No. 775,428. PATENTED NOV. 22, 1904.

R. MELDRUM.

OIL BURNER.

APPLICATION FILED NOV. 21, 1903

NO MODEL. 2 SHEETS—SHEET 1.

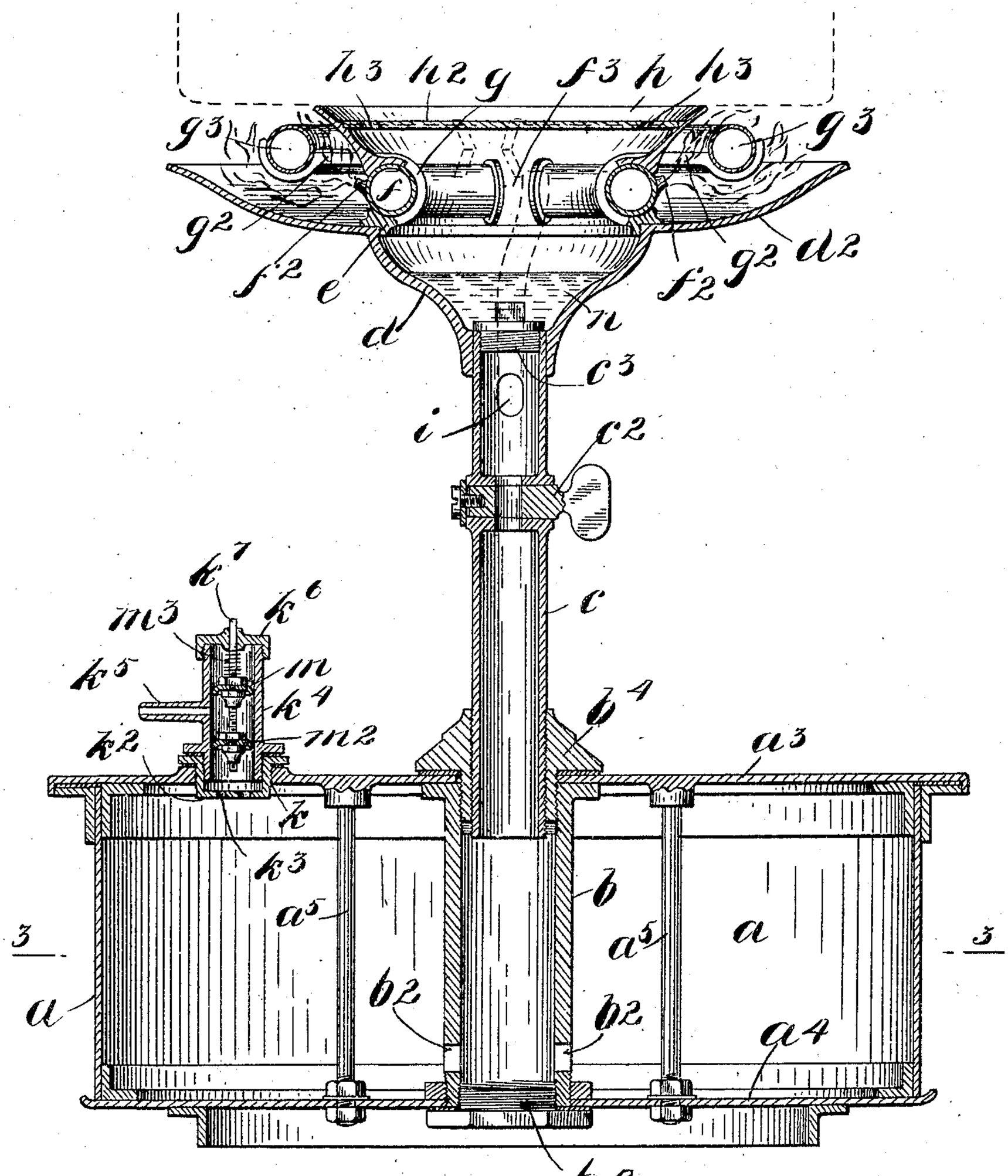

Fig. 1.

WITNESSES

F. A. Stewart

C. E. Mulreany

BY

INVENTOR

Robert Meldrum

Edgar Tate & Co

ATTORNEYS

No. 775,428. PATENTED NOV. 22, 1904.

R. MELDRUM.

OIL BURNER.

