

No. 606,721.

Patented July 5, 1898.

G. JOHNSON.
VAPOR BURNER.

(Application filed Jan. 13, 1898.)

(No Model.)

Fig. 1.

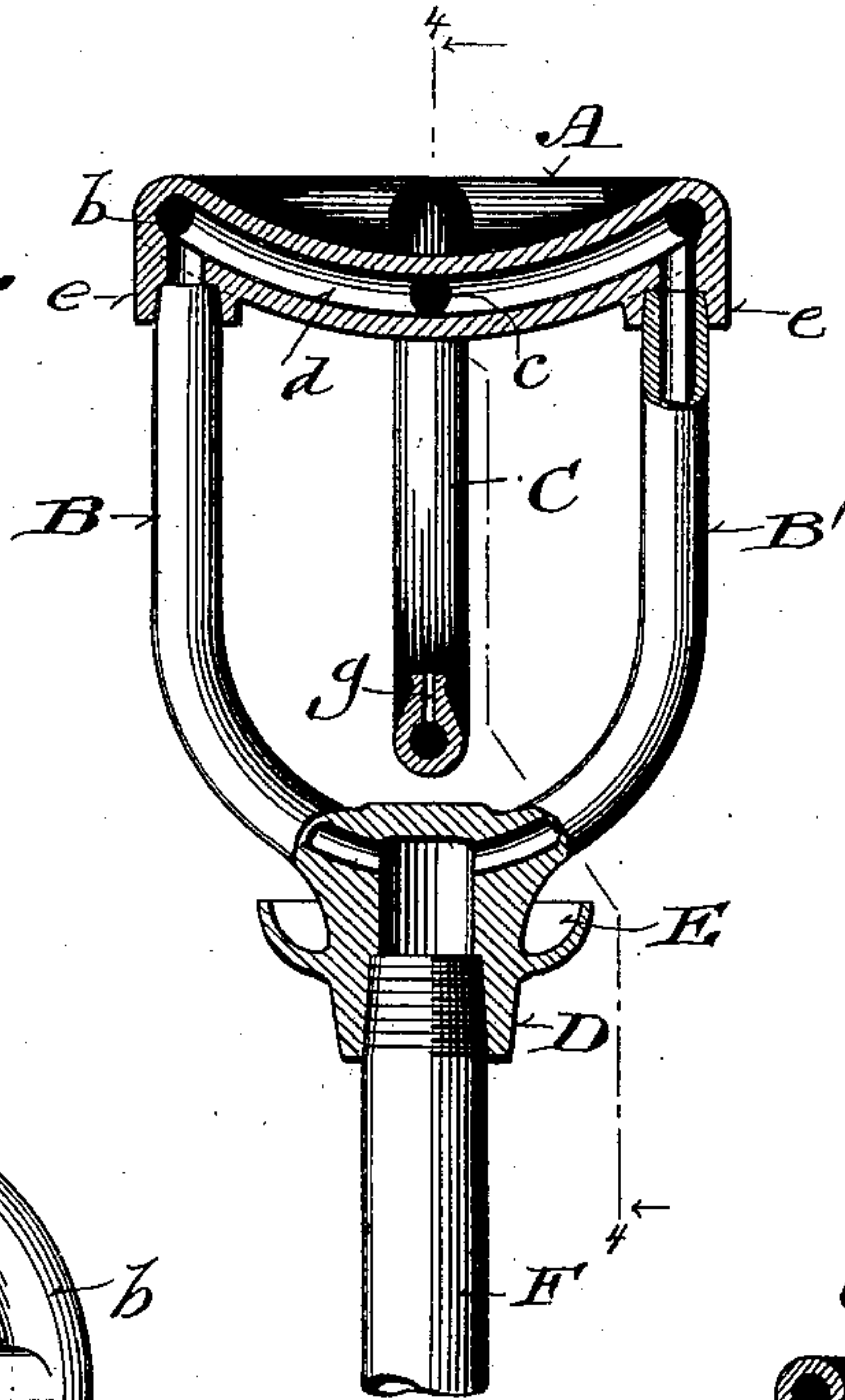


Fig. 2.

