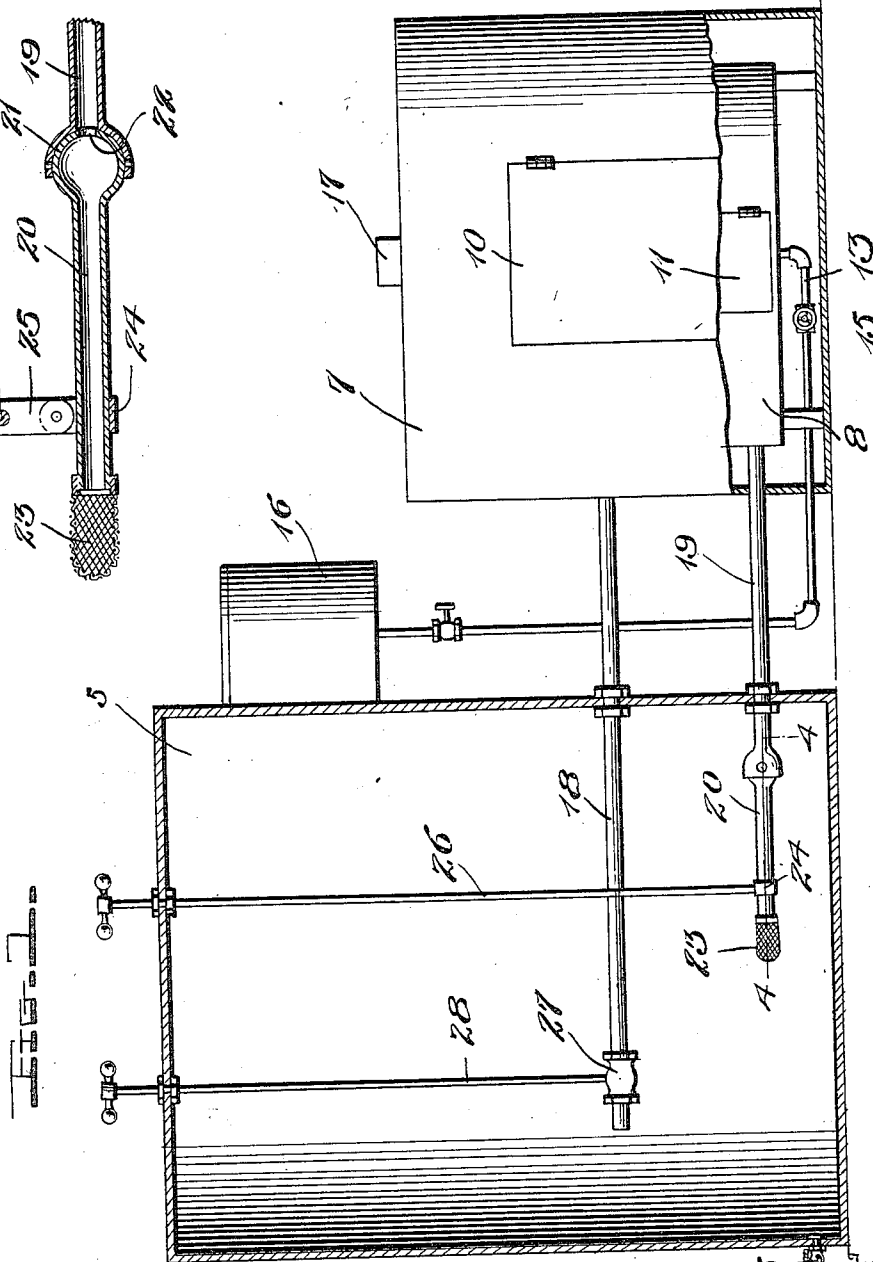


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2 SHEETS—SHEET 1.



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WATER HEATER.

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Patented Nov. 26, 1912.

2 SHEETS—SHEET 2.

1,045,545.

