

(No Model.)

J. Q. A. GANTT & J. D. BLOOMHARDT.
HOT WATER HEATER.

No. 466,673.

Patented Jan. 5, 1892.

Fig. 2.

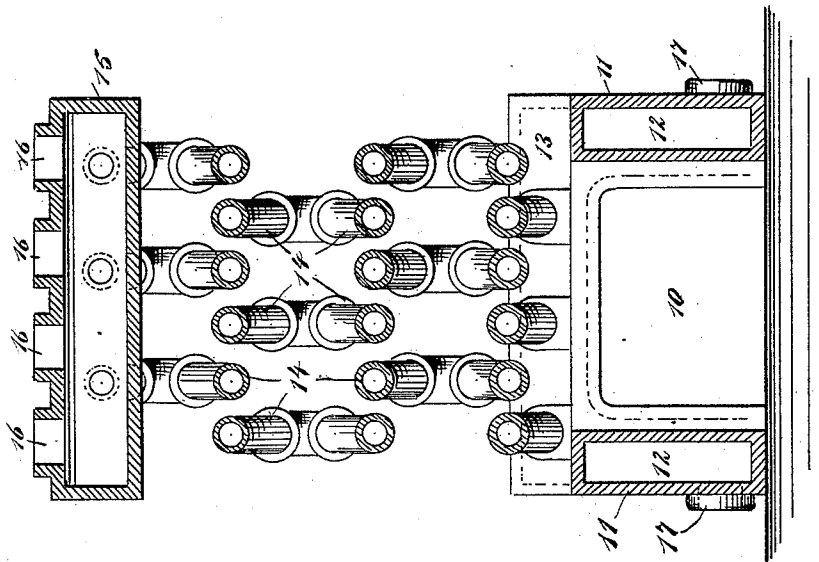
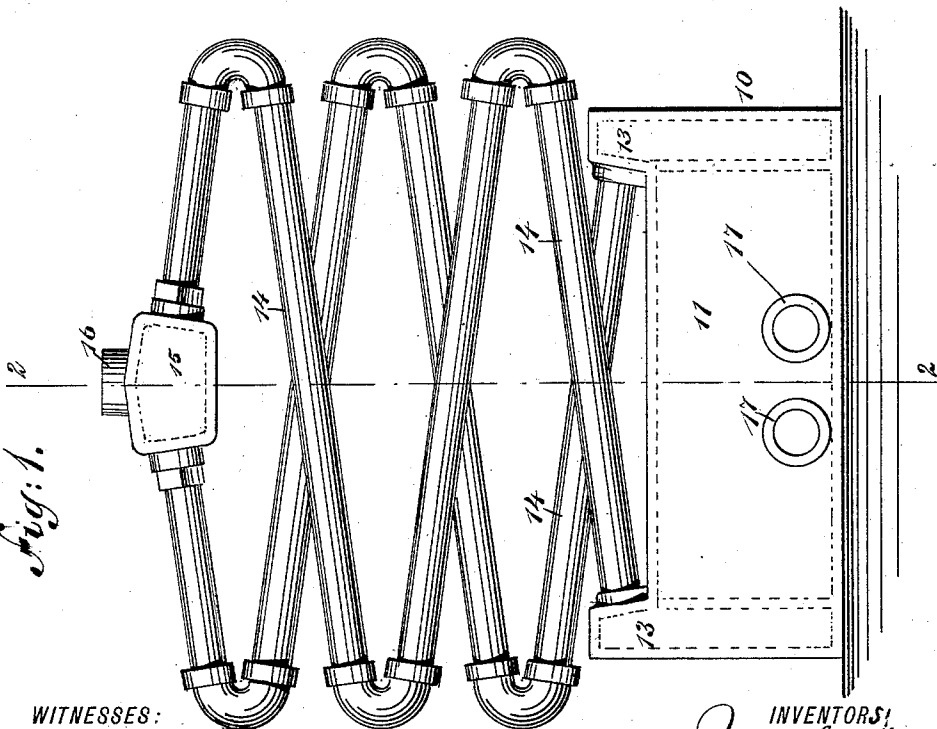


Fig. 1.



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UNITED STATES PATENT OFFICE.

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HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 466,673, dated January 5, 1892.

Application filed August 14, 1891. Serial No. 402,673. (No model.)

To all whom it may concern:

Be it known that we, JOHN Q. A. GANTT and JOHN D. BLOOMHARDT, both of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and Improved Hot-Water Heater, of which the following is a full, clear, and exact description.

Our invention relates to improvements in that class of hot-water heaters which are used for sending hot water through coils of pipes extending to different parts of a building, so as to heat the building; and the object of our invention is to produce a simple form of heater in which the fuel heat will be utilized to its greatest extent in heating water, and which is constructed in such a manner that the water in the furnace or heater-coils will be thoroughly mingled before passing to the coils running through the building, thus insuring an equal amount of heat in the various building-coils.

To this end our invention consists in a hot-water heater constructed substantially as hereinafter described and claimed.

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

Figure 1 is a side elevation of the heater with the ordinary casing removed, and Fig. 2 is a vertical cross-section of the same on the line 2 2 in Fig. 1.

The fire-box 10 of the heater is inclosed on the sides and ends, except for the fuel-opening, by double walls 11, between which is formed a water-jacket 12, so that the water in the jacket will be thoroughly heated. At the ends of the fire-box the walls jut upward, as shown at 13, thus forming convenient couplings, to which the lower ends of the pipe-coils 14 are secured. These coils are arranged above the fire-box, so as to receive the heat as it passes upward to the flue, and the pipes having a uniform pitch, so that there will be an equal resistance in each of the coils and the water will be evenly heated. The coils are composed of straight sections inclined in position and curved coupling-pieces, which are detachably applied to and connect adja-

cent ends of such sections. By this construction the coils may be cheaply manufactured, and by detaching the end couplings the straight sections may be very easily and quickly cleaned by running a flue-cleaner through them. Further, the capacity of the heater can be increased by adding to the number of coils and extending the width of the fire-box correspondingly, in order to provide space for attachment of the extra coils. Thus the capacity of the heater may be practically increased at will and at small expense. The upper ends of the coils enter a hollow head-piece 15, which is provided on top with a series of outlets 16, in which the circulation-pipes are secured in the usual way. The water-jacket 12 has openings 17 near the bottom, and the circulation-pipes are also secured in these openings to provide for the return of water.

It will be noticed that whereas six pipes enter the head-piece 15, there are only four outlets, so that the water in the head-piece will be thoroughly mingled and will pass out through the circulation-pipes, so that each pipe will be heated to the same extent as the other pipes. It is not necessary that any definite number of pipes be used in the coils 14 or that any especial number of outlets be provided in the head-piece; but it is desirable that there be more inlets than outlets to provide for the mingling of water. The coils, fire-box, and head-piece are all adapted to be inclosed in any common form of casing.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

The improved hot-water heater, composed of the double-walled fire-box 11, having the vertical end projections 13 13, the circulation-pipes 14, arranged zigzag, as shown, and the hollow head-piece 15, with which such pipes connect, as shown and described.

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Witnesses:

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