APPLICATION FILED NOV. 21, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

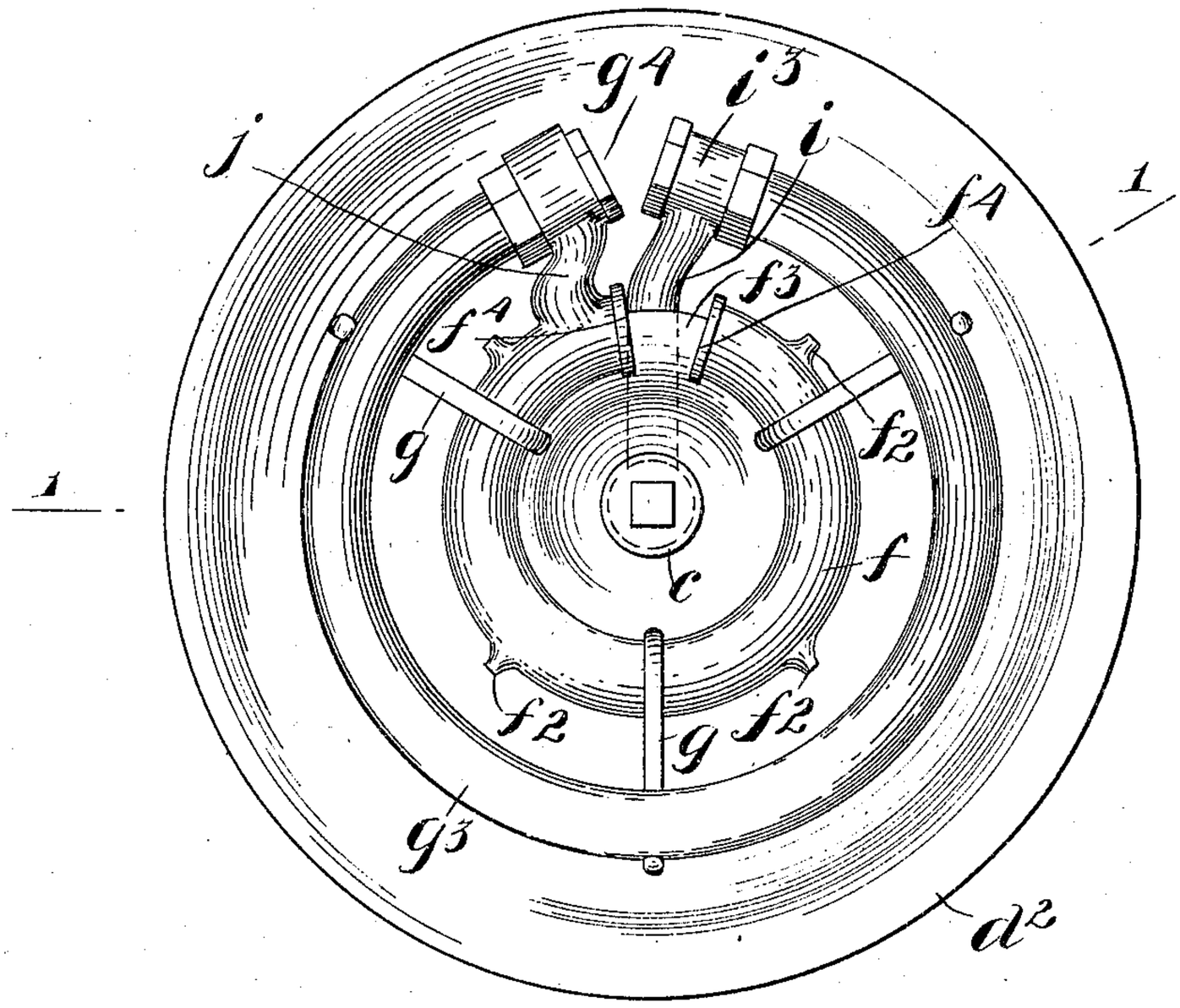

Fig. 2

WITNESSES

F. A. Stewart

C. E. Mulreany

INVENTOR

Robert Meldrum

BY Edgar Tate & Co

ATTORNEYS

No. 775,428. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

ROBERT MELDRUM, OF KIRKLISTON, SCOTLAND.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 775,428, dated November 22, 1904.

Application filed November 21, 1903. Serial No. 182,053. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MELDRUM, a subject of the King of Great Britain, residing at Wellflat, Kirkliston, Scotland, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved oil-burning device which is adapted to be used in furnaces and in other heaters or heating apparatus, a further object being to provide a burner of the class specified in which the oil is first converted into vapor and whereby a great heat may be obtained for the purpose of heating boilers, furnaces, and for various other purposes.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a sectional side elevation of my improved burner on the line 1 1 of Fig. 2; Fig. 2, a partial plan view thereof.

In the practice of my invention I provide an oil-tank a, which preferably comprises a body portion a^2, a top portion a^3, and a bottom portion a^4, said parts being securely bolted together, as shown at a^5; but the tank a may be of any desired form or construction and is provided with a central vertically-arranged tube b, having side slots or openings b^2 and the lower end of which is closed by a screw-threaded plug b^3 and the upper end of which is provided with a tubular plug b^4, into which is screwed a pipe c.

The pipe c is provided with a valve c^2, and the upper end thereof is closed by a screw-threaded plug c^3, and connected with the upper end of the pipe c is a cup-shaped receptacle d, having a saucer-shaped rim or top portion d^2, which forms a deflector-plate, as hereinafter described. On the top of the cup-shaped receptacle d is placed an annular support e, on which is placed an annular burner-tube f, having radially-arranged burner-tips f^2.

