

M. L. CALLENDER.
HYDROCARBON BURNER.

No. 30,703.

Patented Nov. 20, 1860.

Fig. 1

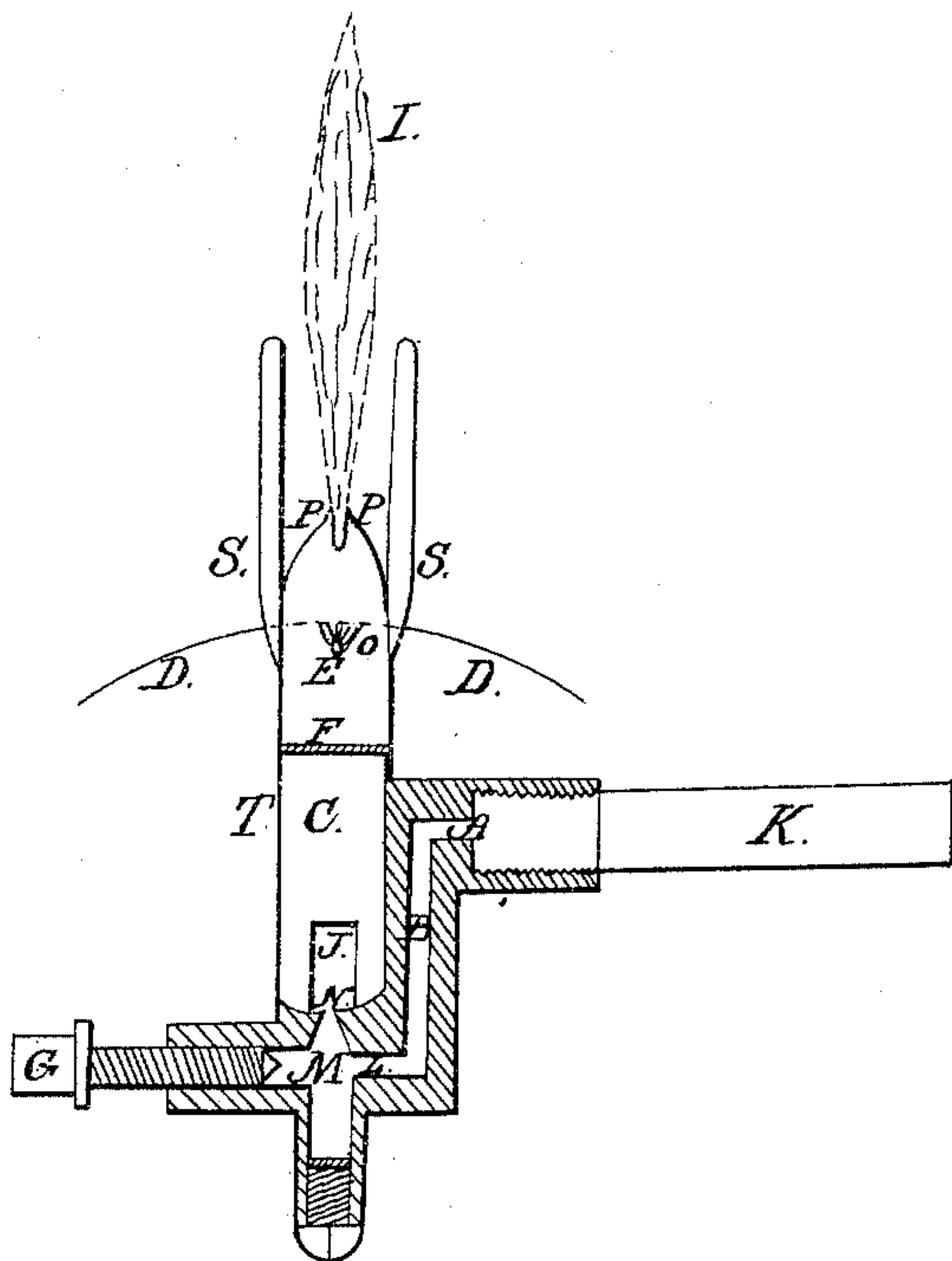
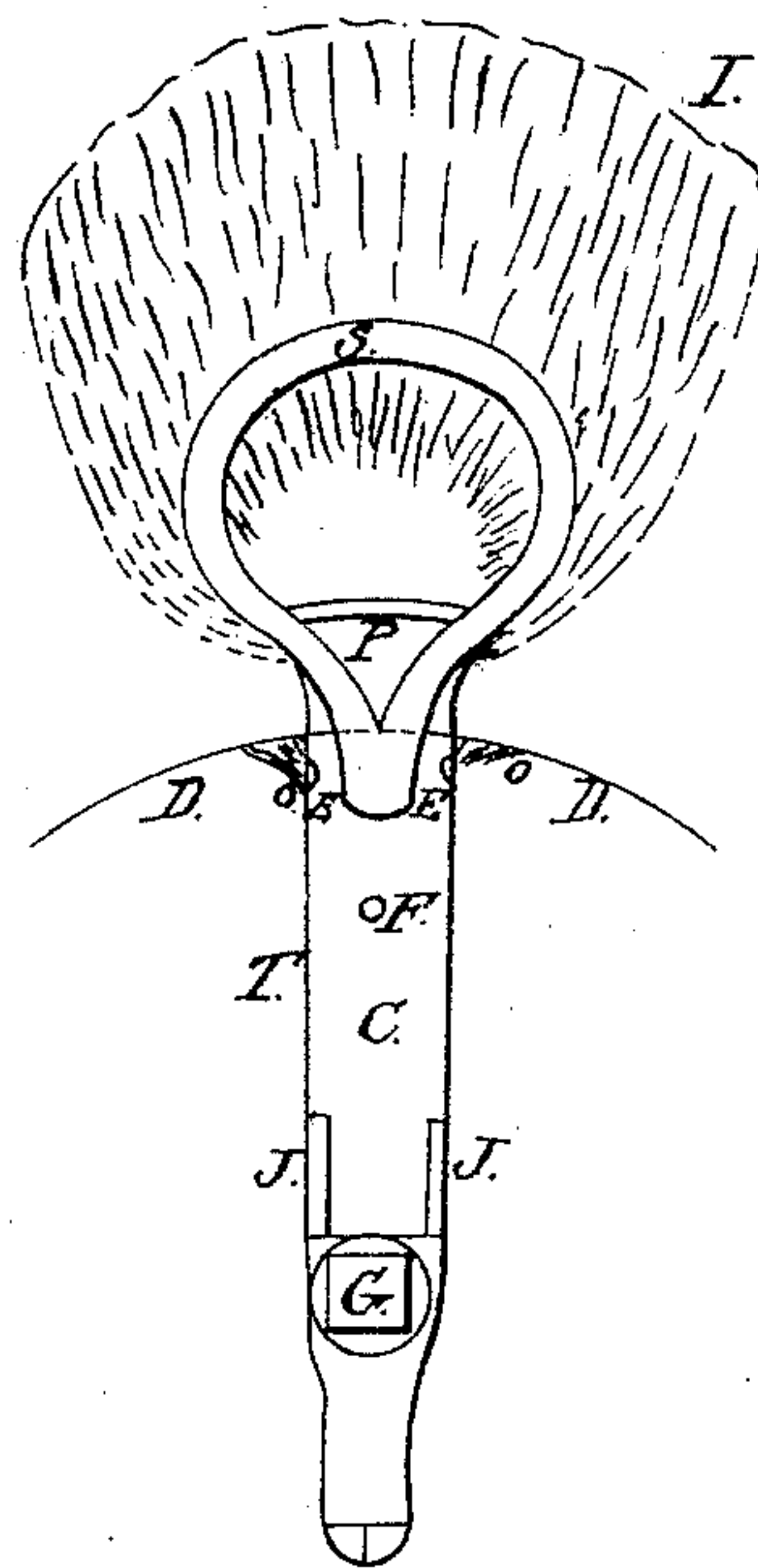


