

W. McDONALD & S. E. PARSONS.
Gas-Stove.

No. 221,688.

Patented Nov. 18, 1879.

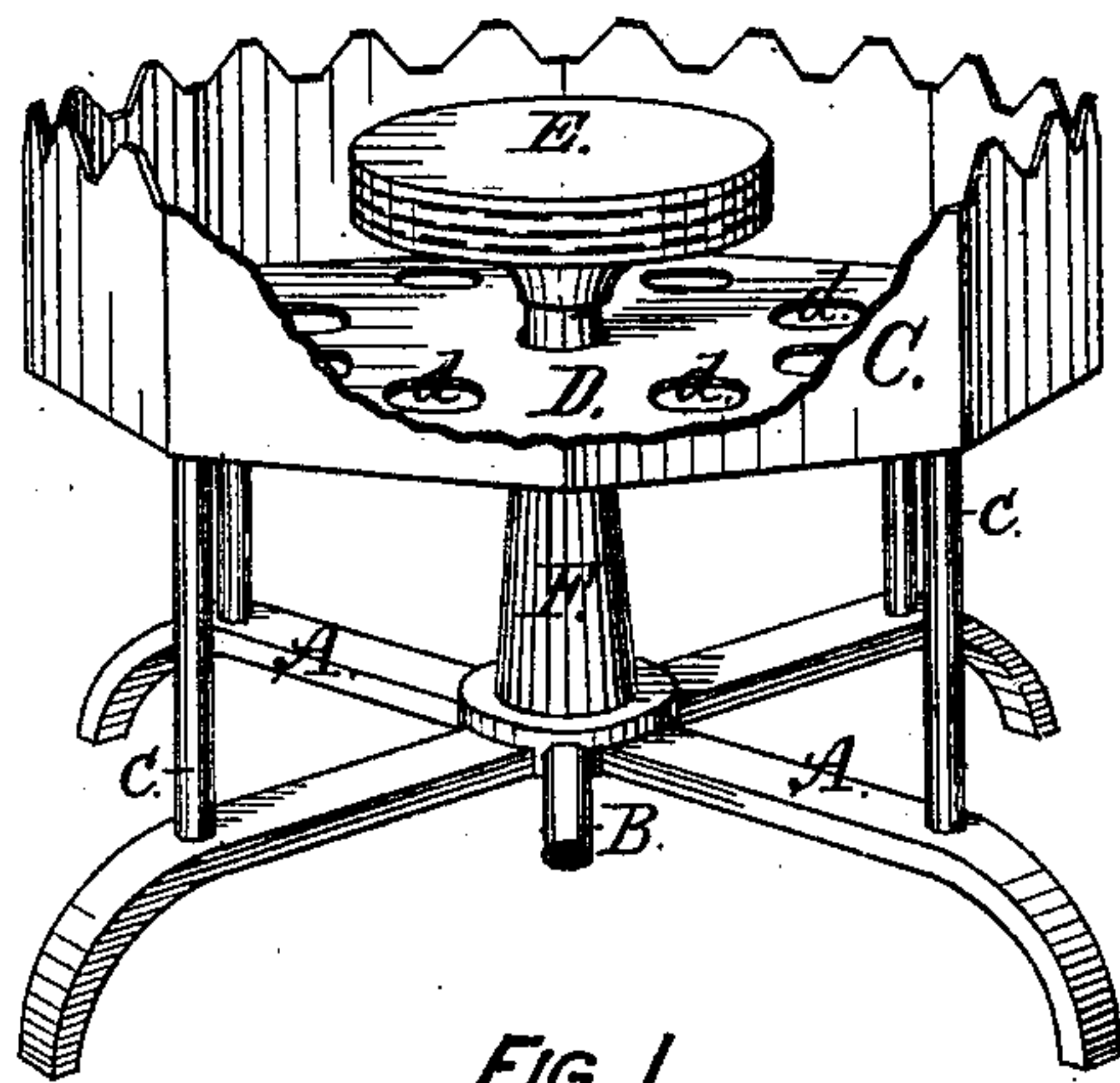


FIG. 1.

