

W. T. BLACK'S *improvement in Base-Burning* STOVES.

PATENTED JUL 25 1871

117373

WITNESSES,

*H. B. Van Benthuysen,
J. C. Hulbert*

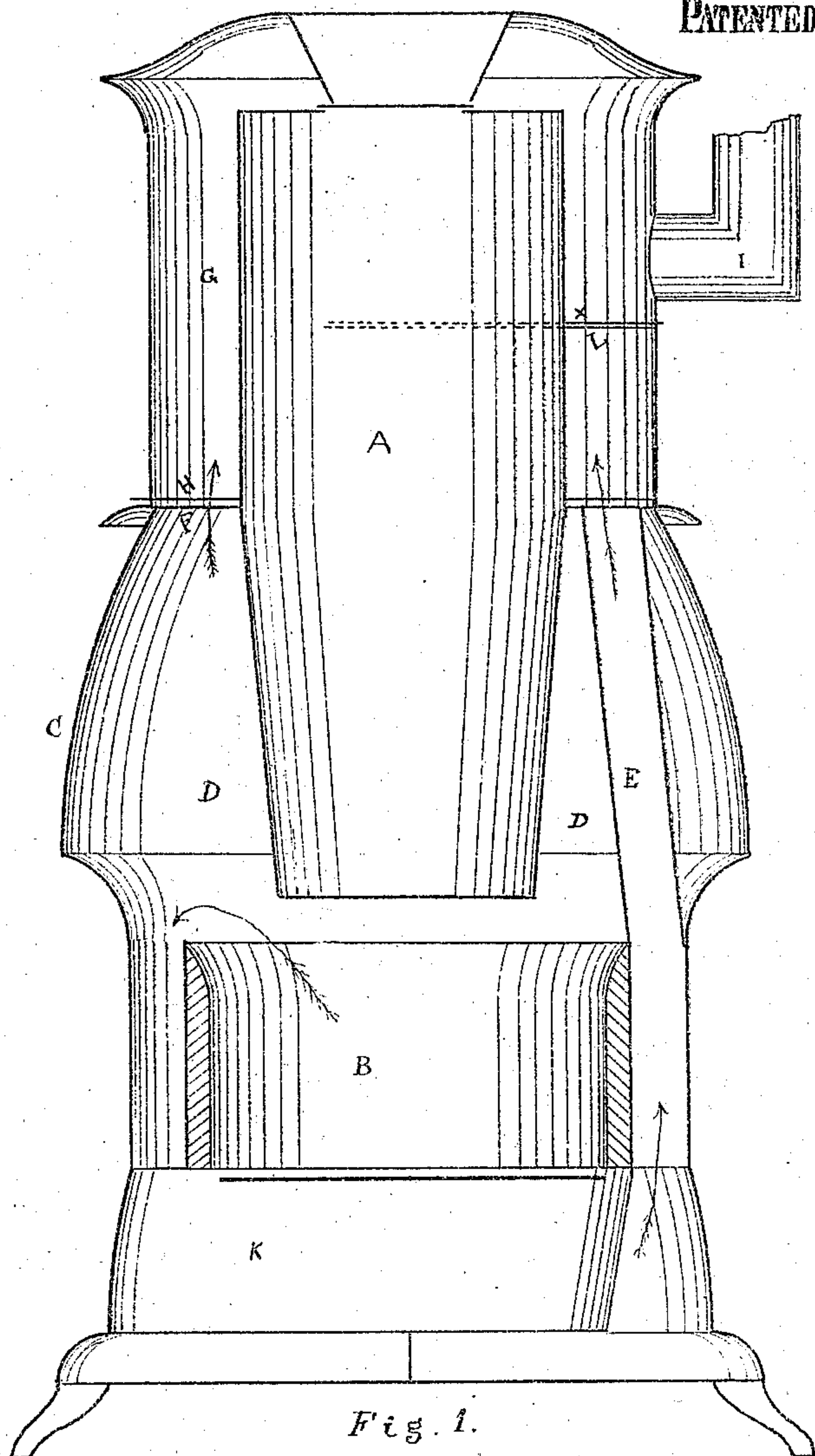
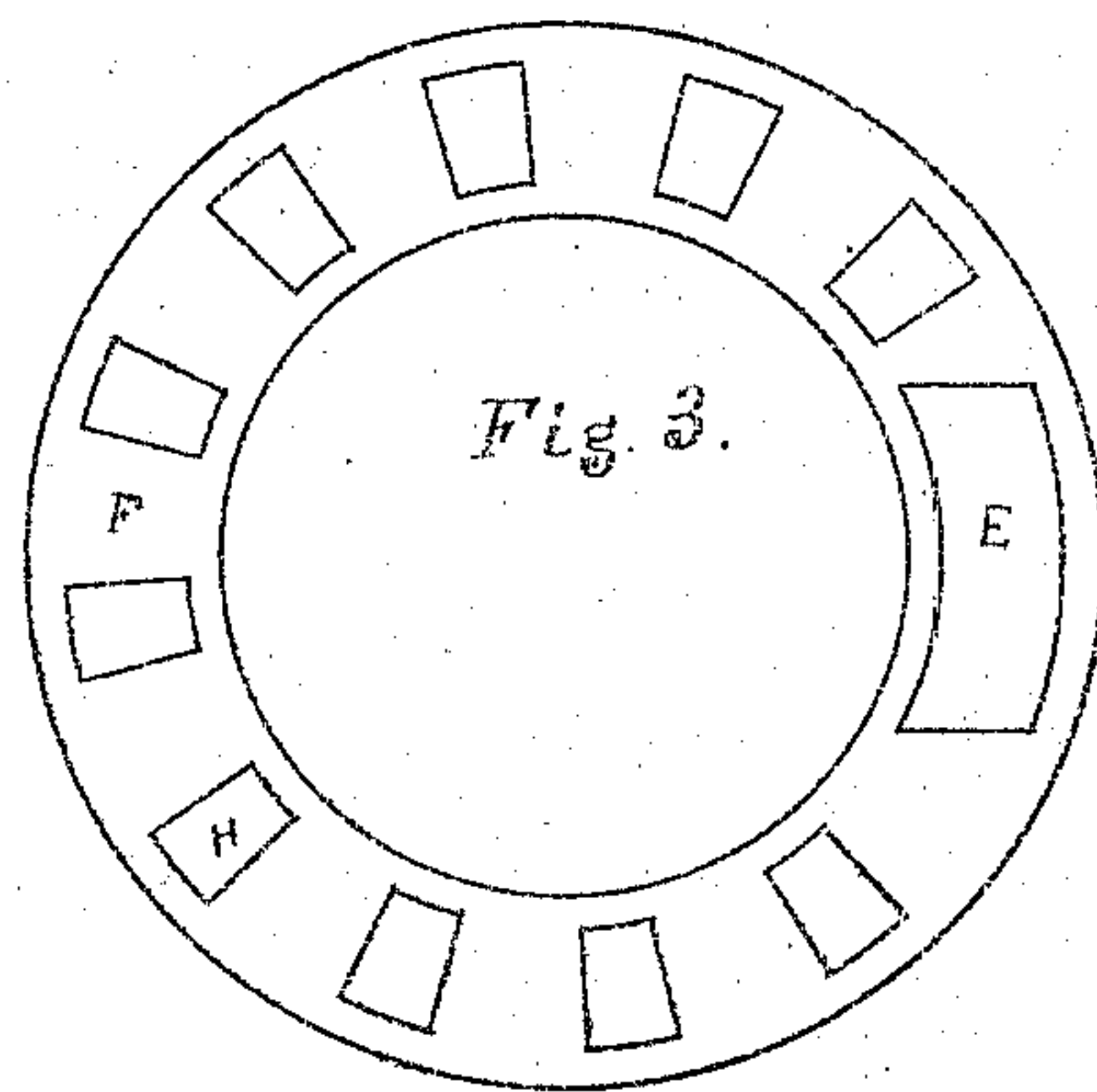
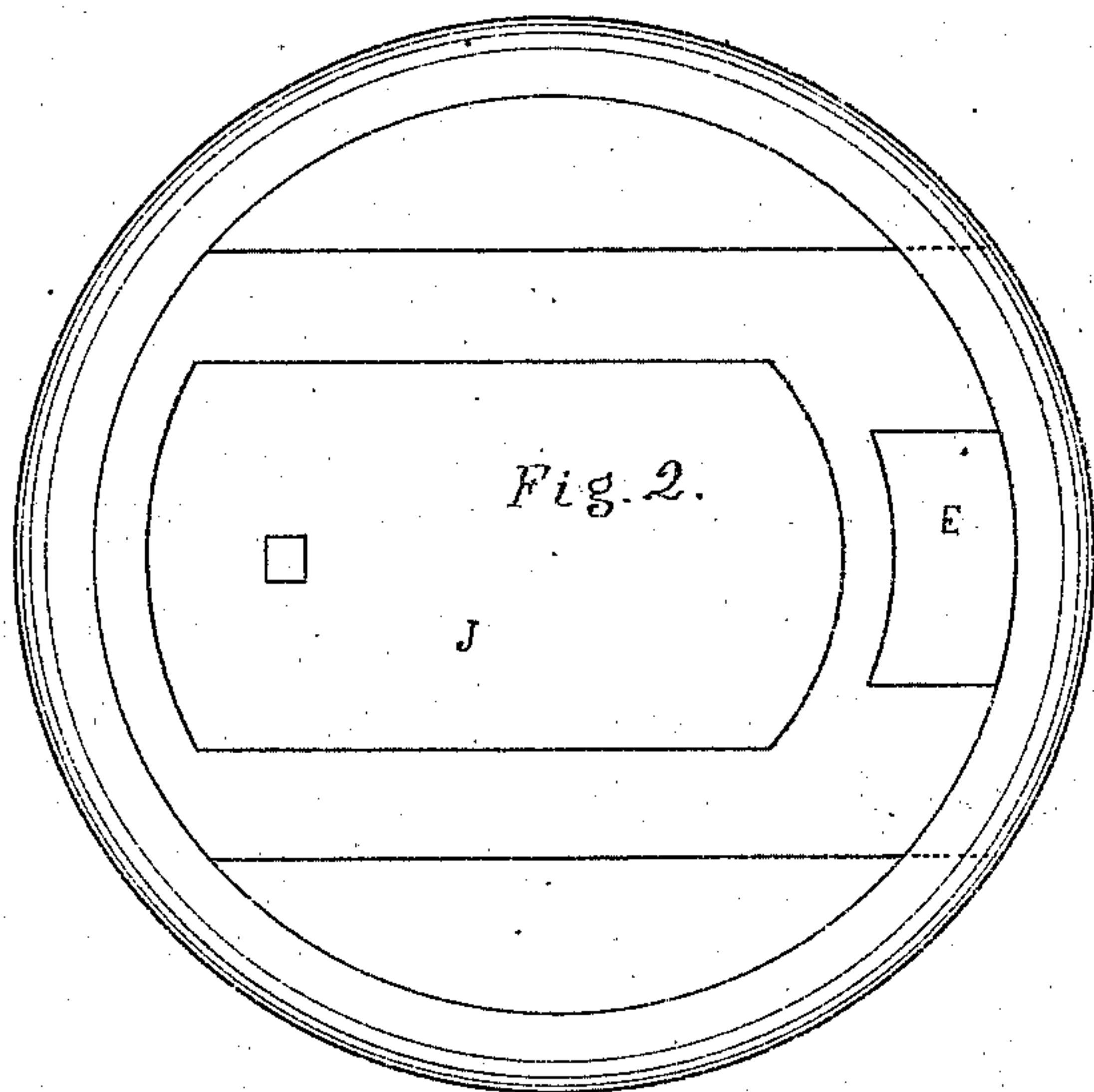


