

(No Model.)

J. H. ADAMS.  
HEATER.

No. 519,560.

Patented May 8, 1894.

Fig: 1.

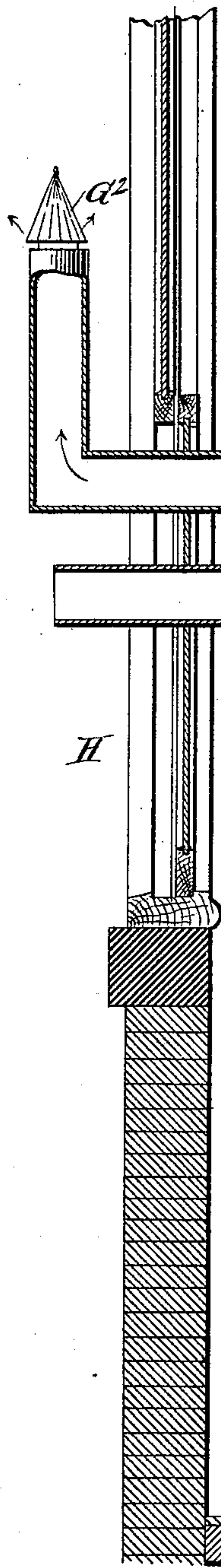


Fig: 2.

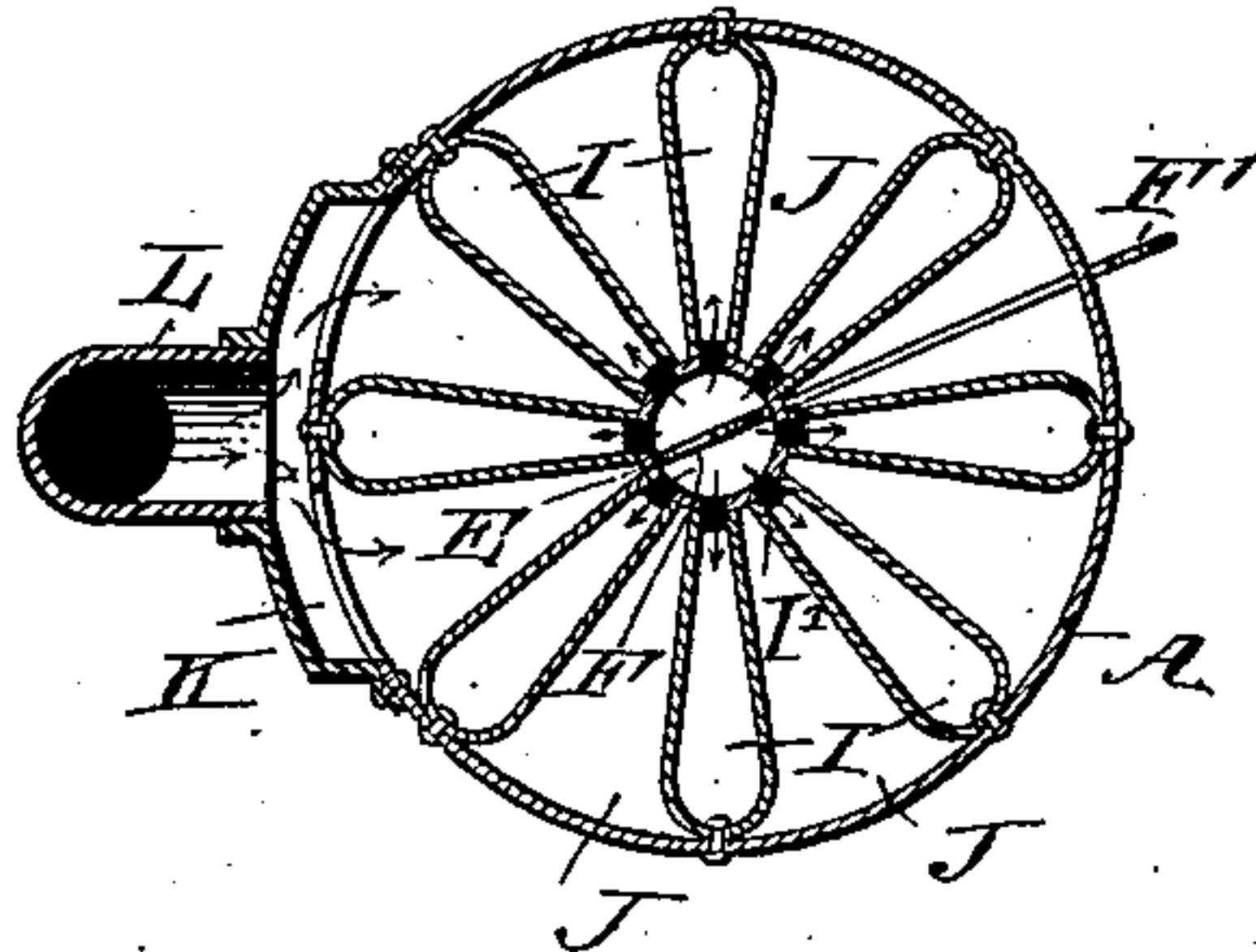


Fig: 3.

