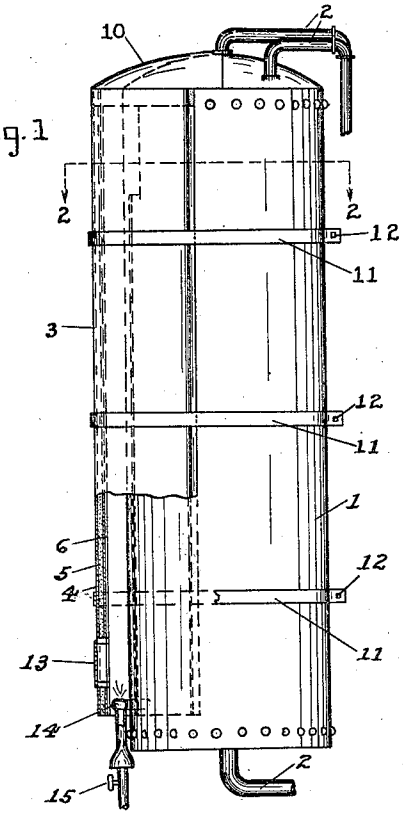
Apr. 24, 1923. 1,452,676

C. E. COLE

HOT WATER TANK HEATER

Filed June 4, 1921

Fig. 1



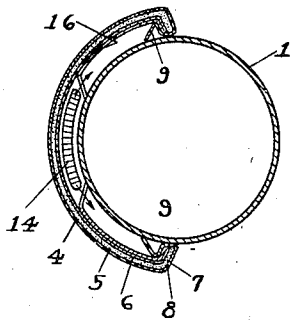
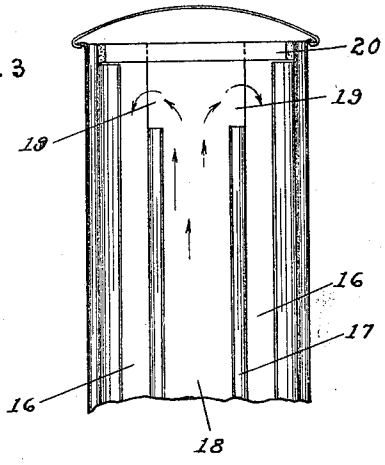


Fig. 2

Fig. 3



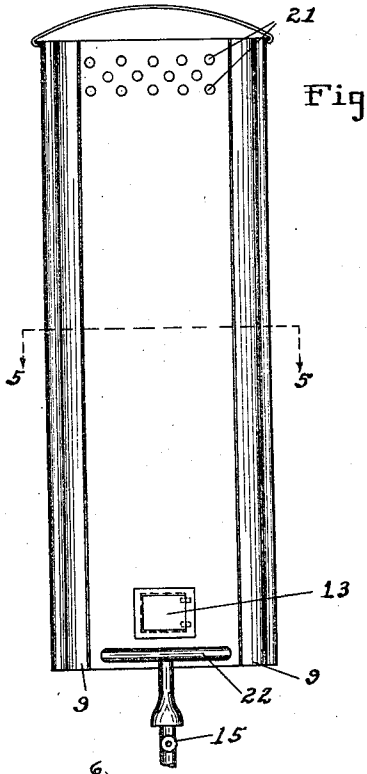
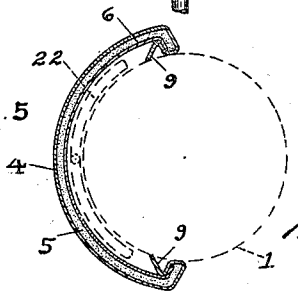


Fig. 4

Fig. 5



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Patented Apr. 24, 1923. 1,452,676

UNITED STATES PATENT OFFICE.

CLIFFORD E. COLE, OF BIRMINGHAM, ALABAMA.

HOT-WATER-TANK HEATER.

Application filed June 4, 1921. Serial No. 474,972.

To all whom it may concern:

Be it known that I, CLIFFORD E. COLE, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Hot-Water-Tank Heaters, of which the following is a specification.

This invention relates to a gas burning water heater and is more particularly designed as an attachment for hot water boilers to the end that the water may be heated therein most efficiently and without requiring any change in the water connections.

More particularly my invention relates to a jacket adapted to partly surround and preferably to overhang the top of any standard kitchen boiler, having suitable means for attaching it in place on the boiler and having a bottom gas burner which discharges the products of combustion into the restricted arcuate flue provided between the heater and boiler.

One distinctive feature of my invention is to provide such a jacket with means along its vertical side edges to prevent the escape of the flames or products of combustion, this being accomplished by a draft pocket formed between each side edge of the jacket and the boiler.

