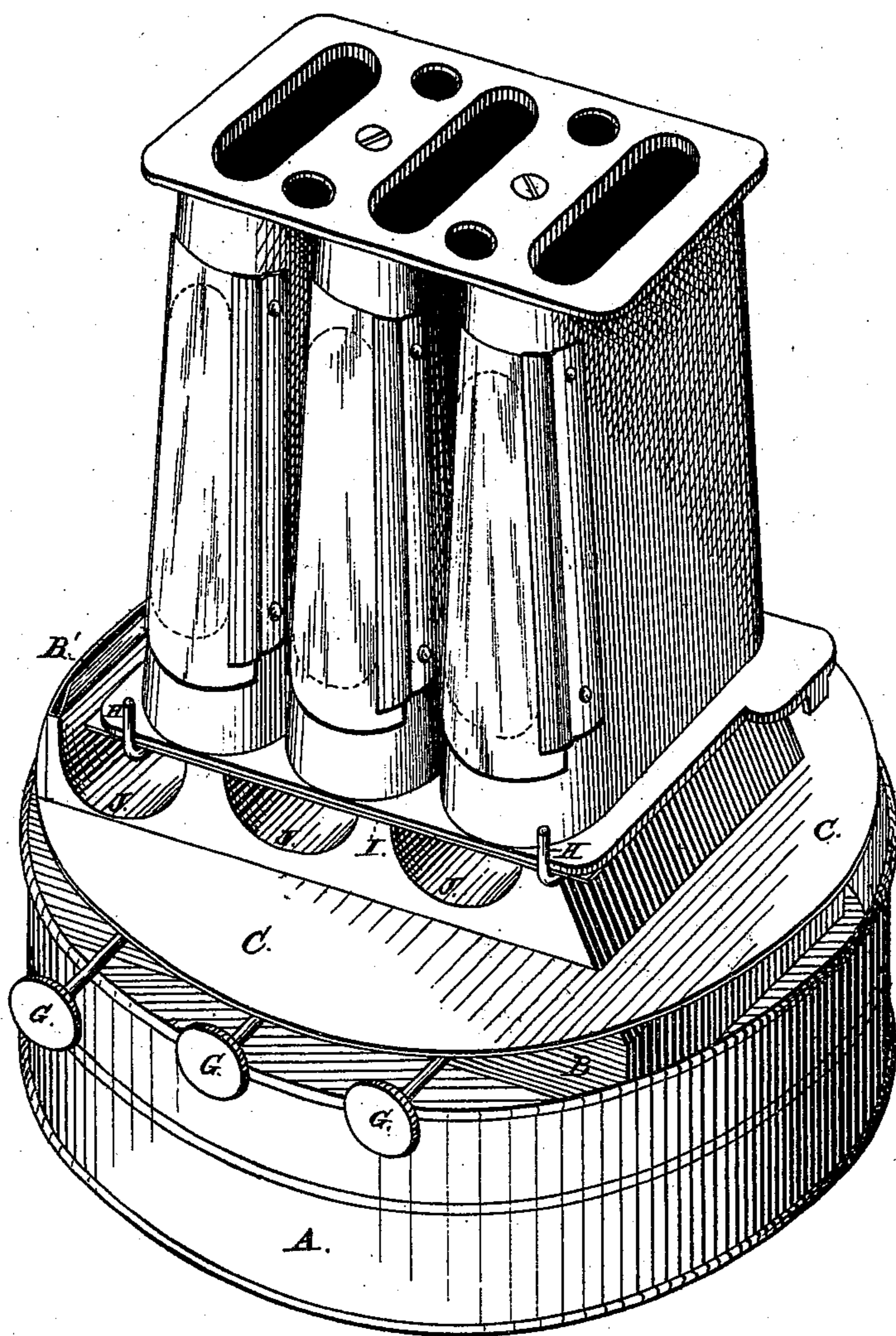


E. R. BLOOD.
OIL-STOVE.

No. 173,101.

Patented Feb. 1, 1876.

Fig. 1.



Witnesses;
Edwin James.
John A. Jones.

Inventor:
Erastus R. Blood.
per J. E. F. Holmead.
Associate Attorney.

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Fig. 2.