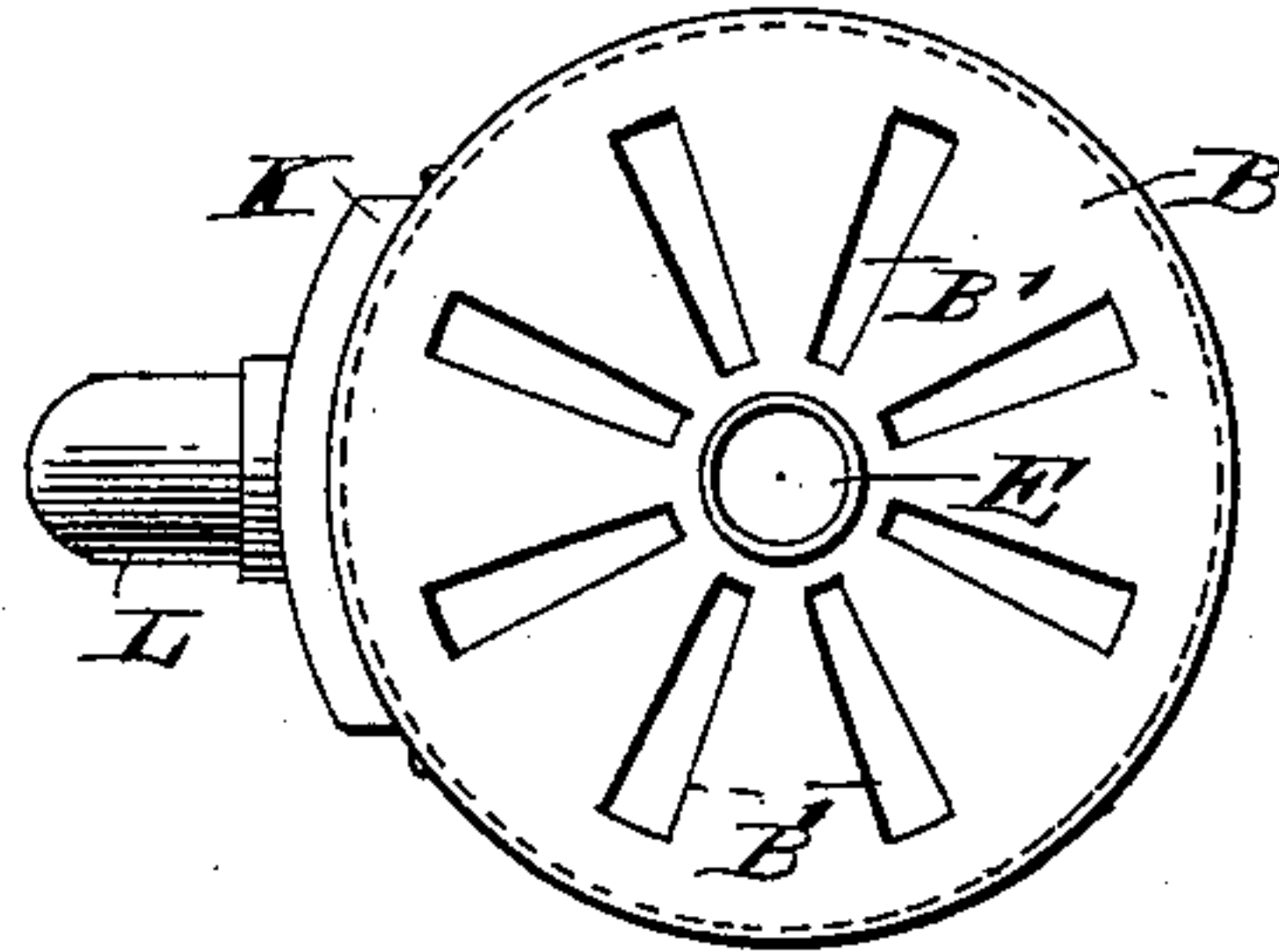
