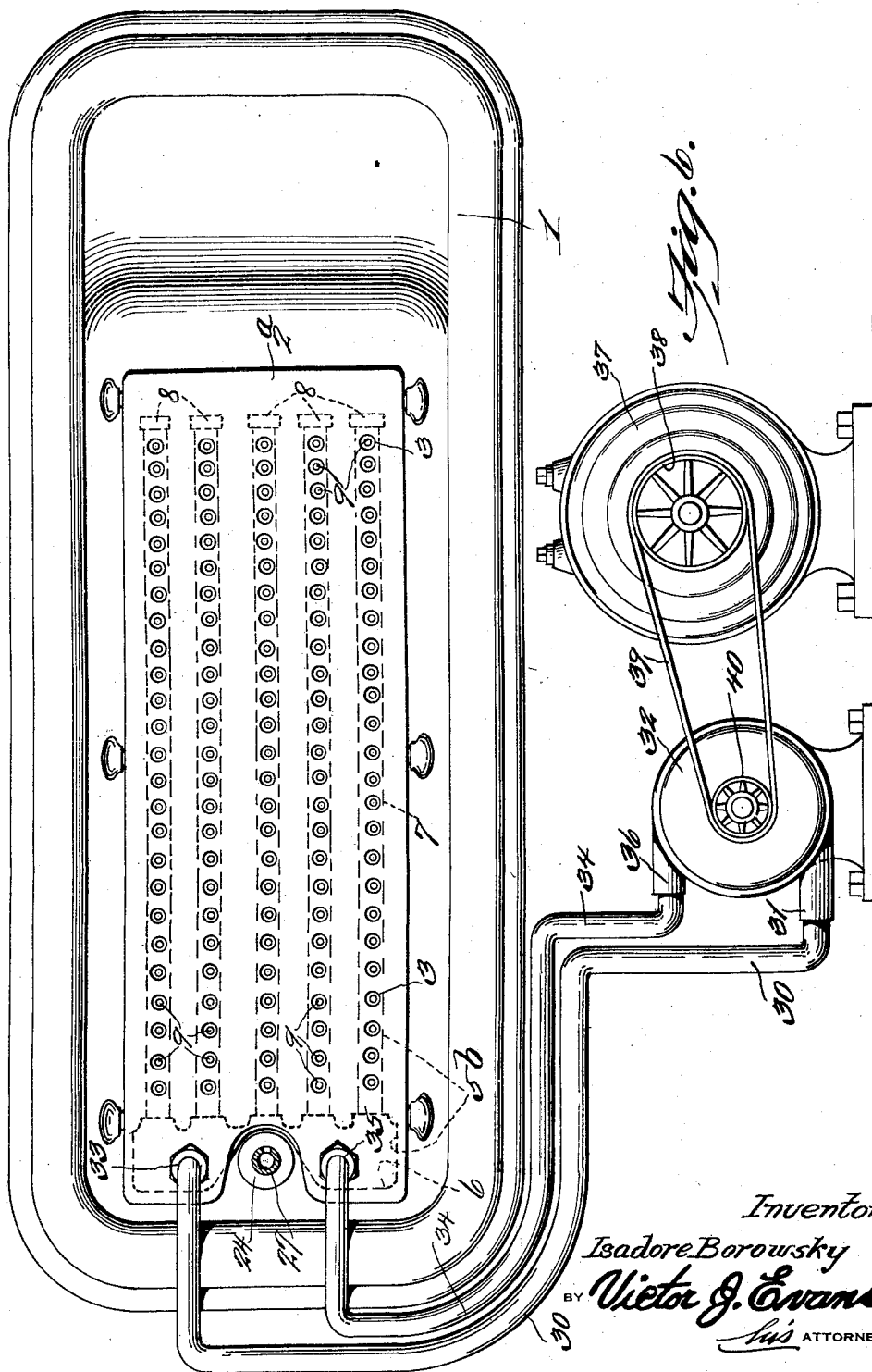
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BATH APPARATUS

