2 Sheets Sheet. 1

# D. Kellogg.

## Gas-Heater.

No. 75429 Patented Mar. 10, 1868.

Fig. 1.

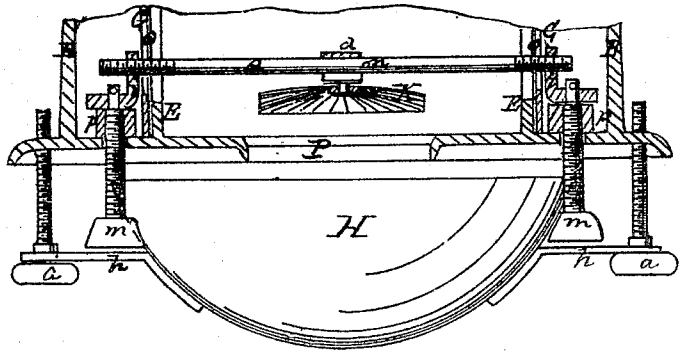
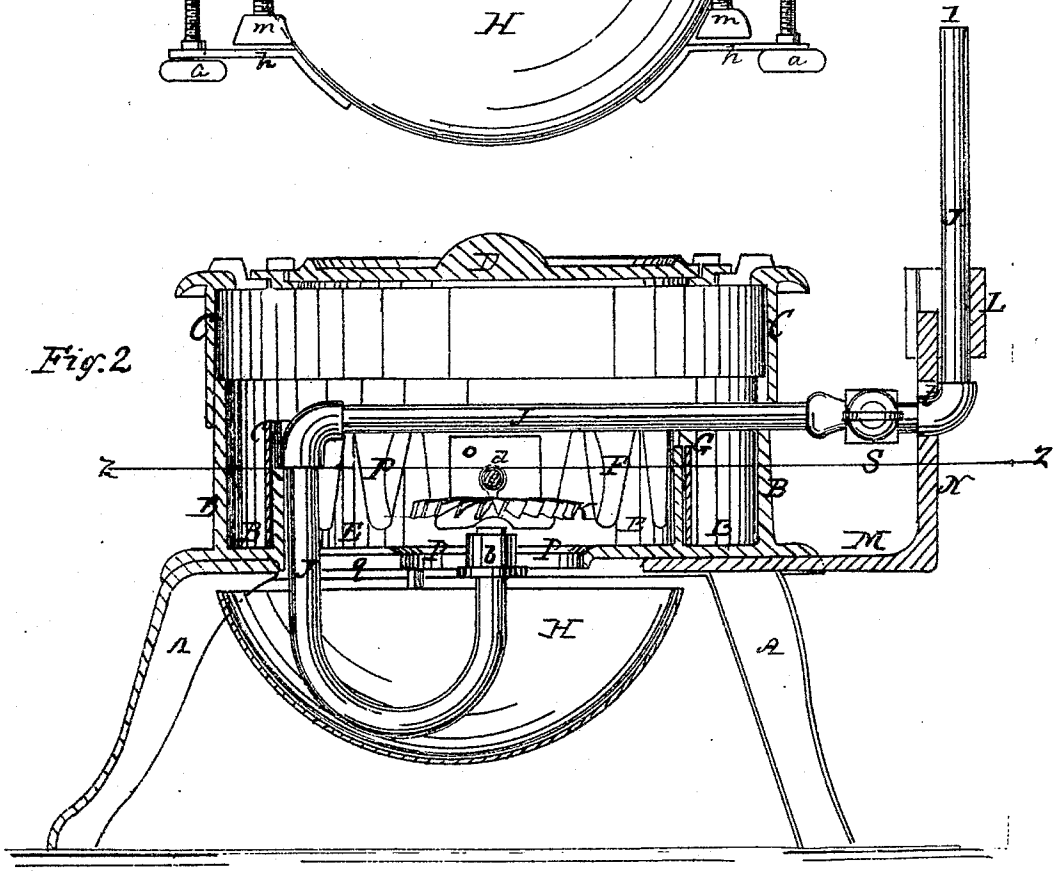



Fig. 2.



