

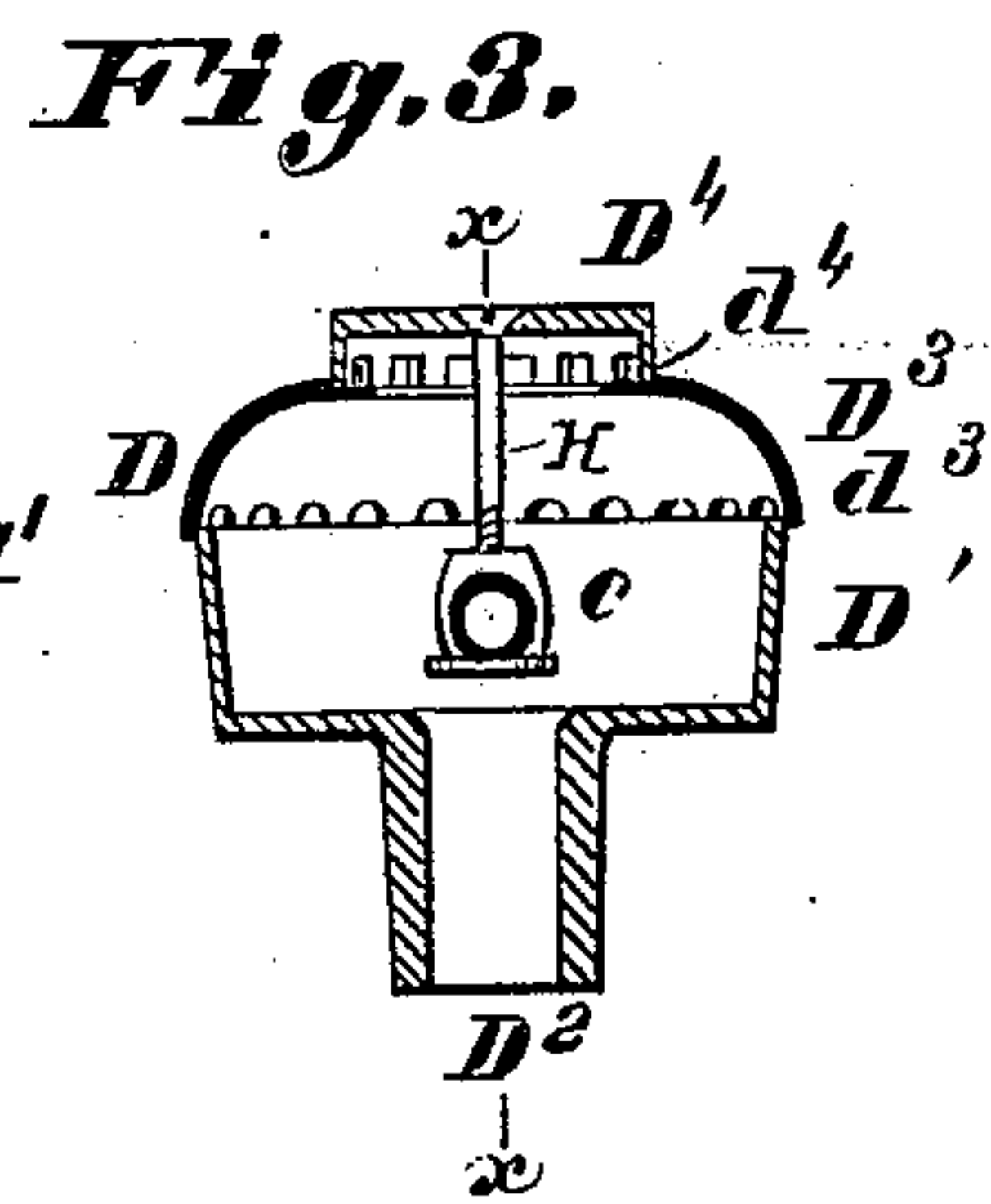
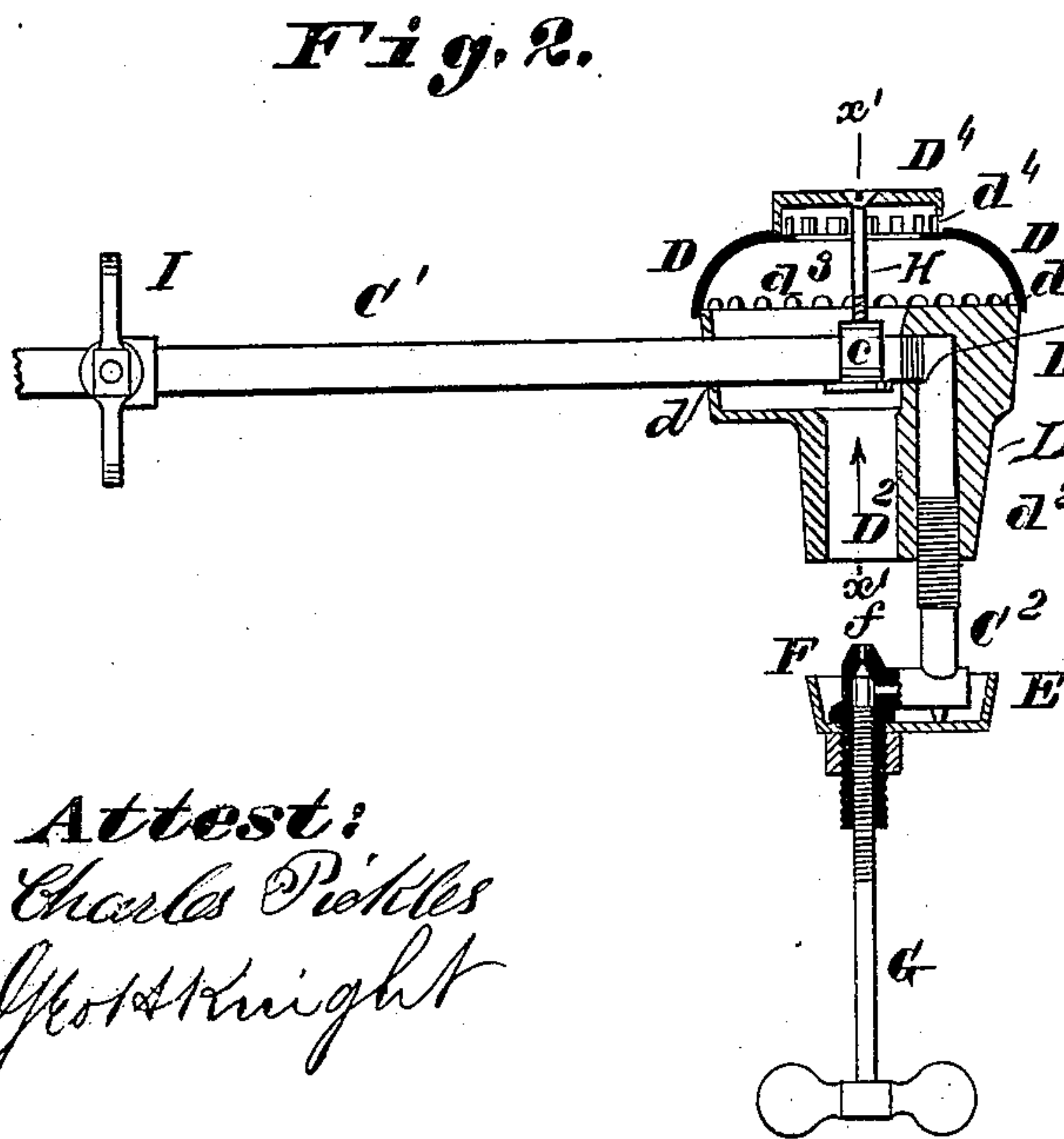
