Aug. 4, 1931. H. R. STUCKWISCH 1,817,214

WATER HEATER

Filed June 19, 1926

FIG. 1

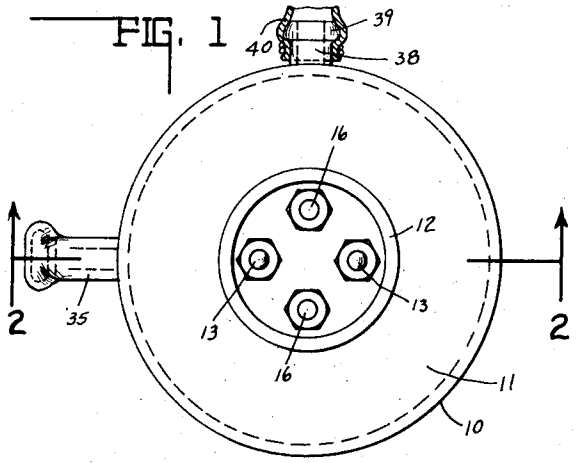


FIG. 2

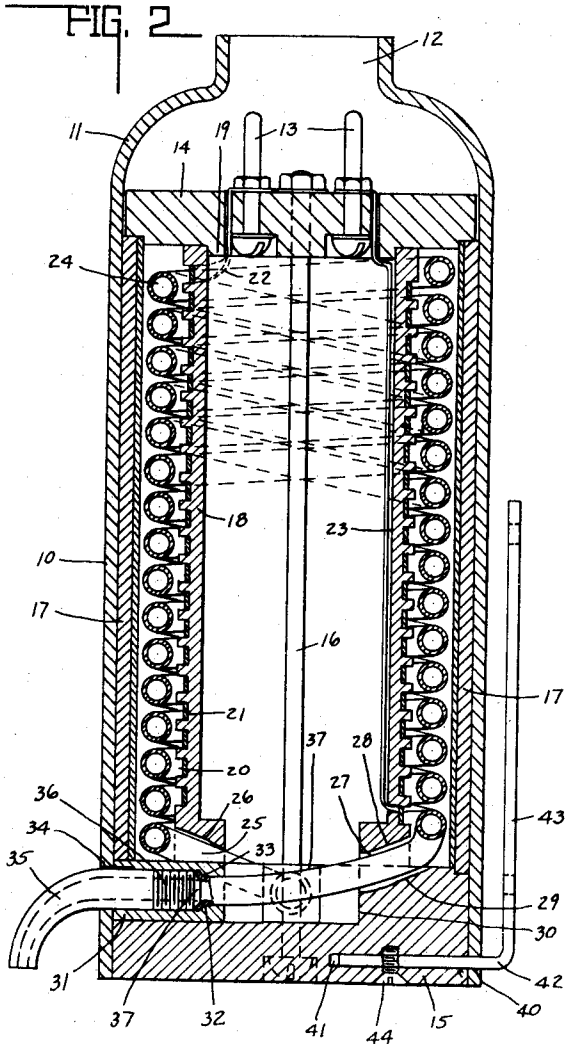
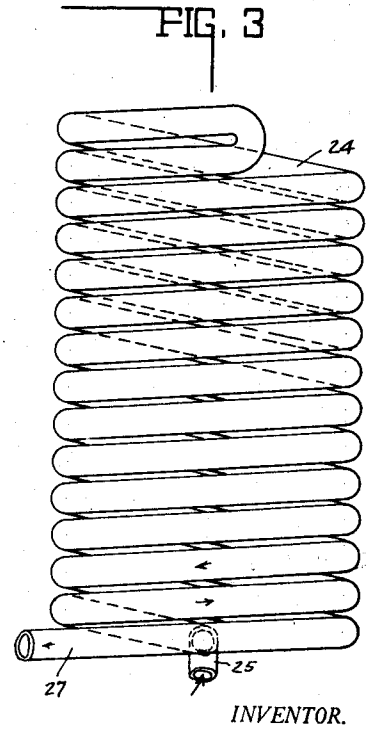


FIG. 3



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WATER HEATER

Application filed June 19, 1926. Serial No. 117,019.

This invention relates to an electric liquid heater.