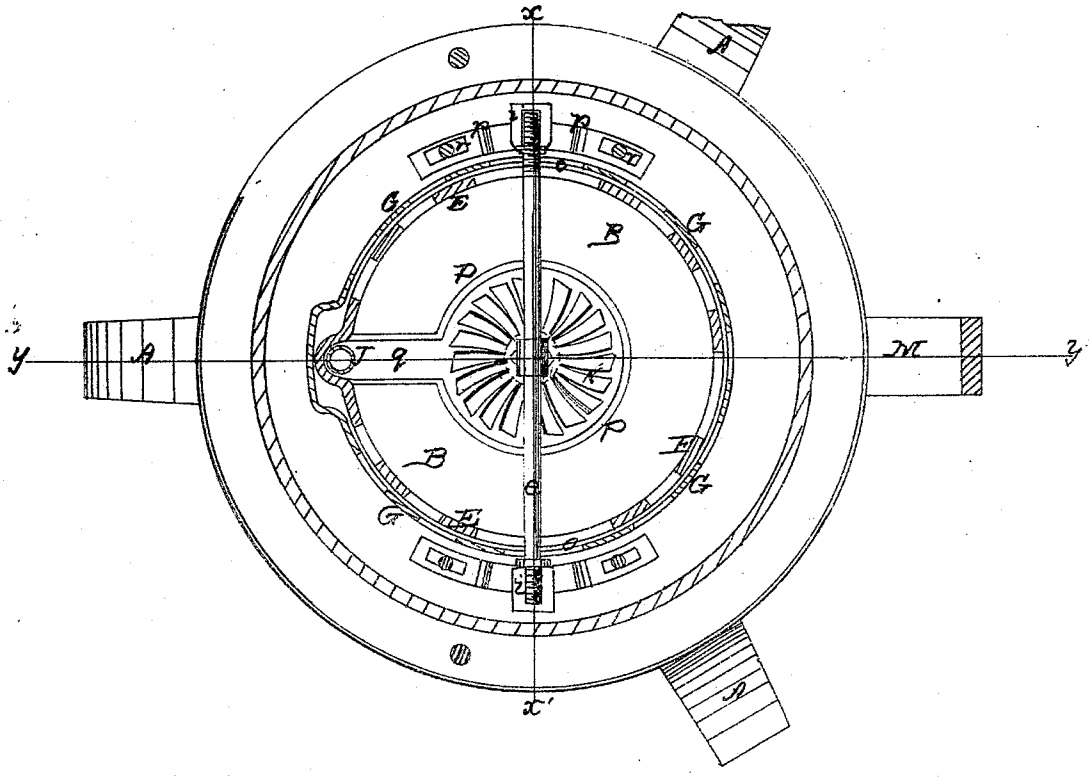

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## Gas-Heater.

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Fig. 3.




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# United States Patent Office.

DANIEL KELLOGG, OF JACKSON, MICHIGAN.

*Letters Patent No.* 75,429, *dated March* 10, 1868.

## IMPROVEMENT IN GAS-HEATERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DANIEL KELLOGG, of Jackson, in the county of Jackson, and State of Michigan, have invented a new and improved Petroleum-Stove; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a detail section, through the line $x$–$x'$, fig. 3.

Figure 2 is a transverse vertical section, through the line $y$–$y'$, fig. 3.

Figure 3 is a horizontal section, through the line $z$–$z'$, fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a stove for burning petroleum or other inflammable oils or fluids, and consists of a tripod-base supporting a burner within a chamber, provided with a bottom dish for adjusting the supply of air, a lateral damper, and a disk of radial springs, the latter being situated immediately over the flame, for aerating the same, and causing the more perfect oxidation of its carbonaceous particles.

In the drawings, A A A are the legs or tripod, screwed on to the body B of the stove. C is the top, which contains and supports the stove-plate D, or any vessel that occupies its place. The body B has an inner wall, E, which is provided with deep vertical notches F, which serve as air-ports to the damper-ring G, that surrounds it, with movable contact. The damper-ring G is provided with vertical slots, which, when brought into coincidence with the notches F, or turned off from said coincidence, operate as a damper for regulating the supply of air to the flame. Air is admitted also from the bottom in a manner to be described, but the supply passing in laterally through the damper just described, is more or less heated, from its passage between the walls of the stove, and therefore facilitates combustion of the flame, which is spread out to meet it by a device to be described.

A hemispherical dish, H, is placed at the bottom of the stove. It is a separate part, and is upheld in more or less proximity to the bottom of the body B, by arms $h$ and screws $a$; the said screws working in the rim of the body B, as shown at fig. 1, the arms $h$ being fastened to the said dish H. The cavity of this dish serves to accommodate the bent portion of the oil-pipe J, as shown, and at the same time to catch any waste oil that may fall from the burner, while its vertical adjustability to the bottom of the stove constitutes it a damper, to regulate the supply of air to the burner, which the bent pipe terminates in. The pipe J conveys the petroleum from a reservoir, somewhere above the end, shown at I, fig. 2. This pipe passes through a slot in the exterior wall of the body B, and along and over the centre of the stove, turning downward into the dish H, as shown, and terminates in a cap or burner, $b$, in top of which is a small orifice for the escape of the petroleum or other gas, made from inflammable fluid, by any generating-attachment now in use. This attachment is not shown or claimed.