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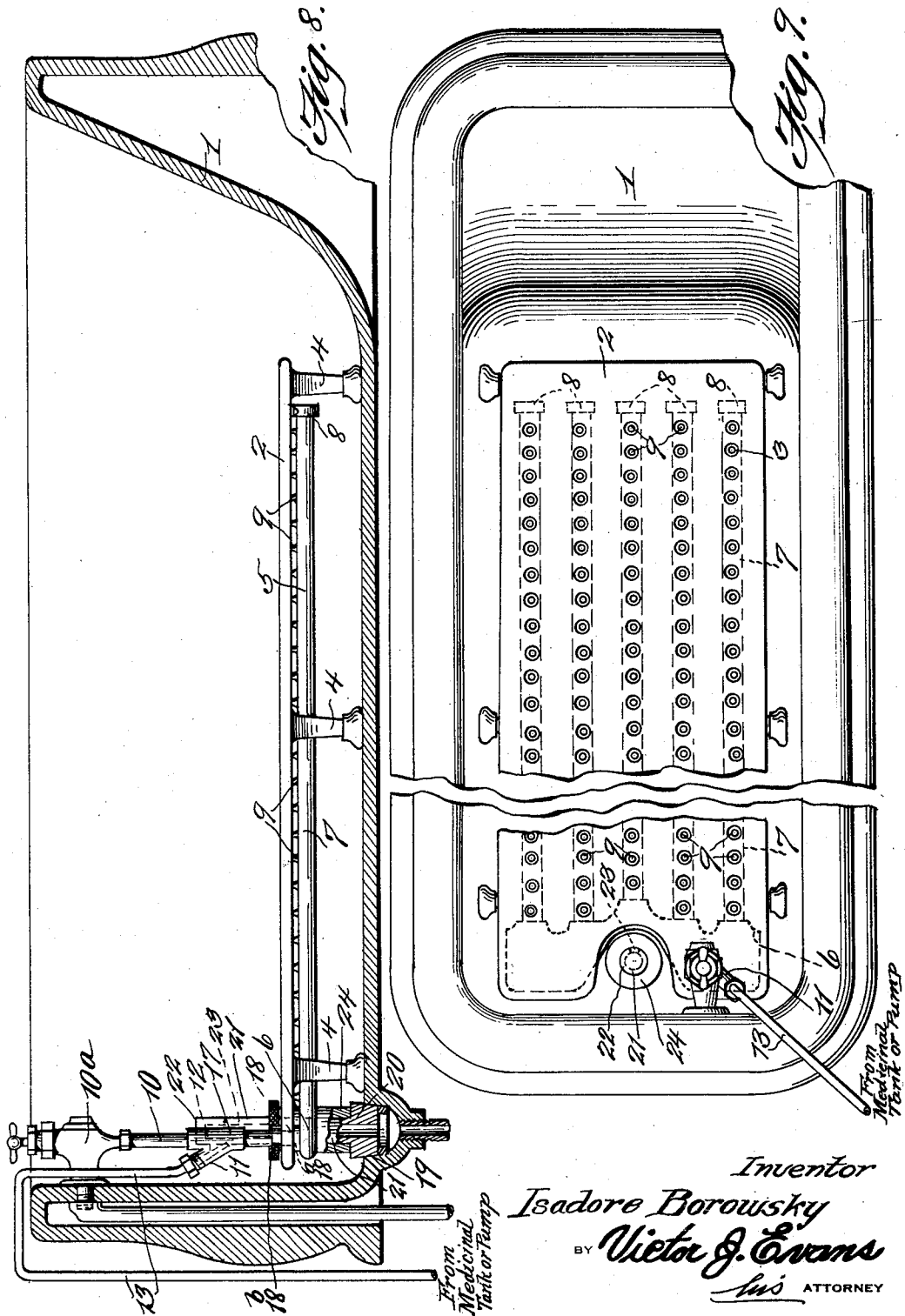
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BATH APPARATUS

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UNITED STATES PATENT OFFICE

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BATH APPARATUS

Application filed April 18, 1930. Serial No. 445,468.

The present invention relates to bath apparatus for administering health-giving and restoring baths, such as will stimulate the bather, and cause a proper thorough circulation of the blood, and invigorate the entire body.