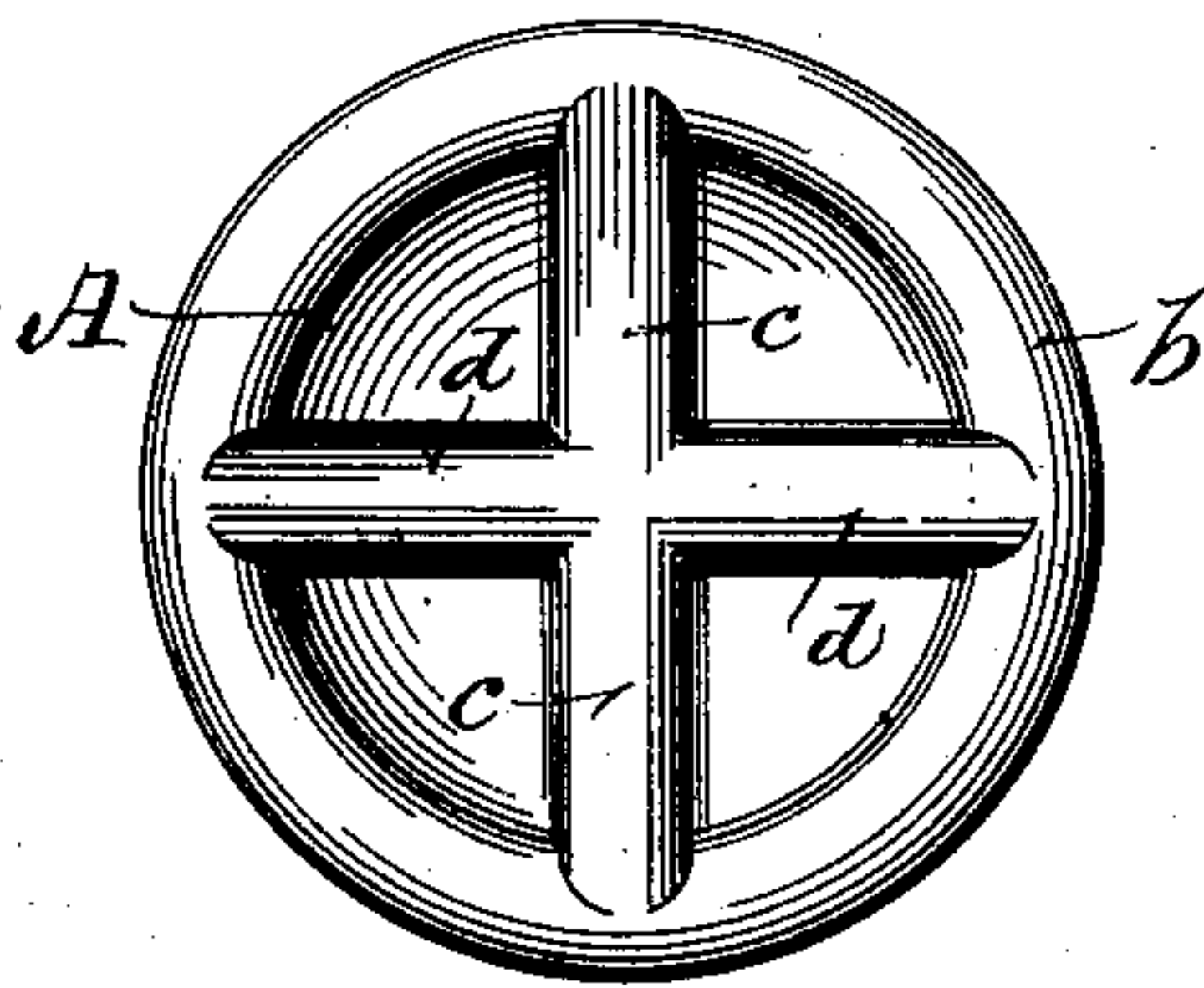


Fig. 3.

