

No. 677,219.

Patented June 25, 1901.

J. M. JEFFREY.

HEATER.

(Application filed Sept. 20, 1900.)

2 Sheets—Sheet 1.

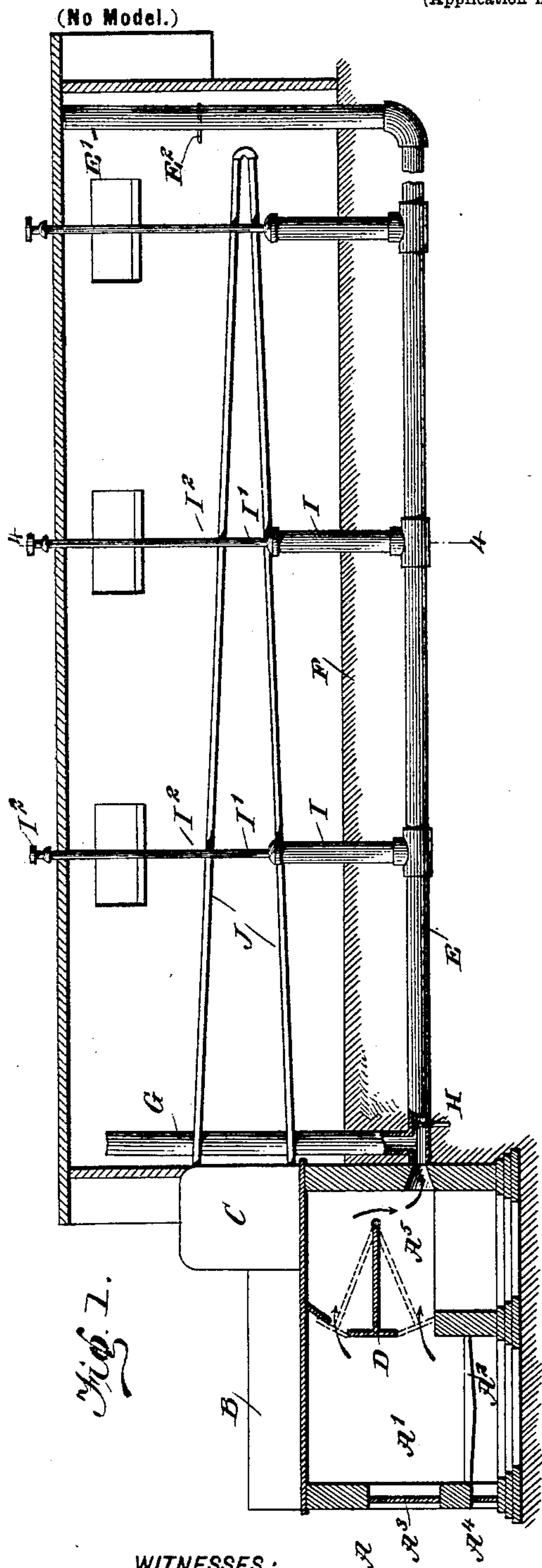


Fig. 1.

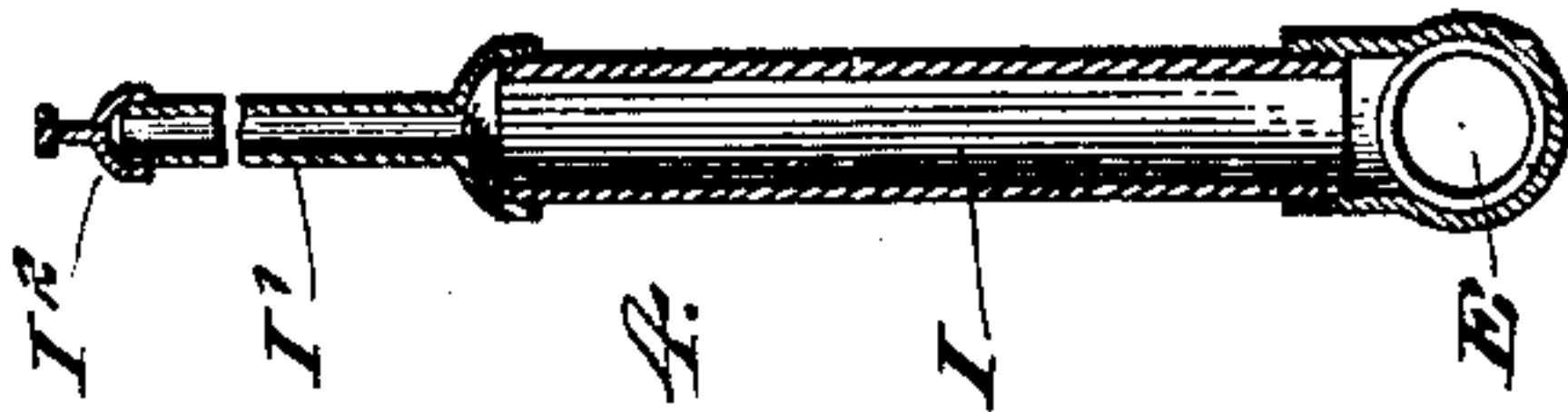


Fig. 4.

