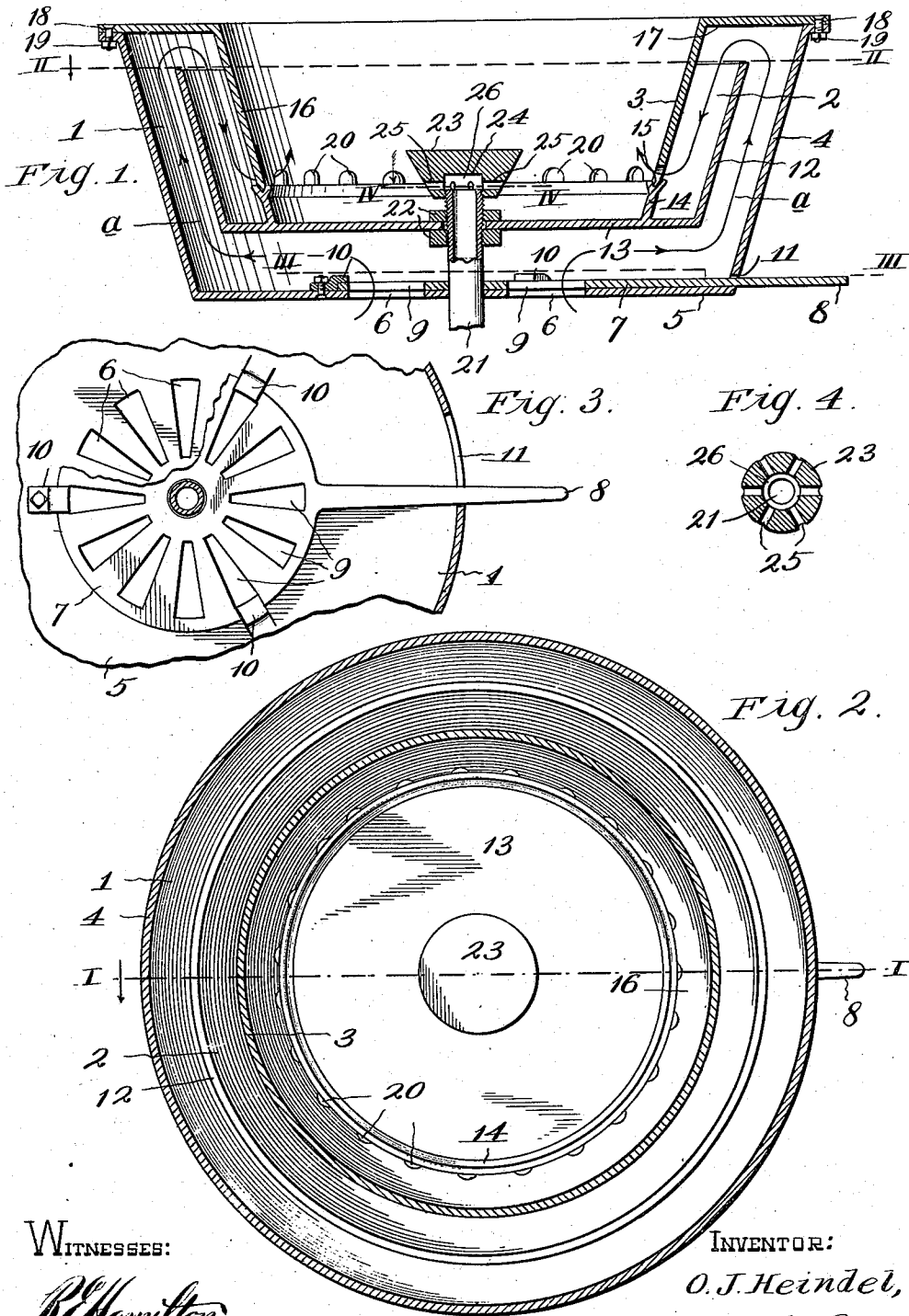


O. J. HEINDEL.
GAS OR OIL BURNER.
APPLICATION FILED MAY 19, 1909.

939,415.

Patented Nov. 9, 1909.