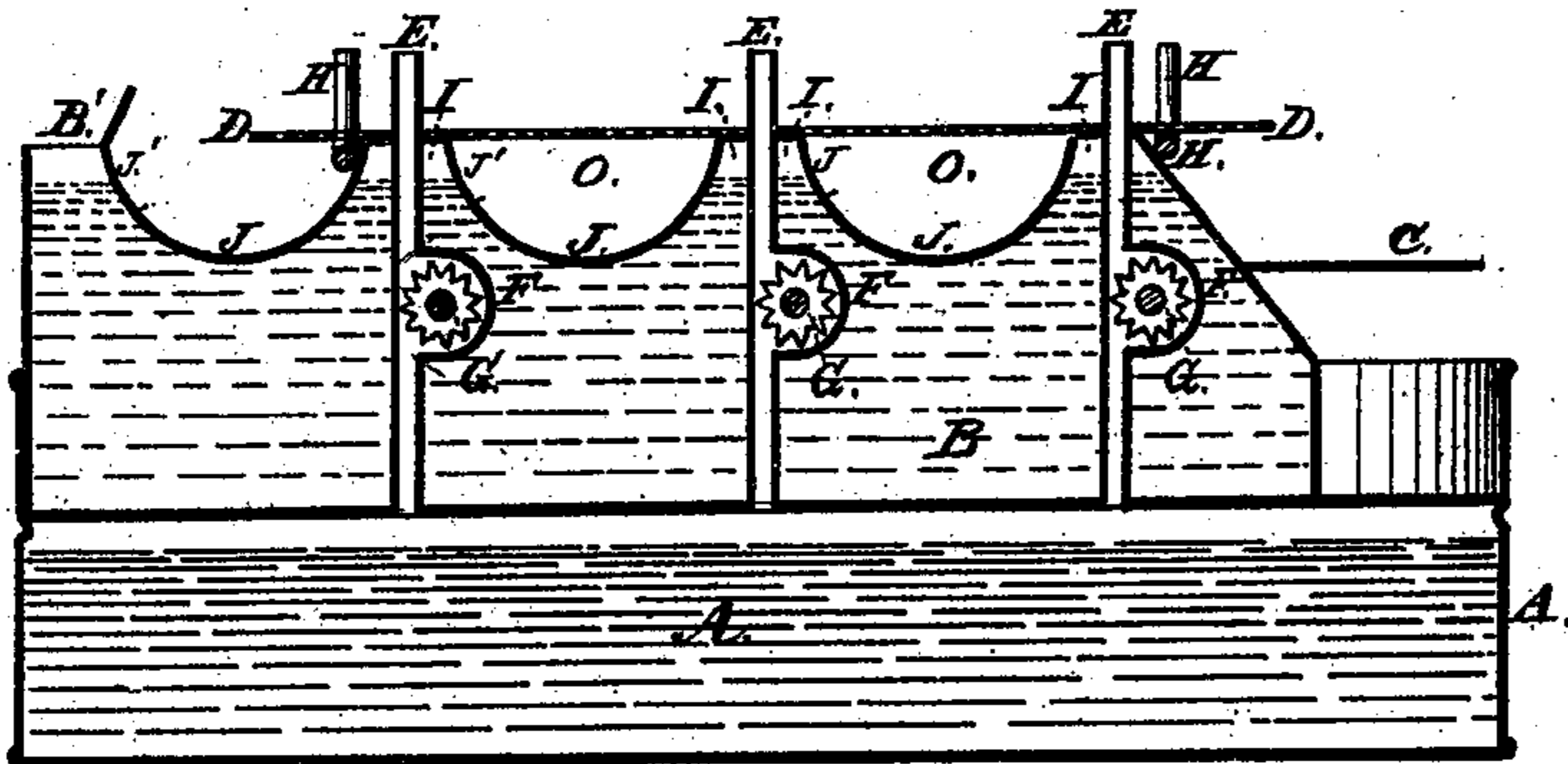