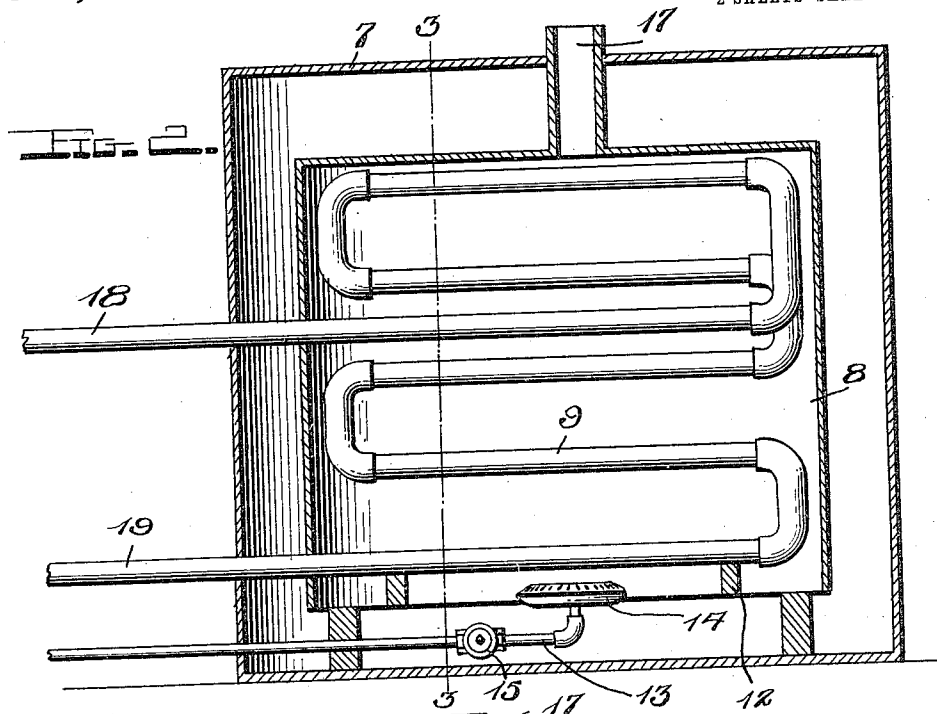
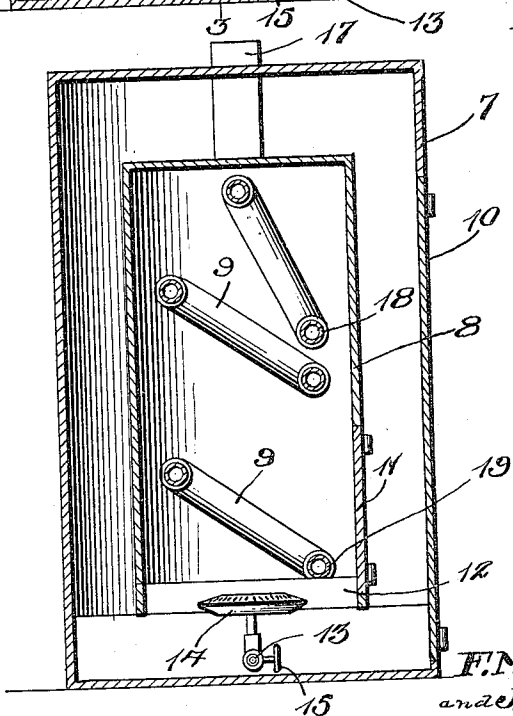


FIG. 3.



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WATER-HEATER.

1,045,545.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, FERDINAND M. GERLEMANN and JOSEPH E. KLEMMER, citizens of the United States, residing at St. Lucas, in the county of Fayette and State of Iowa, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to water heating apparatus and has for its primary object to provide simple and efficient means whereby a large quantity of water may be quickly heated with a minimum consumption of fuel.

Another and more specific object of the invention is to provide a pipe coil having its ends disposed in the water tank a casing for the coil of the pipe and a burner arranged beneath said coil, and means for regulating the flow of the water into the pipe through said coil.

A still further object of the invention is to provide a water heating apparatus wherein a constantly circulating flow of water is maintained, said apparatus including a pipe coil, a movable jointed section at the entrance to the pipe to open or close said entrance, and means for adjusting said movable pipe section.

With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which—

Figure 1 is a side elevation of an apparatus embodying the present invention, the water tank being shown in section; Fig. 2 is a longitudinal section of the housing and tank for the pipe coil; Fig. 3 is a section taken on the line 3—3 of Fig. 2; and Fig. 4 is an enlarged detail section taken on the line 4—4 of Fig. 1.

Corresponding and like parts are referred to in the following description and designated in the accompanying drawing by like reference characters.