Fig. 1.



INVENTOR, *William T. Black*

UNITED STATES PATENT OFFICE.

WILLIAM T. BLACK, OF ERIE, PENNSYLVANIA.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 117,373, dated July 25, 1871.

To all whom it may concern:

Be it known that I, WILLIAM T. BLACK, of the city and county of Erie, State of Pennsylvania, have invented certain Improvements in Base-Burning Stoves, of which the following is a specification:

My invention relates to an increased heating power in base-burning and base-heating stoves, which is effected by an internal flue and upper separate heating-chamber around the upper portion of the magazine, the flue conducting the products of combustion from the base of the stove up through the combustion-chamber, where they are reheated, and discharging them into the heating-chamber, where they are deflected in a circuit before reaching the exit-flue. The diaphragm which separates the heating-chamber from the combustion-chamber is registered, in order to establish a direct upward current, when desired, or to force all the products of combustion downward through the double bottom or base of the stove, so as to heat the lower portion first, and then heat the upper chamber before passing off.

Figure 1 is a vertical section of an entire stove from front to back. Fig. 2 is a section of the base. Fig. 3 is the registered diaphragm.

A is the magazine for reserve fuel, which may be constructed of any desired form. B is the fire-pot, in which the coal is ignited. C is the illuminated and exterior casing, which may be of any desired shape or design. D is the combustion-chamber. E is the internal flue, opening a communication between the double bottom or reversible flues and the heating-chamber. F is the registered diaphragm. G is the heating-chamber. H is the register, to be opened on starting a fire, or used to divide the up-and-down currents. L is the deflection-plate. I is the exit-flue. K is the ash-pit. J is a movable plate for the convenience of removing the ashes from the base. X is a register on the deflection-plate L, to be alternated at will for the purpose of removing the dust which may collect.

Economy of fuel being a matter of great importance and consideration, that stove which will

radiate the largest amount of heat from a given quantity of fuel is the best constructed stove, other things being equal. The more radiating-surface that can be concentrated in a heating-stove without injury to the draught the better. A flue or circuit may be so lengthened to increase the radiation as to seriously retard the draught, and thereby injure the power of combustion. The object of my invention is to increase the radiating-surface of the stove, or rather to increase the power of radiation without increasing the length of the flue externally; to radiate the largest portion of the heat from the lower parts of the stove; to accelerate the upward current by reheating it as it passes through the internal flue; and then to heat the upper portion by the circulation before passing it to the exit-flue.

By my arrangement of parts I compel the results of combustion, wholly or in part, to pass over the front portion of the fire-pot, between it and the outer casing, downward at each side of the ash-pit into a chamber in the base formed by the double bottom, thence up the flue E into the heating-chamber G, thence to the exit-flue.

I do not limit myself to any particular shape or form of stove, or to any particular dimensions or proportions of the several parts.

What I do claim, and desire to secure by Letters Patent, is—

1. The flue E, one or more, passing through the combustion-chamber, as and for the purposes set forth.

2. The diaphragm F, registered or not, in combination with the flue E.

3. The heating-chamber G, as arranged above the combustion-chamber, and separated therefrom by the diaphragm F, and the same in combination with the deflection-plate L and register H.

4. The chamber G, plate L, flue E, diaphragm F, and register H, arranged and combined as and for the purposes set forth.

WILLIAM T. BLACK.

Witnesses:

H. B. VAN BENTHUYSEN,
WM. C. HULBERT.