

No. 616,526.

Patented Dec. 27, 1898.

A. DEADMAN.  
HEATING STOVE.

(Application filed Nov. 1, 1897.)

(No Model.)

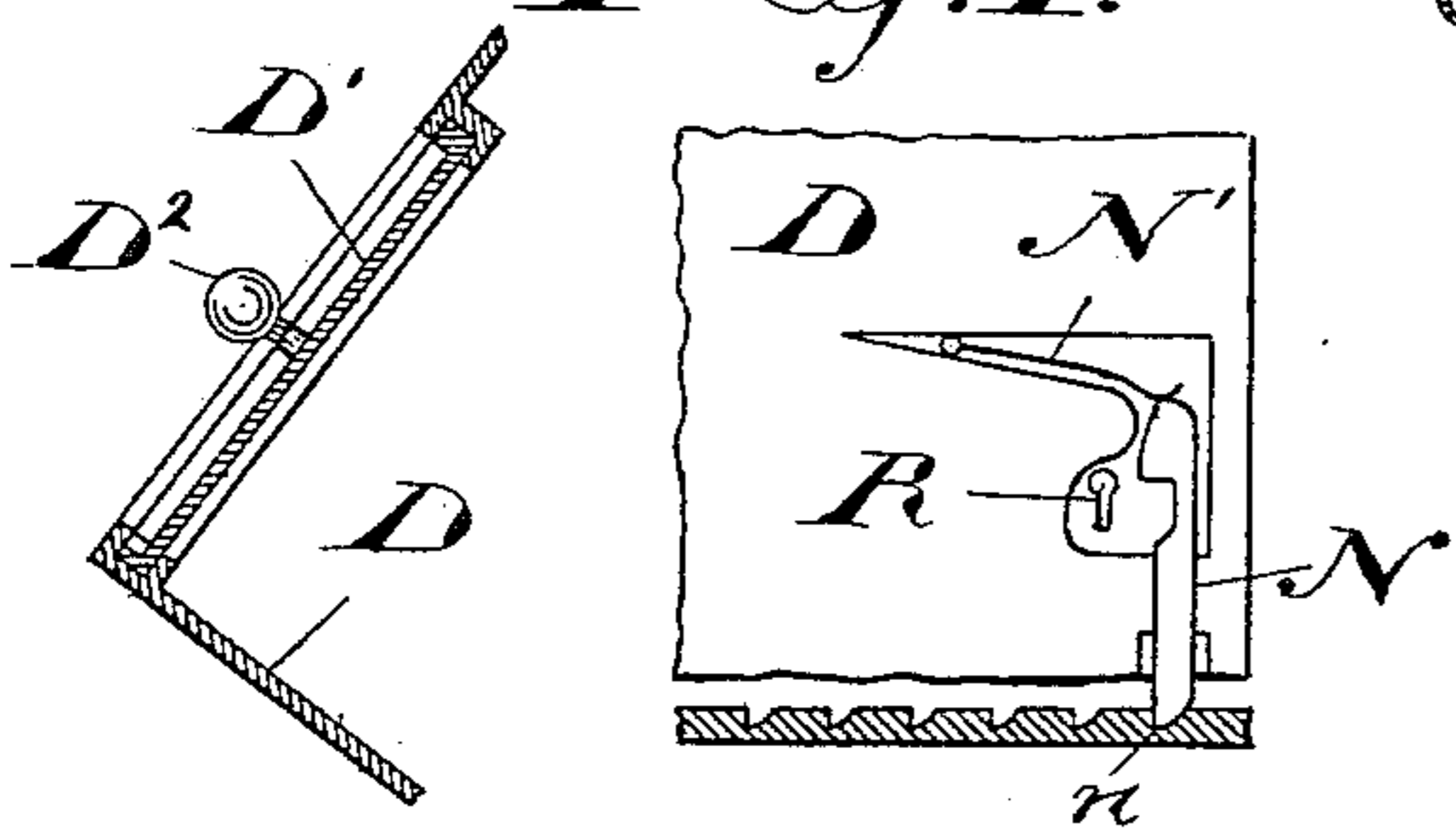
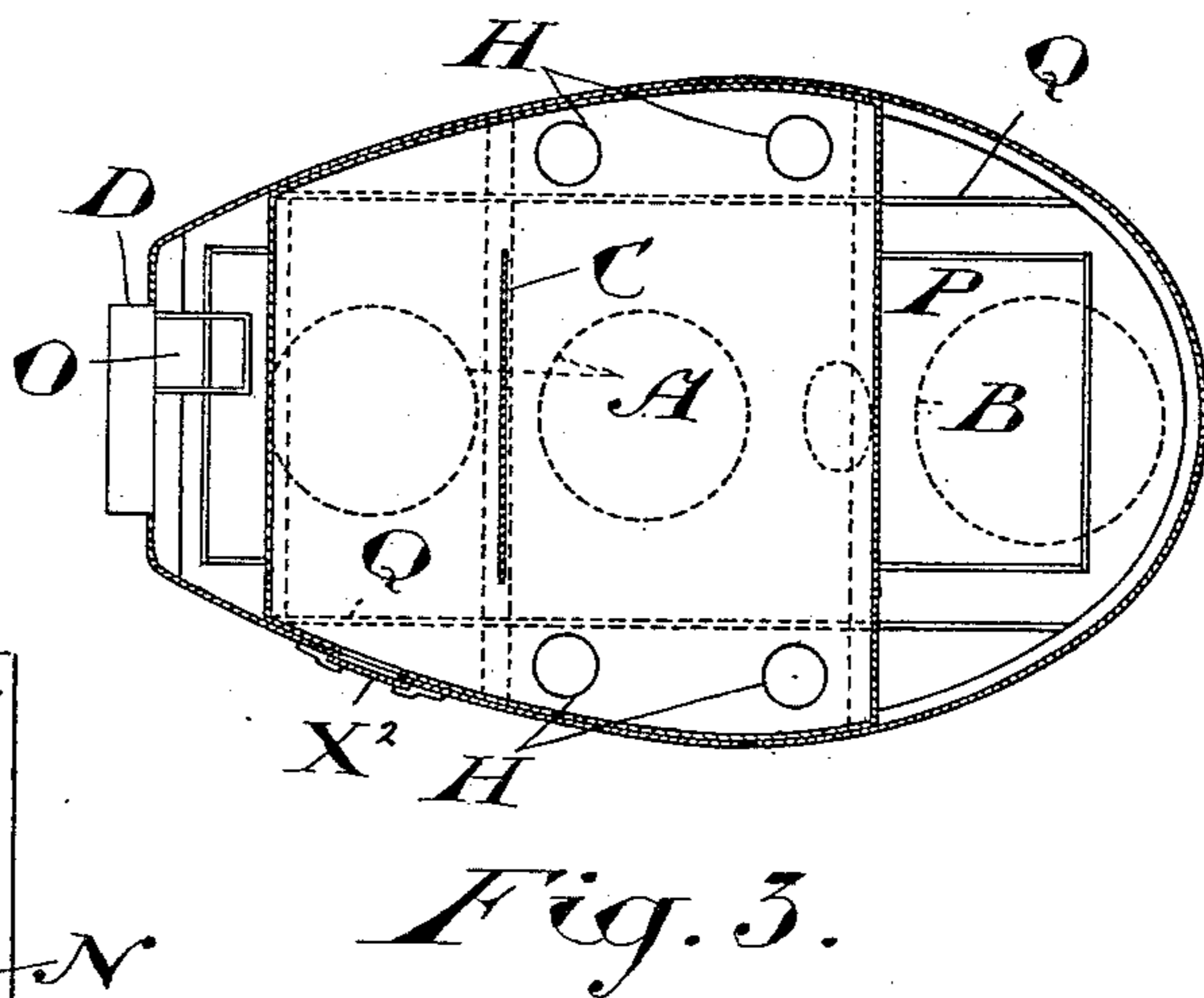