WITNESSES:

R. Hamilton
John D. Adams

INVENTOR:

O. J. Heindel,
By F. G. Fischer,
att'y.

UNITED STATES PATENT OFFICE.

ORVILLE J. HEINDEL, OF KANSAS CITY, MISSOURI.

GAS OR OIL BURNER.

939,415.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed May 19, 1909. Serial No. 497,070.

To all whom it may concern:

Be it known that I, ORVILLE J. HEINDEL, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Gas or Oil Burners, of which the following is a specification.

My invention relates to improvements in oil or gas burners, and my principal object is to provide a device of this character which is simple in construction and economical in the consumption of fuel.

With the above and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter described, pointed out in the claim, and illustrated in the accompanying drawing, in which:

Figure 1 shows a vertical central section of my burner on line I—I of Fig. 2. Fig. 2 is a horizontal section on line II—II of Fig. 1. Fig. 3 is an irregular section on line III—III of Fig. 1. Fig. 4 is a horizontal section on line IV—IV of Fig. 1.

In carrying out the invention I employ an outer casing 1, an intermediate casing 2, and an inner casing 3.

Casing 1 consists of an annular upwardly-flaring wall 4 and a bottom portion 5, having a register at its central portion consisting of radial openings 6 and a valve 7 provided with a handle 8 and radial openings 9, which latter register with the openings 6 when the valve is adjusted to the position shown in Fig. 3. Valve 7 is adjustably-mounted in a plurality of lugs 10 on the bottom portion 5, and handle 8 extends through a slot 11 in wall 4, so that it may be actuated to adjust the valve while the burner is in operation.

The intermediate casing consists of an annular upwardly-flaring wall 12, a bottom portion 13, and a flange 14 flaring upwardly from said bottom portion to form a cup having an annular V-shaped seat 15 in its upper edge.

The inner casing 3 consists of an upwardly-flaring annular wall 16, the lower edge of which fits snugly in the V-shaped seat, and a horizontal marginal flange 17

extending outwardly over the walls 4 and 12, and removably secured to the former by bolts 18 and retaining-nuts 19. The lower end of wall 16 has a series of equally-spaced openings 20 for the admission of air to the interior of the burner.

The casings are spaced apart to form a tortuous air-passage leading from openings 6 to openings 20, as indicated by the arrows *a*, to provide the flame with an ample supply of oxygen to support combustion, so that the greatest efficiency with the least amount of fuel may be obtained.

21 designates a supply-pipe extending centrally through the bottom portions 5 and 13 to which latter it is removably secured by lock-nuts 22. The upper threaded terminal of supply-pipe 21 extends above the uppermost lock-nut 22 to receive an adjustable spreader 23, having a central seat 24 and a series of radial outlets 25 leading from a central recess 26.

In practice the burner is made in different sizes and shapes to fit within cooking-stoves, heating-stoves, and furnaces. In starting the burner with crude-oil as a fuel, the spreader 23 is screwed downward upon the supply-pipe 21 to partly close the radial outlets 25 and oil is then admitted to the cup and ignited. The flame thus created spreads and becomes thoroughly mixed with the air entering openings 20, which air is heated to a high degree in its tortuous passage from openings 6 to openings 20 by the flame impinging against wall 16.

When gas under low pressure is employed as a fuel, the spreader is adjusted upward to fully uncover the radial outlets 25, which occupying a horizontal plane thoroughly spread the gas and direct it toward wall 16 so that it may thoroughly intermingle with the intruding air, the volume of which is controlled by valve 7 to obtain the proper admixture of air and gas.

Having thus described my invention, what I claim is:—

A burner consisting of an outer casing comprising an annular wall and a bottom portion having openings, a valve for controlling said openings, an intermediate casing consisting of an annular wall and a bot-

tom portion, spaced apart from the outer casing and provided with a cup, an inner casing comprising an annular wall having openings at its lower edge and an annular flange at its upper portion secured to the wall of the outer casing, and a fuel supply-pipe leading to the cup.

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

ORVILLE J. HEINDEL.

Witnesses:

JOHN D. ADEMS,
F. G. FISCHER.