

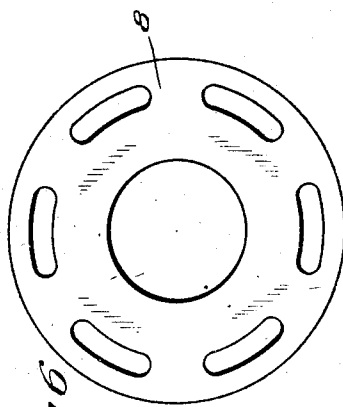
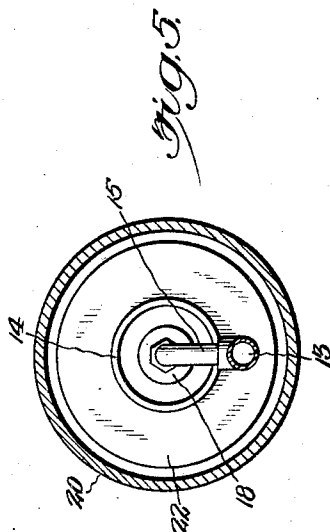
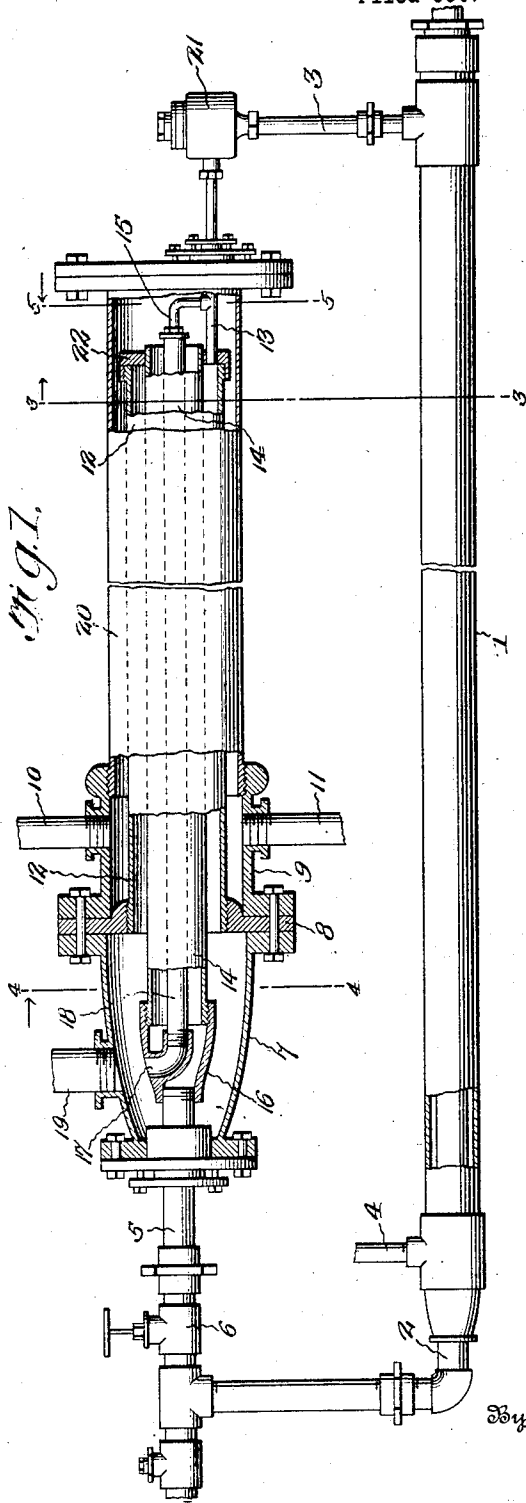
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A. L. BOLINGER
STEAM WATER HEATER

