No. 641,657. Patented Jan. 16, 1900.

W. G. TAYLOR.

WATER HEATER ATTACHMENT.

(Application filed Oct. 6, 1899.)

(No Model.)

Fig. 1.

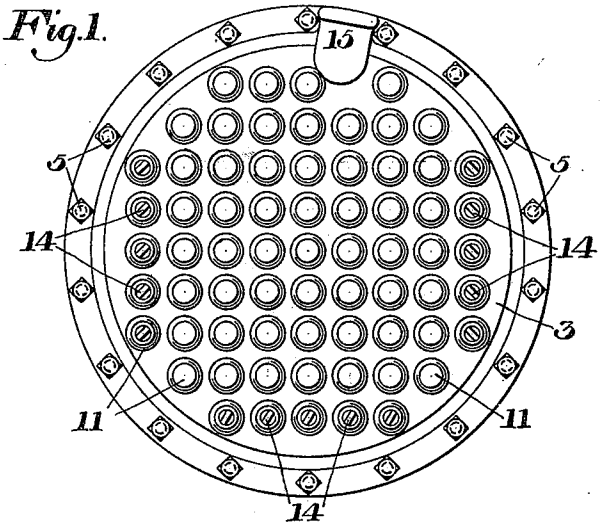


Fig. 2.

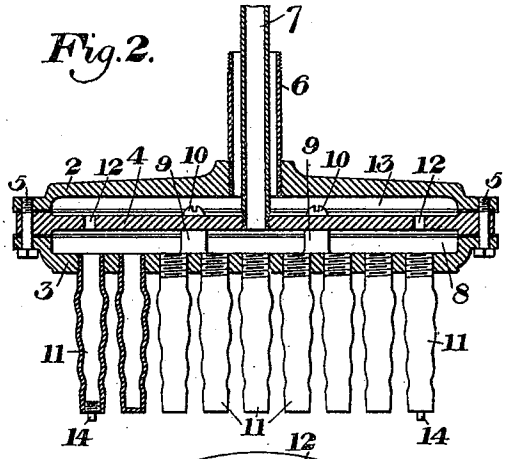
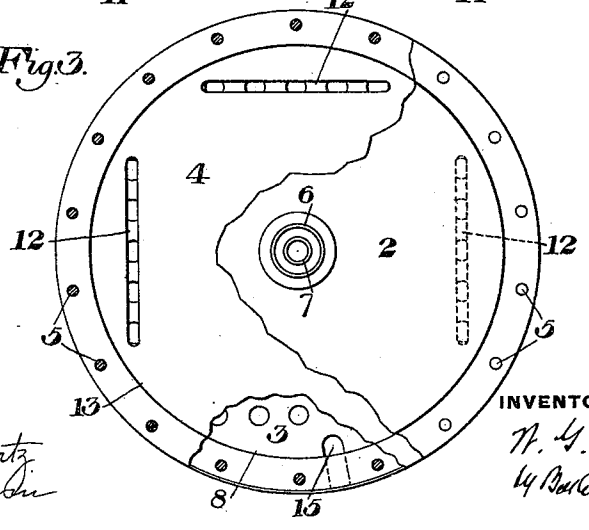


Fig. 3.



WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM G. TAYLOR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE TAYLOR BURNER AND ELECTRO-PLATING COMPANY, LIMITED, OF SAME PLACE.

WATER-HEATER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 641,657, dated January 16, 1900.

Application filed October 6, 1899. Serial No. 732,779. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. TAYLOR, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Water-Heater Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a bottom plan view of my improved device. Fig. 2 is a vertical cross-section, and Fig. 3 is a top plan view with the cap removed and partly broken away.

My invention relates to water-heaters, and is designed to provide a heating attachment which may be applied to ordinary boilers and which will greatly improve their action and may be cheaply and easily made and applied. More specifically it relates to the type of heater set forth in United States Patent No. 606,126, granted to M. G. Cunningham, dated June 21, 1898, it constituting an improvement upon the attachment shown in such patent.

In the drawings, 2 represents an upper head, and 3 a lower head, having clamped between them a separating-diaphragm 4, the parts being secured together by suitable screw-bolts 5. Into the upper head is screwed a short tube-section 6, the upper end of which may be screwed into the lower head of an ordinary domestic boiler, and within the tube-section 6 is a circulating-tube 7, which is screwed into the center of the diaphragm 4 and opens into the chamber 8 formed between it and the lower head. This tube 7 projects upwardly within the boiler, the heated water passing up through it.

The diaphragm 4 is supported and held in place by projecting lugs 9, cast integral with the lower head and secured to the diaphragm by screws 10. Into the lower head are screwed a series of drop-tubes 11, which constitute the primary heating-surface for the gas-burner, which is located beneath them. These tubes are preferably cast and are of a peculiar shape, being provided with bulb-shaped portions, which are gradually enlarged from the lower toward the upper end, giving a sinuous surface. This is an important feature of my invention, as I have found by actual trial that this shape gives a greater efficiency in heating, the tube receiving heat uniformly in all its portions instead of mainly at its lower end portion, and I intend to cover the same broadly in my claims.

In the partition 4 are provided slots 12, through which the cold water entering the upper chamber 13 through the tube-section 6 passes into the chamber 8, and thence into the drop-tubes, and the drop-tubes immediately beneath these slots are preferably provided at their lower end with screw-plugs 14, forming a removable closure therefor, so that these tubes may be easily cleaned.

15 is the hot-water outlet for instantaneous action when desired, this outlet leading from the lower chamber 8.

The advantages of my invention result from the use of the plain drop-tubes without inner circulating-tubes, from the peculiar shape of these tubes, and from the arrangement of the partition or diaphragm relatively thereto, as the apparatus is thus greatly simplified and its action improved.

Many changes may be made in the shape and size of the attachment and its parts without departing from my invention.

I claim—

1. A heater attachment having an upper and lower chamber, drop-tubes depending from the lower chamber, and openings directly connecting the two chambers, substantially as described.

2. A heater attachment having an upper and a lower chamber, drop-tubes depending from the lower chamber and being enlarged upwardly from their lower ends, and openings directly connecting the two chambers; substantially as described.

3. A heater attachment, having drop-tubes, gradually enlarged upwardly from their lower ends and having a substantially sinuous surface, substantially as described.

4. A heater attachment having an upper and lower chamber with a slotted partition between them, and drop-tubes secured to the

lower chamber, at least a portion of the tubes having removable closures, substantially as described.

5. A heater attachment, having an upper and lower chamber separated by a slotted partition, a tube-section screwed into the upper head and arranged to be secured to the lower end of a boiler, an inner circulating-tube connected to the partition and opening into the lower chamber and a series of drop-tubes secured to the lower head, substantially as described.

In testimony whereof I have hereunto set my hand.

W. G. TAYLOR.

Witnesses:
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