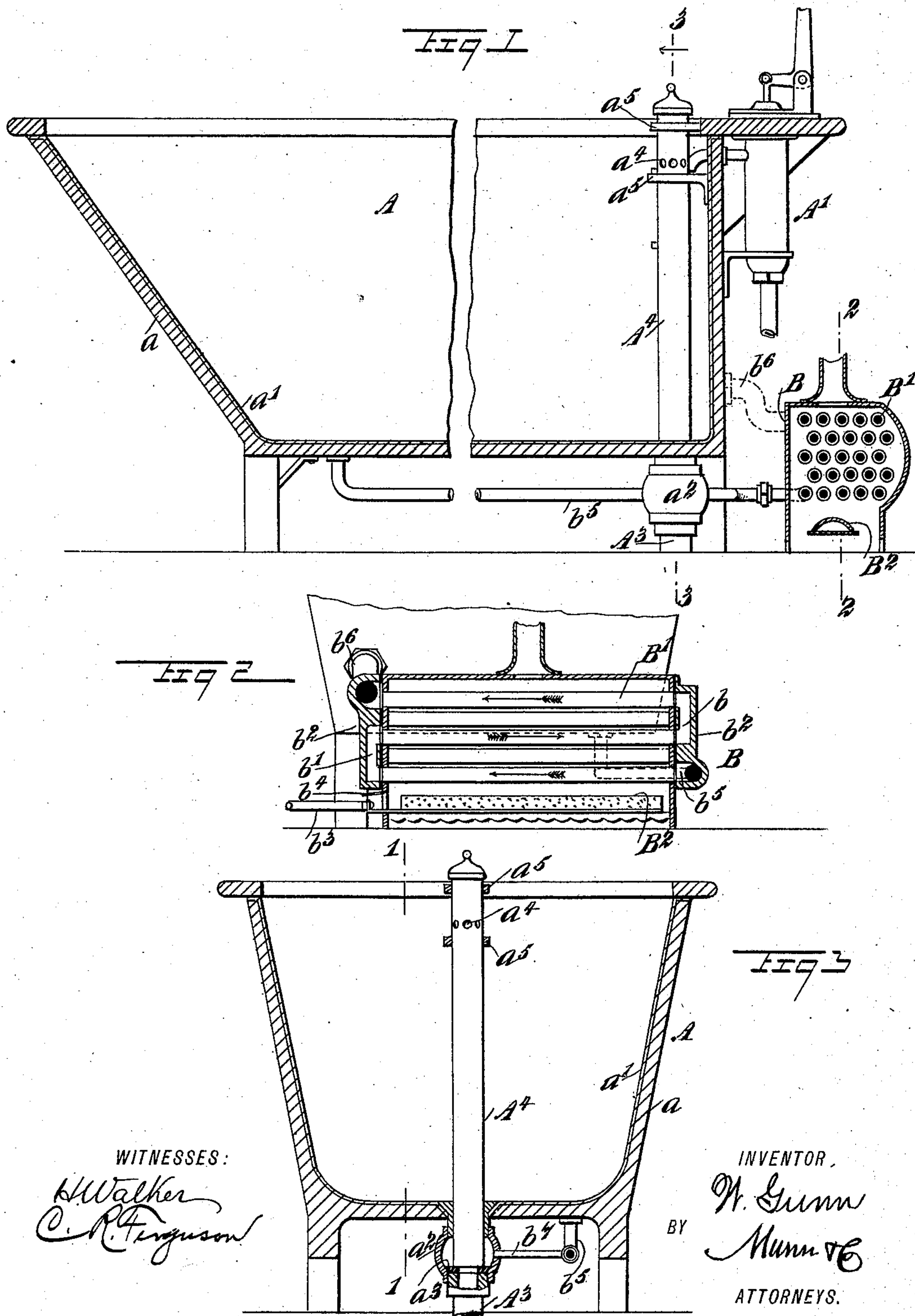


(No Model.)

W. GUNN.  
WATER HEATER FOR BATH TUBS.

No. 575,944.

Patented Jan. 26, 1897.





# UNITED STATES PATENT OFFICE.

WILLIAM GUNN, OF INDIANAPOLIS, INDIANA.

## WATER-HEATER FOR BATH-TUBS.

SPECIFICATION forming part of Letters Patent No. 575,944, dated January 26, 1897.

Application filed November 30, 1895. Serial No. 570,598. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GUNN, of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Water-Heaters for Bath-Tubs, of which the following is a full, clear, and exact description.

This invention relates to water-heaters for bath-tubs; and the object is to provide a simple and convenient device by means of which the water in a tube may be quickly heated and in which the tub serves as the heating-reservoir.

My invention consists in the construction and novel arrangement of parts as will hereinafter appear, and be particularly pointed out in the appended claims.

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 all the figures.