A further object is to provide the jacket with means for creating a reverse circulation of the heated products therein to better insure the efficient transfer of heat therefrom into the water in the boiler.

The advantages of my heater are that I obtain many times the heating surface available in the ordinary coil tank heater and by reason of the long upward circulation in the arcuate flue my heater will consume less gas. As the jacket is insulated and covers a substantial portion of the boiler it will act effectively to keep the water therein hot for a long time. The jacket heater is of pleasing appearance, has no exposed fittings, requires less room than the ordinary heater, is much less expensive to install as no water connections need to be changed, and it can be readily removed and replaced without skilled labor.

These and other advantages of my invention will be better understood by reference to the accompanying drawings which illustrate the heater attachment in its preferred embodiments only, and in which:—

Fig. 1 is a side elevation of a standard kitchen hot water boiler with one form of my invention applied thereto and shown partly in elevation and partly in section.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a partial inside elevation of the heater attachment shown in Fig. 1.

Fig. 4 is an inside elevation of my preferred type of heater attachment.

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 4.

Similar reference numerals refer to similar parts throughout the drawings.

In the embodiment of my invention illustrated in Figs. 1 to 3, a typical kitchen boiler 1 is shown with standard water connections 2. My heater attachment will be made to fit the various standard sizes of boilers and comprises a concavo-convex jacket 3 formed by an outer sheet metal plate 4 and an inner sheet metal plate 6 and an interposed layer of asbestos or like insulation 5. The plate 4 has its side edges bent in sharply at 7 past the inturned edge 8 of the sheets 5 and 6 and is then bent under them and then outwardly and again inwardly to form a V-shaped anti-leak pocket or flue 9 extending the full length of each side wall of the casing from bottom to top thereof and interposed between the heater flue for the products of combustion and the joints formed between the side edges of the jacket and the boiler. The attachment has an arched top plate 10 which fits over the adjacent half section of the boiler top and serves to close the top of the flue and in part to support the attachment which is held in position by a series of straps 11 which are attached to the jacket 3 and have their free ends clamped about the boiler by screw bolts 12. I provide a door 13 near the bottom of the jacket and in convenient position to give access to light the gas burner 14 which is of a Bunsen type controlled by a cock 15.

In the design shown in Figs. 1 to 3, the inside concave face of the attachment has two vertical side plates 16 mounted in position therein by having their outer ends outturned and clamped between the jacket and the flue walls 9, while the inner edges of these plates are bent inwardly as at 17 to yieldingly engage the wall of the boiler and thus form between them a central flue 18 which extends from the bottom above the burner to a point near the top of the jacket

where these walls 17 are interrupted to leave the lateral vents 19 by means of which the products of combustion rising from the burner 14 through the center flue 18 will pass over and down on each side of flue 18 and escape at the bottom of the jacket. An asbestos pad 20 is interposed across the top of the inner face of the jacket to prevent the escape of the products under the top 10.

In the preferred design shown in Figs. 4 and 5, the plates 16 and flue walls 17 are omitted and a series of vent holes 21 are provided at the top of the jacket. Here the burner 22 is made wider to practically subtend the arc between the anti-leak flues 9.

This invention is not intended to be restricted in scope to the specific embodiments shown, but contemplates such modifications as come within the spirit and scope of the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is: —

1. A heating attachment for hot water boilers, comprising a concavo-convex jacket, means to attach said jacket to the side of a hot water boiler, flame leak prevention pockets extending along the vertical side edges of said jacket, and a gas burner to deliver products of combustion into the flue space between the jacket and boiler.

2. The combination with a hot water boiler, of an insulated heating jacket substantially co-extensive in length with the boiler and adapted to subtend a substantial arc thereof, the jacket being shaped to form between it and the boiler an arcuate flue closed overhead and open at its lower end, vertical internal baffles to form a central and two lateral flues connecting overhead, means to attach the jacket to the boiler, means to admit products of combustion to said central flue only, and means to prevent the escape of said products through the joints between the side edges of the jacket and the boiler as they flow downwardly in said outer flues.

3. A heater attachment for hot water boilers, comprising a concavo-convex metallic jacket lined with suitable insulating material and having along each side edge an internal V-shaped flange adapted with the boiler which it engages to form a vertical internal flue for preventing the lateral leakage of flames, and a burner for delivering products of combustion into the flue space between the boiler and jacket.

In testimony whereof I affix my signature.

CLIFFORD E. COLE.

Witness:
NOMIE WELSH.