

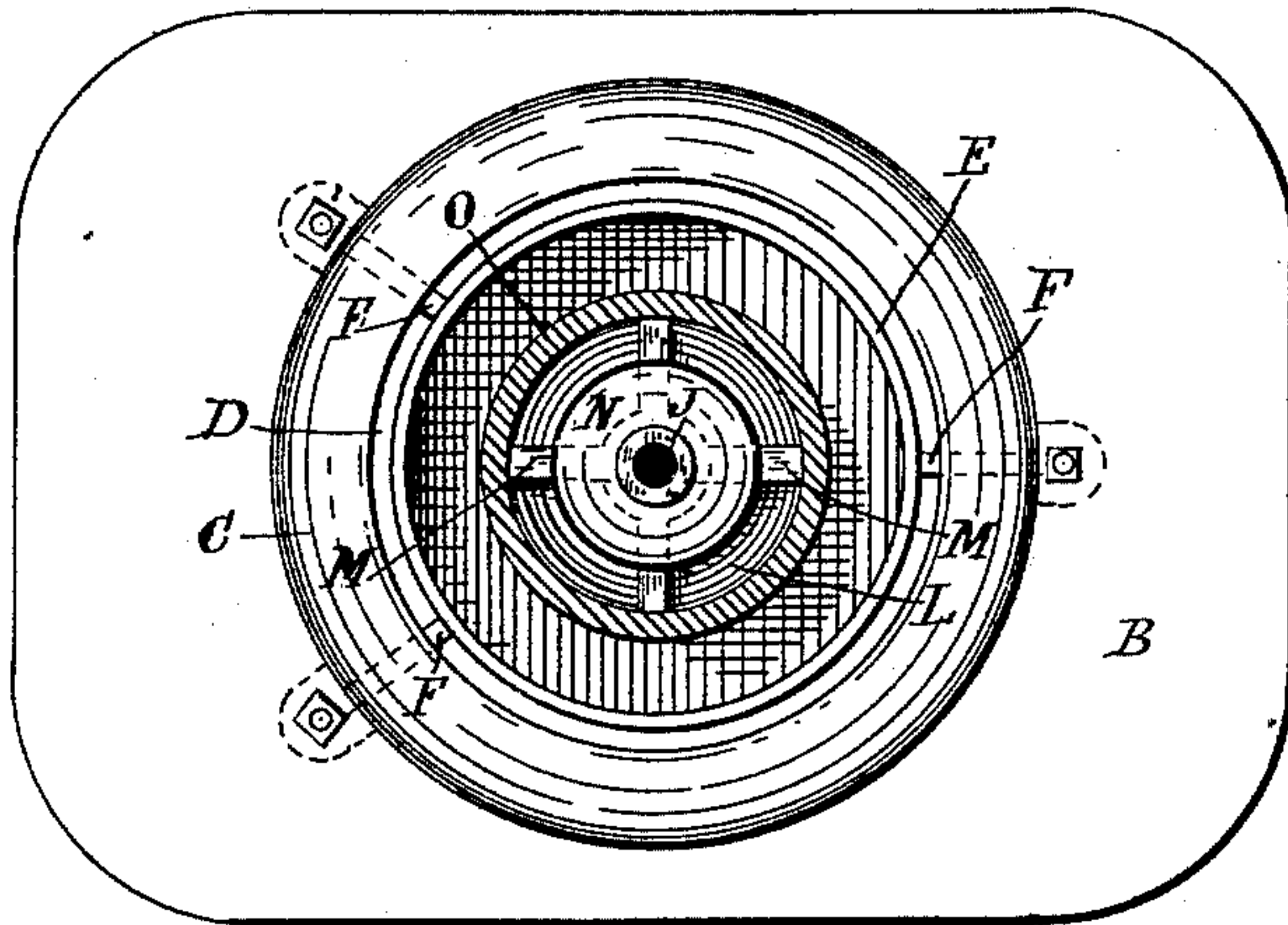
(No Model.)