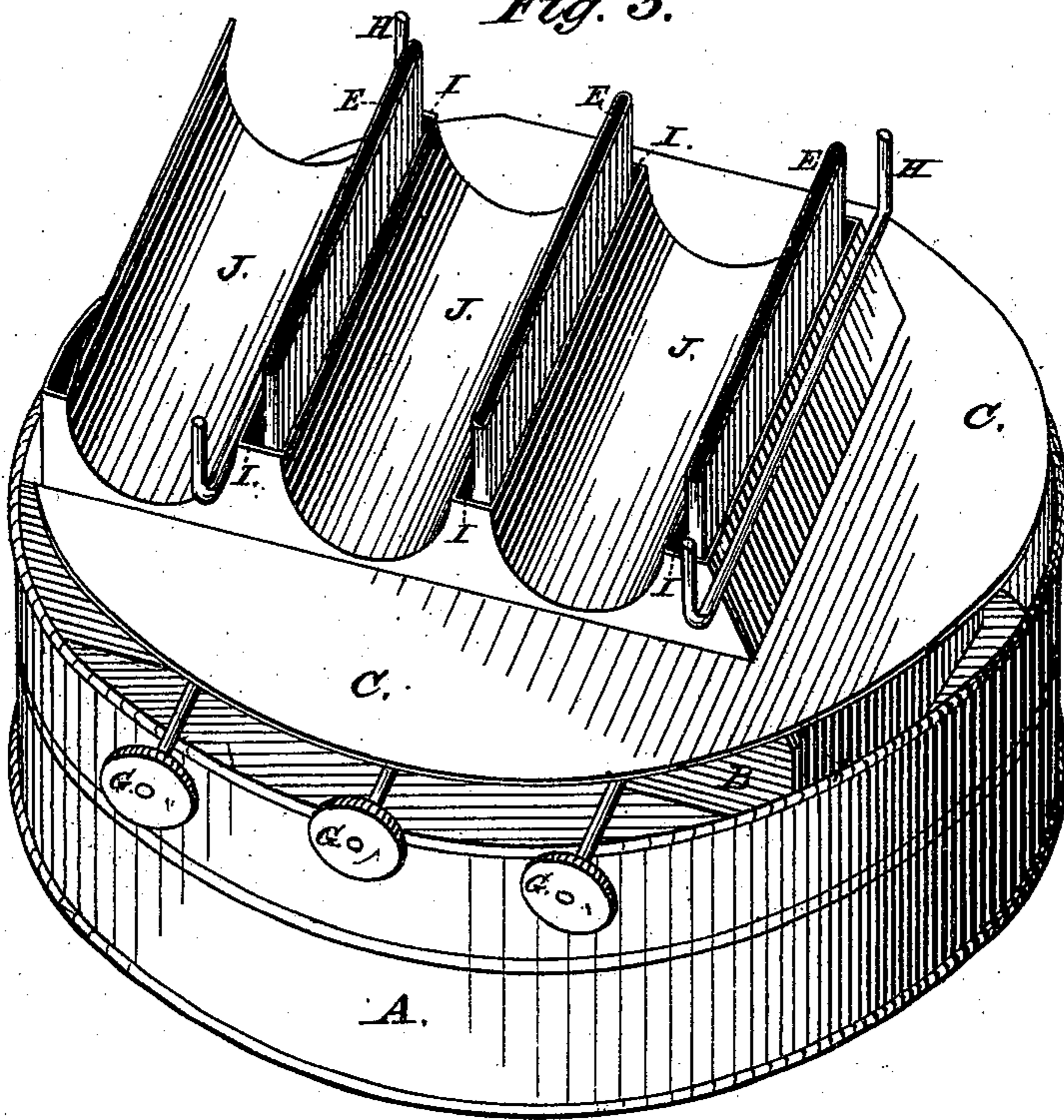