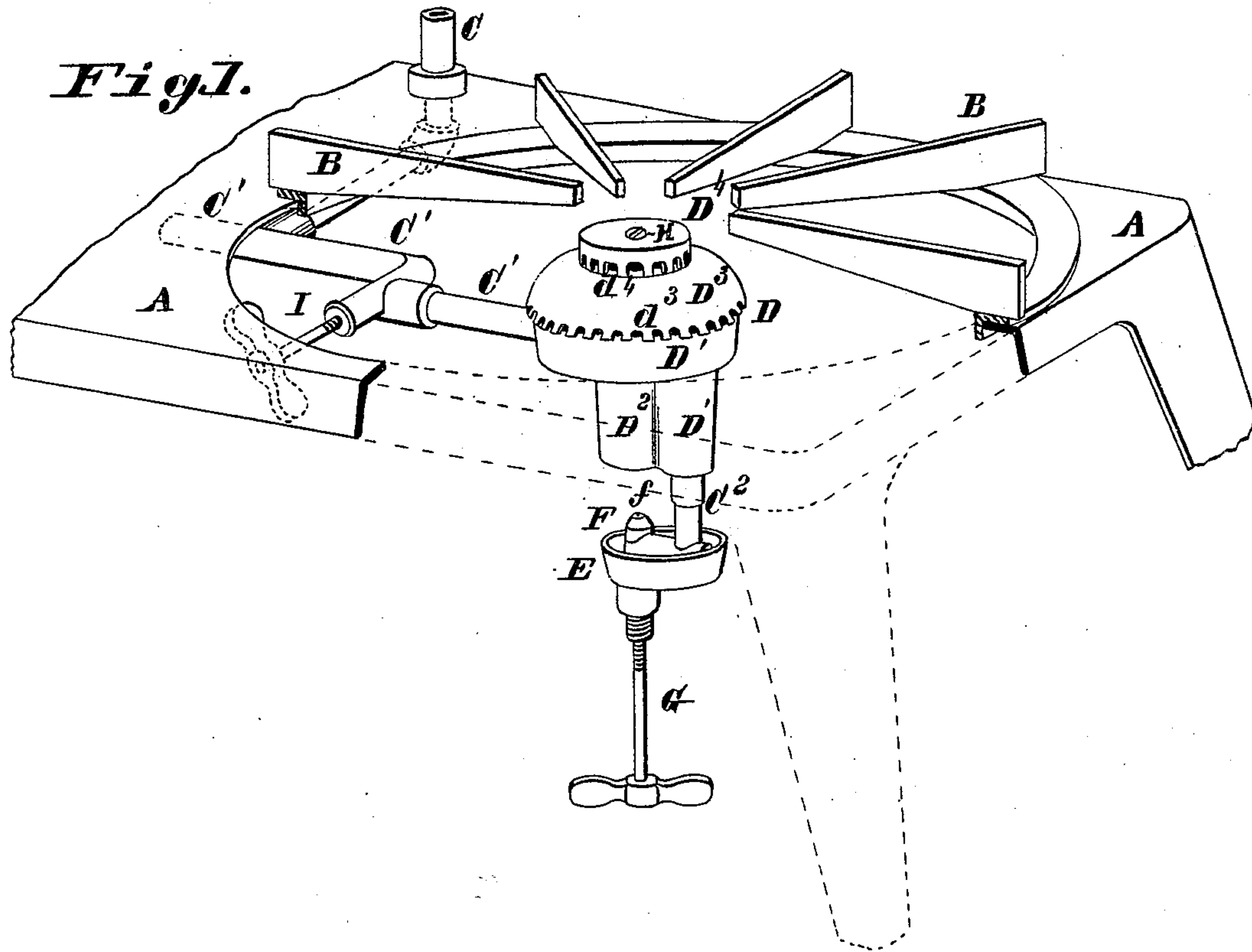
(No Model.)