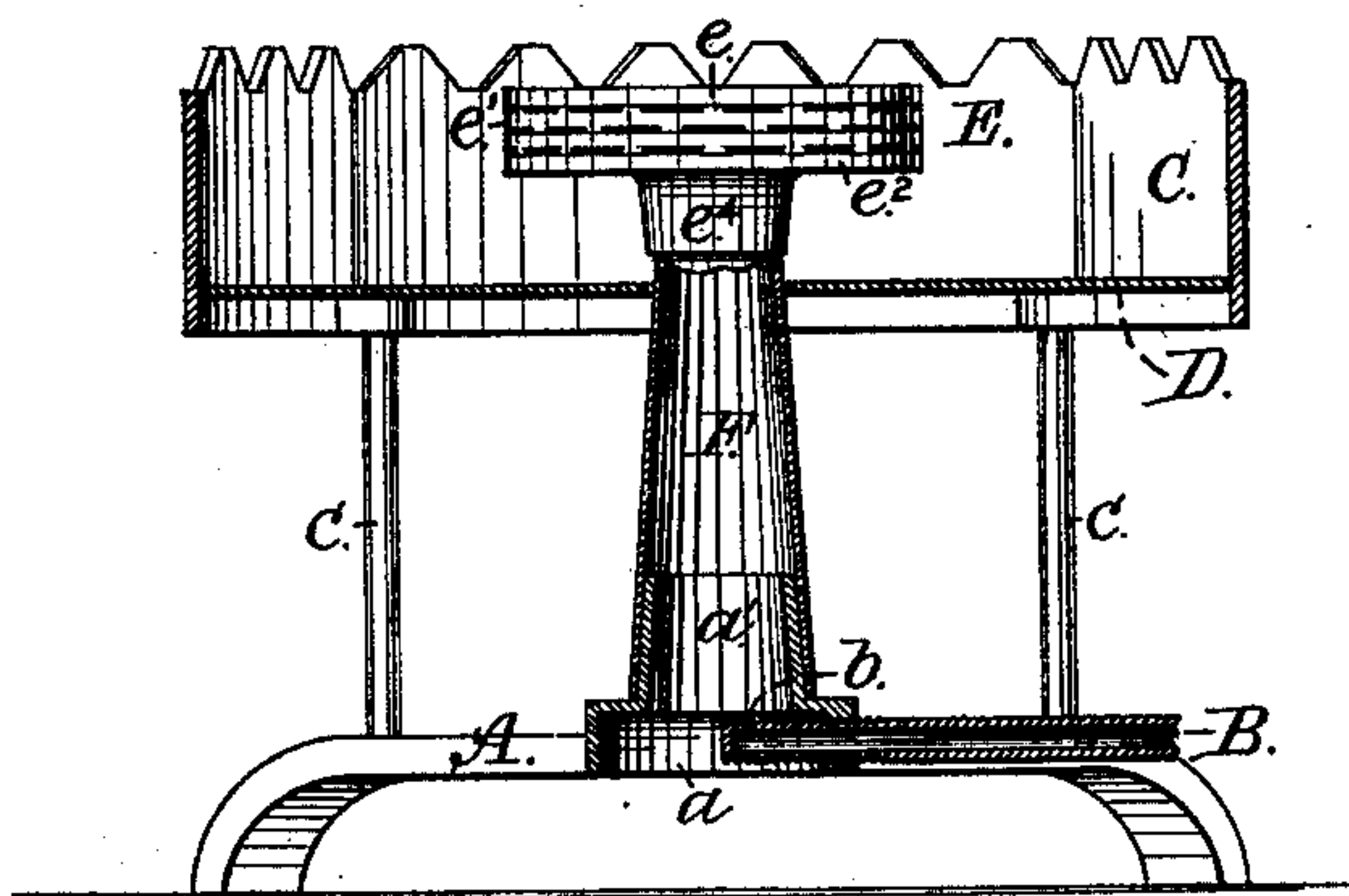


FIG. 2.

