

No. 621,690.

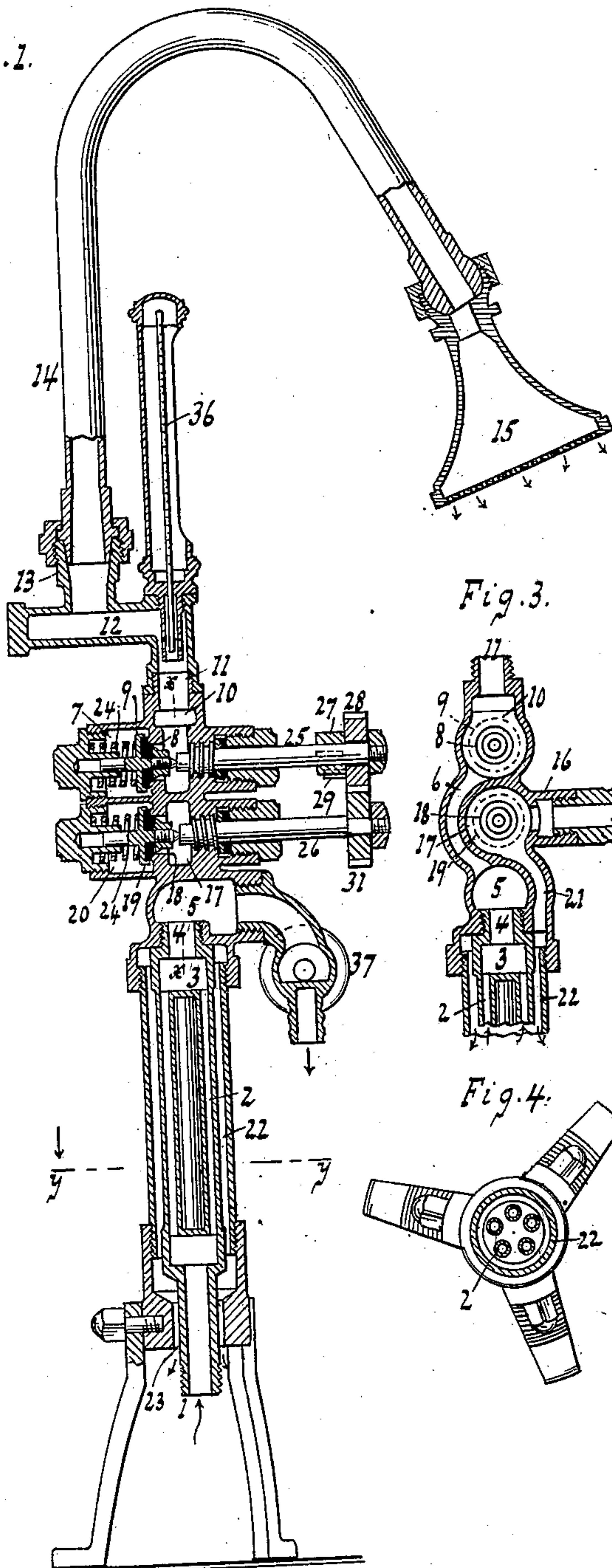
Patented Mar. 21, 1899.

