

(No Model.)

F. DIECKMANN.

GAS BURNER.

No. 250,793.

Patented Dec. 13, 1881.

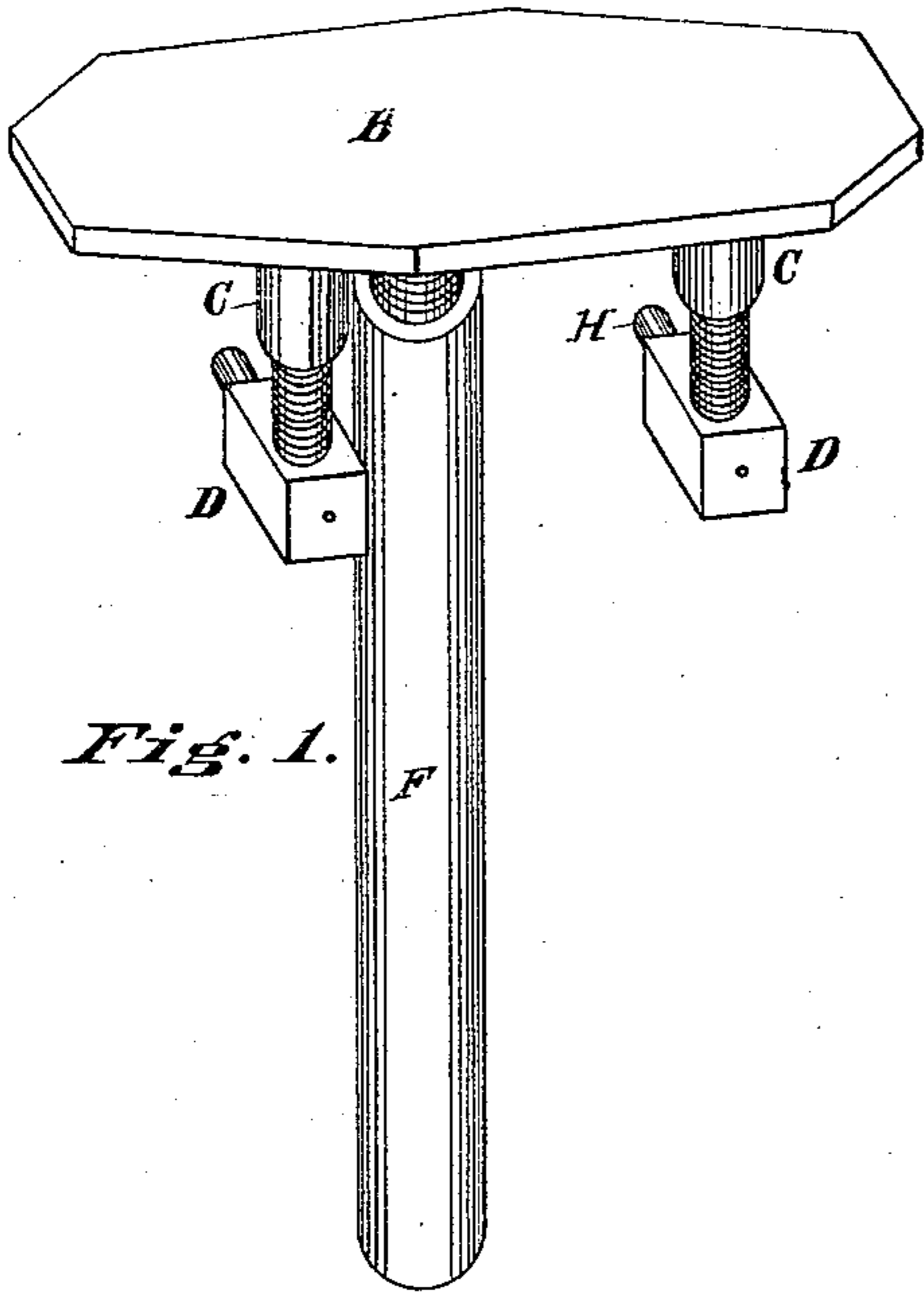


Fig. 1.