C. BALL.  
FUEL OIL BURNER.

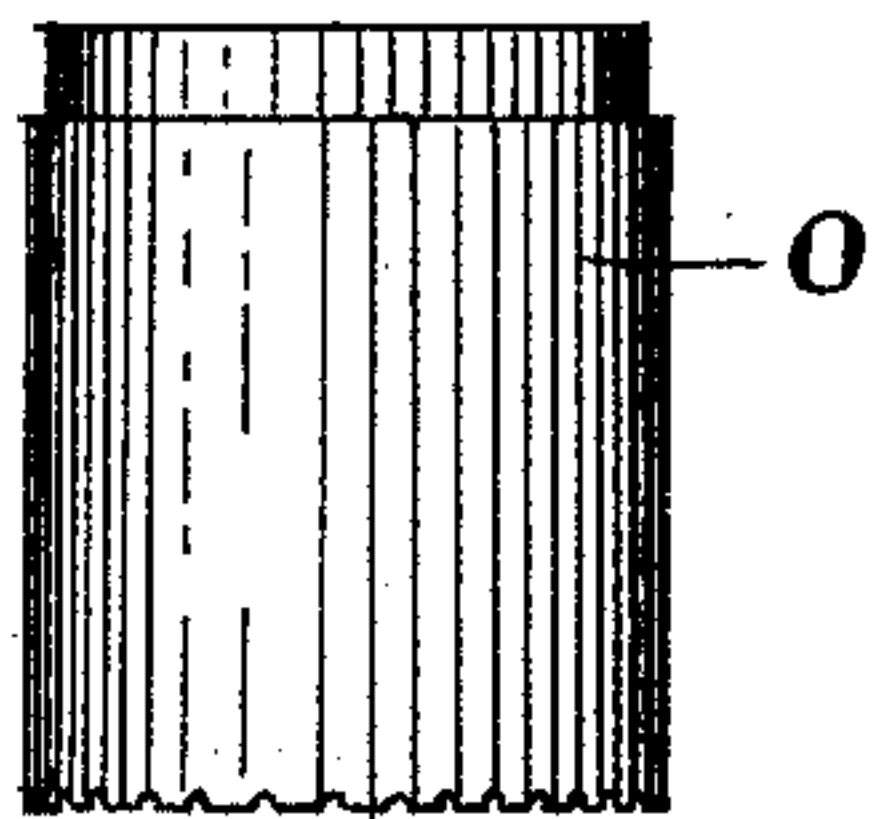
No. 483,730.

Patented Oct. 4, 1892.