Filed Oct. 3, 1924

2 Sheets-Sheet 1



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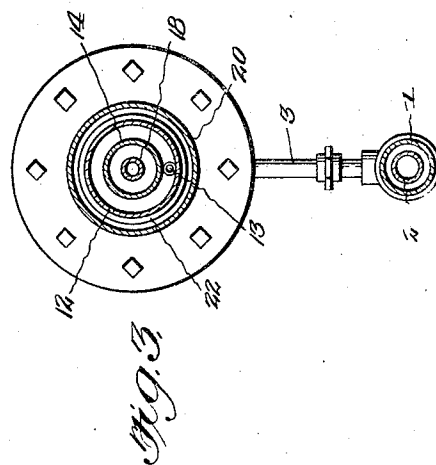
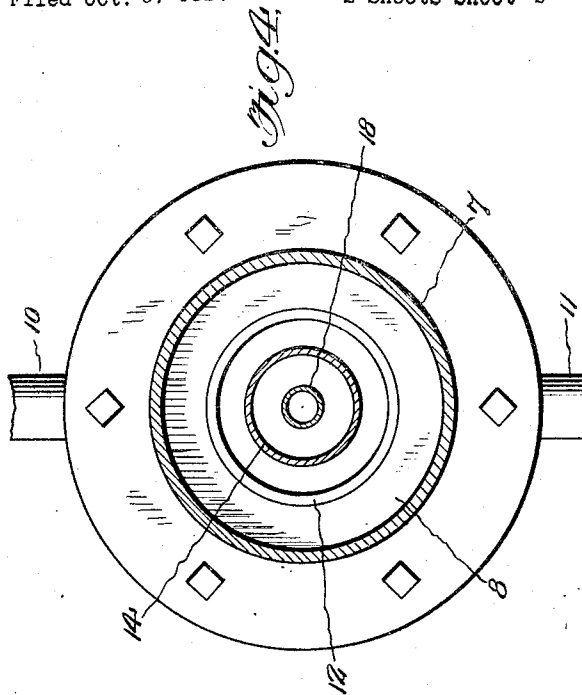
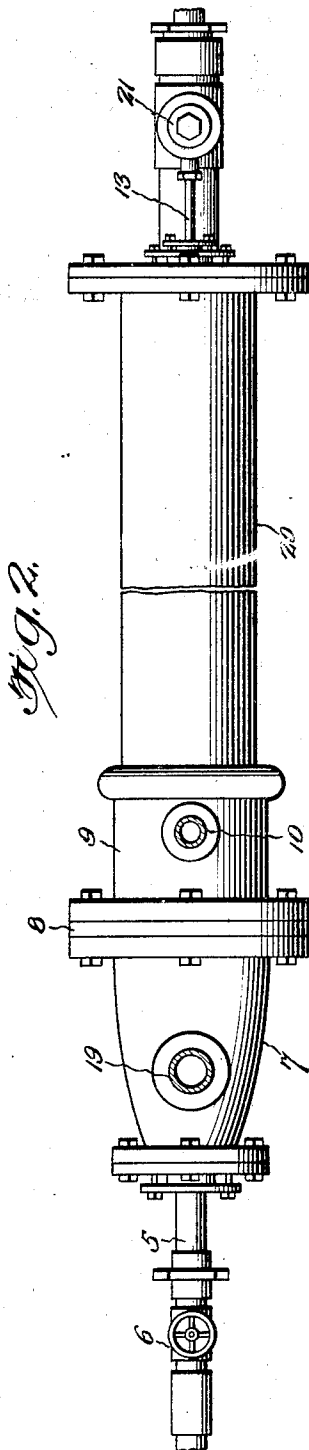
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STEAM WATER HEATER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

AMZY L. BOLINGER, OF NORTH MANCHESTER, INDIANA.

STEAM WATER HEATER.

Application filed October 3, 1924. Serial No. 741,501.

To all whom it may concern:

Be it known that AMZY L. BOLINGER, a citizen of the United States, residing at North Manchester, in the county of Wabash and State of Indiana, has invented certain new and useful Improvements in Steam Water Heaters, of which the following is a specification.

This invention relates to apparatus especially adapted to be used for heating water by employing steam and it consists in the novel features hereinafter described and claimed.