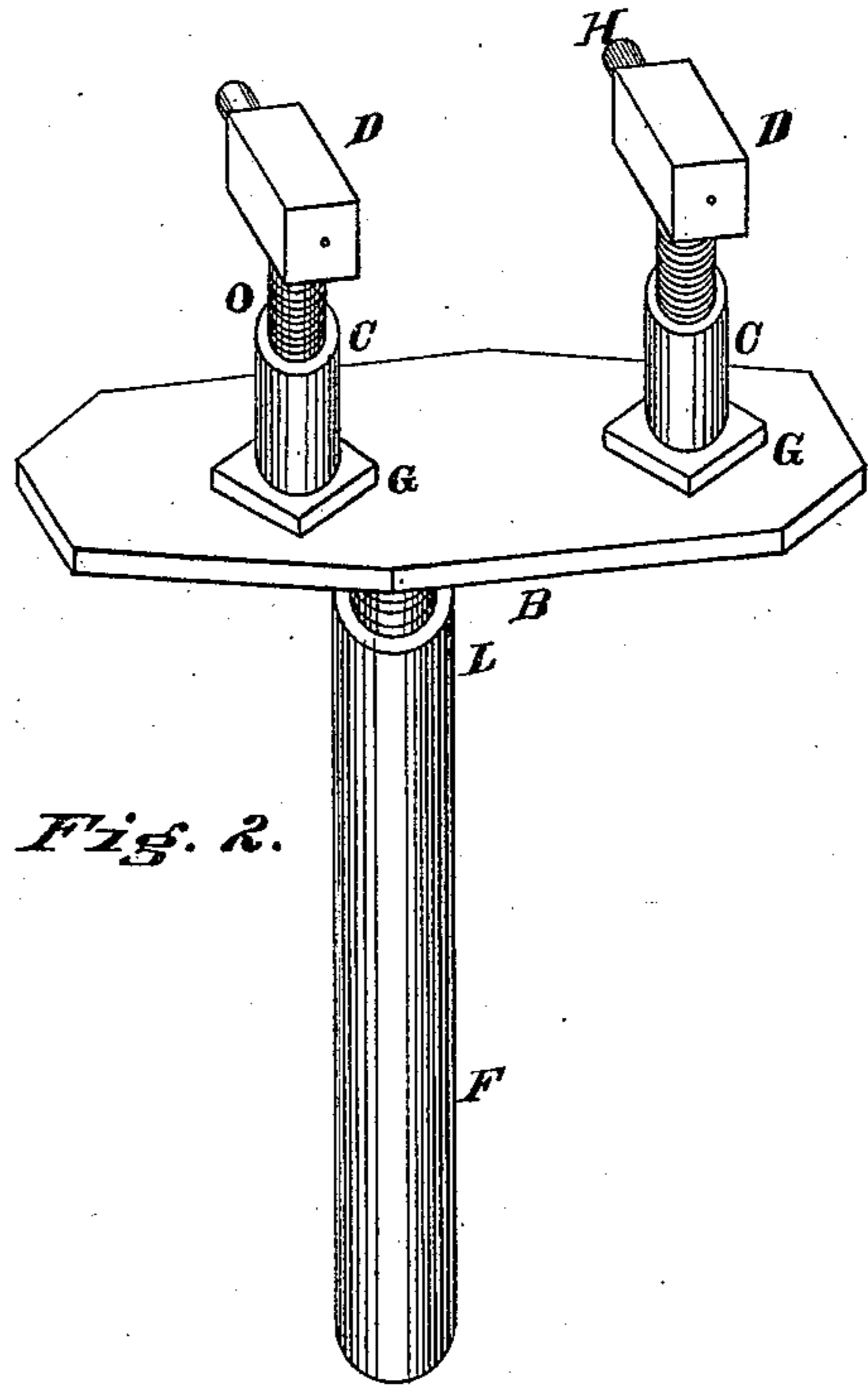


Fig. 2.