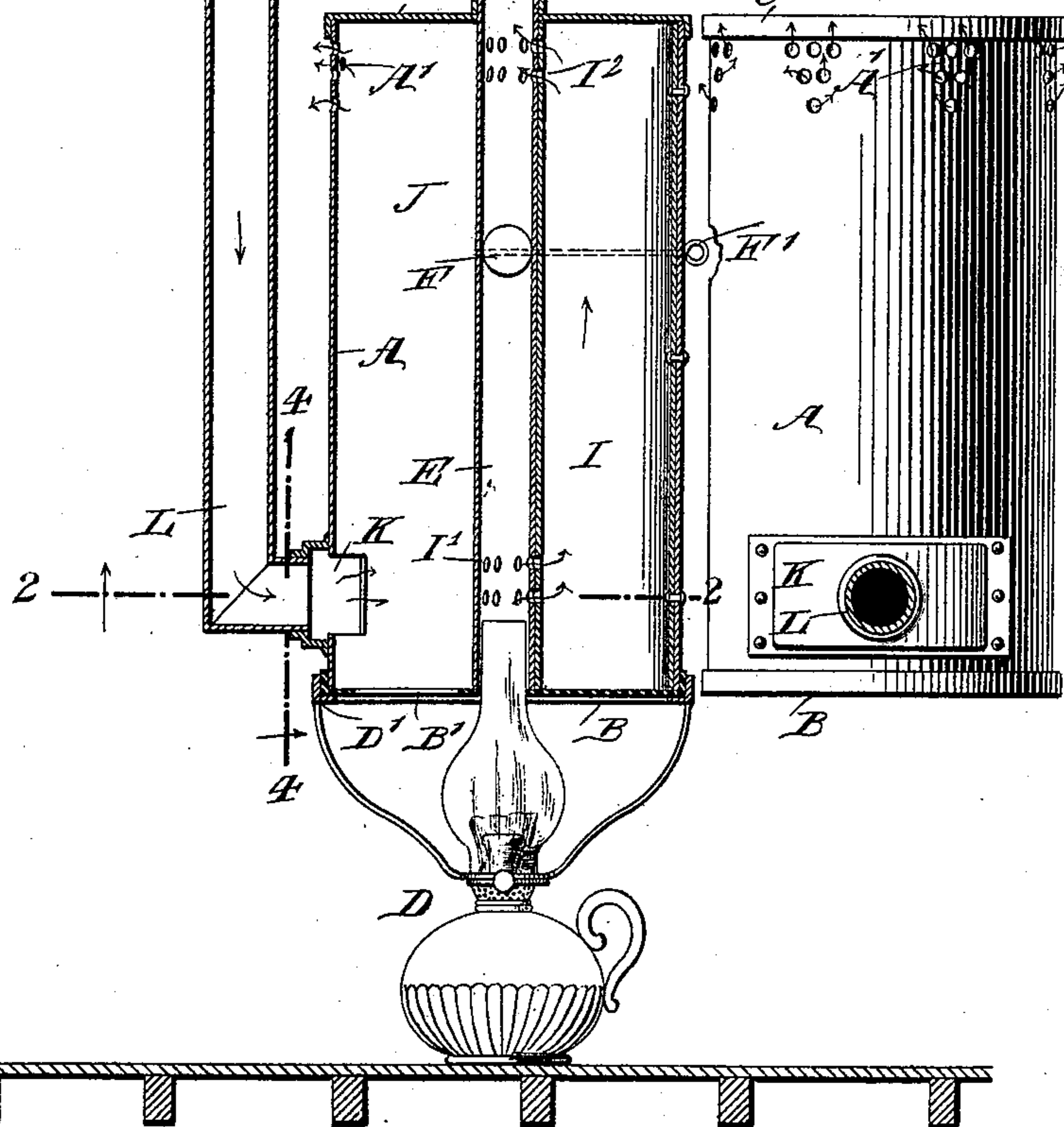