**T. J. MOONEY.  
WATER HEATER.**

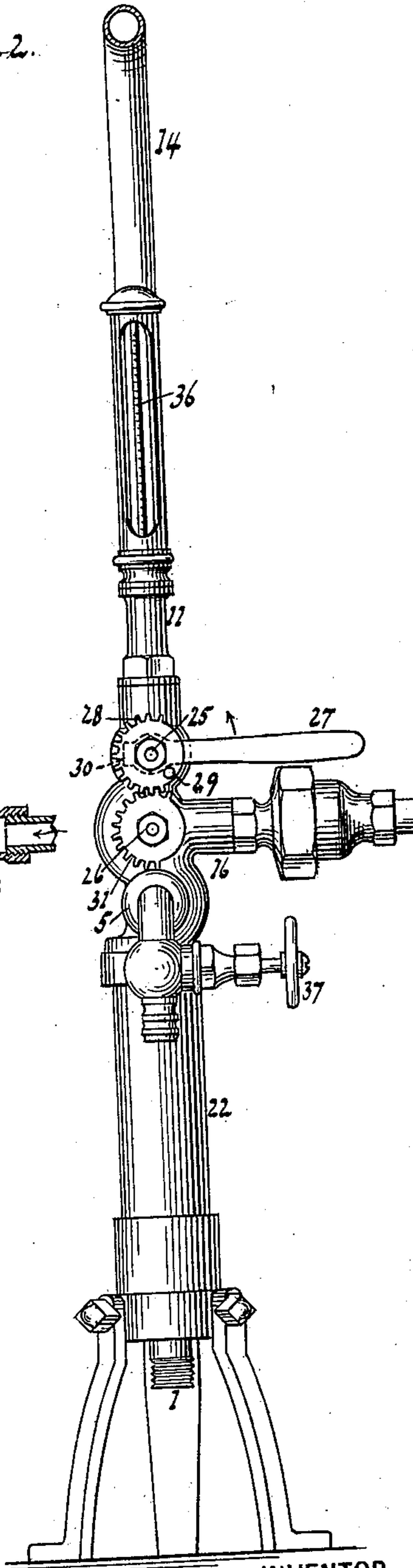
(Application filed Apr. 29, 1898.)

(No Model.)