Fig. 2



Witnesses,
A. J. Gray
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UNITED STATES PATENT OFFICE.

M. L. CALLENDER, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, WARREN CHEMICAL
& MANF. CO., AND ELBERT PERCE, OF SAME PLACE.

HYDROCARBON-BURNER.

Specification of Letters Patent No. 30,703, dated November 20, 1860.

To all whom it may concern:

Be it known that I, MILLS L. CALLENDER, of the city, county, and State of New York, have made certain Improvements in Hydrocarbon Air-Mingling Vapor Burners; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in providing a hydrocarbon air-mingling vapor burner with appliances by which sufficient heat is generated in the burner to evaporize coal oil and other hydrocarbon fluids.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its construction and operation.

The oil flows from a suitably elevated receptacle through a supply pipe K, into the chamber A, where it is converted into vapor, thence downward through the tube B, the vapor passes through the passage L, into the chamber M, and thence upward through the vapor orifice N, into the air-mingling chamber C, which forms the interior of the body of the burner T, and mingling with the air which enters into the interior of the air mingling chamber C, at the air passages

J J, the mingled vapor and air pass upward until they reach the dividing wire F, shown in Figure 2, on the accompanying drawings. At this point the column of mingled air and vapor is divided to the right and left by the obstruction to its upward passage caused by the dividing wire F, and a portion of the mingled air and vapor is forced through the orifices E E, while the other portions of the mingled air and vapor are forced through the lips P P, of the burner, and being ig-

nited, burn in a broad flat flame I. The portion of mingled air and vapor which is forced through the orifices when ignited form small jets of blue flame producing great heat, but no light which jets strike against the under surface of the cap or heater D, which is firmly connected to the body of the burner T. The jets of blue flame impart to the cap or heater D, an intense heat, which is communicated to all parts of the burner. The heating rings S, S, receive heat from their close proximity to the flame I, and impart a large additional amount of heat to the burner; and the heat thus obtained combined with the heat generated by the jets of blue flame O, O, give to the whole burner a sufficient amount of heat to convert coal oil into vapor the instant the oil reaches the chamber A, and also to retain the vapor in a highly heated state until, mingled with air, it reaches the point of combustion. The screw G, serves as a valve by which the oil or vapor is shut off or let on.

The cap or heater is represented as made of bell form in the drawing, but I am not limited to any particular forms. Simple arms projecting from the sides of the burner, against which arms the jets would strike, would answer equally as well.

What I claim as my invention and desire to secure by Letters Patent is—

The employment of the auxiliary jets and cap or heater D, in combination with the air mingling chamber C, substantially as and for the purposes herein shown and described.

M. L. CALLENDER.

Witnesses:

O. B. GRAY,
E. PERCE.