One object of the present invention is to provide a bath apparatus which embodies a manifold including a plurality of pipes or tubes, with outlet jets, adapted to be disposed immediately under a sub-bottom or base or platform in any construction of tub, the jets being in axial alignment with perforations in the sub-base or bottom, or platform, so that the sprays will pass through the perforations of the sub-bottom or base, and thereby engage with the person's body supported on the base and in the bath to give the body a needle or tingling sensation, acting on the skin to insure a complete stimulation of the blood, and an invigorating and healthful condition of the entire body.

Another object of the present invention is to provide a device of this kind which embodies improved means for producing an endless course or circuit of a solution, either hot or cold water, or a hot or cold medicinal fluid, or both with or without a supply of air or gas under pressure, and acts to keep the bath agitated and of an invigorating character.

Another object of the present invention is to provide a container, which may be either a bath tub of any size, or a pool, in conjunction with an apparatus having an endless course for drawing or pumping out a hot or cold water solution from the container, and sending it back to the container with a mixture of air under pressure, and through a manifold into the container, so agitating the water solution in the container as to give the appearance of the water boiling, the solution when leaving the jets of the manifold with a mixture of air under pressure acting to stimulate the surface of the body of a bather in the container and thereby create a most desirable blood circulation. Another object of the present invention is to provide bath apparatus embodying a container adapted to contain hot or cold water solution, or a mix-

ture of hot or cold water solution with a medicinal solution, which will create a desirable stimulating and invigorating sensation to the body, due to the solution being sprayed through jets of a manifold arranged in the container, such solution making a complete circuit from the container through a power device and back through the manifold and into the container, thereby keeping the solution in a thoroughly agitated condition, and transmitting to the body of the bather an invigorating and healthful effect.

A further object of the present invention is to provide improved means for supporting a base or false bottom in the container and embodying a manifold having rubber supports which will engage with the bottom of the tub or container, the manifold in turn supporting the perforated base or false bottom, and the pipes of the manifold providing for free circulation of invigorating bath fluid.

A still further object of the present invention is to provide improved means for increasing or decreasing the intake of air or gas under pressure in the manifold, for the purpose of increasing or decreasing agitation of the fluid in the container or tub.

Another object of the present invention is to provide, in an apparatus of this kind, means for conducting a supply of water, heated if desired to proper temperature by any suitable source of heat, and passing with a gaseous invigorating or stimulating chemically treated solution, into a pipe or tube at a point near the attachment of the tube to the manifold, in such manner as to provide an injector action, the outlet end of this tube if desired, having a threaded reduced extension for connection to the manifold, and the heated water and the gaseous or chemically treated solution circulating thoroughly through the several jet tubes of the manifold, the sprays leaving the jets passing through the perforations of the base or false bottom and contacting with the body of a person supported thereon in the bath so as to invigorate the body, create a thorough and proper stimulation of the blood, and assist in the maintenance of a normal heart action.

Another object of the present invention is to provide, in an apparatus of this kind means to maintain the level of the water or solution in the tub or pool at any desired height, and to maintain the water, or the mixture of water and gaseous fluid or solution, after reaching any desired height, thoroughly agitated by the inflow of additional water, or gaseous fluid, or both, so as to create a tingling sensation to the body of the bather, such as will stimulate and invigorate the entire system.

The invention comprises further features and combination of parts to be hereinafter set forth, and in order to more clearly understand the invention reference may be had to the accompanying drawings which illustrate several embodiments of the invention.

In the drawings:—

Figure 1 is a longitudinal sectional view through a tub, showing one embodiment of the invention.

Figure 2 is an enlarged detailed sectional view through air regulating means carried by a stand pipe which rises from a perforated base or false bottom.

Figure 3 is a sectional view on line 3—3 of Figure 2.

Figure 4 is a sectional view on line 4—4 of Figure 2.

Figure 5 is a bottom plan view of the perforated base or false bottom, showing a manifold applied thereto.

Figure 6 is a plan view of a tub or container, showing another embodiment of the invention.

Figure 7 is a detailed perspective view of the perforated base or false bottom removed from the tub or container.

Figure 8 is a longitudinal sectional view through a tub or container, showing another embodiment of the invention.