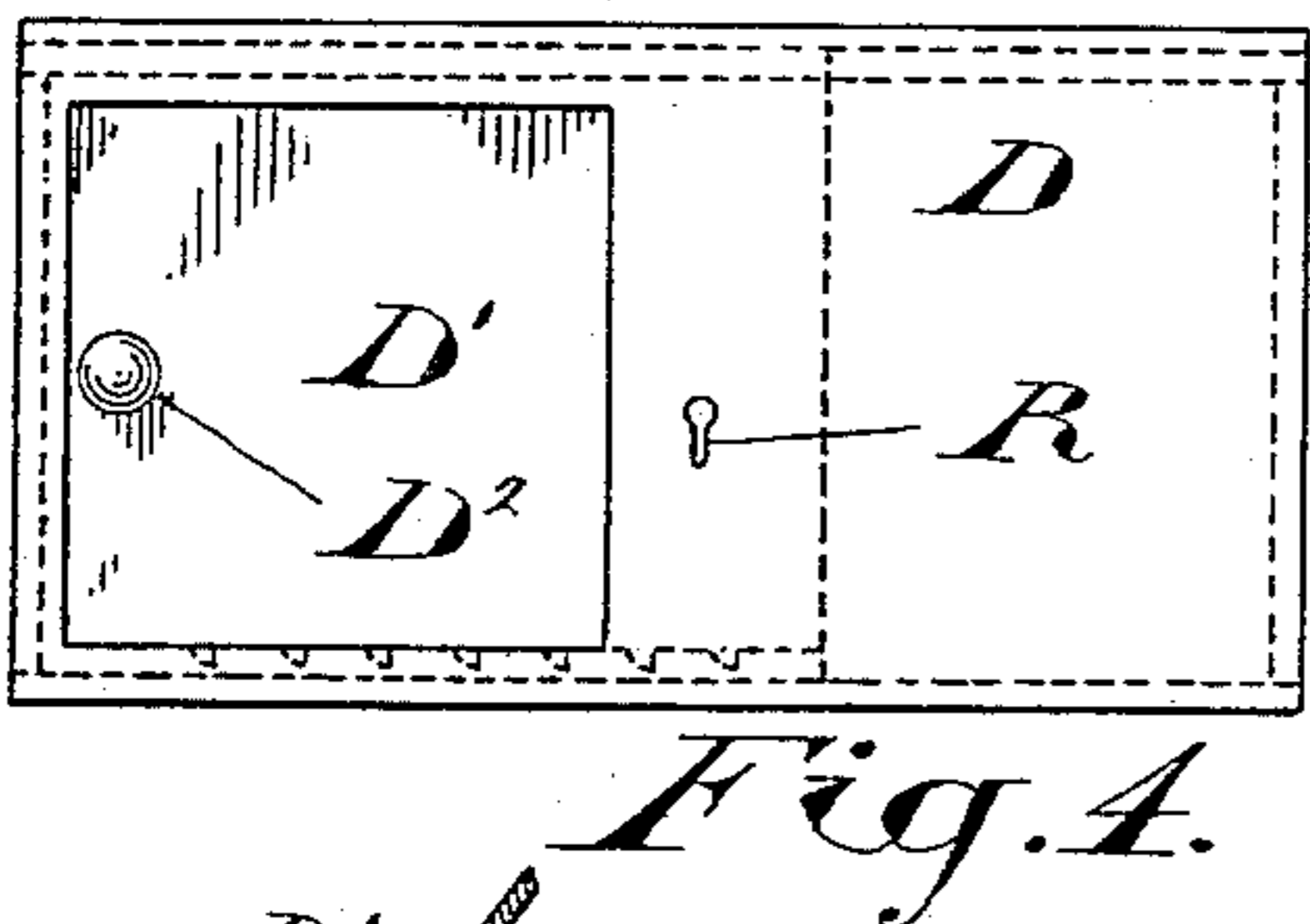
