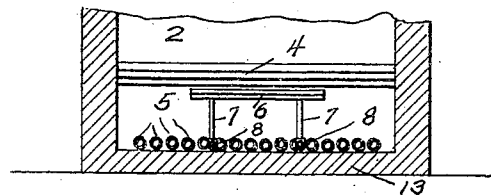
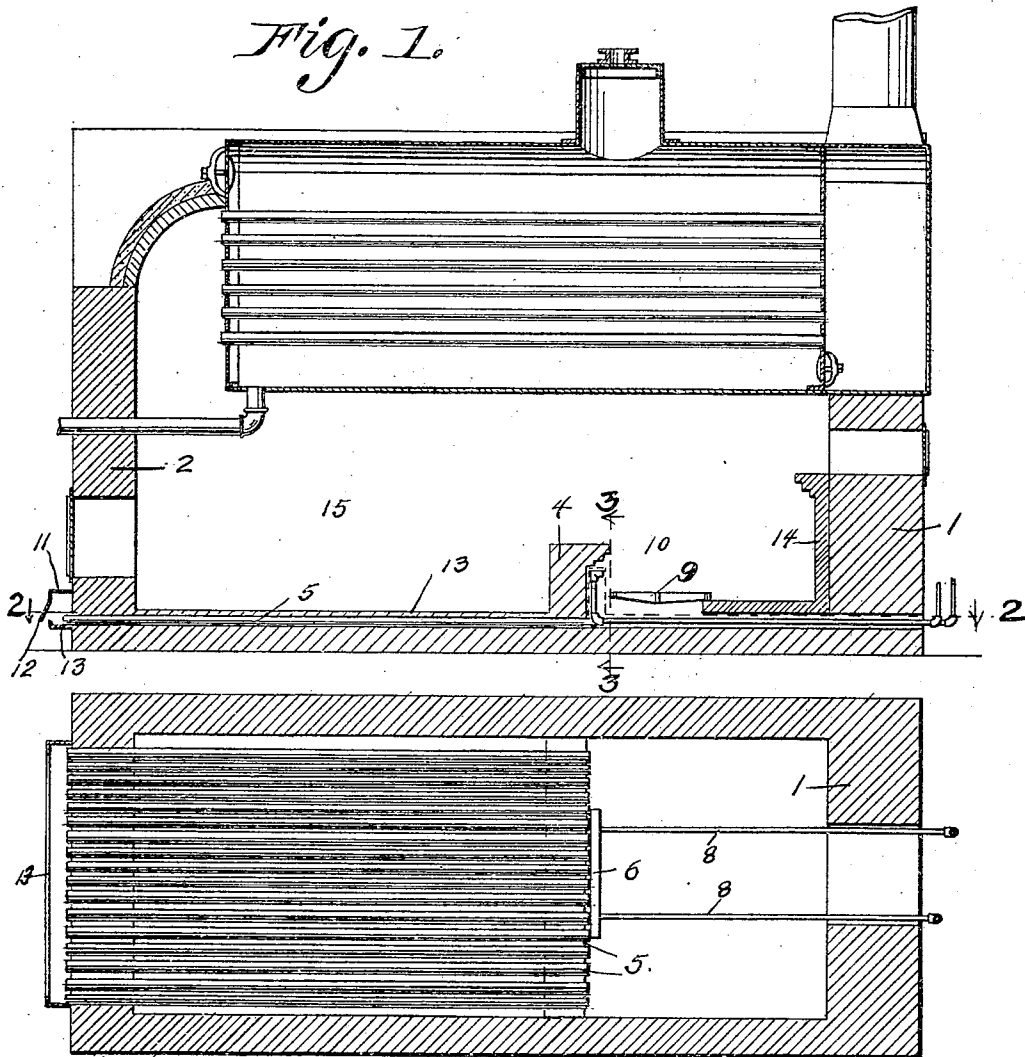


C. C. PHIPPS.
OIL BURNING FURNACE.
APPLICATION FILED NOV. 23, 1909.

958,433.

Patented May 17, 1910.



Witnesses
W. L. Sudworth,
Edward R. Hartman

Fig. 3.
Inventor
Clayton C. Phipps
by Samuel Horrick Attorney

UNITED STATES PATENT OFFICE.

CLAYTON C. PHIPPS, OF SAN DIEGO, CALIFORNIA.

OIL-BURNING FURNACE.

958,433.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed November 23, 1909. Serial No. 529,652.

To all whom it may concern:

Be it known that I, CLAYTON C. PHIPPS, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented new and useful Improvements in Oil-Burning Furnaces, of which the following is a specification.