Figure 9 is a plan view of the tub and apparatus shown in Figure 8.

Figure 10 is a cross sectional view through a tub or container equipped with a manifold, forming a part of the container and adapted for association with means, such as shown in preceding figures, for taking the water out of the tub and sending it back through the manifold into the tub or container.

Referring to the drawings, wherein the reference characters designate like parts throughout the several views, *a* indicates a motor, which may receive current from any suitable source and the shaft *b* of which is provided with a pulley *c* which is connected by a belt *d* to a pulley *e* on the shaft *g* of any suitable type of rotary pump *h*.

As shown in Figures 1, 6, 8 and 9 a suitable tub or other container is provided, and which is adapted to receive a base or false bottom 2 as disclosed. This base or false bottom may be constructed as shown in Figures 1 and 5 or may be constructed as

shown in Figures 6, 7, 8 and 9. This base or false bottom 2 is provided with a plurality of perforations 3, through which streams of water from jets are adapted to pass.

As shown in Figures 1 and 5 the under surface of the base or false bottom has secured thereto transverse angle pieces *k*, which receive the manifold 5*a*. The manifold, shown in Figures 1 and 5 comprises marginal and longitudinally arranged pipes 7*a*, which are disposed outwardly and inwardly of each other respectively and pass through the transverse angle pieces, in order that the manifold may be carried by the base or false bottom.

The outermost of the longitudinal intermediate pipes connect to and communicate with the transverse portion 7*b* of the marginal pipe as at 7*c*, while the opposite ends of said pipes connect at 7*d* to the opposite transverse portion 7*g* of the marginal pipes. The center pipe of the manifold connects to and communicates with the transverse portion 7*g* at one end, and has its opposite end in communication with and connected to a chambered head 6*a*, and into which head the water from a pipe *m* enters, in order to supply the manifold. Mounted on the longitudinal portions of the marginal pipes of the manifold are rubber supports or sleeves 4*a*, which engage with the bottom of the bath tub or container, their purpose being to prevent marring the surface of the tub.

Rising from and secured at *n* to the base or false bottom 2 is a stand pipe *a*2, which has a packing gland *a*3 at its upper end. The pipe *m* passes through the packing gland *a*3 and carries a T fitting *a*4, which supports a suitable pressure gauge *a*5. Suitable piping *b*2 connects with the T *a*4 and in turn to the outlet end *b*3 of the pump *h*. Another suitable piping *b*4 is connected to the inlet end *h*2 of the pump, and in turn connected at *b*5 with the stand pipe *a*2.

Obviously, by means of these pipings, the fluid in the tub or container 1 is drawn through the stand pipe *a*2 from the tub or container 1 through the medium of the pump and discharged by pressure from the pump into the head 6*a*, and then into the manifold, and out through the jet openings 7*b* of the manifold pipes. The jet openings 7*b* are axially aligned with the perforations 3 in the base or false bottom 2 and are disposed below the latter in closely spaced relation therewith, as clearly shown in the drawings. Obviously the sprays or jets of liquid, or of liquid and gas, are thus discharged in the bathing medium directly against a bather supported on the base or support 2 in said medium. The sprays from the jet openings 7*b* mixed, with air if desired, pass axially through the perforations 3 and into the body of water or other fluid in the tub, agitating the water or the like, giving the surface of

the water an appearance similar to a boiling action, such agitation of the water together with the water, or water and air, sprays acting on the body of the bather and thereby transmitting an invigorating massage, which has been found most beneficial.

In order to govern the intake of air into the stand pipe *a2* a regulator *g2* is provided. This regulator comprises a body *g3* which is threaded into the side of the stand pipe *a2*, and its inner portion has threaded to it a perforated shell *g4*, the perforations therein acting to strain the air. The body *g3* has a passage *g5* and is provided with an extension *g6*, on which a sleeve portion *g7* of a disc *g8* is rotatably mounted. The sleeve portion *g7* is exteriorly rectangular as shown in Figure 4, so that the sleeve end *h3* of the handle *h4* may fit thereon, and yet be capable of sliding toward and from the disc *g8*. A bowed spring *h5* has its central opening *h6* fitting the sleeve portion of the disc *g8*, the bowed spring *h5* engaging under the sleeve portion *h3* of the handle *h4*, the spring *h5* bearing against the disc *h8* to hold it in close contact with the disc portion of the body *g3* of the regulator. The extension *g6* has a slightly reduced threaded part *h7*, which passes through the sleeve portion *h3* and is provided with a nut *h2*. The nut is held in position by a pin *h3*. However by loosening the pin, the nut may be adjusted to regulate the tensioning action of the spring *h5* and thereby govern the engaging action between the disc *g8* and the disc portion of the body *g2*.

