T. W. HUNTER.

OIL BURNER.

APPLICATION FILED OCT. 12, 1909.

959,347. **Patented May 24, 1910.**

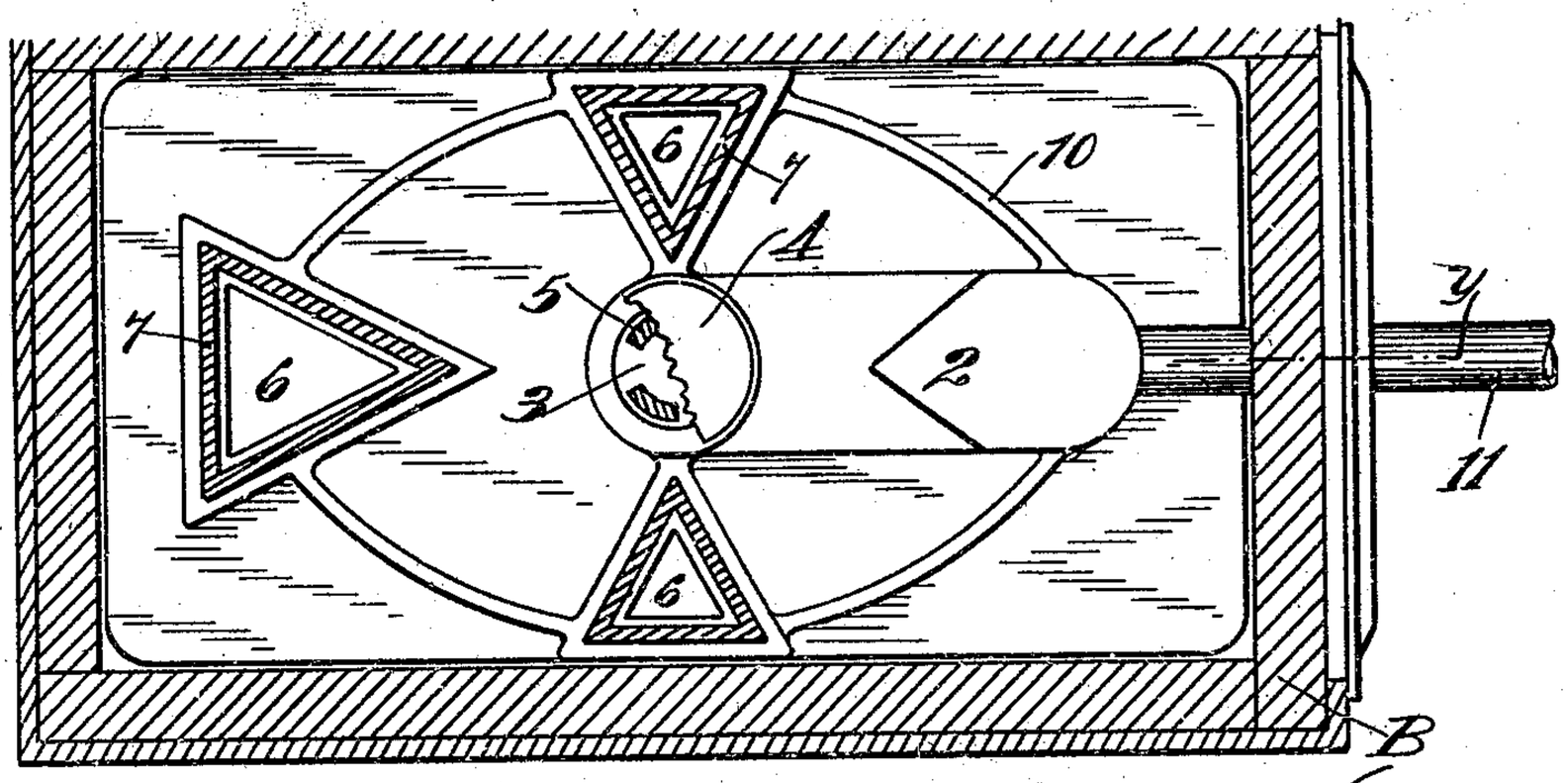

Fig. 1.