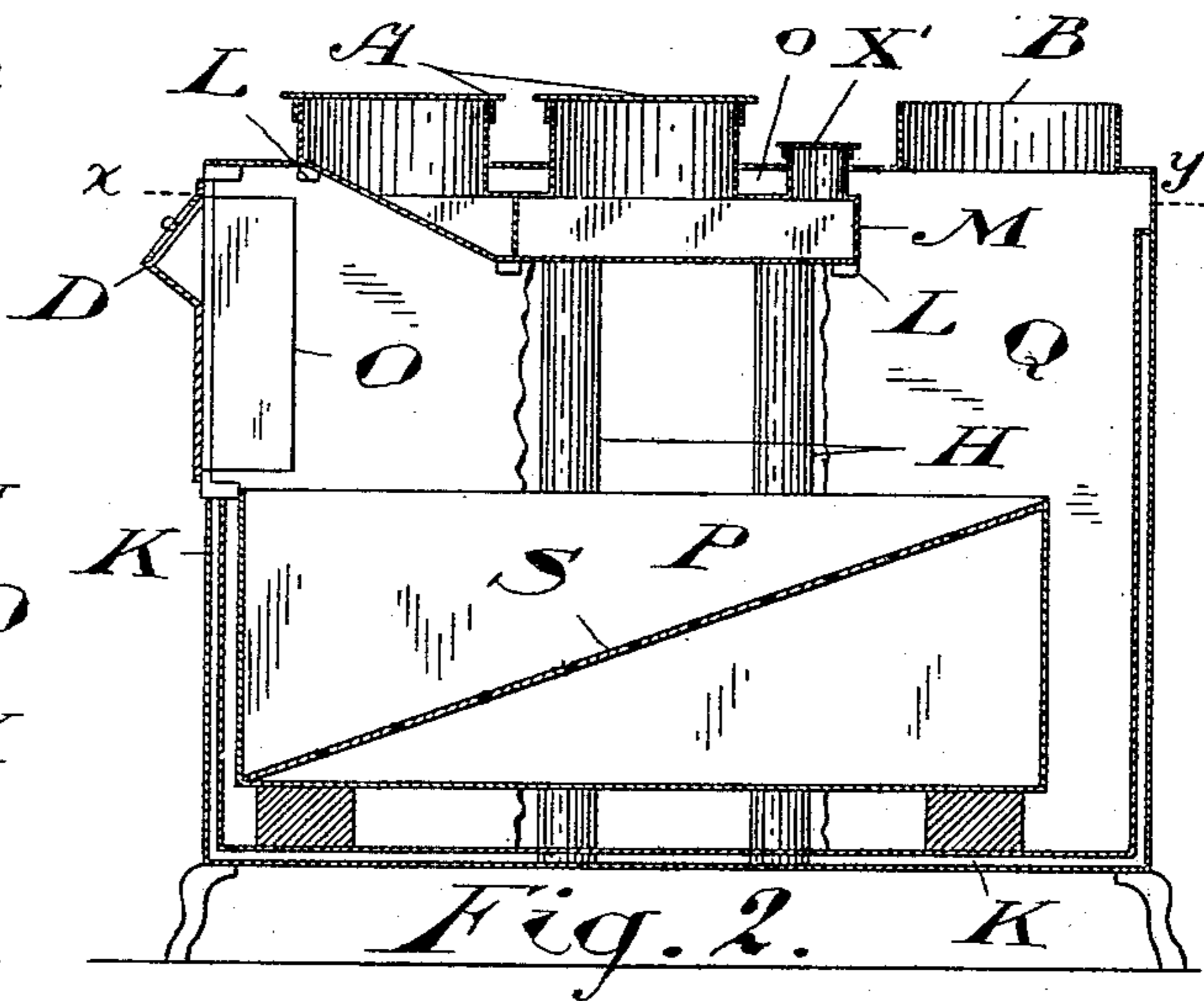
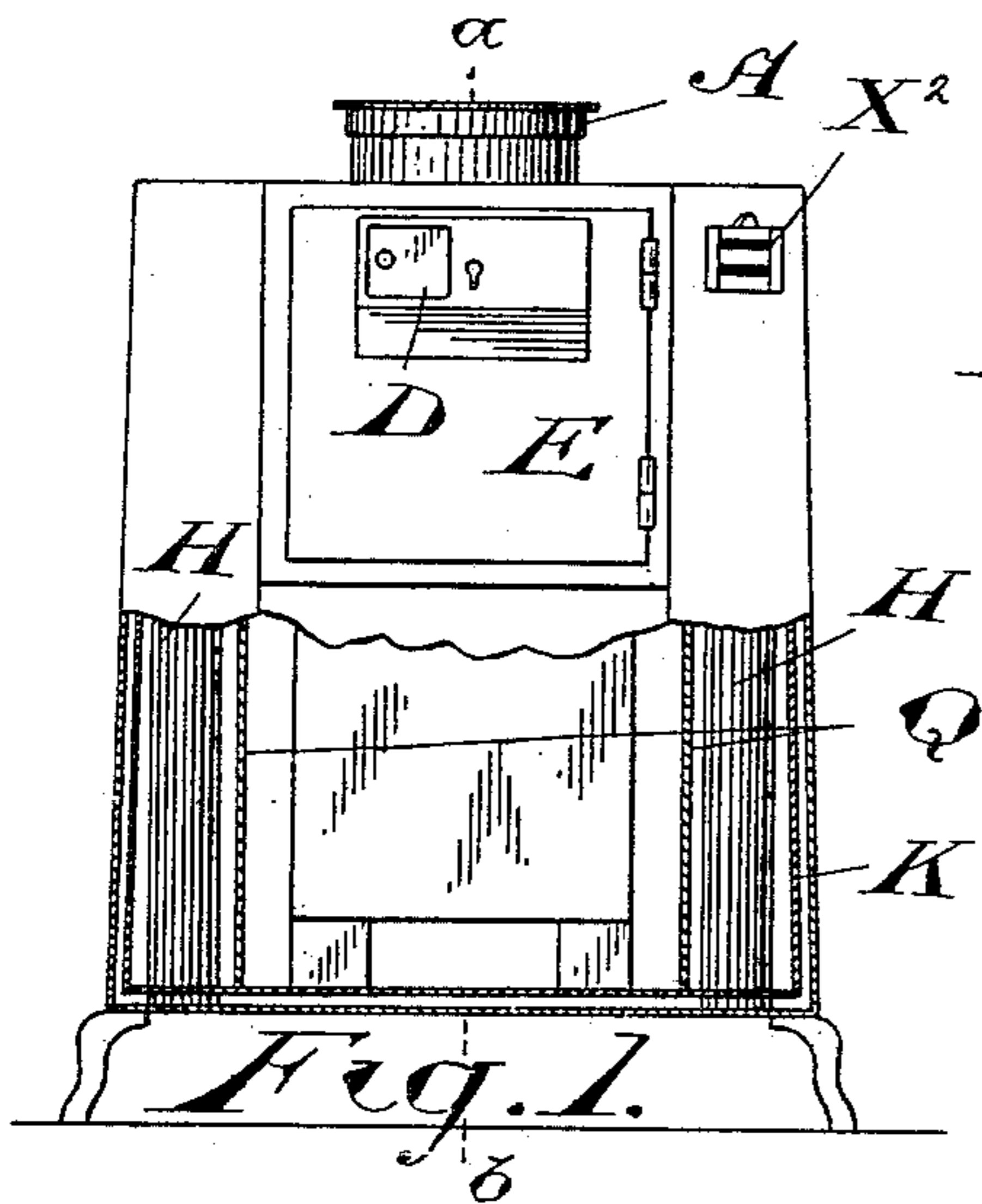