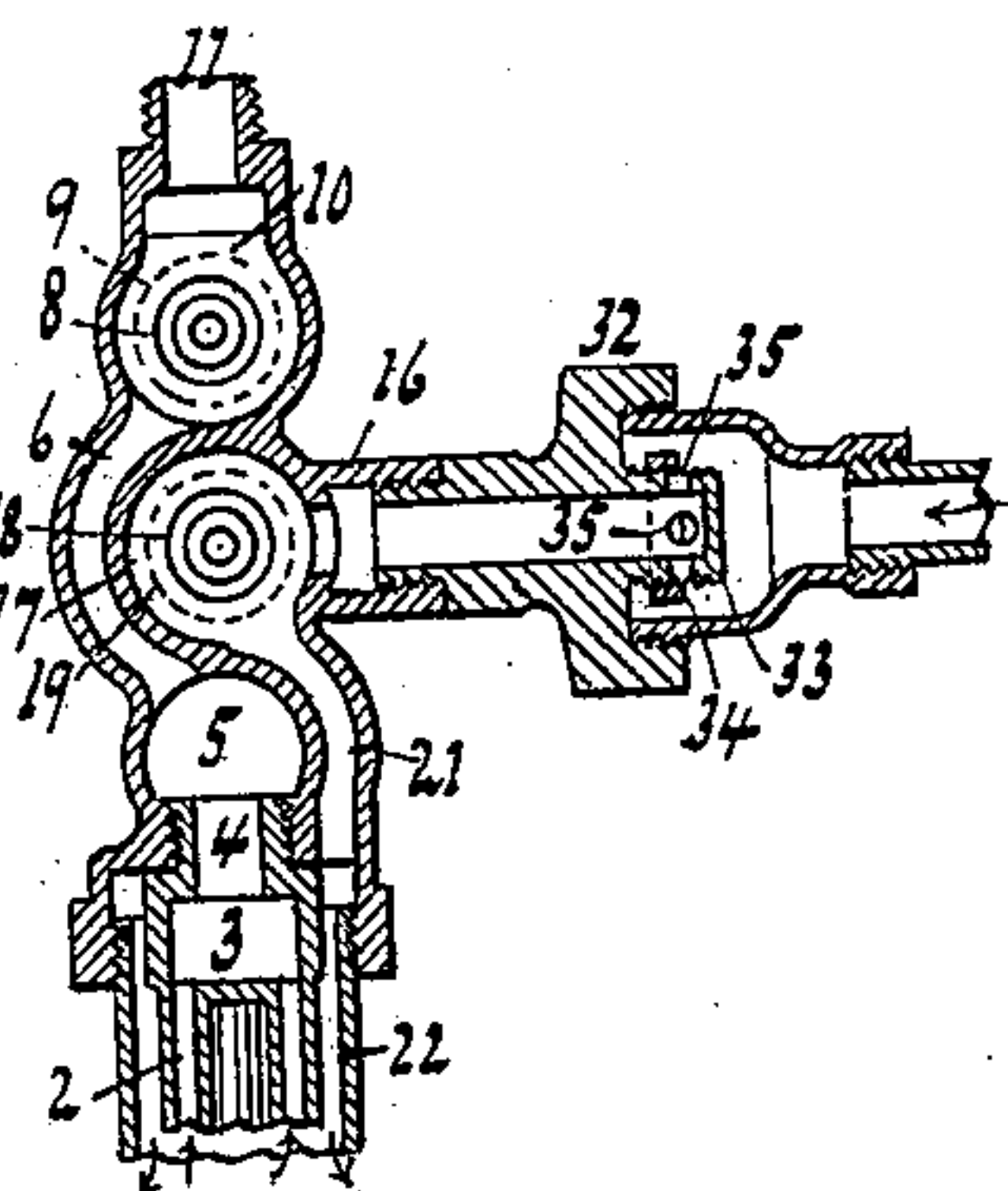
*Fig. 1.*



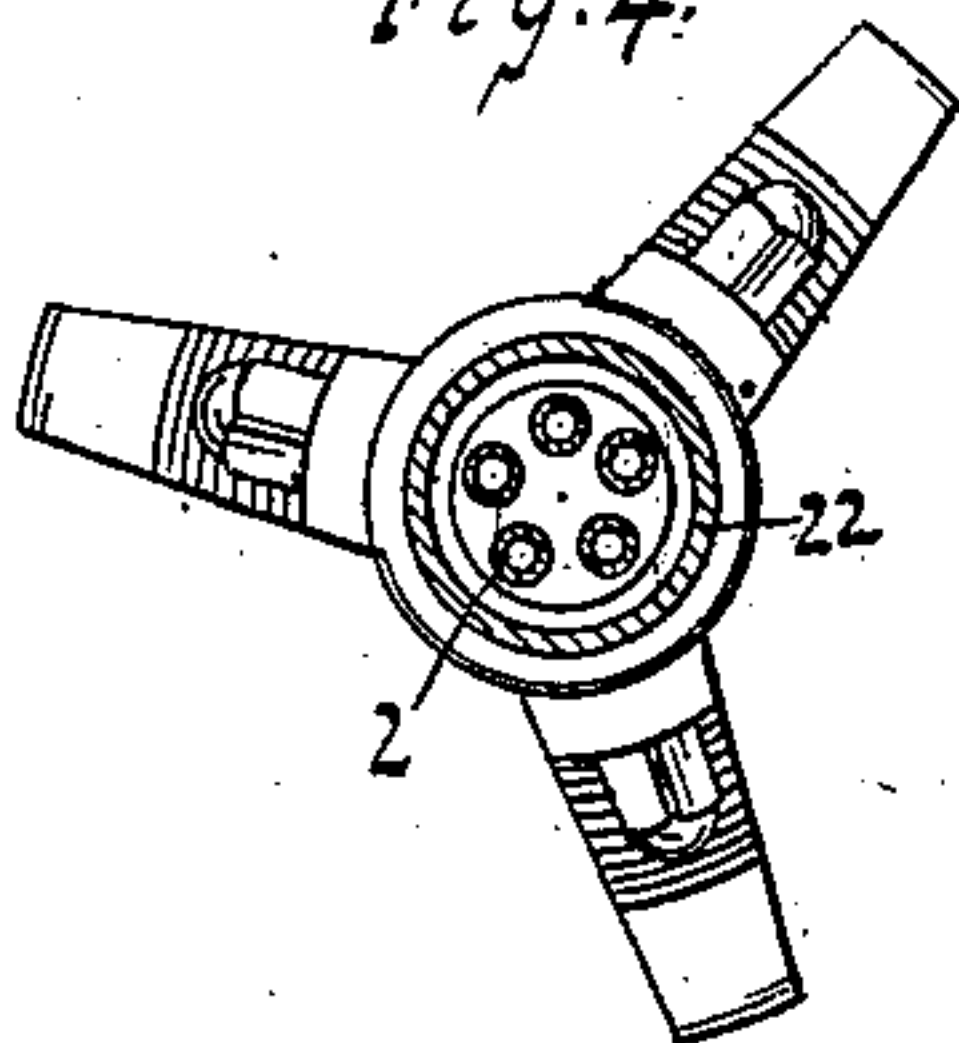
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 621,690, dated March 21, 1899.