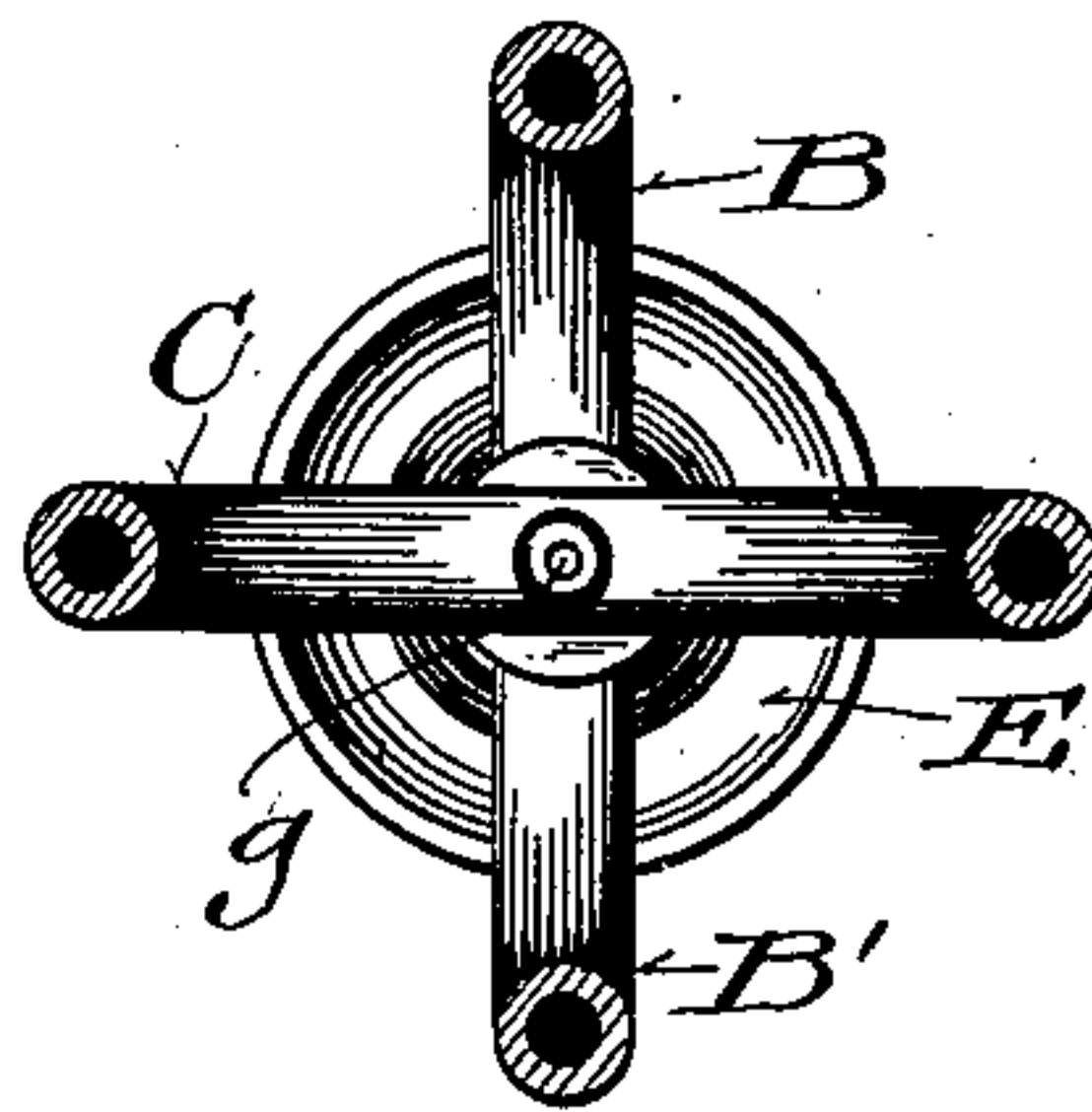