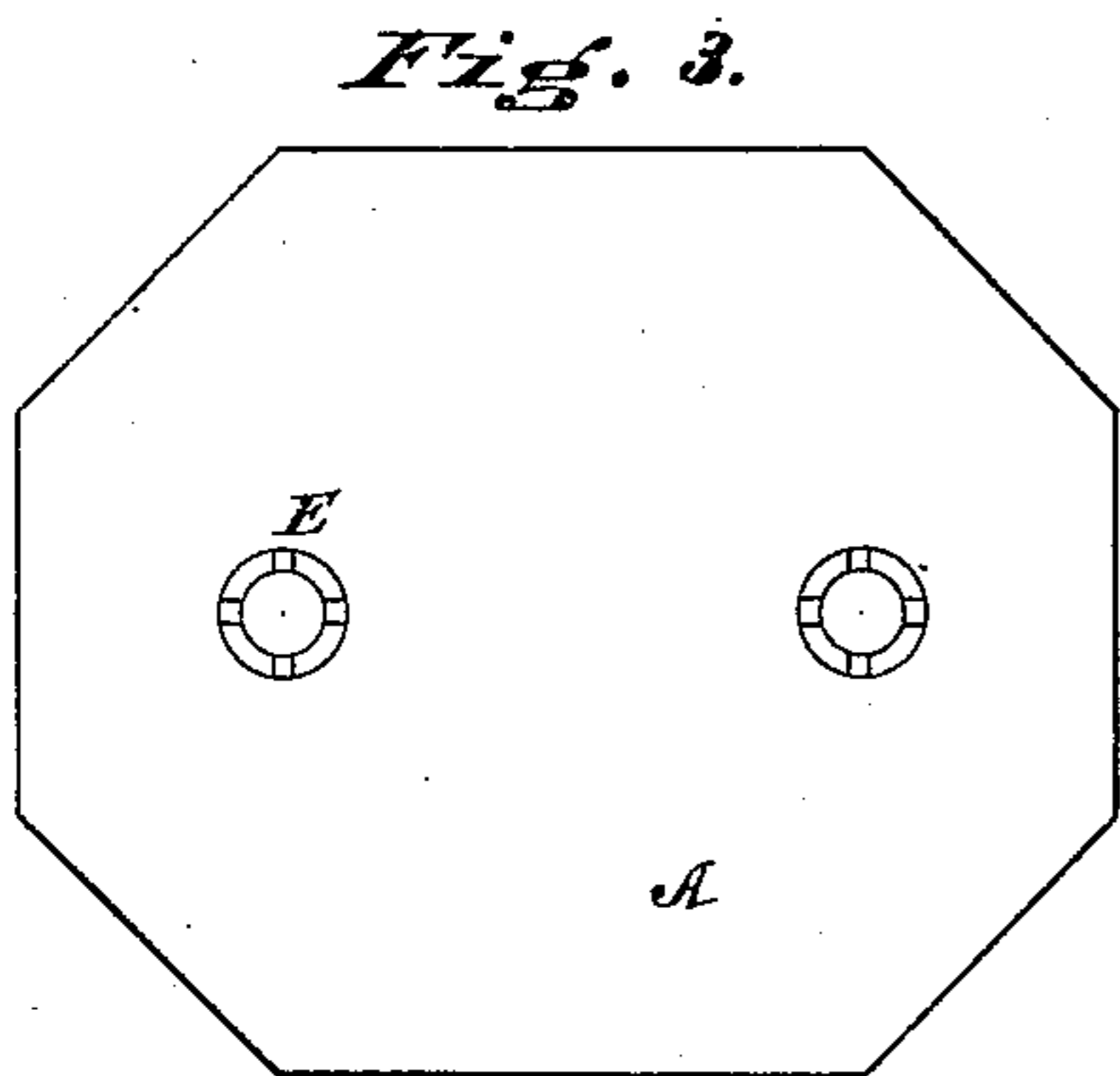


Fig. 3.