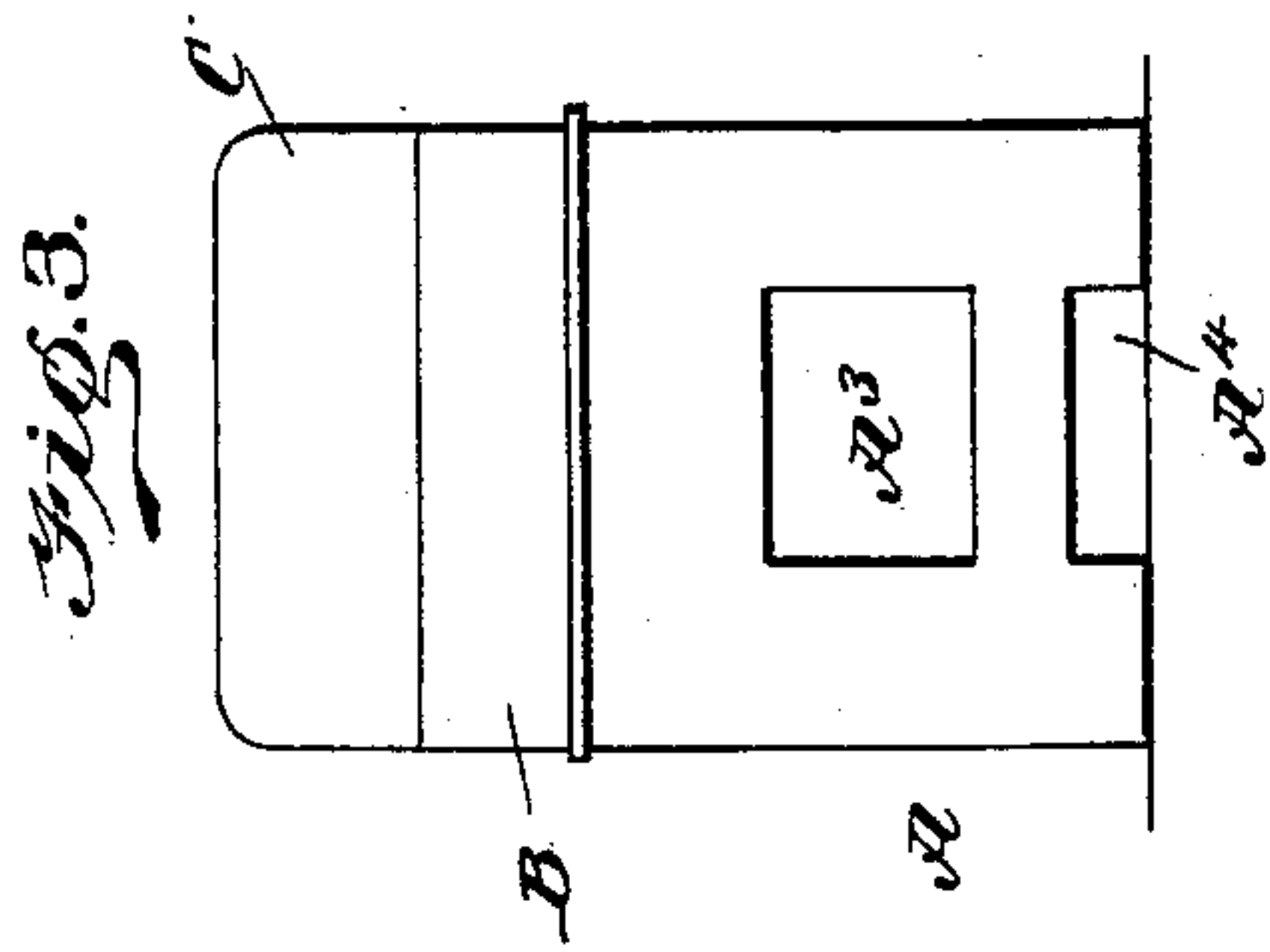


Fig. 3.

