

No. 771,769.

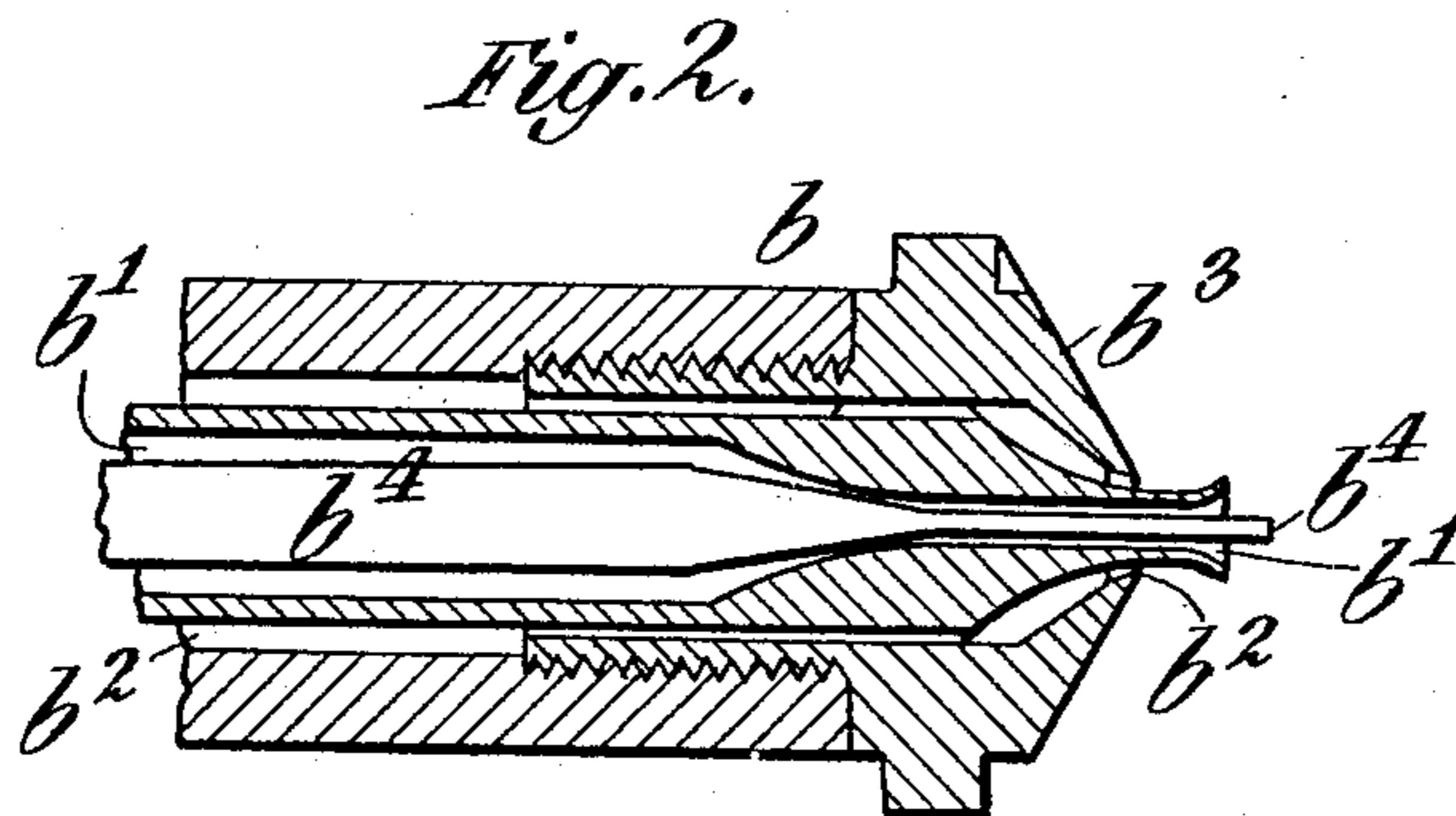
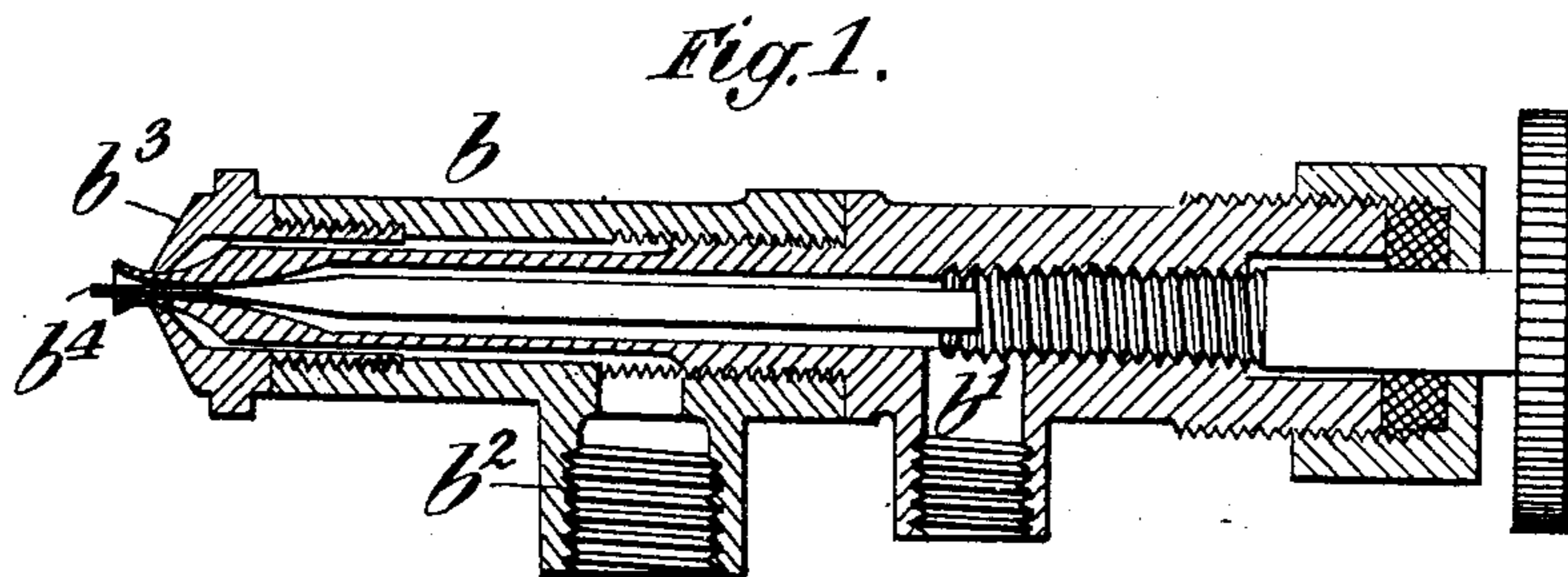
PATENTED OCT. 4, 1904.