The chief object of the invention is to heat water in a relatively short time and substantially only that amount of water required, in other words, to form an instantaneous water heater.

The chief feature of the invention consists in the arrangement of the heating element and the water coil whereby the water is heated substantially as required and no more, and such heating effect is obtained by the water piping being arranged in multiple thread relation permitting the intake and outlet to be at the bottom.

Other features of the invention consist in the simplified arrangement of the several parts such as may be hereinafter pointed out.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

In the drawings Fig. 1 is a top plan view of the invention. Fig. 2 is a central sectional view taken on line 2—2 of Fig. 1 and in the direction of the arrows. Fig. 3 is an elevational view of the water heating coil.

In the drawings 10 indicates a tubular metallic casing having a reduced head portion 11 provided with a mouth 12 adapted to receive an electrical plug for connecting the heater contained within said tubular casing to a suitable source of electrical energy by means of the two terminals 13 supported by the insulation cover plate 14 which may be fibre, composition or porcelain. Oppositely positioned with respect thereto is a base plate 15 and connecting the same together in spaced and clamping relation are a plurality of bolts 16. A suitable heat insulating tube 17 is positioned within the tubular shell and maintains the two bases in said spaced relation. Concentric within the same and also maintained in said clamped relation, is a supporting tubular member of insulation of the aforesaid character or otherwise and indicated by the numeral 18. The lower end of the tube not only has a clamping relation with cover plate 14 but is receivable by the central positioning portion 19. The exterior surface of the tubular insulation support 18 is preferably grooved with a spiral groove 20 and mounted in the root of said groove is a heating element 21 connected by the portions 22 and 23 to the terminals 13. The resultant construction is an annular elongated chamber heat insulated from the atmosphere enclosing element 21.

Mounted within said chamber and concentric with the tubular insulation 18 and the other tubular members is a water heating coil 24 which has a multiple thread. The resultant multiple helix has a connection 25 passing through the slot 26 in the tubular insulation member 18 and a discharge portion 27 similarly mounted in the slot 28 also formed in the insulation member 18 and at the base thereof.

The base 15 is recessed as at 29 and 30 and the extension 27 passes into the recess of the base and is receivable by and anchored to a metallic member 31 by having a flared portion 32 engaging a reduced portion or seat 33. The tubular shell or casing 10 is apertured as at 34 and rotatably mounted therein is the spout 35 constituting the discharge, said spout having a threaded connection 36 with the threaded interior of the connecting member 31 and terminating in a conical portion 37 which, by reason of its engagement with the flared portion 32, maintains all of the parts in rigid and water tight relation.

The intake 25 is similarly mounted in a block or member 37 and the exterior connection 38 is similarly associated with the block and the flared end of pipe 25. The exposed end of the intake member 38 is suitably formed as at 39 to receive a connection 40 supplying water to the heater.

The shell 10 is apertured at 40 and the base 15 is also recessed at 41, said aperture and recess registering and receiving the member 42 having an angular portion 43 constituting an anchoring bracket which is secured to said base by a suitable member such as the screw bolt 44. Thus, the base is anchored to the shell and the cover and tubular parts are clampingly mounted upon said base. The entire construction, therefore, is rigidly associated together through said base.

The multiple helix provides that the intake

and outlet are at the same end of the heater, thereby insuring additional exposure of the water to the heating action of the heating element by said water entering at the bottom and following a spiral path to the top of the heater and then returning by way of a spiral path parallel to the first mentioned path and discharging from the bottom of the heater. The water in the coils thus flows in opposite directions through adjacent coils. The arrangement is such that the water is very quickly heated and in amounts only substantially as required for use. The central channel within tube 18 may be filled with asbestos, glass wool, or left unfilled as desired. The heater may be used for liquids other than water.

The invention claimed is:

In a water heater, the combination of a pair of supporting plates, a plurality of concentric walls forming a tubular channel therebetween and closed at opposite ends by said plates, heating means mounted within the channel and on one of said walls with connections extending outwardly from the heater through one of said plates, a liquid heating multiple thread single layer helix in the same tubular channel and having an intake and outlet supported by the other plate, and means securing said plates and walls together.

In witness whereof, I have hereunto affixed my signature.

HENRY R. STUCKWISCH.