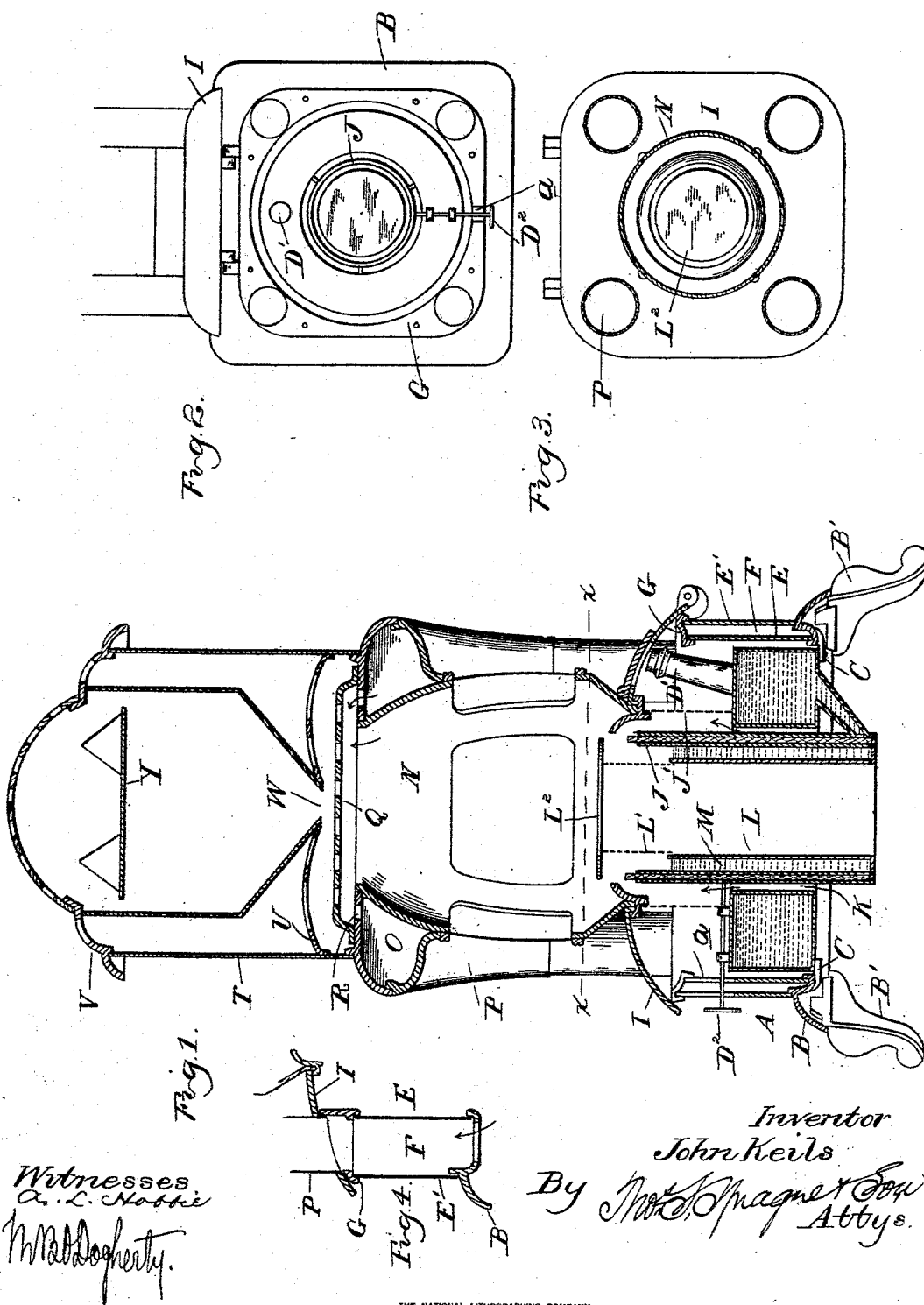


(No Model.)

J. KEILS.
OIL STOVE.

No. 514,555.

Patented Feb. 13, 1894.



Witnesses
A. L. Hobbs
M. A. O'Keefe.

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UNITED STATES PATENT OFFICE.

JOHN KEILS, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO WILLIAM E. HOWARTH, OF SAME PLACE.

OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 514,555, dated February 13, 1894.

Application filed June 5, 1893. Serial No. 476,592. (No model.)

To all whom it may concern:

Be it known that I, JOHN KEILS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Oil-Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention refers more particularly to that class of oil stoves used for heating purposes, and the invention consists in the peculiar construction, arrangement and combination of different parts as more fully hereinafter described and specifically set forth in the claims.

In the drawings, Figure 1 is a vertical, central section through my improved oil stove. Fig. 2 is a plan of the base section with the hinged top thrown back. Fig. 3 is a plan on line *xx* in Fig. 1 and Fig. 4 is a vertical section through one corner of the base, showing a slightly modified construction.

