

UNITED STATES PATENT OFFICE.

JOSEPH ALEXANDER CLARK, OF LOS ANGELES, CALIFORNIA.

OIL BURNER OR HEATER.

SPECIFICATION forming part of Letters Patent No. 673,977, dated May 14, 1901.

Application filed April 11, 1900. Serial No. 12,494. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ALEXANDER CLARK, of the city of Los Angeles, in the county of Los Angeles, State of California, have invented a certain new and useful Improved Apparatus Consisting of an Oil Burner or Heater, of which the following is a full, clear, and exact description or specification, reference being had to the annexed drawings and to the letters marked thereon.

My invention relates to a novel construction of burner for burning oil for the purpose of generating heat and which is especially adapted for heating air in air-heaters and for other analogous purposes.

The oil-burner consists of a shallow vessel, preferably rectangular in form, which is placed in a flue leading into a chamber or duct through which the products of combustion escape in an apparatus wherein my said burner is used.

On the annexed drawings, Figure 1 is a vertical section of my improved oil-burner and the horizontal flue with adjustable door leading into a vertical flue. Fig. 2 is a front elevation of the side flue and the door thereof. Fig. 3 is a horizontal section of the same on the line *a a*, Fig. 2. Fig. 4 is a part transverse section of the front end of the flue and its contained burner shown as passed into or through the shell of a furnace or other receptacle wherein the same is or may be used.

As shown by Figs. 1, 2, and 3, my oil-burner consists of the bottom portion *Q*, the oil-pipes *O* and *O'*, and the baffle-plates *R* and *R'*, all operating together in the flue or duct *D*, provided with a door *S*, wherein there is an opening provided with a second door *T* for regulating the quantity of air passed into the burner, as now to be described.

The front part of the flue or duct *D* is provided with oil receiving and discharging pipes *O O'*, respectively, the upper ends of which are not shown in the drawings, but are provided with funnel-shaped heads, whereinto the oil to be burned is dropped in regulated quantities from any convenient tank or other receptacle containing or holding such oil. The oil thus dropped into the receiving and discharging pipes *O* and *O'* is regulated in

quantity by one or more valves or taps, so that just such quantity of oil as may be required to produce the necessary combustion and heat of the burner and to be distributed throughout the heating apparatus is thereby regulated. The lower ends of the pipes *O* and *O'* are inclined inward, as shown, and the oil dropping from them falls into the bottom and inner end of the burner *Q*, which rests on the front end of the flue or duct *D*. The front end of the burner *Q* is provided with inclined fingers or baffle-plates *R R*, and the inner end of the burner is also provided with two more baffles *R' R'*, the effect of these baffles *R R* and *R' R'* being to distribute and commingle the heat, flame, and products of combustion as they are generated on the ignition of the drops of oil falling from the inclined lower ends of the pipes *O O'*, thereby insuring more perfect combustion.

For the supply of the quantity of air necessary to enter into combination with the oil and for effecting combustion thereof as it drops from the lower inclined ends of the pipes *O O'* the heating apparatus is provided with the hinged door *S*, and in this door an opening is formed across the front thereof, provided with the door *T*, hinged at its upper part to the front of the door *S*, as shown at Figs. 1 and 4. This door *T* has attached to its lower end circular inclined handle *U*, whose inner under part has ratchet-teeth *V* cut therein for the purpose of communicating with the upper edge of the opening in the door *S*. By means of these ratchet-teeth *V* the door *T* can be held open so as to give any desired width of air-space for the air to pass to the burner.

Having now described the nature of my said invention and the best system, mode, or manner which I am at present acquainted with for carrying the same into practical effect, I desire to observe in conclusion that what I consider to be novel and original, and therefore claim as the invention to be secured to me by Letters Patent, is as follows:

The combination of the combustion-chamber provided with an exit-flue and with an air-inlet door, a burner-pan situated in said chamber in proximity to the door, pipes ar-

5 ranged one in front of the other for supplying oil to said pan, said pan being provided with baffles between the points at which oil is supplied and the exit-flue of the combustion-chamber, substantially as hereinbefore described.

In testimony whereof I have hereunto set

my hand and seal, in the presence of two subscribing witnesses, this 17th day of March, 1899.

JOSEPH ALEXANDER CLARK. [L. s.]

Witnesses:

ST. JOHN DAY,

E. O. SIMONS.