

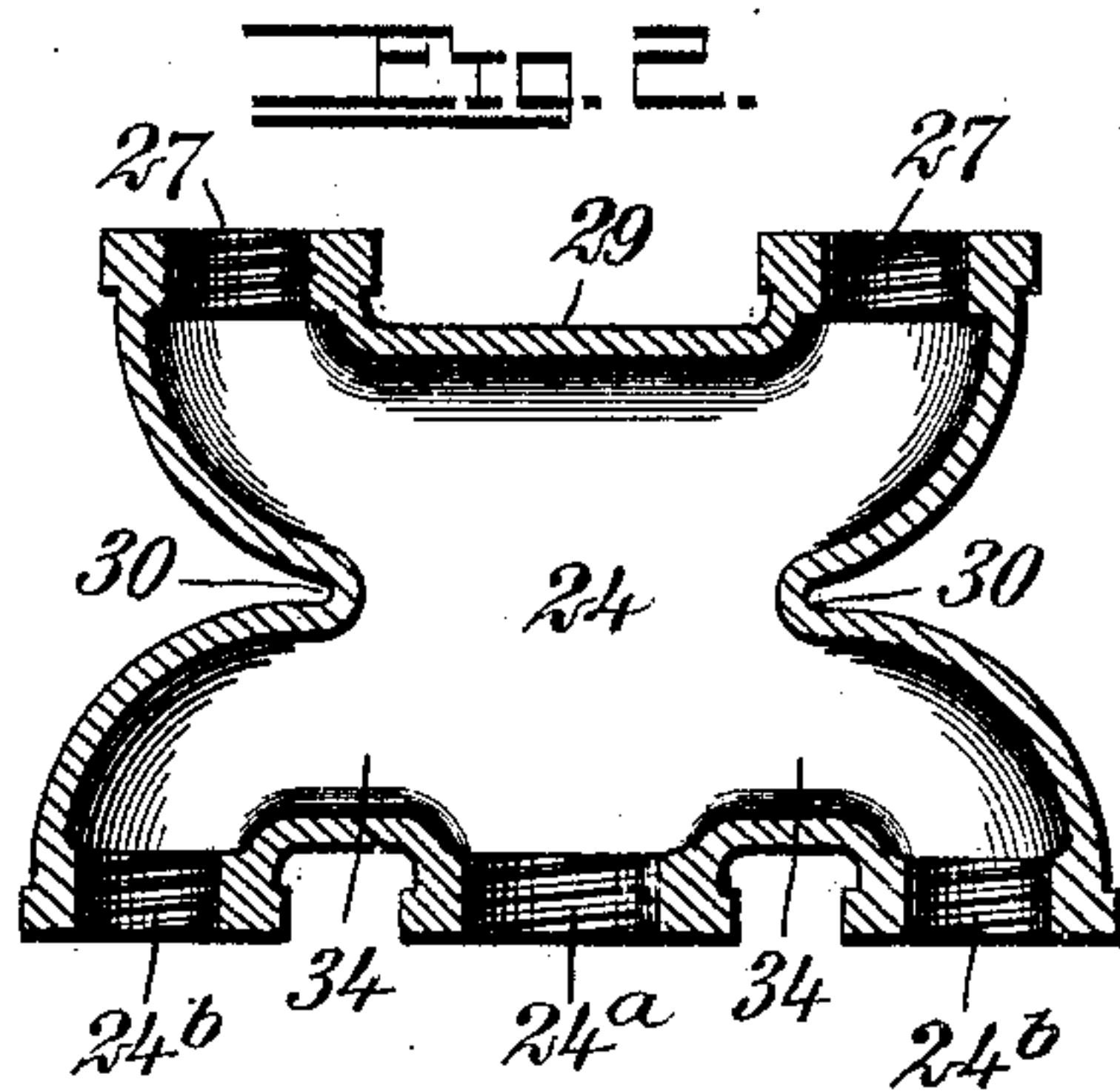