The disc *g8* is provided with a plurality of openings of different diameters graduating from a maximum diameter to a minimum diameter, and adapted one at a time to register with the passage *g5*. The smallest opening *h9* when registering with the passage *g5* permits a minimum amount of air to pass through the passage, and by registering the larger of the openings *h9* with the passage *g5* a maximum amount of air passes there-through. By this construction of regulator the amount of air allowed to enter the stand pipe *a2* is easily governed. The disc *g8* is provided with a series of depressions *k4*, with any one of which a projection *k5* carried by one end of the spring *h5* engages for the purpose of holding the disc *g8* in different positions according to the opening registering with the passage *g5*. The disc *g8* is also provided with a slot *k6*, there being a lug or pin *k7* carried by the disc portion of the body *g2* engaging in the slot, thereby acting to limit the disc in its maximum movements in either direction.

Referring to Figure 6, it is obvious that the embodiment of the invention therein shown involves the same general principles as the embodiment shown in Figures 1 and 5, the Fig. 6, however, disclosing a differently con-

structed manifold *5b*, comprising a body portion 6 and tubes or pipes 7, which may be positioned immediately under a perforated base or false bottom *2a*, that is supported by legs 4. The pipes 7 have nozzles 9 which register with the perforations 3 in the base or false bottom *2a*. The ends of the pipes 7 are closed and are attached in any suitable manner to the under surface of the base or false bottom. Suitable piping 30 connected with the outlet end 31 of the pump 32, is and in turn, connected at 33 to the base or false bottom *2a* and also to the body 6 of the manifold. A second piping 34 connects at 35 through to the false bottom *2a* with the body 6 of the manifold, and said piping is connected to the inlet end 36 of the pump. The pump 32 is operated by an electric motor 37, pulley 38, belt 39 and the pulley 40, which arrangement is similar to that shown in Figure 1. In this embodiment of the invention, and in the embodiment thereof previously described, there is a continuous circulation of the fluid in a closed circuit including the tub or container.

In the embodiment of the invention shown in Figures 8 and 9, the false bottom or base is similar to that shown in Figure 6, is supported in the same manner, and a manifold similar to that shown in Figure 6 is also supported under the false bottom. The tub in Figures 8 and 9 and as in Figure 6 has an outlet opening 19 for the reception of a stopper 20 which has an upstanding tube 21 that is closed at 22. This tube 21 has a vertical slot 23, and movable on the tube (which may be any desired height) is a sleeve 24 which may be supported in any desired position on the tube 21 by friction. By means of this sleeve it is possible to regulate the height of the fluid in the tub, and keep it regulated automatically as long as the usual hydrant spigots are open.

Any number of pipes or tubes 7 may be used in the manifold according to the number of rows of perforations 3. The outlet jets 9 of the tubes or pipes axially align with the perforations so that the sprays of fluid from the manifold will pass centrally through the perforations in the sub-base or false bottom and therefore contact with the bather and at the same time agitate the fluid in which the bather is disposed. Further, the sprays will tend to stir or agitate the fluid and said sprays, with or without such agitation of the fluid, create a tingling sensation on the body, hence invigorating or stimulating the blood as well as producing a fluid massage action on the body.

As shown in Figures 8 and 9 a pipe 10 is provided and is adapted to receive water either hot, or cold, or both, from the usual hydrant spigot 10*a* of the tub. This tube or pipe 10 has an extension 11, which extends in a direction as shown, though it may be

otherwise positioned when desirable. Passing through the extension 11 is a nozzle 12 which may be connected to a tube 13 receiving a solution, or fluid, of gaseous nature, or
 5 having properties of a medicinal or chemical character, and which will agitate the water in the tub and cause the water to transmit to the surface of the body a very desirable tingling sensation, such as will agitate the
 10 surface of the skin and at the same time stimulate or invigorate the blood, and by so acting on the blood regulate the heart action.

