UNIVERS STATES PATENT OFFICE

JOSEPH A. SMITH AND EARL J. HANSEN, OF CLEVELAND, OHIO, ASSIGNS TO THE CLEVELAND HEATER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO

ADJUSTABLE AND DETACHABLE GAS BURNER

Application filed April 21, 1928. Serial No. 271,761.

This invention relates to gas burning appliances and in particular the burner assembly and securement means therefor.

In the assembly and installation of water heaters, considerable difficulty is often encountered in getting the various parts of the heater lined up for connecting the gas and water pipes. The gas connections usually cause most of the difficulty encountered, particularly where the burner of the heater is connected to a thermostat which is located in the tank of a storage automatic water heater.

Water heater bases have been proposed in which the base is adapted to make a swivel connection with the heater jacket so that upon loosening of the attachment bolts the heater base may be swung about its axis.

One of the objects of this invention is to provide in a gas burning appliance having a horizontal Bunsen tube, adjusting means whereby the Bunsen tube may be positioned to point in any direction of the plane of its axis.

Another object of this invention is to provide a gas burner assembly that may be readily attached or removed from the appliance with which it is used.

Another object of this invention is to provide a gas burner assembly that may be readily attached or removed from the appliance with which it is used.

Another object of this invention is to provide an adjustable Bunsen tube that may be readily and easily locked in the desired position.

Another object of this invention is to provide an improved base and burner assembly that is inexpensive and easily manufactured and which may be readily installed on gas burning water heaters.

A further object of this invention is to provide an improved burner assembly that may be used as a replacement unit for water heaters which were not originally built with our improved gas burner.

With the above mentioned and other objects in view, the invention consists in the novel construction, arrangement and combination of parts, hereinafter described, illustrated in some of its embodiments in the accompanying drawings and particularly pointed out in the appended claims.

One of the advantages of this burner assembly is that it eliminates a great deal of expensive pipe fitting in the installation of the appliance, as the Bunsen tube of the burner may be readily swung about the heater base and into alignment with the gas supply pipe. Where our improved burner is used in connection with storage automatic water heaters, it greatly facilitates the assembly of these units as the Bunsen tube of the gas burner can be quickly and easily shifted in order to line up the gas line leading from the tank thermostat.

A further advantage of the above arrangement is that it facilitates the removal and replacement of the main burner for cleaning and other purposes.

Referring to the drawings: Fig. 1 is a perspective view illustrating a side arm gas fired tank heater of the conventional design. Fig. 2 is a plan elevational view of our improved burner base. Fig. 3 is a section taken on line 2—3 Fig. 2. Fig. 4 is a plan elevational view of the Bunsen tube locking member. Fig. 5 is a section taken on line 5—5 Fig. 4. Fig. 6 is a modified form of Bunsen tube.

The heater shown in Fig. 1 illustrates the conventional storage water heating system in which the reference numeral 1 indicates a storage tank that is adapted to store the hot water supplied to it by the heater coils 4 which are in communication with the top 8 and the bottom of the tank at points 2 and 3 respectively.

The conduits or connections 2 and 3 are in communication with the water circulating elements 4, positioned above a gas burner 5. The gas burner 5 is provided with a gas and air mixing tube 6 in communication with a gas supply line 7. The burner 5 is adapted to supply heat to the circulating coils 4 and in this manner heat their liquid contents and induce water circulation through the system consisting of the tank 1 and coils 4 and in this manner raise the temperature of the liquid contents of the tank 1.

In order to facilitate the installation and...
assembly of the system we have arranged the Bunsen tube 6 of the heater so that it may be swung about the heater base and locked in any desired position. The heater base 8 is a single casting having a drip pan as an integral part of the base. The drip pan is provided with a central aperture for the insertion of the upwardly extending portion 10 of the gas and air mixing tube 6.