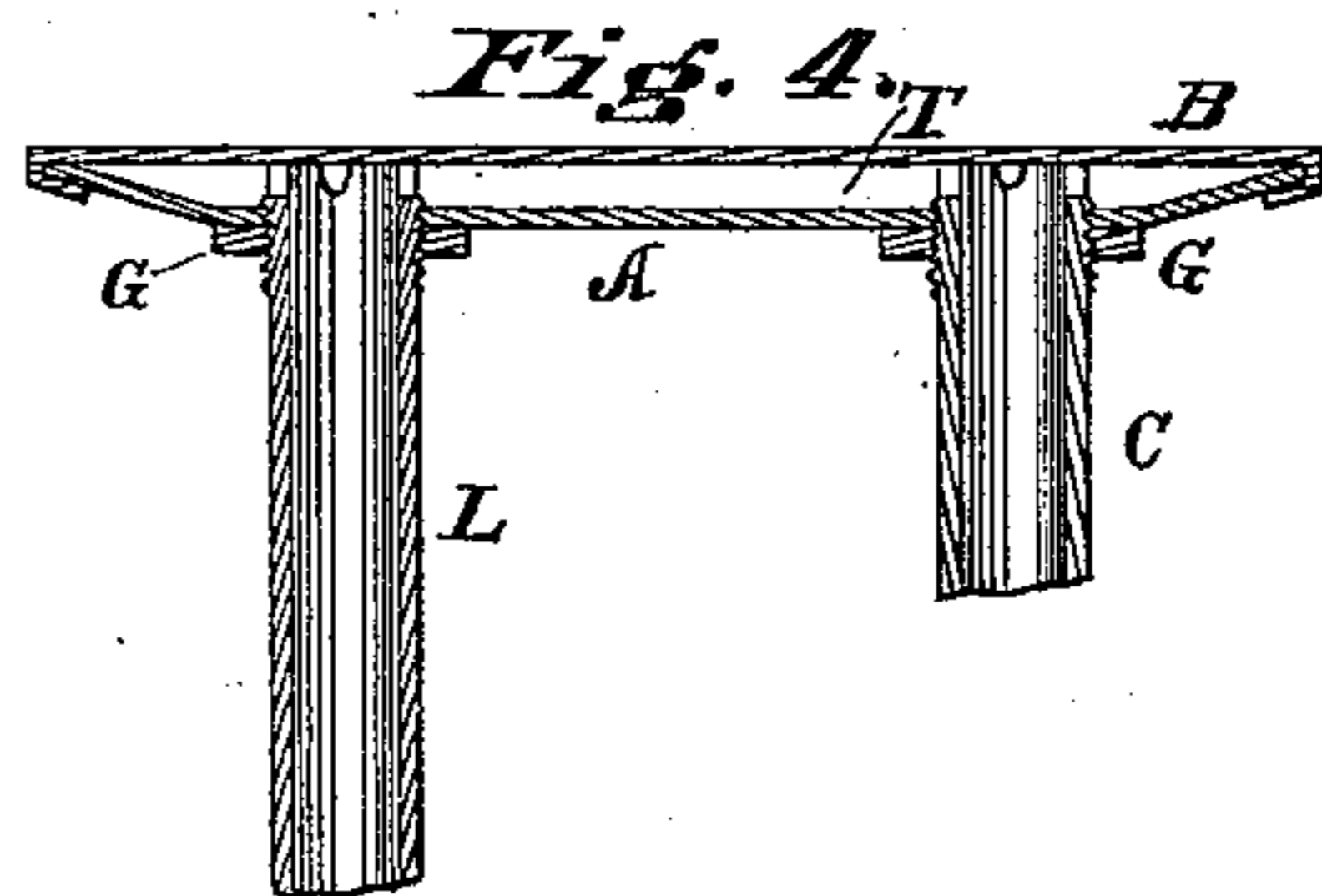


Fig. 4.