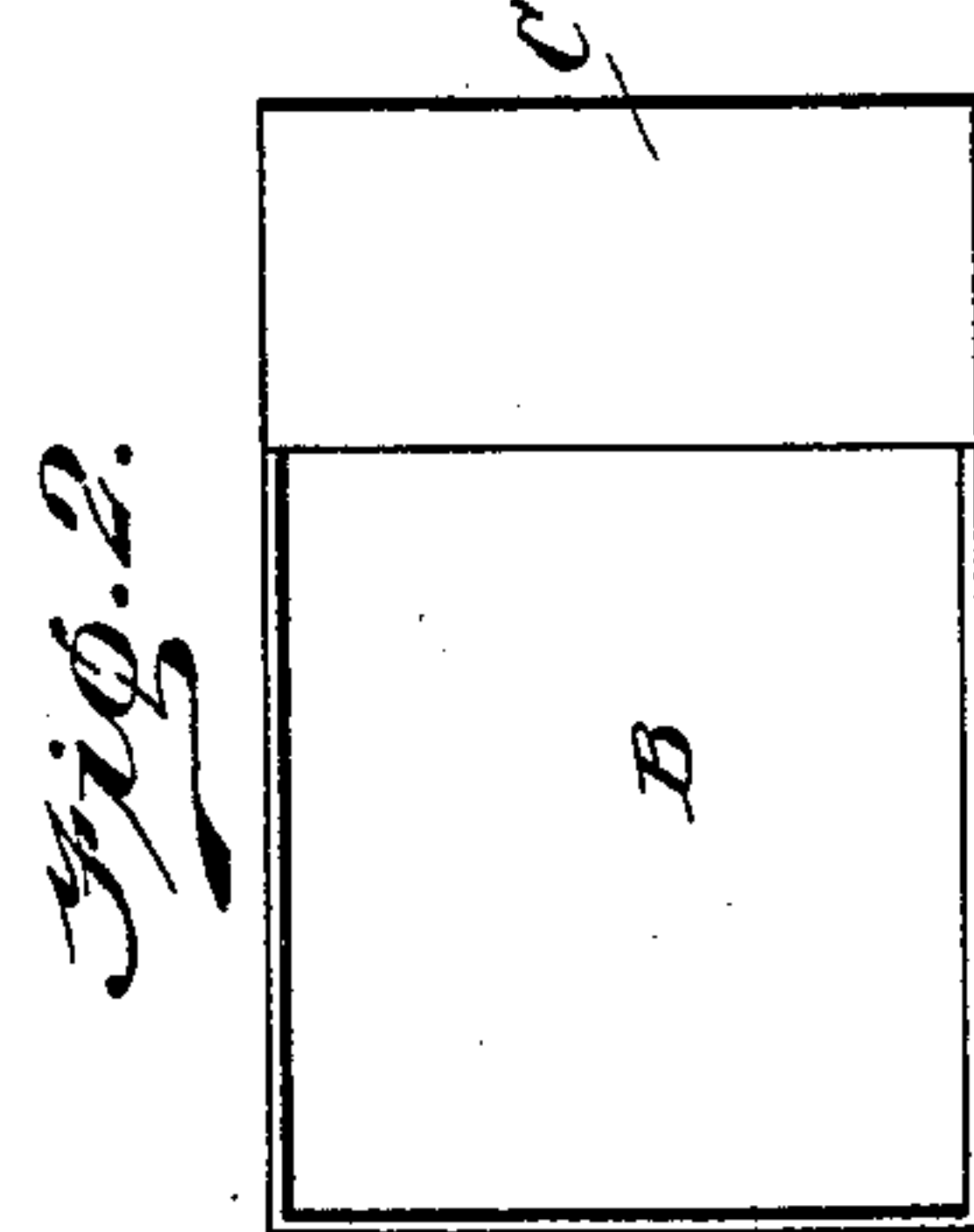


Fig. 2.