The Bunsen tube 17 of gas and air mixing tube 6 is provided with a pair of oppositely disposed lugs 11 which project from the outer surface of the vertical portion of the tube. An annular ring 16 is provided at the lower portion of the vertical extension 10 to provide an abutment or seating element for the tube.

A lock member 9 having a pair of oppositely disposed wings 14 is provided for the purpose of locking a Bunsen tube to the burner base 8. The locking member 9 has a pair of oppositely disposed slots 12 that are adapted to register with the lugs 11 and permit the locating of the locking member below these lugs.

In assembling the device the Bunsen tube 6 is inserted in the central opening of the base 8. The locking member is slipped over the vertical upwardly extending portion of the Bunsen tube with its grooves 12—12 in alignment with the lugs 11—11. In this manner the locking member is dropped below the lugs 11—11 and it is given a slight twist which brings the angular edges 13 into engagement with the lugs 11 and in this manner clamps the Bunsen tube 6 to the base 8.

It is apparent that by this arrangement the Bunsen tube may be locked in any desired position. The underside of the locking member 9 is provided with a shoulder 15 for the purpose of centering the device with respect to the central opening 8.

Fig. 6 illustrates a modified form of Bunsen tube in which the lower portion of the tube is provided with a collar 18 to center the device with respect to the base 8. The base 8 when used in conjunction with the Bunsen tube 17 would be cut out at its lower portion in order to accommodate the collar 18.

The above burner locking device could be readily applied to other gas burning appliances particularly where there is apt to be difficulty encountered in assembling the appliance and in making the necessary gas connections and it is not our intention to limit this device to a water heater of the type shown which was selected for the purpose of illustrating one application of our improved burner assembly.

Furthermore, it is to be understood that the particular forms of apparatus shown and described, and the particular procedure set forth, are presented for purposes of explanation and illustration and that various modifications of said apparatus and procedure can be made without departing from our invention as defined in the appended claims.

We claim:
1. A quick detachable burner assembly for water heaters, a water heater jacket, a combined base and drip pan rigidly secured to the lower portion of said jacket and having a central aperture therein, a horizontal gas and air mixing tube having a vertically extending portion adapted to project in the central opening of said base, lugs formed on the vertically extending portion of said mixing tube, a locking member adapted to engage said lugs to lock said mixing tube in different positions on said base, and a removable burner head adapted for reception on said vertical portion of said mixing tube.
2. In a structure of the class described, the combination of an apertured base member and a horizontally disposed mixing tube having a vertically extending portion adapted to be freely received in the aperture of said base member, and means cooperating with the vertically extending portion of said mixing tube and said base member providing a swivel connection and lock for said tube with said base member.
3. In a structure of the class described, the combination of an apertured base member and a horizontally disposed mixing tube having a vertically extending portion adapted to be freely received in the aperture of said base member, and a winged nut cooperating with the vertically extending portion of said mixing tube and said base member providing a swivel connection and lock for said tube with said base member.
4. In a structure of the class described, the combination of an apertured base member, and a horizontally disposed mixing tube having a vertically extending portion adapted to be freely received in the aperture of said base member, lugs formed on the vertically extending portion of said tube, and means engaging said lugs and base member providing a swivel connection and lock for said tube with said base member.
5. In a structure of the class described, the combination of an apertured base member, and a horizontally disposed mixing tube having a vertically extending portion adapted to be freely received in the aperture of said base member, and a slotted wing nut having helical surfaces adapted to engage said lugs to adjustably secure said tube to said base member.
6. A base member, a short cylindrical wall provided by said member defining an aperture therethrough, a circumferentially adjustable side outlet mixing tube adapted to be loosely received in the aperture of said base member, an annular shoulder formed on said tube for engagement with the lower edge of said wall.
lugs on said tube, and a flanged wing nut adapted to engage said lugs and the upper end of said wall to center and secure said tube in the aperture of said base member.

In testimony whereof we affix our signatures.

JOSEPH A. SMITH,
EARL J. HANSEN.