This invention pertains to certain new and useful improvements in oil burning furnaces, and has for its object a furnace of this type wherein a maximum of heat efficiency may be obtained by employment of a minimum of oil consumption.

A further object of the invention is to provide a simple, economical, and highly efficient furnace of this class, wherein air is supplied to the oil, at the point of combustion, in a wide layer, the air being thoroughly heated prior to its encountering the flame.

Further and other objects of the invention will be later set forth, and manifested.

In the drawings, Figure 1, is a central vertical section taken through a furnace embodying the present invention, Fig. 2, is a section on line 2—2 of Fig. 1, and, Fig. 3, is a vertical section taken on the line 3—3, of Fig. 1.

In carrying the invention into practice, I have disclosed same as applied to a furnace including a front wall 1, a rear wall 2, a bottom 3, and a bridge wall 4. Incorporated in the bottom 3, there are provided a series of longitudinally disposed air supply pipes 5, the latter having their outer ends projecting beyond the rear wall 2, of the furnace so as to be completely accessible to the surrounding atmosphere. The inner ends of the pipes project beyond the front face of the bridge wall so as to discharge the heated air at the base of the bridge wall. By reference to Fig. 2 of the drawings it will be observed that the air pipes extend in a horizontal layer entirely across the width of the furnace, and as they individually discharge the air which is admitted thereto, they will supply a film of air to the point of fuel consumption which film is originally composed of a series of individual sources.

The burner is designated 6, same being connected to the two vertical pipes 7, which provide support therefor, and which further conduct the oil to the burner proper, for which purpose pipes 7, 7, communicate with horizontal oil supplying pipes 8, 8, which latter are connected to any suitable source

of oil supplying medium. Burner 6, is disposed so as to be located above the points of discharge of the air pipes 5, and is shown as being of less width than the combined width of all of the air pipes, in order that the air will completely envelop the flame issuing from the burner, and thereby cause a thorough commingling of the two.

A grate, preferably composed of fire-clay, is provided in air receiving chamber 10, the grate being designated 9, in the drawings, the purpose of which is to equally distribute the air issuing from the pipes 5. It will be understood that the air issuing from pipes 5, will discharge beneath the grate, and will in its upward passage, be equally distributed thereby due to the fact that the grate, being composed of a series of spaced bars will "cut" the air so to speak.

At the rear wall of the furnace there is secured a hood 11, which overlies the outer ends of the air pipes 5, and which carries a hinged damper 12, whereby the inlet of air into the pipes 5, may be controlled and regulated, as is evident. A shelf-like part 13, coöperates with the hinged damper 12, to allow of regulation of the air into the pipes 5.

It will be observed from the drawings that the flame will pass toward the front of the boiler, encountering the wall 14, and will then be deflected thereby to travel in a direction toward the rear of the boiler, thus again meeting with the air which is coursing upwardly from the inner or discharge ends of the air pipes. Furthermore the air will be thoroughly heated due to the fact that there exists intense heat in the combustion chamber 15, which acts on the pipes 5, the latter being exposed thereto. It will further be seen that the blast from the burner as it issues directly from the latter will not come into contact with the boiler, which were it to contact with same would prove injurious to the latter. This is due to the fact that the gases travel horizontally to encounter wall 14, and are deflected by the latter in an upward direction, the gases then traveling rearward and acting on the under side, or exposed portions of the boiler.

What is claimed is:—

1. In an oil burning furnace, in combination with the front, rear, and bottom walls thereof, a bridge wall located to the rear of the front wall, an oil burner disposed adja-

cent to the front face of the bridge wall and supported at a point above the furnace bottom, and a series of pipes arranged in a horizontal layer and disposed along the bottom of the furnace, said pipes having their rear ends projecting beyond the rear wall of the furnace and having their front ends disposed at the base of the bridge wall, so as to discharge the air below the burner.

10 2. In an oil burning furnace, in combination with the front, rear and bottom walls thereof, a bridge wall located to the rear of the front wall, a series of air pipes on the bottom wall which air pipes extend through
15 the rear wall and through the bridge wall, a hood on the rear wall overlying the rear ends

of the pipes, a damper connected to the hood to regulate the ingress of air into the pipes, a shelf-like member carried by the rear wall to cooperate with said damper, the front 20 ends of the air pipes extending through the bridge wall at the base thereof, and a burner located in front of the bridge wall adjacent the top thereof.

In testimony whereof I have hereunto set 25 my hand in presence of two subscribing witnesses.

CLAYTON C. PHIPPS.

Witnesses:

MARKS P. MOSSHOLDER,
DELIA A. SEVERIN.