P. MISPEL.

ELECTRIC WATER HEATER.

APPLICATION FILED FEB. 9, 1918.

1,281,051.

Patented Oct. 8, 1918.

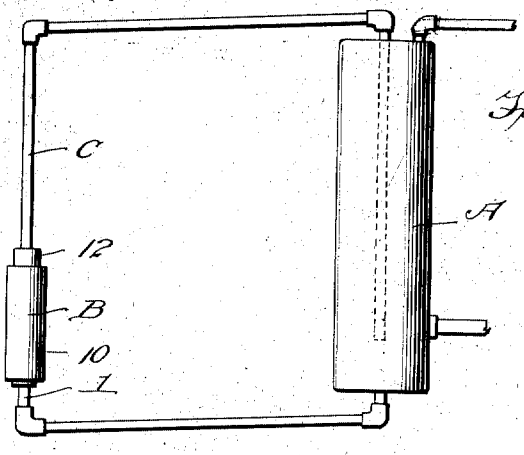


Fig. 1.

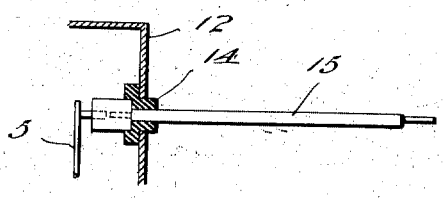


Fig. 4.

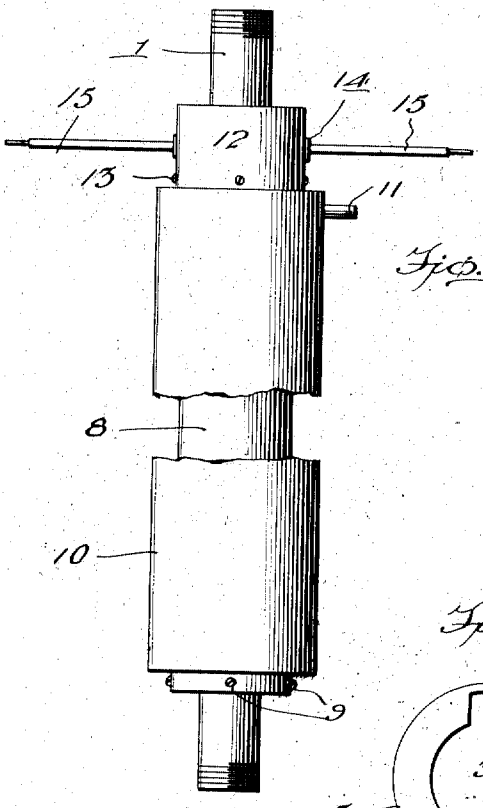


Fig. 3.

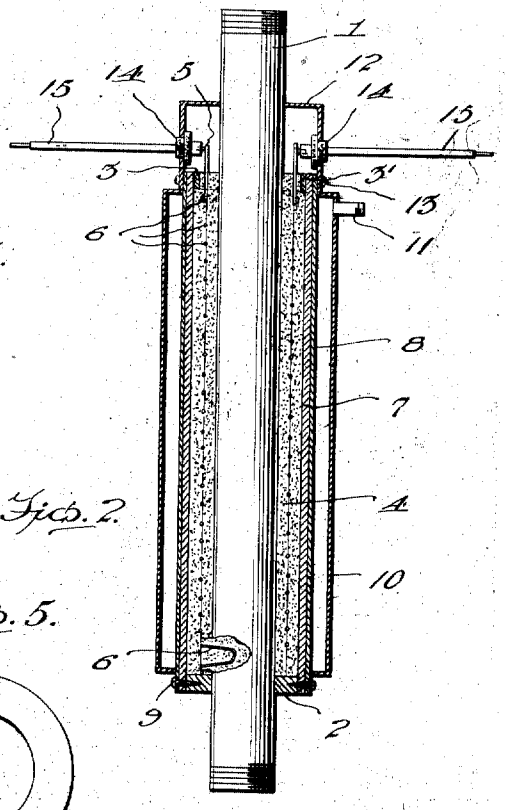
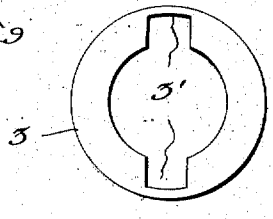


Fig. 2.

Fig. 5.



WITNESSES

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ELECTRIC WATER-HEATER.

1,281,051. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed February 9, 1918. Serial No. 216,294.

To all whom it may concern:

Be it known that I, PAUL MISPEL, a citizen of the United States, residing at New Lenox, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Electric Water-Heaters, of which the following is a specification.

This invention relates to new and useful improvements in electric water heaters and the principal object of the invention is to provide an efficient arrangement of parts for preventing the short-circuiting of the electric current and to prevent the loss of heat from the device.

Another object of the invention is to provide a device of this character which is simple and durable in construction, reliable and efficient in operation and one which can be manufactured and placed upon the market at a minimum cost.

The invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation of the heater in use.

Fig. 2 is a longitudinal section through the heater.

Fig. 3 is an enlarged elevation with parts broken away through the heater.

Fig. 4 is a detail sectional view through the end cover and showing the socket through which the terminal passes.

Fig. 5 is a plan view of the recessed collar.

As shown in these views the boiler is shown at A and the heater at B. C indicates the pipes connecting the heater with the boiler. The heater consists of the pipe 1 which is adapted to be connected with the pipes C and through which the water to be heated passes. This pipe is provided with a collar 2 and a collar 3 which is provided with diametrically opposite recesses 3′. The portion of the pipe between the collars is provided with suitable insulating material such as powdered soap-stone formed into a paste and baked on the pipe as shown at 4. The wire 6 is then coiled on this material and the terminals 5 of said wire project through the recesses 3′. As shown in the drawing the wire is coiled around the insulating material, beginning at the upper end of the device and at the lower end the wire is looped and coiled in the opposite direction back to the upper end of the device. Care must be taken that the terminals 5 do not come in contact with the collar 3 and the recesses 3′ are filled with the powdered soap-stone. The wire coil is then covered with another layer of powdered soap-stone and this layer is to entirely fill the space between the collars so that its outer surface will be flush with said collars. A tube 7 is then placed on the collars and this tube is to have a tight fit thereon so as to entirely surround the insulating material and said collars. A brass tube 8 is then placed around said pipe 7 and secured thereto by the screws 9. 10 represents a second tube of larger diameter than the tube 8 and having its ends turned inwardly to engage said tube and these ends are secured to the tube 8 to form an air tight connection therewith. A nipple 11 is left on the tube 10 to receive an air pump for removing the air from the space between the tubes. As soon as the air is removed this nipple is then closed in any suitable manner. 12 indicates a cover for one end of the heater which is secured to the end of the tube 8 by the screws 13. The sides of this cover are provided with the insulated sockets 14 through which pass the conductors 15 which are connected with the terminals 5.

It will thus be seen that the coils are well insulated from the inner water tube 1 and the surrounding tube 7 and heat is prevented from escaping from the heater by means of the two copper tubes forming a vacuum between them.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make slight changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

An electric heater comprising a section of water pipe, a pair of collars thereon, one of said collars having recesses therein, a coil

located between the collars and having its ends projecting through said recesses, insulating material filling the space between the collars and surrounding the coils, a pipe engaging with said collars and surrounding the insulating material, a pair of brass tubes forming a vacuum space and surrounding said last mentioned pipe, a cover connected with one end of said brass tubes and having sockets therein, and conductor members secured to the projecting ends of the coil and passing through said sockets.

In testimony whereof I affix my signature.

PAUL MISPEL.