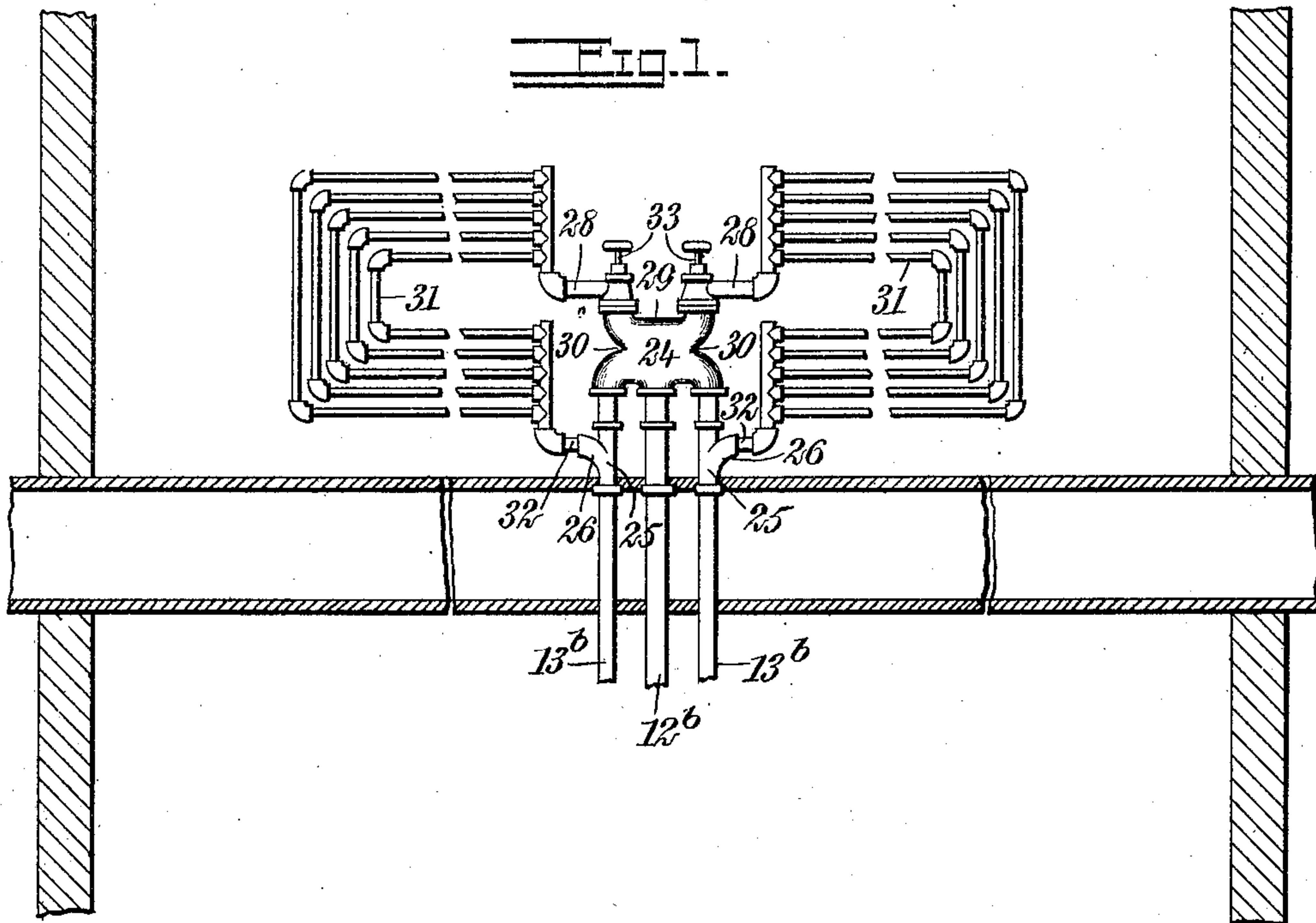
No. 832,408.