To accomplish the more perfect combustion of the petroleum, a disk, K, provided with radial helical wings, is placed over the circular opening in the bottom of the body B. In this position it is immediately over the burner $b$. The office of this disk is to spread the gaseous flame over the bottom surface of the vessel to be heated, when the latter is in place on the top C, and also to facilitate the more perfect combustion of the petroleum, as well as to obviate the unpleasant hissing noise peculiar to other gas-stoves. This disk, then, serves these purposes by being hung loosely on a central pivot, which permits it to revolve when encountering the upward draught of air from below, in a manner identical to the revolving draught-wheels placed in the walls of rooms. By this revolution the flame is spread over an increased surface, and thus mechanically mingled with the heated air entering through the aforesaid notches F, whereby the complete oxidation or combustion of the flame results, and the aforesaid hissing noise is obviated. The disk is pivoted to a thimble, $d$, which slides with easy contact on a rod, $e$, passing horizontally across the chamber of the stove, as shown. This rod is provided with supports $i$ $i$ at its ends, exterior to the damper-ring G. These supports have hollow threads cut in their perpendicular parts to receive the screw-ends of the rod $e$, whereby a lateral adjustment of the rod is obtained by turning the same to the left or right, as may be, which, by means of a pin, $n$, on the said rod, near its middle point, moves the thimble $d$ to which the disk is attached, and thereby adjusts the latter to the centre of the flame.

The rod is raised by means of two screws, *m m*, the ends of which fit into holes in the bases of the supports *i*, as shown at fig. 1. Thus the rod *e* is raised, and the disk adjusted to that height above the flame which is found by trial to give the best results. The extremities of the screw-rod *e* pass through angular plates *i*, which rest upon slotted plates *p*. Screws *r r* pass through the slots in the plates *p*, and prevent said plates from rising, while longitudinal motion of the plates is permitted. Elevating screws, *m*, pass through slots in the bottom of the body B of the stove, and through the plates *p*, directly underneath the angular supports *i*. By this arrangement the rod *e*, and with it the disk K, may be adjusted both vertically and laterally. Openings *o*, in the wall and damper-ring, provide for such lateral movement.

A slot, *q*, in the bottom of the body B, and extending into the circular opening P, permits the insertion and withdrawal of the pipe. This pipe is furnished with a stop-cock, S, for graduating the supply of oil, or shutting the same completely off. The said pipe rests in a notch in the exterior wall of the body B, and passing down through the slot *q*, before described, rests with its bent part in the dish H, as shown at fig. 2. To further secure the same pipe, an arm, M, having a ratchet part, N, is secured to the bottom of the stove, as shown at figs. 2 and 3. A lateral notch, *l*, in the vertical part N, receives the pipe, and a clamp, L, embracing the pipe and the upper part N, holds the former firmly in place.

When the stove is to be put in operation, the stop-cock S is turned to admit a small quantity of the inflammable oil, which is lit at the burner. The revolving disk which was slid aside to light the flame is now brought back in contact with its pin on the rod. The plate D is replaced, a draught is formed, which causes the disk to revolve, and the heat increasing, a greater supply of oil is admitted, the dish H is adjusted, and the stove left to burn without further care.

The advantages of this stove consist, first, in its perfect combustion of the oil or inflammable fluids; second, its economical operation; third, its simplicity and durability.

I claim as new, and desire to secure by Letters Patent—

1. The employment of a revolving disk, substantially as shown and described, for the purpose of spreading the flame of a gas or oil-stove, all as set forth.

2. The adjustable dish H, in combination with the burner *b* and disk K, substantially as and for the purpose shown and described.

3. The rod *e*, and elevating-screws *m m*, for adjusting the height of the disk above the burner, substantially as shown and described.

4. Providing the rod *e* with a screw-thread or other equivalent device, for the lateral adjustment of the disk, substantially as and for the purpose shown and described.

5. The ring-damper G, in combination with the disk K, substantially as shown and described, and for the purpose specified.

DANIEL KELLOGG.

Witnesses:

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