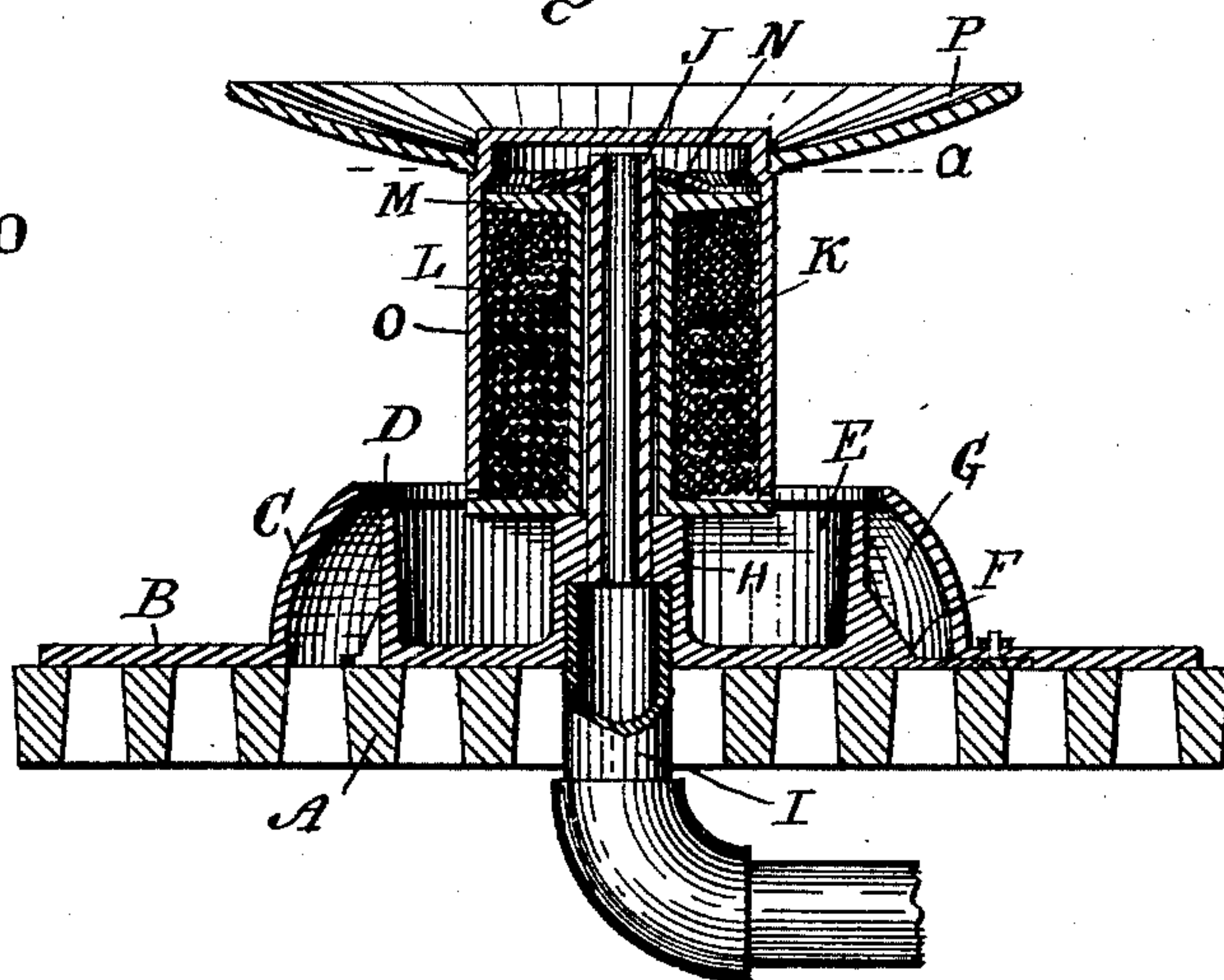
*Fig. 2.*



*Fig. 3.*



*Fig. 1.*



WITNESSES:

*V. M. Hood.*  
*H. P. Hood.*

INVENTOR

*Corland Ball*



# UNITED STATES PATENT OFFICE.

CORTLAND BALL, OF INDIANAPOLIS, INDIANA.

## FUEL-OIL BURNER.

SPECIFICATION forming part of Letters Patent No. 483,730, dated October 4, 1892.

Application filed April 1, 1892. Serial No. 427,312. (No model.)

*To all whom it may concern:*

Be it known that I, CORTLAND BALL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Fuel-Oil Burners, of which the following is a specification.

My invention relates to an improvement in fuel-oil burners for domestic purposes.

The object of my improvement is to provide means for finely-dividing and vaporizing the oil which shall be cheaply and easily constructed and readily accessible for the purpose of removing the residuum left by the burning oil.

The accompanying drawings illustrate my invention.

Figure 1 represents a central vertical section. Fig. 2 represents a plan at  $\alpha$ , Fig. 1. Fig. 3 represents a side elevation of the retort.

In the drawings, A designates the grate-bars of an ordinary heating or cooking stove.

B is a flat metallic plate having a central circular raised portion C, in which is a circular opening D. A circular cup E, of slightly-less diameter than opening D, is secured to plate B by means of arms F F in such a manner that the cup is concentric with the opening D and its bottom is in the same plane as plate B, the arrangement being such that air is prevented from passing through the grate except in that portion immediately below the annular space G formed between the walls of the cup E and the raised portion C. Cup E is provided with a central hub H, into the under side of which is screwed the oil-supply pipe I and into the upper side of which is screwed a pipe J, forming a continuation of the supply-pipe.

Mounted upon pipe J is a metallic spool K, having numerous coils of wire L wound thereon. The upper head of spool K consists of a series of arms M or is of other similar open construction, so as to expose the coils of wire. Spool K is constructed so as to slip easily over pipe J and is held in place by a washer N, which fits tightly over the pipe. The lower head of the spool is of slightly-larger diameter than the upper head, and upon this

lower head rests the cylindrical retort O, completely inclosing the upper end of pipe J and the coils K. Mounted upon and supported by the retort O is a circular deflector P.

The operation of my burner is as follows: Oil being admitted through the supply-pipe I and overflowing from the top of pipe J is conducted outward by washer N and is discharged upon the coils K. Flowing downward through the coils K, each of the wires is thoroughly coated with a film of oil, and the surplus passes out between the lower edge of the retort and the lower head of spool K and falls into the cup E. The oil in cup E being ignited, the coils K and retort O become heated, and the oil, being finely divided and distributed over the surfaces of the coils, is quickly vaporized and formed into gas, which, passing outward at the lower edge of the retort, is mixed with the current of air flowing upward through the annular space G and burns with a clear flame without soot, which is directed outward against the walls of the stove by the deflector P.

The difficulty heretofore encountered in all burners of this class having a vaporizing-retort has been the accumulation of unburned debris from the oil in the retort, which debris under former methods of construction it has been difficult or impossible to remove.

In my device by use of the coils of wire the oil is so thoroughly vaporized that little or no debris accumulates, and the construction is such that the retort and vaporizing-coils may be easily and quickly removed, cleaned, and replaced by unskilled persons without special tools.

I claim as my invention—

1. In a fuel-oil burner, the combination, with a vertical supply-pipe, of the spool carrying a series of wire coils and removably secured upon the pipe so as to receive the discharge of oil therefrom upon the coils, and a retort arranged to inclose said discharge-pipe, spool, and coils, substantially as set forth.

2. In a fuel-oil burner, the combination of the plate having the central circular raised portion provided with a central opening, the

cup secured to said plate concentric with said  
opening, the supply-pipe projecting vertically  
above said cup, the spool carrying a series of  
wire coils and mounted upon said pipe so as  
5 to receive the oil therefrom, and the retort  
mounted upon said spool and arranged to  
inclose the supply-pipe and the coil, all ar-

ranged to co-operate substantially as and for  
the purpose set forth.

CORTLAND BALL.

Witnesses:

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