An object of the invention is to provide apparatus of the character stated which is of simple and durable structural arrangement and may be used for heating the water in a pipe line by passing the water through a steam chamber where the chill is taken off of the water. The water is then passed into a heater and a column of steam introduced into the center of the column of water and at the same time steam is caused to envelop the column of water. The water thus heated is then returned to the pipe line.

In the accompanying drawings in which like parts are designated by like reference characters throughout the several views:—

Figure 1 is a side elevation, partly in section, of a steam water heater embodying my improvements.

Figure 2 is a plan view.

Figure 3 is a vertical transverse section taken on line 3—3 of Figure 1, looking in the direction indicated by the arrow.

Figure 4 is a similar view taken on line 4—4 of Figure 1, looking in the direction indicated by the arrow.

Figure 5 is also a similar view taken on line 5—5 of Figure 1, looking in the direction indicated by the arrow, and

Figure 6 is a face view of the head flange.

As illustrated in the accompanying drawing, the apparatus for heating water comprises a condensation reducer 1 which surrounds the pipe line 2 of a water system. A condensed water pipe 3 communicates with one end portion of the jacket 1 and a pipe 4 communicates with the other end portion of the said jacket 1. One end of the pipe 2 communicates with a pipe 5 and said pipe 5 is provided with a valve 6. A head 7 is connected with the pipe 5 and a flange 8 is applied to the end of the head 7. A fitting 9 is connected with the flange 8 and is provided at one side with a hot water outlet

10 and at its opposite side with a drain outlet 11. A cylinder 12 extends longitudinally within the fitting 9 and longitudinally through casing 20; and a pipe 13 communicates with one end of the cylinder 12 and is connected with the pipe 3 hereinbefore described. One end of 12 is screwed into flange 8 and the other end is provided with a closed head 22. A pipe 14 is disposed longitudinally through the cylinder 12 and one end of the said pipe is housed within the head 7, and the other end is screwed into head 22. Between 13 and 3 is a trap 21 which empties the condensation into pipe 3 and prevents the steam from entering said pipe.

A cone shaped head 16 is located within the head 7 and the said head 16 is mounted upon the pipe 14. The head 16 is provided with a duct 17 which communicates at its inner end with a pipe 18 which is disposed longitudinally within the pipe 14 and which communicates at one end with the pipe 15 hereinbefore described. The head 7 is provided with a steam inlet 19.

In operation, steam is admitted into the head 7 through the pipe 19. This steam passes from the head 7 through the duct 17 into the pipe 18 and from the pipe 18 into the pipe 15 and pipe 13. From the pipe 13, the steam passes to trap 21 and out of trap 21 through pipe 3 as condensation into the jacket 1 which surrounds the pipe line 2.

The steam passes from the head 7 into the pipe 12 and fills the space between the inner surface of the pipe 12 and the outer surface of the pipe 14. At the same time, water is passing through the pipe 2 and this water is preheated by the condensation in the jacket 1. From the pipe 2, the water passes through the pipe 5 when the valve 6 is opened and enters the head 16 and the pipe 14. And from 14 it empties into outer casing 20 and returns around pipe 12 to fitting 9. Therefore the column of preheated water which is admitted into the heater through the pipe 5 is supplied with the central column of steam and the said column of water is surrounded by a column of steam and hence the water is effectually heated and may be drawn off from the heater through the outlet 11.

Having described the invention, what is claimed is:

A water heater comprising a line pipe, a head connected with said pipe, a steam inlet

pipe communicating with the interior of said head, a flange connected with the head, a second head located interiorly of the first-mentioned head and provided with a duct, 5 a pipe connected with the second mentioned head, a pipe connected with the duct and located within the last-mentioned pipe, a fitting connected with the flange, a steam cylinder located in the fitting and receiving both 10 of the pipes which are connected with the second mentioned head, a closed end casing surrounding the steam cylinder, means extending through the casing for conducting condensation from the pipe which is connected with the duct of the second men- 15 tioned head and from the interior of the steam cylinder, a water outlet connected with said fitting and means for separating the steam and water compartments.

In testimony whereof he affixes his signature. 20

AMZY L. BOLINGER.