PATENTED OCT. 2, 1906.

J. O'NEILL.

PIPE FITTING FOR HOT WATER HEATING SYSTEMS.

APPLICATION FILED OCT. 12, 1905.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN O'NEILL, OF NEW YORK, N. Y.

## PIPE-FITTING FOR HOT-WATER HEATING SYSTEMS.

No. 832,408.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Original application filed April 6, 1905, Serial No. 254,236. Divided and this application filed October 12, 1905. Serial No. 282,529.

*To all whom it may concern:*

Be it known that I, JOHN O'NEILL, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Pipe-Fitting for Hot-Water Heating Systems, of which the following is a full, clear, and exact description.

My invention relates to a pipe-fitting to be used in a certain type of hot-water heating system, and this application is a division of my prior application, Serial No. 254,236, filed April 6, 1905. The present invention relates to the fitting which was described in that application for use in a three-pipe system.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation, partly in section, of a portion of a hot-water heating system, showing how my improved fitting is applied; and Fig. 2 is a vertical longitudinal sectional view of the fitting detached from the other features of the system.

I have shown a main flow-pipe 12<sup>b</sup> and two main return-pipes 13<sup>b</sup>, one located upon each side of the flow-pipe. The flow-pipe 12<sup>b</sup> communicates with a fitting 24, which constitutes the main portion of the present invention and is designed to conduct the hot water from the flow-pipe and to return it to the return-pipes under certain conditions. In the under side of this fitting, which I call a "three-pipe" fitting, are openings 24<sup>a</sup> and 24<sup>b</sup> 24<sup>b</sup>, the first being in the center and the other two on opposite sides thereof. The flow-pipe communicates directly with the opening 24<sup>a</sup>, while the connection of each return-pipe with the openings 24<sup>b</sup> is preferably made through an additional element, shown in the form of a Y-union 25, each of which has a side inlet 26. This inlet is located below the by-pass 34, which is contained in the body of the fitting 24. At the opposite side of the fitting from the supply-openings are flow-openings 27 27, from which lead radiator flow-pipes 28. These openings 27 are shown as separated by a substantially horizontal wall 29 or one which is at right angles to the axis of the supply-flow opening, which opening is directly opposite the center of this wall. The openings 24<sup>b</sup> and 27 are shown as

separated from one another by inwardly-curved double walls 30.

Connected with the flow-pipes 28 are radiators 31, both of which are shown in the form of coils, though it will be obvious that any desired style of radiators may be employed. The radiators are joined by return-pipes 32 with the openings 26 of the Y-unions. Valves 33 are preferably inserted in connection with the radiators at any desired points.

In use the heating fluid rises through the supply-pipe into the fitting and is delivered to the flow-pipes of the radiators by impinging against the wall 29 and being divided between the two flow-openings 27. After passing through the radiators the fluid is conducted to the supply-pipes through the openings 26 of the Y-unions. It will be noticed that this connection between the radiator and the return-pipes is at a point below the outlet of the radiator-flow, and the tendency of the supply to direct itself toward the return-pipes is thus counteracted, as the radiator practically acts as a siphon. This permits one radiator of a series to be shut off without affecting the other, the water then returning through the by-pass in the fitting. This by-pass is formed by a passage 34, located between the opening 24<sup>a</sup> and either of the side openings 24<sup>b</sup>. This by-pass should be located above the inlets 26.

It will be observed that in spite of the rather complicated nature of the three-pipe system only three fittings are required—the main fitting 24 and the two Y-unions. These three fittings take the place of a large number of fittings which have to be employed in the present systems.

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

1. In a heating system, a fitting having a central flow-opening in its lower side, a return-opening on each side of said flow-opening, a wall located directly opposite said flow-opening, and two additional flow-openings formed through said wall near the opposite edges thereof, said fitting having passages between the first-named flow-opening and the return-openings, and Y-unions communicating with the return-openings, said Y-unions having inlets located below said passages in the fitting.

2. A pipe-fitting having on one side a flow-opening, and two return-openings located on

opposite sides of the flow-opening, and on the other side a flat wall located opposite the flow-opening, and two flow-openings formed through the wall near the opposite edges thereof.

5 3. A pipe-fitting having three openings on one side located in alinement, the central one of said openings constituting means for admitting a fluid to the fitting, and the other, 10 means for returning the fluid therefrom, a passage between the central opening and each of the other two openings, the said fitting being provided on its opposite side with

two flow-openings, and a passage for directing fluid from the central opening of the first- 15 mentioned side to said flow-openings, the fitting also having reëntrant walls located below the upper openings.

In testimony whereof I have signed my name to this specification in the presence of 20 two subscribing witnesses.

JOHN O'NEILL.

Witnesses:

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