T. JOHNSON.

GASOLINE VAPOR BURNER.

No. 246,784.

Patented Sept. 6, 1881.



Attest:
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UNITED STATES PATENT OFFICE.

THOMAS JOHNSON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
JOHN BAIRD, OF SAME PLACE.

GASOLINE-VAPOR BURNER.

SPECIFICATION forming part of Letters Patent No. 246,784, dated September 6, 1881.

Application filed June 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JOHNSON, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Gasoline-Vapor Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My improvement relates to a burner of that class in which the gasoline is converted into vapor before reaching the jet.

My invention consists in a combustion-chamber of peculiar construction, consisting of a cup formed with an open neck, horizontal openings for reception of the liquid-pipe, and vertical opening parallel with the open neck connecting the liquid-pipe with the vapor-pipe, as hereinafter described.

My invention consists, further, in combining with said combustion-chamber a liquid-pipe placed horizontally across the chamber in a central position, so that the products of combustion can play below and above it and heat it, a deflector mounted on said pipe for spreading the flame beneath the pipe, a vapor-pipe depending from the cup, a burner-cup, and a burner or jet-pipe, as hereinafter described.

My invention consists, further, in combining with the cup of the combustion-chamber a dome formed of two inverted saucers superimposed and having notched edges, the upper saucer being secured through the lower one to the horizontal pipe by means of a suitable screw-bolt, as hereinafter described.

My invention consists, further, in combining in a gasoline-vapor burner various elements of improved construction.

In the drawings, Figure 1 is a perspective view, showing one portion of a double-burner stove with part broken away. Fig. 2 is a vertical section through the burner at xx , Fig. 3. Fig. 3 is a vertical section through the combustion-chamber at $x'x'$, Fig. 2.

A is the stand. This may be made of any suitable form for the support of the burner and its appendages and the cooking vessel or ves-

sels. Part of the stand is shown broken out to exhibit the construction of the burner.

B is the spider for the direct support of the cooking-vessel.