The chemical or invigorating solution passing through the nozzle 12 may be received from any suitable source of supply, such as a tank (not shown) and such fluid, being under pressure, creates an injector action on the water or other fluid passing through the tube or pipe 10. This tube 10
 20 carries a coupling 17, which in turn carries the extension 11. The coupling 17 is connected to the tube 10 at one end, while the opposite end of the coupling is reduced and threaded at 18 into an opening 18a of the
 25 manifold so as to conduct the medicinal or chemical solution to the manifold, there being a lock nut 18b to hold the reduced end of the coupling 17 rigid with the sub-base or false bottom.

In Figure 10 there is shown a tub 42 having a wall provided with perforations 45, there being a second wall 43 formed integrally with the tub and said first named wall and spaced a short distance from the under surface of the latter to provide a manifold 44
 35 in which water or other fluid may be circulated and forced out through said perforations into the tub. While several embodiments of the present invention are illustrated and described herein with more or less
 40 particularity, it is to be expressly understood that the invention is not limited to said embodiments or otherwise than by the terms of the appended claims.

The invention having been set forth, what is claimed is:

1. In a bath apparatus, a flat support to be positioned in a container which receives a bathing fluid, said support having perforations throughout its area, a manifold suspended from the under surface of the support and arranged in close parallel relation thereto, said manifold comprising a plurality of parallel conduits having outlet jets, a
 50 stand pipe rising from one end of the support and having its lower end in communication with a space below the support, a conduit extending through the stand pipe, suction means for drawing the bathing fluid upwardly through the stand pipe and having
 60 a discharge outlet merging into said conduit, the latter being in communication with one of the conduits of said manifold for maintaining a constant circulation of the bathing fluid through the manifold and outwardly

through the outlet jets, means carried by the stand pipe for the admission of air from the atmosphere to be entrained by said circulating fluid, and said outlet jets being spaced below the support and axially aligned with
 70 said perforations to permit discharge of the bathing fluid from the outlet jets of the manifold through the perforations thereby causing an entraining action of the bathing fluid between the manifold conduits and support and hence through the perforations to
 75 cause an agitation of the bathing fluid against the body of the bather.

2. In a bath apparatus, a flat support to be positioned in a container which receives a bath fluid, said support having perforations throughout its area, a manifold suspended from the surface of the support and arranged in close parallel relation thereto, said manifold comprising a plurality of parallel conduits having outlet jets, a stand pipe rising from one end of the support and having its lower end in communication with a space below the support, a conduit extending through the stand pipe, suction means having a connection with the upper portion of the stand pipe for drawing the bathing fluid upwardly through the stand pipe, said suction means having a discharge outlet merging into said conduit, the latter being in communication with one of the conduits of said manifold for maintaining a constant circulation of the bathing fluid through the manifold and outwardly through the opposite jets, an air valve operatively carried by the stand pipe diametrically opposite said connection of the suction means for drawing air from the atmosphere into the stand pipe for mixing with the bathing fluid when drawn into the stand pipe, said valve being variably adjustable, for varying the admission of air into the stand pipe, and said outlet jets being spaced below the support and axially aligned with said perforations to permit discharge of the bathing fluid from the outlet jets of the manifold through the perforations thereby causing an entraining action of the bathing fluid between the manifold conduits and support and hence through the perforations to cause an agitation of the bathing fluid against the body of the bather.

In testimony whereof he affixes his signature.

ISADORE BOROWSKY.

CERTIFICATE OF CORRECTION.

Patent No. 1,896,938.

February 7, 1933.

ISADORE BOROWSKY.

It is hereby certified that the above numbered patent was erroneously issued to the inventor said "Borowsky" whereas said patent should have been issued to "Hydro-Pneumatic Bath Appliance Company, Inc., of Atlantic City, New Jersey, a corporation of New Jersey", as assignee of the entire interest in said invention, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of February, A. D. 1933.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.