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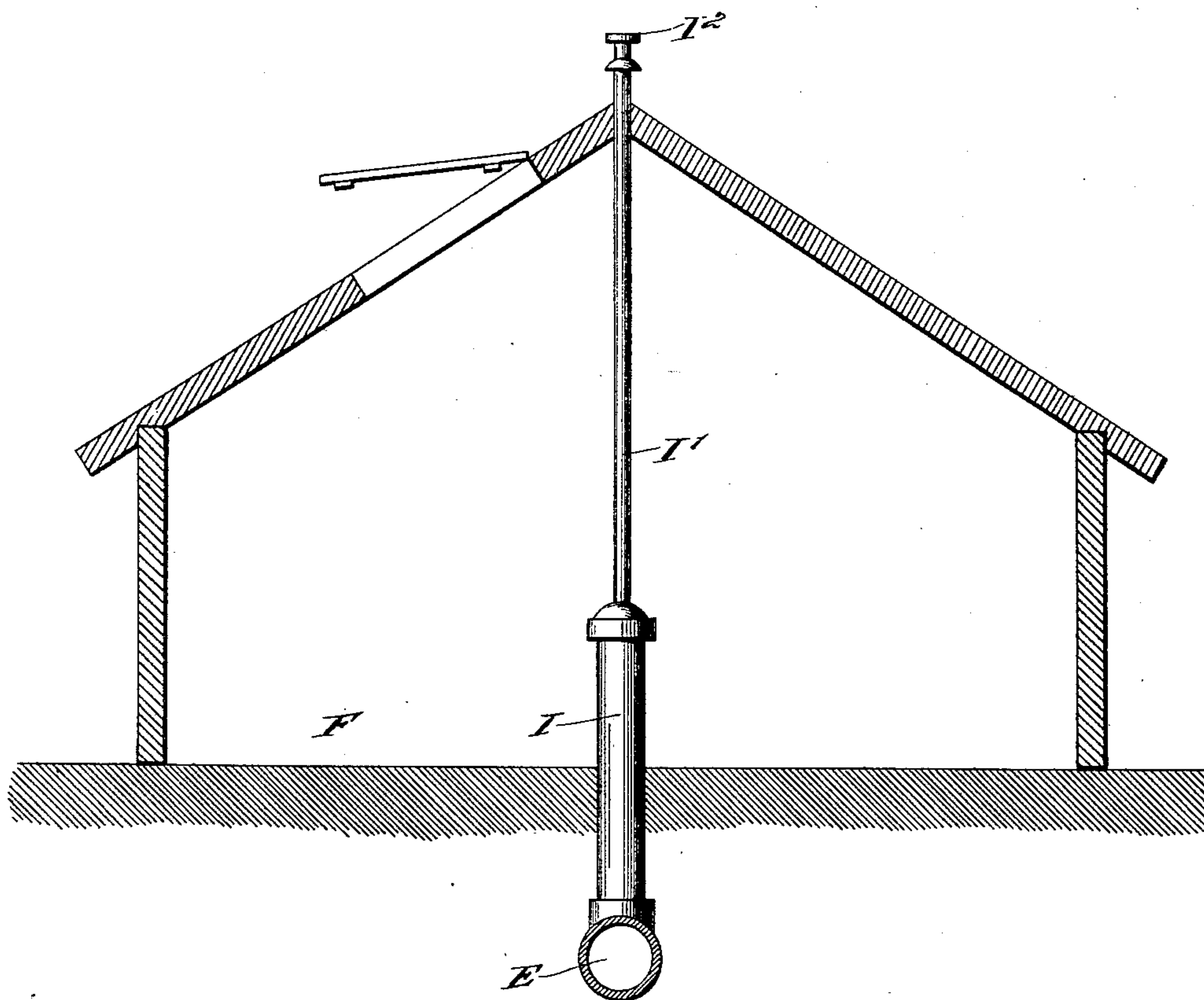
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(No Model.)

2 Sheets—Sheet 2.

Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES M. JEFFREY, OF WAYNESVILLE, ILLINOIS.

HEATER.

SPECIFICATION forming part of Letters Patent No. 677,219, dated June 25, 1901.

Application filed September 20, 1900. Serial No. 30,554. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. JEFFREY, a citizen of the United States, and a resident of Waynesville, in the county of Dewitt and State of Illinois, have invented a new and Improved Heater, of which the following is a full, clear, and exact description.

The invention relates to heaters for heating brooding-rooms and the like; and its object is to provide a new and improved heater which is simple and durable in construction, very effective in operation, and arranged to utilize the fuel to the fullest advantage.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement as applied. Fig. 2 is a plan view of the feed-cooker and hot-water boiler. Fig. 3 is a front elevation of the furnace and the feed-cooker and the hot-water boiler. Fig. 4 is an enlarged transverse section of the main flue and one of the risers, the section being on the line 4 4 in Fig. 1; and Fig. 5 is a cross-section of the improvement as applied.

The improved heater is provided with a furnace A, having a fire-box A', a grate A², a fuel-door A³, and an ash-pit A⁴, as indicated in Fig. 1. The fire-box A' opens at the rear into a dividing-chamber A⁵, and the top of the fire-box and said chamber supports a feed-cooker B and a hot-water boiler C, the latter being located principally over the chamber A⁵, as indicated in Fig. 1.