Figure 1 is a longitudinal section of a bath-tub on the line 1 1 of Fig. 3 and a transverse section of a heater embodying my invention. Fig. 2 is a longitudinal section of the heater on the line 2 2 of Fig. 1 and showing its connections with the tub, and Fig. 3 is a section on the line 3 3 of Fig. 1.

Referring to the drawings, A designates a bath-tub of any desired construction, but as here shown it has a wood or similar outer casing *a* and a metal lining *a'*. To a bracket at one end of the tub is connected a pump *A'* for drawing water from a well or tank and discharging it into the tub.

*A*<sup>3</sup> is a discharge-pipe having a bulb connection *a*<sup>2</sup> with the interior of the tub through its bottom. In the lower portion of the bulb is a rubber or similar gasket *a*<sup>3</sup>, upon which the end of the overflow-pipe *A*<sup>4</sup> may rest and serve as a valve or cut-off to prevent a discharge of water from the heater, as will be hereinafter explained. The overflow-pipe *A*<sup>4</sup> has openings *a*<sup>4</sup> in its upper portion for the discharge of water to prevent overflowing the tub. The pipe *A*<sup>4</sup> is movable vertically through guides *a*<sup>5</sup>, secured to the inner side of the tub, and a suitable locking device may be employed for securing the pipe in its open or closed position.

*B* indicates the heater, having a shell or casing of suitable metal and end chambers *b b'*,

the outer walls of which are formed by the removable end closures *b*<sup>2</sup>. Within the shell or casing and communicating with the chambers *b b'* is a series of water-tubes *B'*, which are straight from end to end, so that they may be easily cleaned after removing one of the end closures *b*<sup>2</sup>. Below the water-tubes and extended lengthwise of the casing is a perforated shell *B*<sup>2</sup>, forming a gas-burner and receiving gas from a supply-pipe *b*<sup>3</sup>, the tip of which terminates slightly outside an opening in the end wall of the casing in line with the open end of the burner. Above the tip of the supply-pipe *b*<sup>3</sup> is a hood *b*<sup>4</sup> for directing air to the tip to mingle with the gas.

From the bottom of the bath-tub *A* a small tube *b*<sup>5</sup> leads into the chamber *b* of the heater, and from the chamber *b'* a larger pipe *b*<sup>6</sup> leads through the end wall of the bath-tub and communicates with the interior of the tub near its bottom, and from the tube *b*<sup>5</sup> a drain-pipe *b*<sup>7</sup> leads into the bulb *a*<sup>2</sup>, as shown in Fig. 3. When the overflow-pipe *A*<sup>4</sup> is in its lowered position, with its end resting on the rubber gasket *a*<sup>3</sup>, it serves as a cut-off to prevent the outflow of water from the tube *b*<sup>5</sup>; but when said pipe *A*<sup>4</sup> is raised to allow the discharge of water from the tub, and as the tube *b*<sup>5</sup> communicates with the chamber *b* on a plane with the lowest set of water-tubes *B'*, it is obvious that all of the water will be drained from the water-tubes, thus preventing their destruction by freezing water when the heater is not in use.

In operation the cold water in the tubes will run through the tube *b*<sup>5</sup> into the heater, circulate through the water-tubes, and discharge in a heated state through the pipe *b*<sup>6</sup> into the tub. The circulation will be maintained by the hot water rising in the tub, and when sufficiently heated the gas-supply may be cut off.

As there is a very large heating-surface in the heater, it is obvious that the water may be quickly heated to any desired temperature.

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

1. The combination with a bath-tub and its waste-pipe, of a heater comprising a series of straight water-tubes communicating with water-chambers, the outer walls of which are removable, a cold-water pipe leading from the



bottom of the tub to the lower portion of the heater, a drain-pipe leading from the cold-water pipe to the waste-pipe, and a pipe leading from the upper portion of the heater to the interior of the tub, substantially as specified.

2. The combination with a bath-tub and a waste-pipe having a bulb portion, of an overflow-pipe in the tub and adapted to be moved into said bulb and serve as a cut-off or a drain for the tub, a heater comprising water-tubes, a cold-water pipe extended from the bottom of the tub to the lower portion of the heater, a drain-pipe leading from said cold-water pipe to the bulb, and a pipe leading from the upper portion of the heater to the interior of the bath-tub, substantially as specified.

3. The combination with a bath-tub, a discharge-pipe and a bulb connection between

the pipe and tub, said bulb connection having a gasket in its lower portion, a vertically-movable overflow-pipe in the tub and having its lower end resting upon the gasket in the bulb connection of the discharge-pipe, a heater having water-tubes, a pipe leading from the lower part of the heater through the bottom of the tub, a pipe leading from the upper part of the heater through the end wall of the tub, and a drain-pipe leading from the pipe entering the bottom of the tub to the bulb connection, substantially as herein shown and described.

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Witnesses:

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