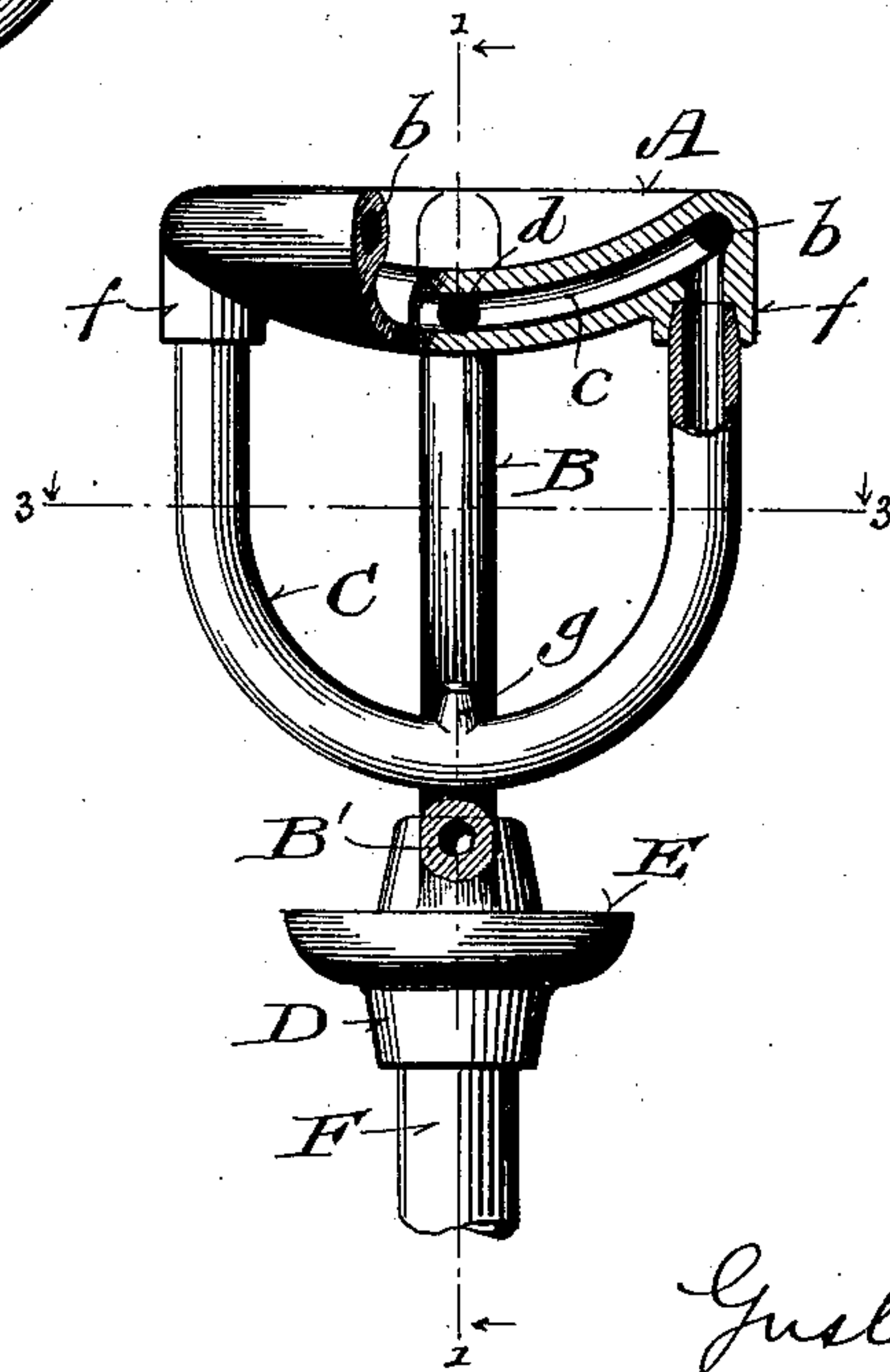