The opening leading from the fire-box A' to the chamber A⁵ is controlled by a manually-actuated damper D for directing the smoke and gases from the fire-box A' either directly to the said hot-water boiler C or to a main flue E, extending under the floor F of a room, pen, or stall in which hogs, poultry, or other animals are to be raised. The rear part of the flue E opens into a stack E', leading to the outer air and containing a damper E² for regulating the draft in the furnace.

From the flue E, near its entrance end, leads

a second valved stack G, through which the smoke and gases may pass when a damper H in the flue E is closed to prevent the smoke and gases from passing through the main flue. The stack G is especially used when the damper D is in a lowermost position, and the smoke and gases pass from the fire-box A' directly to the chamber A⁵ under the hot-water boiler C to heat the water therein. When the damper D is in an uppermost position, then direct communication is established from the fire-box A' through the chambers A⁵ to the entrance end of the floor F, the damper H then being in an open position.

From the main flue E extend a plurality of risers or hollow tubes I through the floor F and above the same into the room, and the upper ends I' of said risers are somewhat reduced, extend through the roof of the building, and are closed by removable caps I², which when open permit the smoke and gases to directly pass into the outer air.

From the hot-water boiler C extends a circulating-pipe J into the room below the upper ends of the risers I, so that the hot water from the boiler C circulates through the pipes J and heats the room in addition to the heat radiating from the projecting ends of the risers I. The pipes J may be omitted; but when they are used it is desirable that the building be provided with ventilating devices in its roof, as shown in Figs. 1 and 5, to insure a rapid circulation of the air in the room.

From the foregoing it will be readily seen that the floor F of the building is readily warmed or heated by the smoke and gases passing through the flue E, and the space above the floor is also heated by the heat radiating from the risers I and the water-circulating pipe J. It will also be seen that by manipulating the damper in the smoke-stack E' and the removal and replacement of the caps of the risers the temperature of the room can be readily changed or regulated.

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

1. A heater comprising a furnace, a main flue under the floor of a room or the like and leading from the furnace to connect with a smoke-stack, and a plurality of risers on said

main flue, said risers extending through the room and having removable caps for opening or closing their outer ends, whereby when the caps are removed the products of combustion

5 will pass out through the risers, as set forth.

2. A heater, comprising a furnace, a main flue under the floor of a room and leading from the furnace, a smoke-stack having a damper and with which the said flue is connected, a plurality of risers extending from the main flue through the floor into the space above the same and through the roof thereof, and removable caps on the upper ends of said risers above the roof, whereby provision is

15 made for readily regulating the temperature of the room, as set forth.

3. A heater, comprising a furnace having a fire-box, a dividing-chamber in communication with the fire-box, an outlet-flue leading from said chamber, a hot-water boiler over said chamber and a damper for controlling the opening between the fire-box and chamber and serving to direct the products of combustion from the furnace directly to the boiler

25 or to the outlet-flue, as set forth.

4. A heater, comprising a furnace having a fire-box, a dividing-chamber in communication with the fire-box, an outlet-flue leading from said chamber, a hot-water boiler over said chamber, smoke-stacks connected with said main flue at the ends thereof and a swinging damper for controlling the opening between the furnace and chamber and serving to direct the products of combustion from the furnace directly to the boiler or to the

35 outlet-flue, as set forth.

5. A heater, comprising a furnace having a fire-box, a dividing-chamber in communication with the fire-box, a damper for control-

ling the opening between the fire-box and said 40 chamber and regulating the exposure of the boiler to the heat, an outlet-flue leading from said chamber and adapted to extend beneath the floor of a room, risers extending from the flue into the room, a hot-water boiler over said 45 chamber, and circulating water-pipes leading from said boiler into the room to be heated, as set forth.

6. A heater, comprising a furnace having a fire-box, and a dividing-chamber with a manually-controlled damper for controlling the opening between the fire-box and the chamber, a main flue leading from said chamber and having smoke-stacks, risers leading from said main flue, a feed-cooker on the top of 55 the furnace, a hot-water boiler over said dividing-chamber, and a circulating water-pipe leading from said hot-water boiler and extending into the room, as set forth.

7. A heater, comprising a furnace, a dividing-chamber at the rear of the fire-box and communicating therewith, a swinging damper for controlling the opening between the fire-box and chamber, a flue leading from the chamber and extending under the floor of a 65 room or the like, a stack at each end of the flue, the stack at the rear end being provided with a damper, risers extending from the flue into the room and out through the roof of the same, and removable caps for said risers, substantially as described. 70

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES M. JEFFREY.

Witnesses:

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