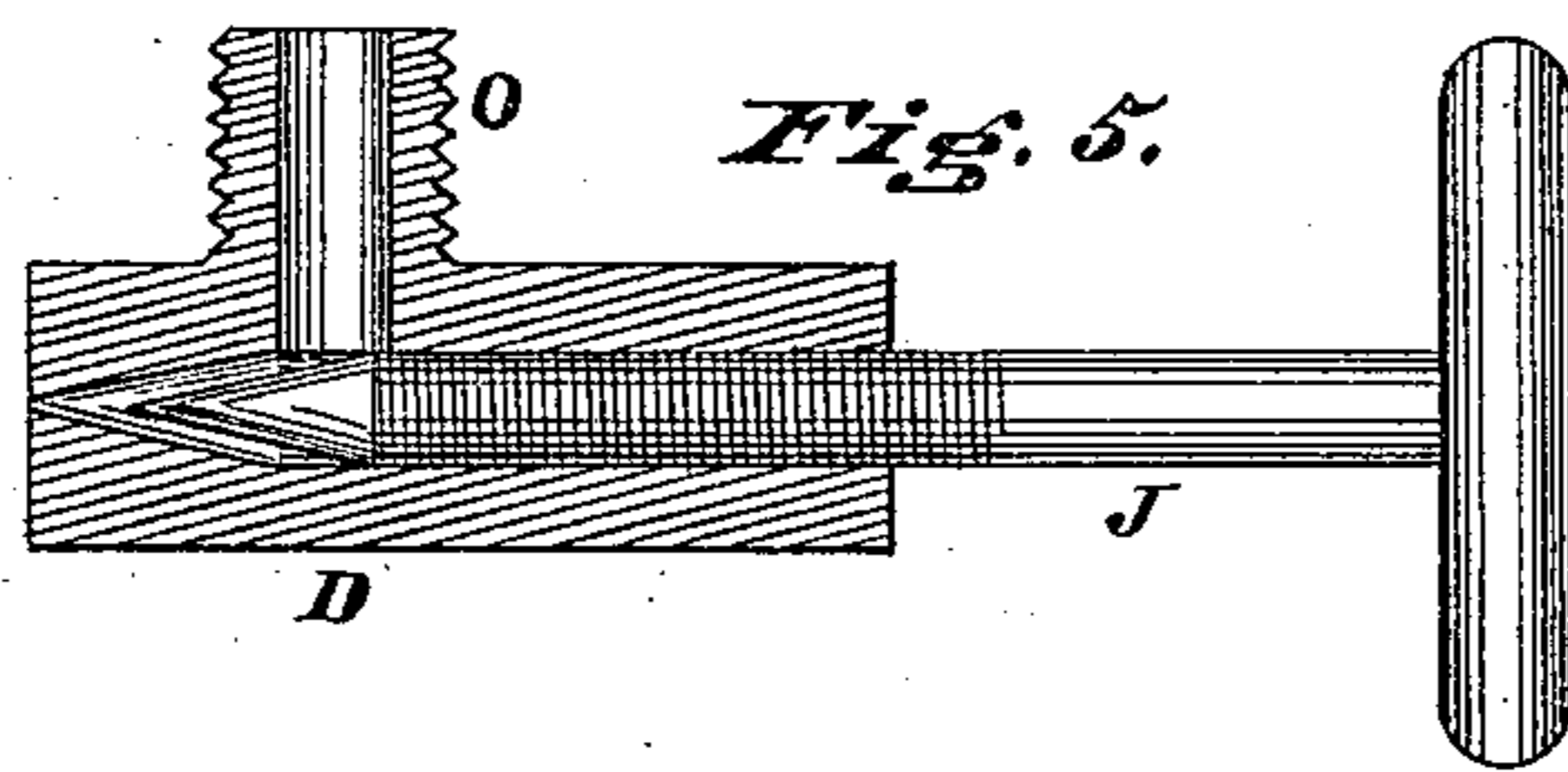


Fig. 5.