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

GUSTAF JOHNSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF FIVE-SIXTHS
TO CHARLES C. WENTWORTH, RINALDO R. WENTWORTH, MONTA D.
WENTWORTH, AND PETER MUNSON, OF SAME PLACE.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 606,721, dated July 5, 1898.

Application filed January 13, 1898. Serial No. 666,502. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF JOHNSON, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to obtain the best possible results in the matter of converting hydrocarbon liquid, such as petroleum, into fuel-vapor under the influence of heat; and it consists in certain peculiarities of construction and combinations of parts constituting a simple, economical, and effective vapor-generating burner, hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents an elevation of my improved burner, partly in section, as indicated by line 1 1 in the fourth figure; Fig. 2, a plan view of the burner; Fig. 3, a horizontal section of said burner, indicated by line 3 3 in the fourth figure; and Fig. 4, another elevation of said burner, partly in section, as indicated by line 4 4 in the first figure.

Referring by letter to the drawings, the head A of the burner is a preferably dished disk having an annular chamber *b* therein adjacent to its rim, and cross-channels *c d*, these channels being open to each other and said chamber. Depending from the disk at quarter-circle intervals of the same are hollow lugs *e f*, that communicate with the chamber *b*, and these lugs register with the termini of the aforesaid cross-channels.

In fluid-tight connection with the disk-lugs are the upper ends of pipes B B' C, the first two of these pipes being curved branches of a coupling D, that is provided with a drip-cup flange E and has screw-thread connection with a supply-pipe F for liquid hydrocarbon. The other pipe C of the series is U-shaped and has its bend centrally provided with an upwardly-extending jet-nozzle *g*, this bend being above the coupling D above specified.

In practice the burner is first heated by a readily-combustible liquid, such as alcohol, ignited in the drip-cup flange, and thus the conversion of the liquid hydrocarbon circulated in said burner is begun. The hydrocarbon liquid is fed to the vaporizing-chamber *b* of the burner through the pipes B B', and the resultant inflammable vapor finds its way to the outlet-nozzle *g* of pipe C, this vapor being ignited to serve as fuel.

It has been found in practice that the flame from the jet-nozzle will extend for some distance above the same, and the dimensions of the disk or burner-head A are such that said flame is diffused so as to burn in a circle, and thus give the best results.

The burner is kept hot by its own flame, the latter continuing as long as there is supply of liquid hydrocarbon to said burner, and owing to the circulation of this liquid in contact with a very considerable area of heating-surface it is rapidly converted into free-burning vapor unmixed with air until it escapes through the jet-nozzle.

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

1. A vapor-burner consisting of a disk having an annular chamber therein adjacent to its rim, as well as cross-channels that are open to each other and said chamber, hollow lugs depending from the disk at quarter-circle intervals of the same in register with terminals of the cross-channels, a supply-pipe coupling having hollow branches whose ends are joined to one pair of disk-lugs, a U-pipe joined to the other pair of disk-lugs, and a jet-nozzle extending upward from the bend of the latter pipe, said bend being above the supply-pipe coupling.

2. A vapor-burner consisting of a disk having an annular chamber therein adjacent to its rim, as well as cross-channels that are open to each other and said chamber, hollow lugs depending from the disk at quarter-circle intervals of the same in register with terminals of the cross-channels, a supply-pipe coupling provided with a drip-cup flange and having

hollow branches joined to a pair of disk-lugs,
a U-pipe having its ends joined to the other
pair of disk-lugs, and a jet-nozzle extending
upward from the bend of the latter pipe, said
5 bend being above the supply-pipe coupling.

In testimony that I claim the foregoing I
have hereunto set my hand, at Milwaukee, in

the county of Milwaukee and State of Wis-
consin, in the presence of two witnesses.

GUSTAF JOHNSON.

Witnesses:

N. E. OLIPHANT,
B. C. ROLOFF.