Application filed April 29, 1898. Serial No. 679,226. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS JOSEPH MOONEY, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Water-Heaters, of which the following is a specification.

By means of this apparatus water can be rapidly heated to required degree for culinary, bathing, and other purposes, as set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a sectional elevation of the apparatus. Fig. 2 is a view at a right angle to Fig. 1. Fig. 3 is a section along  $x x$ , Fig. 1. Fig. 4 is a section along  $y y$ , Fig. 1.

Water from a suitable conduit or supply entering at inlet 1 flows along the conduit or pipe 2 to chamber 3 and passage 4 to chamber 5, whence channel 6, Fig. 3, leads to chamber 7, having seat 8 for valve 9. When the valve is open, the water flows into chamber 10 and channel 11 to the horizontal pipe-section 12, having a nipple or outlet 13, whence the water can be drawn off for required purpose—as, for example, through a douche or shower-bath 14 and 15.

An inlet for a heating medium or steam is shown at 16, Fig. 3, leading to chamber 17, having seat 18 for valve 19, which when open allows the heat or steam to pass to chamber 20 and thence to channel 21, leading to pipe or pipes 22. The steam can exhaust or escape at 23, Fig. 1. As seen, the water-pipes 2 extend through or are surrounded by the steam pipe or jacket 22 and the steam is led in a direction opposite to the flow of the water, the latter being thus thoroughly or instantaneously heated. The water-pipe 2 is shown straight, but manifestly it can be run otherwise—as, for example, spiral or bent, if required.

The chambers 5 7 10 17 20 and channels 6, 11, and 21 are formed in a casing 1<sup>a</sup>, interposed between the pipe-section 12 and the conduit or pipe 2 and jacket 22. The upper side of the casing has a screw connection with a part of the pipe 12, and the lower end of the casing has screw-threaded connections

with the upper end of the conduit or pipe 2 and jacket 22.

The valves 9 and 19 are both shown normally held closed or to their seats each by a spring 24. A screw-stem 25 is shown adapted to press or act against the valve 9 or its stem, and a screw-stem 26 is similarly arranged with relation to valve 19. By suitably turning or screwing such a stem toward its valve the latter is opened more or less, as required. Suitably applied or fixed to stem 25 is a handle or lever 27. This handle is loosely connected to the other stem or valve, as will presently appear.

On stem 25 is a gear 28, loosely mounted, so as to be capable of turning independently of the stem. This gear carries a pin or coupling-stud 29, Fig. 2. When the valve 9 is closed and the handle 27 is in the position shown in Fig. 2, a quarter-turn of the handle will serve to open valve 9 and allow the water to flow. During this throw of the handle the gear 28 stands still. The tail or part 30 of the handle now strikes the coupling pin or stud 29 on gear 28 and a continued rotation of the handle is now accompanied by rotation of gear 28. This gear 28, meshing into gear 31, fast on stem 26, the latter is now rotated to open valve 19 for the flow of steam. It is thus seen that the handle 27 successively actuates the valves at different points of its throw or movement—that is to say, the handle at its first move opens valve 9 to allow the water to flow and a continued throw or move of the handle will turn on steam to heat the water, the pin or projection 29 communicating motion from the handle to the second or steam-valve 19 at a certain point in the throw or movement of the handle. The handle or its tail 30 simply striking or releasably engaging stud 29, the handle on its return will carry the tail 30 away from the stud, and the main part of the handle striking such stud will give a return or closing movement to the gears 28 and 31.

The steam or heat inlet 16 is shown provided with a part or coupling 32, Fig. 3, having a threaded seat 33, having one or more lateral passages 35. The thimble or ring 34 being screwed more or less along its seat 33 in one



direction or another, the flow or pressure of steam into the inlet is regulated by the passages 35 being more or less closed or obstructed. As the coupling 32 is readily unscrewed or freed, the thimble 34 is readily accessible or set as required. The consumer or user can thus regulate the steam-pressure as required in individual cases. The device is capable of being cheaply made and is simple and not liable to get out of order.