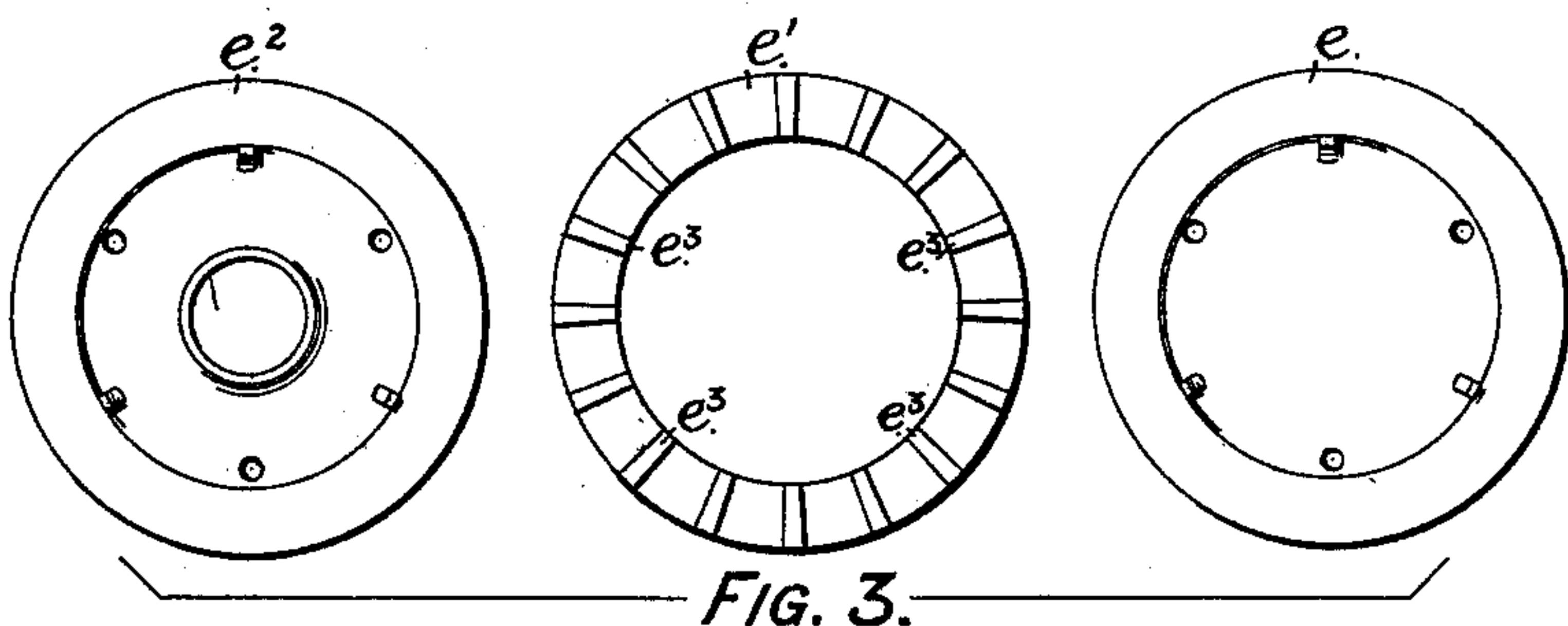


FIG. 3.

Witnesses,

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UNITED STATES PATENT OFFICE.

WILLIAM McDONALD AND SETH E. PARSONS, OF ALBANY, N. Y., ASSIGNORS
TO DONALD McDONALD AND NOEL E. SISSON, OF SAME PLACE.

IMPROVEMENT IN GAS-STOVES.

Specification forming part of Letters Patent No. 221,688, dated November 18, 1879; application filed September 26, 1879.

To all whom it may concern:

Be it known that we, WILLIAM McDONALD and SETH E. PARSONS, of the city and county of Albany, and State of New York, have invented certain new and useful Improvements in Gas-Stoves, of which the following is a full and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of our improved stove, with a portion of the outer casing removed for the purpose of showing the burner; Fig. 2, a vertical section through the central line of the casing and conical tube, and Fig. 3 enlarged and detached details of the burner.