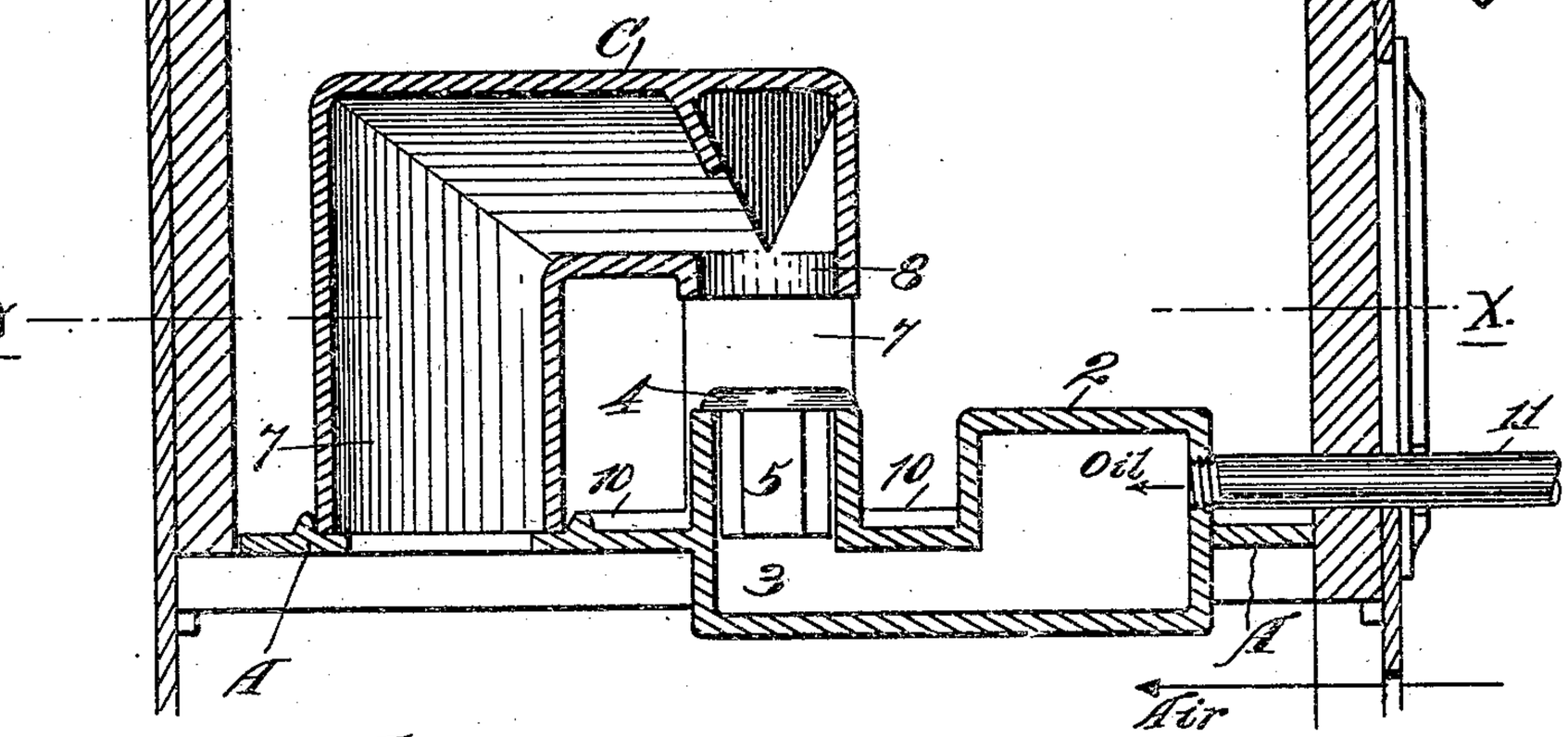

Fig. 2.

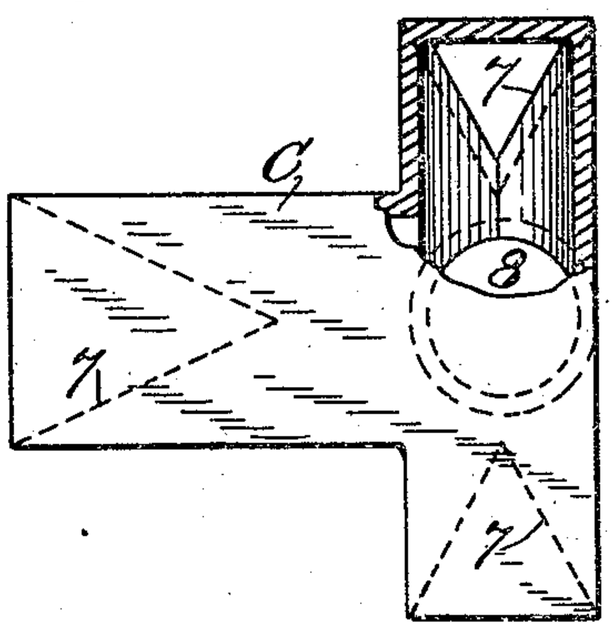

Fig. 3.

Witnesses;
F. E. Maynard.
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UNITED STATES PATENT OFFICE.

THOMAS W. HUNTER, OF PETALUMA, CALIFORNIA.

OIL-BURNER.

959,347. Specification of Letters Patent. Patented May 24, 1910.

Application filed October 12, 1909. Serial No. 522,297.

