

H. LUDWICK.
OIL BURNER.

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1,042,454.

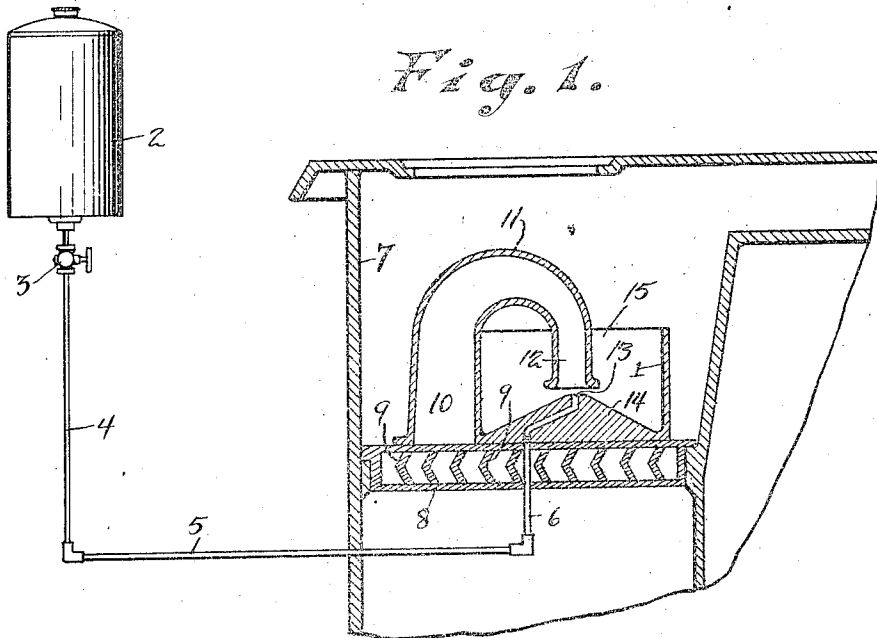
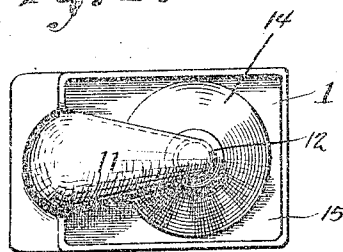


Fig. 2.



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UNITED STATES PATENT OFFICE.

HERMAN LUDWICK, OF MILWAUKEE, WISCONSIN.

OIL-BURNER.

1,042,454.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed May 13, 1912. Serial No. 886,913.

To all whom it may concern:

Be it known that I, HERMAN LUDWICK, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to improvements in oil burners, and it pertains to that class which are adapted to be used in the combustion chamber of a stove or furnace and to which oil is led from a reservoir through ordinary piping.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a vertical section of my burner located in the combustion chamber of a stove, a portion of which stove is also shown in vertical section, and Fig. 2 represents a top view of the burner removed from the stove.

Like parts are identified by the same reference numerals throughout both views.

The burner comprises an open receptacle 1 to which oil is led from the reservoir 2 through the valve 3, vertical duct 4, horizontal duct 5 and vertical duct 6.

7 represents the combustion chamber of a stove, and 8 represents the stove grate. The burner is adapted to rest upon the upper surface of the grate.

10 is an air duct into which air is led from beneath the grate 8 between the grate bars 9, when it passes from thence through the central bend 11 and thence through the downward bend 12 above the oil discharge opening 13.

It will be understood that the flow of oil from the reservoir is regulated by regulating the opening of the valve 3, and that the oil is permitted to flow gradually into the receptacle 1 as fast only as it is burned.

When starting the burner, a small quantity of oil is admitted into the receptacle 1 when it is ignited as it flows down over the inclined surface 14. The discharge opening 13 is located centrally at the apex of the conical bottom 14, whereby the oil is uniformly distributed in all directions from the apex toward the vertical walls 15 of the receptacle, whereby a thin sheet of flame is produced. When the fire has been started for a brief interval of time, the bottom member 14 of the receptacle becomes heated to a high temperature, whereby the

oil is converted into vapor before escaping, and whereby more perfect combustion is produced. As the oil is being consumed in the receptacle 1, the required volume of air for promoting combustion passes from beneath the grate up through the curved air duct, when it is discharged, as stated, directly above the center of the flame at the apex of the bottom member 14. The entire burner, including the receptacle 1, conical member 14 and air duct 10 are cast integrally from a single piece of iron or other metal, whereby the same may be made at the minimum cost of construction, when it is connected with the reservoir 2 through ordinary piping.

It will be understood that with this device the combustion chamber 7 of the stove is practically filled with flame by which the oven and receptacles supported from its upper surface are heated. The device is equally adapted for heating furnaces when it is supported in like manner from the furnace grate.

In view of the fact that the bottom 14 is formed of a single piece of solid cast metal, it is adapted to retain the heat and be thereby raised to a very high temperature, and in view also of the fact that the upper end of the oil duct is formed in the metal comprising said bottom, the oil is thereby brought in direct contact with the bottom itself, and thereby becomes heated to a high temperature and converted into a gas by such heat before it escapes beneath the air duct 11, whereby the combustion of the oil is much more perfect than it would otherwise be were the oil discharged in a liquid form through such duct.

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

1. An integrally formed cast metal oil burner comprising a solid conical bottom, vertical walls inclosing said bottom, an oil duct formed in the metal comprising said bottom, communicating up through the bottom and terminating at its apex, an air duct having its inlet end on the same plane with said bottom and extending from thence upwardly and terminating centrally above the discharge end of the oil duct at the apex of said conical bottom, and means for connecting said oil duct with an oil reservoir.

2. An integrally formed cast iron oil burner comprising a solid conical bottom,

vertical walls inclosing said bottom, an oil inlet formed in the metal comprising said bottom communicating up through the bottom and terminating at its apex, an air duct
5 having its inlet end on the same plane with said bottom and extending from thence upwardly and terminating centrally above the discharge end of the oil duct formed in the apex of said conical bottom, said bottom
10 and integrally formed air duct being adapted to rest upon the upper surface of the

grate of a combustion chamber, whereby air is led to said burner through such supporting grate, and means for connecting said oil duct with an oil reservoir.

In testimony whereof I affix my signature in the presence of two witnesses. ↓

HERMAN LUDWICK.

Witnesses:

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