Fig. 3.



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UNITED STATES PATENT OFFICE.

ERASTUS R. BLOOD, OF ERIE, PENNSYLVANIA, ASSIGNOR TO JAMES A. MOREHEAD.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **173,101**, dated February 1, 1876; application filed January 7, 1876.

To all whom it may concern:

Be it known that I, ERASTUS R. BLOOD, of Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a stove for cooking and heating purposes wherein the fuel shall be petroleum-oil, and to have the same so constructed that there shall be a perfect combustion, thus avoiding any smoke; also, so there shall be no leakage, thus avoiding any offensive odor; and also so there shall be no danger of explosion or ignition of the oil in the oil-receptacle, thus avoiding all danger.

My invention is illustrated in the accompanying drawings by three figures, as follows: Figure 1 is a perspective view of the whole device. Fig. 2 is a perspective view of the base or lamp with the upper part or chimney removed. Fig. 3 is a transverse vertical section view of the part shown in Fig. 2.

The following is a full, clear, and exact description of my device as shown in the drawings, reference being had to the letters of reference marked on the drawing.

A is the oil-chamber, which is constructed generally of sheet metal—such as tin or copper. E E E are the wick-tubes, and G G G are the ratchet-wheels for moving the wicks. F F F are caps, which inclose the ratchets and prevent the escape of oil at the ratchet-openings in the tubes. D is a finely-perforated tin, placed in the position shown for regulating the flow of air to the flame, and also to prevent the flame from communicating to any point below it. For the purpose of keeping the wick-tubes cool, and preventing them from conducting heat to the oil-chamber, I surround them with water placed in the chamber B. As the caps F surround the ratchets entirely, preventing the water from coming in contact with the wick through the ratchet-openings,

the water can surround the wick-tubes from top to bottom. The water-chamber B has an opening, B', at one end, where the water is poured in and out. The surface of the water-chamber at the sides of the wick-tubes (see J) is made concave. The object of this is as follows: First, it makes a thin column of water by the side of the wick-tubes, at or near the flame, and there is enough heat at that point in the tubes to keep that column of water warm, and as there is an opening I at the top of each of these columns the evaporation caused by the heat is, as it rises, brought in immediate contact with the flame, and assists the combustion. The upper edges of the concaved surfaces (see J') are painted black, so as to absorb all the heat which falls upon that point from the flame above, thus adding to the heat in the water-column. The balance of the concave surface is left bright, and all the heat falling upon it is reflected back, and the water beneath it is not heated. Second, by thus concaving the surfaces J a sufficient opening for the air to pass up to the flame is made from both sides, and yet the water is kept at a high point on the wick-tubes. By the heat which falls on the polished surface of the curved plate J being reflected as described, the air-passage O becomes a heater for the ingoing air, and thus the flame is fed by hot air, and thus combustion is accelerated. H H is a wire frame, made to sustain and hold the chimney in place. C is a polished disk, so attached to the water-tank or other point as to leave an air-passage between it and the deck of the oil-tank; and, being polished, the heat falling upon it is reflected away from the oil-tank, and being raised above the deck of the tank, leaving an air-passage, the deck of the tank cannot become heated. The air-flues O O O being of uniform size throughout, and being open at both ends, and the flow of air being regulated to the flame by the perforated tin D, there will be no flaring of the flame by wind striking against the side of the stove, unless it should blow through the flues O O O so hard as to cause suction down from the flame. The air-supply being thus regulated, and being heated on its way to the flame, and the vapor from the water coming in contact with the

flame, as it does, the combustion of the oil is perfect, and no smoke will be formed.

By inclosing the ratchet-wheels by the caps J', as described, no oil can escape from the wick-tubes into the water-chamber, or upon the deck of the oil-tank, or any other point, and there will be evaporated. Therefore there will be no odor or smell of oil. Also, by thus inclosing the ratchets the wick-tubes are entirely surrounded and submerged by water. Thus there can be no communication of heat by them to the tank ; and also, as the water-tank covers most of the deck of the oil-tank, and the balance is protected by the reflecting-disk C, and by the air-current under the same, it (the oil-tank) cannot become heated, and therefore there will be no danger of gas generating within the same, and hence no danger of explosion.

What I claim as new, and desire to secure by Letters Patent, is as follows :

1. The water-tank B, with the surface-plates J made concave, as shown, forming the air-flues O, and the thin column of water near the top of the tubes, as shown, and for the purposes mentioned.

2. The concave plates J, with their upper edges J' blackened, for the purpose of absorbing heat, and their center polished, for the purpose of reflecting heat, as shown, and for the purposes mentioned.

3. The reflecting-disk C, in combination with the oil-tank A, as shown, and for the purposes mentioned.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ERASTUS R. BLOOD.

Witnesses :

JNO. K. HALLOCK,
L. H. COUSE.