To all whom it may concern:

Be it known that I, THOMAS W. HUNTER, a citizen of the United States, residing at Petaluma, in the county of Sonoma and State of California, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to an apparatus which is designed for the combustion of oil as a fuel, and is adapted especially to the use of oil fuel in the firepot of a stove or range.

It consists in the combination of parts, and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of the burner-plate as applied to the fire-box of an ordinary stove, and showing the air conduit in section on a line *x—x* of Fig. 2. Fig. 2 is a longitudinal vertical section on line *y—y* of Fig. 1. Fig. 3 is a plan view of the conduit partially broken away.

The present illustrations show the application of my invention to a stove or range.

A is a plate which substantially fits the lower part of the fire-pot B of a stove, and this plate has a housing 2 within which is a tunnel or opening through which the liquid fuel passes to a central well 3, with which the opening communicates. The upper end of this well is open, and within it is fitted a loose stem having a head or cap 4 which fits over the opening of the well 3. The stem is here shown as composed of vertical separated legs 5 extending downwardly into the well, and the pressure generated to supply the fuel will cause the cover 4 to have a lifting or dancing movement constantly rising from the seat to allow the liquid or gas to escape radially between the top of the well and this cover, and to be thus thoroughly distributed throughout the space above the plate. In order to supply air in proper quantities, and at proper points, I have shown the plate formed with openings 6, adapted to register with lower open ends of a removable T-shaped conduit C. Hollow legs, 7, are shaped to fit the openings 6, and air admitted through these openings from beneath the plate, rises through the legs and converges to a central opening 8 which is located directly above the well and its cap 4. The position of this air supply is such that there will be a downward discharge of air to meet the divergent jets of the hydrocarbon from beneath the cap, and the result will be an intermingling which produces a most thorough combustion of the oil. All parts are easily accessible and separable for cleaning when desired.

The upper surface of the burner-plate A is preferably flat as shown by the shading (Fig. 1), save for the low ribs 10 which form an elliptic pan around the well 3 adapted to receive a small quantity of fluid for igniting purposes, and to prevent any fluid from accidentally overflowing the plate A.

An important feature of the present invention is the peculiar form and arrangement of the conduit C which, as shown in Fig. 3, is T-shaped in plan, and has triangular shaped legs 7, whose apices are disposed toward the fuel well 3, thus offering but slight resistance to the flame, while the incoming fresh air is conducted through the highly heated conduit C, and is discharged at 8 at a temperature nearly equal to that in the fire-box.

The operation of this burner is as follows: The plate A having been set on the grate of the fire-box B, and the conduit C placed in position on the plate, fuel may be admitted through pipe 11 in the housing which, passing above the plate A, is heated by the flame and this causes the fuel to become heated and partially vaporized before it escapes from the well 3 past the cap 4, by which it is completely vaporized as it mixes with the incoming heated air from discharge 8. The flame encounters but little resistance as it passes from beneath, and rearwardly and forwardly around the conduit.

By the provision of the freely movable cap 4, it is impossible for a dangerous pressure to accumulate in the well 3, or chamber beneath the housing 2, and by simply removing the conduit C the surface of the plate A is of easy access when it becomes necessary to clean it. There are no valves, small elements or fine screw adjustments necessitating care or skill in using the burner, and as no machine work is required on the parts, the device is comparatively inexpensive.

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

1. The combination in an oil burner, of

a rectangular, horizontal plate, a cylindrical well centrally formed in said plate, a loose cap resting upon the top of the well whereby fuel is deflected in a horizontal plane, a housing formed with the plate approximately in the plane of the top of the well so as to intercept flames during combustion, whereby the fuel may be heated, a pipe for supplying oil within the housing and to the well, and a conduit having triangular-shaped legs resting upon the plate and registering with apertures therein.

2. The combination in an oil burner, of a horizontal plate, a well located centrally of and projecting upwardly from the surface of said plate, a housing formed on the plate and in line with the top of the well and having a chamber communicating with the well, a cap loosely fitting the well whereby flame may be deflected against the housing, a series of ribs formed upon the surface of the plate, a pipe connected to the housing whereby fuel may be supplied to the well, and a conduit resting on the plate having triple supports through which air may be admitted and discharged in close proximity to and just above the well.

3. An oil burner comprising a base-plate, an upwardly projecting well centrally thereof, a housing formed with the plate, having its upper portion in the plane of the top of the well, and having a chamber communicating therewith, a loose, removable cap having projections extending down in the well, pan-forming ribs on the upper surface of the plate, a T-shaped conduit, and triangular hollow supports formed on said conduit adapted to register with apertures formed in the plate upon which the supports rest, said apertures being triangular in form and having their apices proximate to the well.

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

THOMAS W. HUNTER.

Witnesses:
G. D. O'NEILL,
M. HORWEGE.