The burner-tube f is preferably open at one side or divided, as shown at f^3, the ends thereof being closed by caps f^4, and the support e is provided with arms g, which pass part way around the burner-tube f and are provided with horizontal extensions g^2, which support an annular retort g^3, which is also open at one side or divided, as shown at g^4 in Fig. 2. Mounted on and supported by the burner-tube f is an annular outwardly-flaring deflector h, through the base of which the arms g pass, and in the top of the deflector h is placed a removable plate h^2, having ports or passages h^3.

A pipe i communicates with the upper end of the pipe c at i^2 and extends outwardly and upwardly and communicates with the one end of the retort g at i^3, and another pipe, j, is connected with the opposite end of said retort and with one end of the burner-tube f, this construction being clearly shown in Fig. 2, and by means of this construction the vapor from the tank a, as hereinafter described, is discharged into one end of the retort-tube g^2 and passes entirely around the same and passes into one end of the burner-tube f and entirely around the same.

In Fig. 2 the deflector h, the plate h^2, and the tank a are omitted, the object of this being to more clearly show the burner-tube, retort, the cup-shaped receptacle d, and the method of connecting the burner-tube and retort.

By reason of the form of the deflectors d^2 and h the flame from the burner-tips or burner-nozzles f^2 is directed against and around the retort g^3, as indicated in dotted lines in Fig. 1, said retort being supported between said deflectors, and as a result of this the retort is highly heated when the apparatus is in operation.

The tank a is provided with an opening k, through which it may be filled or partially filled, and this opening is provided with a thimble-shape closure device k^2, having perforations or openings k^3, and secured therein is a short tube k^4, provided at one side with a nozzle k^5, through which air may be forced into the tank a, and the top of the tube k^4 is closed by a cap k^6, through which passes a rod

k^7, which is provided with two flexible valves m and m^2, between which the air filling-nozzle k^5 is located, and above the upper valve m is placed a spring m^3, which normally holds the valves m and m^2 in the position shown in the drawings. The object of the valves m and m^2 is to permit air to be forced into the tank a and to prevent the escape of air and vapor from the tank, and any suitable construction that will accomplish this result may be employed.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof: In order to start the burner, alcohol, gasolene, oil, or other suitable material is placed in the cup-shaped receptacle d, as shown at n in Fig. 1, and this material is ignited and the heat generated heats the pipe c, the burner-tube f, and the receptacle d, and this heat is transmitted to the tank a and starts the generation of vapor therein, and the vapor thus generated passes upwardly through the pipe c into the retort g and into the burner-tube f and is discharged from the burner nozzles or tips f^2, where it is ignited. The flame from the burner tips or nozzles f^2 highly heats the retort g and also the burner-tube itself, together with the deflectors h and g^2, and this heat is sufficient to convert the vapor in the retort g^3 and the burner-tube f into a fixed gas, and the heat from the burner may be employed for the purpose of heating boilers, furnaces, or any other article or device or apparatus which it is desired to heat.

Although I have shown the burner-tube f and the retort g^3 as annular or circular in form, it will be apparent that this form need not be necessarily absolutely followed, as other arrangements of said parts may be adopted so as to bring said parts in parallel position, or substantially so.

Various changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations therein as fairly come within the scope of the invention.

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

1. In an apparatus of the class described, a tank, a pipe communicating therewith at one end and provided at the other with a receptacle, a burner-tube inclosing said receptacle and divided at one side, and a retort-tube parallel with the burner-tube and divided at one side and in comumnication with the burner-tube and with said pipe, substantially as shown and described.

2. In an apparatus of the class described, an oil-tank, a pipe communicating therewith and provided at its end with a receptacle, a burner-tube inclosing the rim of said receptacle, a retort-tube parallel with the burner-tube and in communication therewith and with said pipe, a deflector connected with the burner-tube and extending over the retort-tube and another deflector connected with the rim of the receptacle and extending below the retort-tube, substantially as shown and described.

3. In an apparatus of the class described, a pipe provided at one end with a receptacle, an oil-supply in communication with the other end thereof, a burner-tube mounted on the rim of said receptacle, a retort-tube inclosing and parallel with the burner-tube and divided at one side and one end of which is in communication with said burner-tube and the other with said pipe, a deflector connected with the burner-tube and extending over the retort-tube and another deflector connected with the rim of the receptacle and extending under the retort-tube, substantially as shown and described.

4. In an apparatus of the class described, a pipe provided at one end with a receptacle, means for forcing oil through said pipe, a burner-tube mounted on and inclosing said receptacle and divided at one side, a retort-tube parallel with and inclosing the burner-tube and divided at one side and one end of which is in communication with the burner-tube, and the other with said pipe, and deflectors arranged above and below the retort-tube, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 2d day of November, 1903.

ROBT. MELDRUM. [L. S.]

Witnesses:
ROBERT F. SCOTT,
FREDERICK PIATT.