A is the base section of a stove comprising the open ring base proper B, provided with suitable legs B' and the inwardly projecting lugs C for supporting the oil tank D of the burner. The wall of the base is composed of two metal rings the inner one E of circular and the outer one E' of polygonal form.

In the drawings I have shown the outer ring of substantially rectangular shape, but it may be triangular, hexagonal or any other polygonal form.

F is an annular air flue between the rings E E' which is closed at the top by a suitable ring G bolted or otherwise secured to the base B, and to which the top I carrying the upper or radiator section of the stove is hinged.

D is the oil tank, centrally of which is the wick tube J, and K is an air flue between said tank and wick tube.

L is an air flue centrally within the wick tube and separated therefrom. Between the flue L and the wick tube is the annular water tank M. At the upper end of the air flue is a perforated tubular extension L' carrying the spreader L² and surrounding the wick tube is the ring J' forming an extension of the air passage K. The tank is provided with a suitable fill opening D' and the usual wick raising device D² passing out through slots a

in the walls of the base, all so arranged that if the top of the base section is thrown back the oil tank and burner may be lifted out.

The upper or radiator section consists of the casing N, within which is formed the combustion chamber centrally over the burner. This casing is contracted at its upper end, and centrally is provided with suitable mica windows. Surrounding the upper contracted portion of the combustion chamber is an air heating chamber or jacket O.

P, are flues connecting the jacket with the annular air flue F in the base. If desired instead of extending the flue P down into the base, as shown in Fig. 1, they may terminate in the top I and suitable nipples may be cast integral with the ring plate G, as shown in Fig. 4.

Above the combustion chamber is placed a raised top or grating Q and apertures R through the top of the air jacket O communicate under this grating. The whole is surmounted with a detachable heating drum T which consists of an inner and outer cylinder concentrically secured one within the other by the perforated bottom plate U, and the cast top V. The inner cylinder is conically contracted at the lower end leaving a small central opening W, and above this opening a spreader plate Y is secured.

The parts being arranged and constructed as described they are intended to operate as follows: By means of the hinged top of the base section, full access is provided to fill water into the annular chamber around the central air tube L, and to replenish the oil tank. For cleaning and trimming the wick the whole oil tank with its fixtures may be lifted out of the base section. Air is furnished to the burners through the passage K on the outside of the wick tube, and also through the central air flue L passing through the perforated extension, L' over the water tank M where it is mixed with the vapor arising from water. This moistening the air supplied to the burner aids in producing perfect combustion and at the same time the water in the chamber serves to keep the wick tube cool. The combustion chamber is so constructed as to obtain the most perfect draft for the flame and to expose a large radiating surface, while at the same

time the contracted upper portion concentrates the heat upon the inner wall of the jacket O. This jacket with the flues P and F form an outer air circulating system, taking 5 air through the apertures in the ring B, and delivering the heated air under the grating Q where it is mixed with the more intensely heated air of the combustion chamber, finally passing into the heating drum and thence into 10 the room. Where the stove is desired to be used for cooking the drum may be removed and the cooking vessel laid upon the grating.

What I claim is—

1. In an oil stove, the base comprising two 15 outer separated rings forming a vertical air flue between, a burner in the base, a radiator section removably supported on the base comprising a combustion chamber, a jacket surrounding the combustion chamber and forming 20 an outer air heating chamber, having exit apertures and air supply flues connecting the jacket with the annular air flue in the base, substantially as described.

2. In an oil stove, the combination of the 25 base comprising two outer separated rings, forming a vertical air flue between, a burner in the base, a radiator section hinged to the base, comprising a combustion chamber, and a superimposed heating drum, a jacket surrounding the upper end of the combustion 30 chamber, having exit apertures connecting

with the heating drum and of flues outside the combustion chamber connecting the jacket with the vertical air flue in the base, substantially as described.

3. In an oil stove, the combination with the 35 base, burner and combustion chamber, of a heating drum composed of an inner and outer separated cylinder, the latter forming the outer wall of the drum the centrally apertured 40 outwardly and upwardly extending bottom for the inner cylinder, the perforated plate U connecting the bases of the cylinders, and an outer air circulating system connecting with the base of the heating drum, substantially 45 as described.

4. In an oil stove, the combination of the base, comprising an outer polygonal ring constituting the outer wall of the base and an inner circular ring forming an air flue between, 50 of a removable combustion chamber, a jacket around the top of the combustion chamber, flues connecting the corners of the air flue in the base with the jacket, and a removable burner within the inner ring substantially as 55 described.

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

JOHN KEELS.

Witnesses:

JAMES WHITTEMORE,
OTTO F. BARTHEL.