Fig. 5. Fig. 6.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 616,526, dated December 27, 1898.

Application filed November 1, 1897. Serial No. 657,068. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR DEADMAN, inventor, of the town of Fort William, in the district of Algoma and Province of Ontario, Canada, have invented certain new and useful Improvements in Heating-Stoves, of which the following is a specification.

My invention relates to a simple and economic method of constructing such stoves so that in combination with drums, hot-air flues, fire-boxes, &c., more than ordinary heat may be obtained therefrom, having special relation to the quality and quantity of fuel consumed therein and the different appliances used to effect the combustion thereof.

Reference is had to the accompanying drawings, in which—

Figure 1 represents an end view of my invention, partly in section; Fig. 2, a vertical section through *ab*, Fig. 1; Fig. 3, a horizontal section through *xy*, Fig. 2; Fig. 4, a front view of a safety draft-cover; Fig. 5, a cross-section through the draft-cover; and Fig. 6 an inner view of the same, showing locking device.

In the drawings like letters of reference indicate corresponding parts in the different figures.

It is understood in looking at the drawings that an air-chamber of one-half inch, more or less, in thickness surrounds the sides, ends, and bottom of the whole stove, (irrespective of the door,) as indicated in Figs. 1 and 2 by the letters *K K K*, said air-chambers being formed by a casing of sheet-steel in the interior of the stove-frame and held in position by supporting-flues *H H H*, hereinafter described, or by other convenient appliances for that purpose.

A metallic drum *M M*, preferably of the form shown in Fig. 2, rests on iron bars *L L L*, crossing laterally underneath and attached to the sides of the stove, said bars being of sufficient height to leave an air-space between the top of said drum and top of the stove. At convenient places in the top of said stove I propose to have holes or orifices, preferably of a circular formation, so that the discharge-pipes *A A* in connection with the drum may protrude through said orifices, the said drum being in connection with air-flues *H H*, hereinafter described. In the rear

of said pipes I also propose to place a smaller hole or orifice of similar formation and construction, as shown at *X'*, so that same may act as an air-feeder to the drum. All or any of said orifices may be closed with movable caps or cover fitting over the tops of the collars thereof.

Inside the body of the drum and crossing the same laterally, as better shown at *C* in Fig. 3, I propose to fasten the edges of one or more metallic plates, so that same may act not only as walls in support of the head of the drum, but also tend to cause by obstruction a more equable distribution of the hot-air draft therein, it being understood that the length of said plates is such as not to impede a flow of air between the ends thereof and the sides of said drum, as shown at *C* in Fig. 3.

In the side of the drum, as shown at *X''* in Figs. 1 and 3, are dampers, which may be opened or closed at will for heat-regulating purposes. Connecting with orifices in the bottom of said drum and also with similar orifices in the bottom of the stove, as shown at *H H* in Figs. 1, 2, and 3, are one or more perpendicular air-flues, preferably made of steel, which may be either of circular, oval, or square formation, but so situated inside the body of the stove as not to interfere with the fire-box *P*, hereinafter described, said flues acting as conduit-pipes for the transmission of air up the outside of the fire-box *P* into the drum *M* and from there discharged through the pipes *A A*, it being contemplated that cold air will be drawn through the orifices *H H* in the bottom of the stove and become heated in its passage upward.

*P* in Fig. 2 represents a section of the fire-box above mentioned. *S* represents the bottom of said fire-box when the same is raised to a slanting position, hereinafter described, the said box being made of cast iron or steel and of such dimensions that it can be introduced through the door of the stove *E*, and the diagonal bottom *S* is elevated at its rear end and is of such length that it rests against the side of the fire-box *P*, so that the bottom may slope and present an opposing face to the draft entering through said door for the purpose hereinafter mentioned. If necessary, the bottom plate of this fire-box may be

perforated, so that oxygen passing through the holes may assist in the combustion of the carbon arising from such refuse material as may be placed thereon, it being contemplated  
 5 by this means to consume for heating purposes screenings, frosted wheat, and such other refuse as might otherwise be wasted in countries where coal and wood are scarce.