Attest

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# UNITED STATES PATENT OFFICE.

FERDINAND DIECKMANN, OF CINCINNATI, OHIO.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 250,793, dated December 13, 1881.

Application filed September 5, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND DIECKMANN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented new and  
5 useful Improvements in Gas-Burners, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to produce a gas-  
10 burner made from thin sheet-metal plates, and so constructed that by the application of a small amount of heat it will generate gas from the very heaviest as well as the lightest hydro-  
carbon oils. To do this I use certain forms and  
15 modes of construction, which must be described in detail to be thoroughly understood. This burner is of that class which usually receives its heat from the flame of another burner, but may be made to furnish its own heat, if de-  
20 sired.

Figure 1 shows a perspective of my burner with the needle-points underneath the plates, and Fig. 2 the same with the points on top. Fig. 3 shows a top view of the plate marked  
25 A and usually used as the lower plate. Fig. 4 shows a sectional view of my burner, and Fig. 5 an enlarged view of the needle-point D with a needle in it.

A represents the lower plate with the edges  
30 slightly raised. This is done to give a very small oil or gas space, T, between it and the top plate, B. Into plate A are screwed one or more short pipes, C. These pipes are first screwed through the nut G, and then through  
35 the plate A until the nut rests firmly against the plate, and then both the nut and pipe are thoroughly brazed to the plate. The pipes are made to pass through the plate about the thirty-  
40 second part of an inch, and the end is notched, as shown at E, Fig. 3. This is to allow the oil or gas to pass from the pipe F, Fig. 1, into the pipe C, and from this into the needle-points D. These points are made in the shape of a  
T. One way they are drilled and tapped to  
45 receive the plugs H or needles J, Fig. 5, as may be desired. Preferably the needles are left out and the plugs used, that a greater force may be obtained for the flow of the gas from the point; but either may be used at pleasure.

50 The arm of the point marked O, Fig. 5, is drilled for the passage of oil or gas and the outside threaded to fit into the short pipe C, which is tapped to receive it.

A short pipe, L, is fitted into the plate A precisely in the same way as the pipe C; but  
55 instead of being tapped on the inside the lower end is threaded to screw into the oil-supply pipe F. The plate B is laid on plate A, the edges turned over and beat down close, and then carefully brazed all round to the plate A.  
60 This is a part of the process that requires great care and skill, as upon the careful brazing of the parts depends in a large measure the construction of the burner successfully, as in this way only can such thin metal be made tight  
65 and durable.

This burner may be used with the points D and pipes C above the burner; but the oil-sup-  
ply pipe F is always placed below.

The operation of my burner is as follows:  
70 The oil from the fount being let into the pipe F it flows into the burner, where it is held in a very thin strata, the burner being previously heated by a taper placed under it for the purpose. The oil-globules are here mechanically  
75 divided and forced to come in contact with the highly-heated metal plates of the burner, which, having a large heating-surface, causes them to be instantly decomposed and converted into gas. Not even the smallest oil-globule is ever  
80 allowed to pass the point D, as the outlet is exceedingly small, and being filled with the expanded gas from the burner effectually holds the oil back in the pipe F, while the oil in the  
85 pipe is pressed by the oil in the fount. This counter action in the burner holds the gas till it is thoroughly decomposed and a fine gas produced from the heaviest oils.

What I claim as my invention is—

1. The plates A and B, placed in relation to  
90 each other, as described, so that a space not exceeding one thirty-second part of an inch shall remain between them, the plate A resting on the notched ends E of the pipes C and L, as and for the purpose specified.  
95

2. The burner described, consisting of the plates A and B, recess T, pipes C and L, nuts G, needle-points D, and supply-pipe F, substantially as and for the purpose set forth.

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Attest:

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