Our invention relates particularly to the burners of gas-stoves; and it consists of a burner composed of one or more rings, provided with a series of radial ribs interposed between a top and bottom plate, to form a series of horizontally-slotted openings, through which the gas is emitted, as hereinafter described.

As shown in the drawings, A is the base-piece of the stove, made in the form of radial arms, terminating in curved ends or feet, on which the stove stands. At the center of said base-piece there is an opening, *a*, inclosed by a collar, *a'*, through which the atmospheric air and gas for maintaining combustion are admitted; B, a supply-pipe for the introduction of the gas into the tube leading to the burner. Said supply-pipe is secured to the central part of the base-piece A, and is provided with an opening, *b*, arranged to emit the gas upward at or near the center of the opening *a*. C, the casing of the stove, supported on the studs *c*, which are secured in the base-piece. Said casing has indentations around its upper edge for the escape of the waste heat from the interior of the stove when it is covered by articles larger than the casing. D, the bottom plate or diaphragm of the casing, provided with openings *d* for the admission of air for supporting combustion; E, the burner, composed of an imperforate top plate, *e*, one or more rings, *e'*, and the bottom plate, *e''*.

The rings *e'* are provided on one or both faces with a series of radial ribs, *e''*, so arranged

that when the parts composing the burner are secured together they will produce a series of horizontally-slotted openings for the emission of the inflammable gas. Said openings should be arranged to break joints, as shown in the drawings.

The width of the rings *e'* and the height of the radial ribs *e''* should be so proportioned that while an ample space is secured for the free flow of the inflammable gas the flame at the exterior of the burner cannot run back through the openings to ignite the gas contained in the chamber of the burner. This effect, as found by experience, is attained by making the width of the rings *e'* about seven-sixteenths of an inch, and the height of the ribs *e''* about one-twentieth of an inch. Said ribs should be parallel in width and spaced so as to produce an opening of about one-half an inch at the periphery of the burner. When so constructed the natural contraction of the opening at the internal diameter of the ring aids materially in preventing the flame from penetrating into the chamber of the burner.

The bottom plate, *e''*, is provided with a collar, *e'''*, which surrounds a central opening, through which the gas enters the chamber formed in the burner by securing together the top plate, *e*, rings *e'*, and bottom plate, *e''*, by means of rivets or other suitable fastenings.

F is a conical tube, which has its base fixed on the collar *a'* of the base-piece and its top in the collar *e'''* of the burner, for the purpose of supporting the burner and for forming a channel-way or flue, wherein the atmospheric air and gas may commingle while passing upward to the burner and before issuing from the openings for the burner for ignition.

The operation of this stove is as follows: Gas of the kind commonly used for illuminating purposes is admitted through the supply-pipe B, and, passing through the opening *b*, enters the conical tube F, in which it mixes with the atmospheric air that freely enters the conical tube through the opening *a*. The mixture of air and gas, being of greater rarity than the atmosphere, ascends through the tube F into the chamber of the burner E, and passes out from thence through the slotted openings of the burner, where it is ignited and burns

with the intense heat produced by a Bunsen burner.

The combustion of the inflammable mixture naturally produces sufficient vacuum in the chamber of the burner to create an accelerated upward draft in the tube F for constantly feeding a fresh supply of the inflammable mixture to the burner.

When preferred, the burner may be made in the form of a truncated cone instead of the cylindrical form shown in the drawing. When made in a conical form, the plates e and e^2 and rings e' should be made in sizes graduated to produce the required form, and either the largest or smallest end of the cone may be placed uppermost.

We claim as our invention—

1. The burner E, composed of the imperforate top plate, e , one or more rings, e' , provided with ribs e^3 , and bottom plate, e^2 , as and for the purpose herein specified.

2. The combination of the burner E, constructed as herein described, with the supply-pipe B, casing C, and tube F, constructed and arranged to operate as and for the purpose herein specified.

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