A thermometer 36 can be suitably applied, as at channel 11, to indicate the degree of heat of the water flowing to outlet 13. In case the valves 9 and 19 are closed unheated water can be drawn from the pipe 2 or chamber 5 by opening the valve 37. The steam from exhaust 23 can be collected or led off or returned to the boiler as required. The handle, as seen, by a single or continuous throw opens both the valves to allow a flow of water and a flow of steam in the opposite direction for and heating said water, said water and steam flowing respectively through said valves without mixing.

What I claim as new, and desire to secure by Letters Patent, is—

1. A water-heater, consisting of a casing provided with water-chambers 5 and 7, a channel 6 connecting said chambers, a heated-fluid channel 21, and valve-seats 8 and 18, one controlling the passage of water and the other the inlet of steam, a pipe connected with one side of the said casing, a water-conduit and a heated-fluid jacket both connected with the other side of said casing, the conduit passing through the jacket and the latter having communication with the heated-fluid channel in the casing, independent valves seating upon said valve-seats, and devices for successively opening the valves, substantially as and for the purposes described.

2. In a water-heater, the combination with a casing having two separate water-chambers, a heated-fluid chamber, means for introducing water and a heated fluid in the said chambers, respectively, and two independent valves, one located in one of the water-chambers and the other in the heated-fluid chamber, of two screw-threaded stems acting at their inner ends upon the valves, a gear fixedly secured to one stem, a gear loosely mounted on the other stem and provided with a pin or projection, and a lever secured to the stem which carries the loosely-mounted gear and having a tailpiece which, after the lever has been swung to a certain extent to turn the stem to which it is secured, strikes the said pin or projection and thereby imparts motion to the gear which is fixed to its stem, substantially as and for the purposes described.

3. In a water-heater, the combination with a casing having two separate water-chambers, a heated-fluid chamber, means for introducing water and a heated fluid in the said chambers, respectively, two independent valves,

one located in one of the water-chambers and the other in the heated-fluid chamber, and independent springs acting upon the said valves to normally hold them in their closed positions, of two screw-threaded stems acting at their inner ends upon the valves, a gear fixedly secured to one stem, a gear loosely mounted on the other stem and provided with a pin or projection, and a lever secured to the stem which carries the loosely-mounted gear and having a tailpiece which, after the lever has been swung to a certain extent to turn the stem to which it is secured, strikes the said pin or projection and thereby imparts motion to the gear which is fixed to its stem, substantially as and for the purposes described.

4. In a water-heater, the combination with a casing having two separate water-chambers, a heated-fluid chamber, means for introducing water and a heated fluid in the said chambers, respectively, and two independent valves, one located in one of the water-chambers and the other in the heated-fluid chamber, of two screw-threaded stems acting at their inner ends upon the valves, a gear fixedly secured to one stem, a gear loosely mounted on the other stem and provided with a pin or projection, a lever secured to the stem which carries the loosely-mounted gear and having a tailpiece which, after the lever has been swung to a certain extent to turn the stem to which it is secured, strikes the said pin or projection and thereby imparts motion to the gear which is fixed to its stem, a water-delivery pipe connected with one side of the casing, and a water-conduit and a heated-fluid jacket connected with the opposite side of the casing, said water-conduit passing centrally through said jacket, substantially as and for the purposes described.

5. The combination with a casing having water and steam chambers provided, respectively, with valve-seats, valves arranged in said chambers, and screw-threaded stems acting at their inner ends upon the valves, of intermeshing gears, one fixed to one of the stems and the other loosely mounted on the other stem and a handle secured to the stem which carries the loosely-mounted gear, and means, substantially as described, for engaging the handle with a part of the loosely-mounted gear after the handle has made a partial revolution, substantially as and for the purposes described.

6. A water-heater comprising a water pipe or pipes, a steam or heat supply pipe, a threaded seat in the steam-supply pipe having a lateral passage, and a thimble adapted to screw along the seat for regulating the flow or pressure through said passage, substantially as described.

7. A water-heater comprising a water-pipe and a heat or steam supply pipe made separate or independent from one another so that their respective contents will not mingle,



valves for said pipes, and a common handle  
made to actuate both valves so as to allow  
the successive flow without mingling of water  
and steam in opposite directions through  
5 said valves respectively substantially as de-  
scribed.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing  
witnesses.

THOMAS JOSEPH MOONEY.

Witnesses:

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E. F. KASTENHUBER.