Fig: 4.



WITNESSES:

John A. Hennie  
C. Sedgwick

INVENTOR

J. H. Adams  
BY Munn & Co

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOSEPH H. ADAMS, OF NEW YORK, N. Y.

## HEATER.

SPECIFICATION forming part of Letters Patent No. 519,560, dated May 8, 1894.

Application filed December 22, 1893. Serial No. 494,377. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH H. ADAMS, of the city, county, and State of New York, have invented a new and Improved Heater, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved heater, which is simple and durable in construction, very effective in operation, and more especially designed to properly heat and ventilate hall and other rooms, shops, cellars, &c., where ordinary sources of heat are not practical or desired.

The invention consists principally of an exterior shell having air inlets at its lower end and air outlets at its upper end, a central smoke pipe adapted to connect with the source of heat and provided at or near its middle with a damper or valve, and a series of smoke flues arranged in the said shell and connected at their lower and upper ends with the said smoke pipe, to cause the heat and smoke to circulate through the flues to heat the air circulating in the shell around the flues.

The invention also consists of certain parts and details, and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a sectional plan view of the same on the line 2—2 of Fig. 1. Fig. 3 is an inverted plan view of the improvement; and Fig. 4 is a transverse section of the same on the line 4—4 of Fig. 1.

The improved heater is provided with an exterior shell A, made of sheet metal or other suitable material and provided with a bottom B and a top cap C, of which the former is set in a ring D' on a lamp D, or other suitable source of heat, for heating and circulating air in the manner hereinafter more fully described.

The chimney of the lamp D extends at its upper end into the lower end of a smoke pipe E, arranged centrally within the shell A, and provided at or near its middle with a valve or damper F, having a handle F' extending

through the shell to the outside thereof, so as to be under the control of the operator to open and close the damper for the purpose herein-after more fully described. The upper end of the smoke pipe E connects with the outlet pipe G, provided with a damper G' and adapted to either connect with a chimney or other flue, or is passed through a window H, to the outside of the room in which the heater is located, and as illustrated in Fig. 1. When used in connection with a window, as shown, then the outer up-turned end of the pipe G is provided with the usual wind cap G<sup>2</sup>, to prevent back draft.

Within the shell A is arranged a series of vertically-disposed smoke flues I, arranged radially, as shown in Fig. 2, and preferably extending from the shell A to the smoke pipe E and from the cap C to the bottom B. Each smoke flue I is connected near its lower end by apertures I', with the lower end of the smoke pipe E, and similar apertures I<sup>2</sup> connect the upper end of each flue I with the said pipe E, so that the damper F is located between the apertures I' and I<sup>2</sup>. Now, it will be seen that when the damper F is closed and the lamp D is burning, then the heat and smoke from the chimney pass into the pipe E and through the apertures I' into the flues I, to rise therein and finally pass through the apertures I<sup>2</sup> back into the upper part of the pipe E to pass to the outlet pipe G and to the chimney or to the outside of the building, as the case may be. The several flues I form, within the shell A, compartments J, each connected at its lower end with openings B' in the bottom B, so that air from the room can pass into the said compartments between the flues I. The upper end of each compartment J is connected with the interior of the room by apertures A', arranged in the side wall of the shell A, as will be readily understood by reference to Figs. 1 and 4.

Into one, two or all of the compartments J may open a chamber K, secured on the lower end of the shell A, as plainly shown in the drawings, the said chamber being connected with a fresh air supply pipe L, extending to the outside of the room into the outer air, so that air from the outside can pass through the pipe L into the chamber K and from the



latter into the respective compartment or compartments J near their lower ends. The pipe L is preferably provided with a valve L', which when closed, prevents outer air from passing into the compartments in the shell A. Now, when the lamp is burning and the damper F is closed and the dampers L' and G' are open, then the heat and smoke from the lamp chimney pass into the lower part of the pipe E and then circulates through the several flues I, as previously described, to heat the said flues before passing through the apertures I<sup>2</sup> into the upper end of the pipe E and into the pipe G, to finally pass to the outer air. A circulation of air is thus established within the shell A, the air passing into the compartments J through the openings B', so as to come in contact with the heated flues I, thus heating the air in its ascent, the heated air finally passing through the apertures A' into the room. Fresh air is supplied through the pipe L from the outside, the said air passing from the chamber K into one or a series of compartments J, to mingle with the air of the room and be heated by coming in contact with the heated flues I, finally passing into the room through the respective apertures A' with the intermingled heated air of the room. Thus it will be seen, that not only the air contained in the room is heated, but also the necessary amount of fresh air for the room is supplied, and heated to render the room perfectly healthful.

It will also be seen that the device is very simple and durable in construction, can be cheaply manufactured, and readily set up in any room not otherwise practical to be heated by the ordinary sources of heat. As the air heated is to a great extent fresh air from the outside, the device is readily applicable in

sick rooms, sleeping rooms and other rooms where coal stoves are not desirable.

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

1. A heater comprising an exterior shell, having cold-air inlets at its lower end, and hot-air outlets at its upper end, a smoke-pipe arranged in the said shell and provided with a damper and apertures at each end, its lower end being adapted to be connected with a source of heat, and a series of smoke flues arranged radially around said smoke-pipe in the said shell, and connected at their lower and upper ends with the smoke-pipe, whereby products of combustion may be caused to circulate through the flues to heat air circulating in the shell around them, as shown and described.

2. A heater, comprising an exterior shell having air inlets at its lower end and air outlets at its upper end, a smoke pipe in the said shell and provided with a damper, the lower end of the said smoke pipe being connected with a source of heat, a series of smoke flues arranged in the said shell and connected at their lower and upper ends with the said smoke pipe, to cause the heat to circulate through the flues to heat the air circulating in the shell around the flues, a chamber arranged on the said shell and connected with compartments formed in the shell between the said flues, and an air inlet pipe connected with the said chamber and extending to the outside of the room, substantially as shown and described.

JOSEPH H. ADAMS.

Witnesses:

THEO. G. HOSTER,  
C. SEDGWICK.