C is the gasoline-supply pipe in connection with an elevated gasoline-reservoir. The reservoir is as usual and is not shown, constituting no part of my invention. The supply-pipe C is shown with branches C' C' leading to different burners, one only of which is shown. The pipe C' passes through a cup, D' , forming the lower member of the combustion-chamber D, and having at bottom an open neck, D^2 , directly in line with the vapor-jet, allowing the jet to ascend into the combustion-chamber and heat the same, together with the pipe C' passing through the chamber. The cup D' is made thick on one side, and is bored at d for the passage of the pipe C' and at d' d^2 for the connection of the ends of pipes C' and C^2 , the former shown entering the vertical bore horizontally and the latter vertically.

Upon the pipe C' , directly over the jet-flame, is a deflector, c , consisting of a horizontal flat plate, against which the flame squarely impinges, and a collar fitting on the pipe. Thus the heat communicated to the deflector from the flame is conducted directly to the pipe C' and renders the latter very hot. The horizontal portion of pipe C^2 passes through the cup E, that contains the supply of liquid gasoline which is burned to heat the burner and adjacent parts when first lighting up.

F is the burner proper, with a small upright jet-hole, f , and a screw-plug valve, G, closing or partly closing the jet-hole, as may be required. The jet ascends through the neck D^2 and comes in direct contact with the deflector c . It also comes in contact with the dome of the combustion-chamber and escapes outwardly in jets of flame. The vapor-jet carries up with it into the combustion-chamber (through the neck D^2) the requisite amount of air for the thorough combustion of the vapor in the chamber.

The dome of the combustion-chamber consists of two saucers, D^3 and D^4 , the lower hav-

ing a central aperture closed by the upper saucer. Both saucers have notched lower edges, forming jet-holes d^3 d^4 in the side of the combustion-chamber for the escape of the flame in numerous small jets. As a means of holding down the saucers D^3 and D^4 in place I connect them to the deflector c by a screw, H , passing through the upper saucer, D^4 , and screwing into the deflector c .

I is a screw-plug valve, constructed to close the pipe C' between the supply-pipe C and the combustion-chamber. This valve is the one ordinarily used to close or open connection between the supply-pipe C and the burner. The valve G is used to regulate the normal size of the flame, and may remain in one position constantly where there is no change required in the size of the flame.

It will be understood that when the apparatus is in operation liquid is passing through the port of valve I and vapor through that of valve G , so that means is afforded for regulating the passage of either the liquid or the vapor irrespective of one another.

The cup E should be made to hold sufficient gasoline to heat up the burner and contiguous parts into an operating condition.

To first start the apparatus (the valve G being already open) the valve I is opened and the cup E filled; then the valve I is closed and the gasoline in the cup ignited and allowed to burn out sufficiently to heat the parts; then the valve I is again opened and a lighted match passed around the dome to ignite the jets issuing from the jet-holes d^3 d^4 .

I am aware that combustion-chambers have been formed with an oil-pipe discharging upwardly through the bottom thereof, a socket for receiving a depending-pipe conducting oil thereto, and a deflecting-chamber beneath re-

ceiving the air and gas from a guide-tube. Such construction is not adapted to my purpose, and I do not therefore claim it, because the flame does not impinge directly upon nor does it surround the oil-pipe as in my device.

I claim as my invention—

1. The combustion-chamber D , formed with a cup, D' , having open neck D^2 , horizontal openings d d' for the liquid-pipe C' , and vertical opening d^2 for the vapor-pipe C^2 , as set forth.

2. The combination, with the combustion-chamber D , of the liquid-pipe C' , passing centrally between the top and bottom of the chamber, vapor-pipe C^2 , depending from the chamber, burner-cup E , burner F , and valves I and G , as set forth.

3. The combination of the combustion-chamber D , constructed substantially as described, the oil-pipe C' , passing centrally between the top and bottom of the chamber, the deflecting device c for spreading the products of combustion beneath and around said pipe, a vapor-pipe C^2 , depending from the chamber, burner-cup E , and burner or jet F , as set forth.

4. The combination, with the cup of the combustion-chamber, of the dome formed with two inverted saucers, D^3 D^4 , having notched edges d^3 d^4 , the securing device H , and pipe C' , as set forth.

5. A vapor-burner consisting of combustion-chamber D , having cup D' , formed with open neck D^2 and openings d d' d^2 , the horizontal pipe C' , depending pipe C^2 , notched saucers D^3 d^3 D^4 d^4 , jet-cup E , jet F f , and valves I and G , as set forth.

THOS. JOHNSON.

Witnesses:

SAML. KNIGHT,
GEO. H. KNIGHT.