Referring in detail to the drawing, 5 designates a water tank of any desired capacity. This tank is provided adjacent its bottom with a draw off cock 6. Adjacent to the

tank 5 a housing 7 is arranged in which the casing 8 for the pipe coil 9 is disposed. The housing 7 is provided with a door 10 and the casing 8 is also provided with a door 11 to permit access thereto, whereby repairs may be made to the pipe coil. This coil is supported within the casing 8 upon the base members or blocks 12. The bottom of the housing 7 and case 8 is provided with an opening to receive the end of a fuel supply pipe 13. A burner 14 of any approved construction is secured to the end of said pipe beneath the pipe coil 9 and a valve 15 is arranged in the pipe whereby the supply of gasoline or other fuel to the burner may be regulated. The supply pipe 13 is connected at its other end to a reservoir 16 which may be mounted or supported in any preferred manner. The top of the casing 8 is provided with a short length of pipe 17 the upper end of which is disposed through an opening in the burning fuel. It will be observed that the casing 8 closely surrounds the pipe coil 9 so that a high degree of heat is maintained within said casing.

The ends of the pipe coil 9 are extended through the casing 8 and housing 9 and into the water tank 5 through one of the side walls thereof. The end 18 of this pipe coil extends almost to the opposite side of the tank while the other end 19 thereof terminates a short distance from the casing wall. Upon this latter end of the pipe a movable entrance pipe section 20 is disposed, said pipe section being connected to the end of the pipe 19 by means of the common ball and socket joint indicated at 21, the ball of said joint being provided with an opening 22 to coincide with the bore of the pipe 19, thereby permitting the flow of water from the pipe section 20 into the pipe 19 and through the coil 9 thereof. Upon the open end of the pipe section 20 a strainer 23 of any suitable material is arranged to prevent the entrance of sedimentary matter into the pipe coil. A metal band 24 is fixed upon the pipe section 20 and to this band a laterally extending plate 25 is pivotally connected at one of its ends. In the other end of this plate the lower end of an adjusting rod 26 is threaded. The other end of this rod is rotatably mounted in the top wall of the tank 5 and is provided in its upper end with a suitable hand wheel as shown. It will be obvious that by rotating the rod 26, the pipe

section 20 is swung vertically so that the opening 22 in the end of said pipe section may be disposed with relation to the bore of the pipe and the flow of water therethrough thus regulated. When the pipe section 20 is in a horizontal position in alinement with the end portion 19 of the pipe coil, the entrance to the pipe 19 is opened to its full extent. By adjusting the pipe section 20, to raise the same, this entrance to the pipe coil is gradually closed so that the volume of water flowing into the same is reduced until it is entirely shut off. The end 18 of the pipe coil within the water tank is provided with a valve 27 which is adapted to be opened and closed by means of the rod or stem 28. In the operation of the apparatus, the water flows from the tank 5 through the pipe section 20 into the pipe coil 9 where the same is highly heated and flows through the end 18 of the pipe back to the tank. Thus a constantly circulating flow of the water between the coil and the tank will be maintained so that the water becomes heated to a high degree. Owing to the simplicity of our improved apparatus it will be seen that the same can be manufactured at comparatively small cost, and it is also extremely durable, reliable and efficient in practical use. While we have shown and described the preferred construction and arrangement of the various parts, it will be obvious that the invention is susceptible of considerable modification without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed is:

1. The combination with a water tank, of a casing, a pipe coil arranged within said casing and having its ends extended through the wall thereof and through one side of said tank, a valve on one end of said pipe within the tank, an intake pipe section pivotally mounted upon the other end of the pipe coil

within the said tank, means operable exteriorly of the tank to adjust said pipe section and vary the supply of water from the tank to the pipe coil, and additional means also operable from the exterior of the tank to open and close said valve.

2. The combination with a water tank, of a casing, a pipe coil therein having its ends extended through the wall of said casing and through one side of the tank, a burner arranged in said casing beneath the pipe coil, fuel supply means for said burner, a vertically movable pipe section having a valve opening in one end mounted upon one end of the coiled pipe within the tank, a laterally extending plate pivotally mounted upon the other end of said pipe section, and a rod threaded in said plate to move said pipe section vertically and dispose the opening thereof with relation to the bore of the coiled pipe to vary the volume of water to be supplied to the coil.

3. The combination with a water tank, of a housing, a casing arranged in said housing, a coiled pipe arranged in the casing having its end extended through the wall thereof and through the housing and disposed through one side of the water tank, a fuel supply pipe extending through the bottom of said housing and casing, a burner thereon disposed beneath the pipe coil, a valve in one end of the coiled pipe within the tank, a vertically adjustable entrance pipe section having a valved connection to the other end of the coiled pipe, and means for adjusting said pipe section vertically to regulate the volume of water supplied to the pipe coil.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

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Witnesses:

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