P. DAVIES, B. WOODCOCK & E. ODDY.

LIQUID FUEL BURNER.

APPLICATION FILED JAN. 27, 1903.

NO MODEL.



Witnesses:

Witnessing
M. R. Adams

Inventors:
Preston Davies
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By their Attorneys

Paulson Davidson & Co.

UNITED STATES PATENT OFFICE.

PRESTON DAVIES, OF SOUTHFIELDS, AND BOTTOMLEY WOODCOCK AND EDWIN ODDY, OF CLECKHEATON, ENGLAND.

LIQUID-FUEL BURNER.

SPECIFICATION forming part of Letters Patent No. 771,769, dated October 4, 1904.

Original application filed October 15, 1898, Serial No. 693,684. Divided and this application filed January 27, 1903. Serial No. 140,808. (No model.)

To all whom it may concern:

Be it known that we, PRESTON DAVIES, residing at Southfields, in the county of Surrey, and BOTTOMLEY WOODCOCK and EDWIN ODDY, residing at Cleckheaton, in the county of York, England, all subjects of His Majesty the King of Great Britain, have invented certain new and useful Improvements in and Relating to Liquid-Fuel Burners, of which the following is a specification.

Our invention has for its object to provide improved means for effecting the combustion of liquid fuel, such as hydrocarbon oils.

In the accompanying drawings, which are illustrative of our invention, Figure 1 shows in longitudinal section our improved burner or feeder, and Fig. 2 is a part thereof drawn to a considerably enlarged scale.

Our apparatus contains, as clearly shown in the enlarged view, Fig. 2, two independent and preferably concentrically-arranged passages b' b^2 , the central one, b' , for the hydrocarbon and the other, b^2 , for steam. The said feeder b terminates in a nozzle b^3 . Thus two distinct orifices are provided, as shown, the hydrocarbon one, b' , preferably being in advance and somewhat flaring or trumpet-shaped.

As will be clearly seen from the enlarged view, Fig. 2, the hydrocarbon-tube tapers toward its end, and then at the extremity both exteriorly and interiorly it spreads or becomes flaring or trumpet-shaped, while the orifice at the apex of the steam-nozzle has sloping walls, as shown. The issuing steam is by the sloping walls of the orifice in the steam-nozzle directed to and strikes against the trumpet-shaped end of the hydrocarbon-tube.

It is essential that there be means to regulate the flow of hydrocarbon at its point of issue from the orifice b' . The drawings show this effected by a needle-plug b^4 . The steam-orifice b^2 surrounds the hydrocarbon one, and optionally such steam-orifice may be capable

of regulation by adjusting the nozzle b^3 in a longitudinal direction.

The hydrocarbon need not be forced through the nozzle, but may be sucked through it by the issuing steam. This issuing steam forms a vacuum around the hydrocarbon-outlet and such outlet being nicely regulated at that point by the needle-plug b^4 the supply is constant and the hydrocarbon consumption limited.

In starting up (unless a separate boiler is used) steam has to be generated by other means. When starting with such a supply of steam, our liquid-fuel burner or feeder is started by applying to the nozzle a temporary flame or the like.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. A liquid-fuel burner having a central passage for the hydrocarbon, terminating in a flaring orifice, and a passage for steam surrounding the hydrocarbon-passage which is provided with walls at its front end that taper toward the flaring extremity of the hydrocarbon-passage and terminate in rear thereof.

2. A liquid-fuel burner comprising a central tube having a flaring or trumpet-shaped outer end, a tube surrounding the first-mentioned tube and having its outlet-orifice in rear thereof, said tube having walls at its front end which taper toward the inner tube and toward the flaring or trumpet-shaped end thereof.

In testimony whereof we have hereunto subscribed our names.

PRESTON DAVIES.
BOTTOMLEY WOODCOCK.
EDWIN ODDY.

Witnesses to the signature of Preston Davies:

J. ANDREW,
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Witnesses to the signatures of Bottomley Woodcock and Edwin Oddy:

A. F. SPOONER,
FRED HAMMOND.