I prefer to take my draft through an air-  
 10 pipe O, connected with the draft-cover slide D' in the door E, which is located near the top of the stove, as shown in Fig. 2. The draft of air coming down through the air-pipe O strikes on the fuel on the lower part  
 15 of the slanting bottom S, and as the fuel is consumed it slides down and the draft on its way to the smoke-pipe B reaches that portion of the fuel which may possibly not slide down from the back top end of the slanting  
 20 bottom, and thus all the fuel may be consumed, the draft-cover being of such formation as shown in the enlarged view thereof represented in Figs. 4, 5, and 6. In Figs. 4  
 25 and 6, R represents a key-slot through which a suitable key may be introduced, so as to engage with an opposing bolt N, and thus by raising the bolt N out of its notch *n* the draft-cover slide D' may be opened as far as re-  
 30 quired, and by permitting the bolt to fall back into a new notch the draft-cover is held into its appropriate place until it is required to open the draft-cover slide still further, when the bolt is again raised out of the notch  
 35 by means of the key; but the draft can be shut off at any time, as the notches are so shaped that the point of the bolt will slide up and over these notches as the draft-cover is being closed. The spring N' (shown in Fig.  
 40 6) serves to keep the bolt N normally in one of the notches.

It is understood that all the products of combustion pass through a smoke-stack B on the back of the stove in the ordinary manner and  
 45 also that the vertical flues H, which pass up into the drum M, may be differently arranged with respect to the fire-box P and be of any desired number. In the illustration I have shown four vertical flues, two on either side  
 50 of the fire-box P, which I find to be a convenient number and location. In Fig. 5 I have shown a cross-section through the draft-cover D and the slide D', which slides in grooves formed on the inside of the cover, and the knob D'', which serves to open and close the  
 55 slide.

Q are steel linings (shown in Figs. 1, 2, and 3) which run from front to rear of the stove, which stove may be of an oval shape, as shown

in Fig. 3, so that the vertical pipes or flues H are between the side of the stove and this steel  
 60 lining. These steel linings serve to protect the flues H from the destructive effect of the direct action of the fire, and these linings may readily be renewed at a small cost.

What I claim as my invention is—

1. In a heating-stove, the combination with  
 65 the body of the stove, of the hot-air drum M, located within the body of the stove and near the top thereof; one or more vertical metallic pipes or flues H, communicating between open-  
 70 ings in the bottom of the stove and the hot-air drum and located on either side of the fire-box; one or more discharge-pipes A, leading from the hot-air drum through the top of the  
 75 stove; one or more metallic plates, so located within the drum as to leave a passage-way between its ends and the sides of the drum, and a smoke-stack B, substantially as speci-  
 fied.

2. In a heating-stove, the combination with  
 80 the body so constructed as to leave an air-chamber K, on sides and bottom; of the air-drum M, so secured in position as to leave an air-space *o* between the top of the drum and  
 85 the top of the stove and provided within with heat-distributing plate C; one or more vertical pipes or flues H, communicating between openings in the bottom of the stove, and the  
 90 hot-air drum; one or more discharge-pipes A, leading from the hot-air drum; the steel lin- ings Q, forming with the sides an inclosure for the flues H; and a smoke-stack B, substan-  
 tially as specified.

3. In a heating-stove, the combination with  
 95 the body thereof, of the hot-air drum M, held in position at the top of the stove immediately over the fire-box by means of iron bars L, and vertical flues H, so as to leave an air-space *o*  
 100 between the drum and the top of the stove; the metallic plate C, for distributing the hot air within the drum; the air-feeder pipe X' for supplying outside air to the drum; and  
 105 the discharge-pipes *a*, passing from the hot-air drum through the top of the stove, substantially as specified.

4. In a heating-stove, the combination of a  
 110 removable fire-box P, with slanting bottom S, provided with perforations, and the air-pipe O, connected with the draft-cover slide D', in the door E, which door is located near the top  
 of the stove, substantially as specified.

Fort William, October 23, 1897.

ARTHUR DEADMAN.

In presence of—

WILLIAM RUMSEY,  
 WM. HARRISON.