

No. 693,761.

E. E. WALTERS.
STOVE.

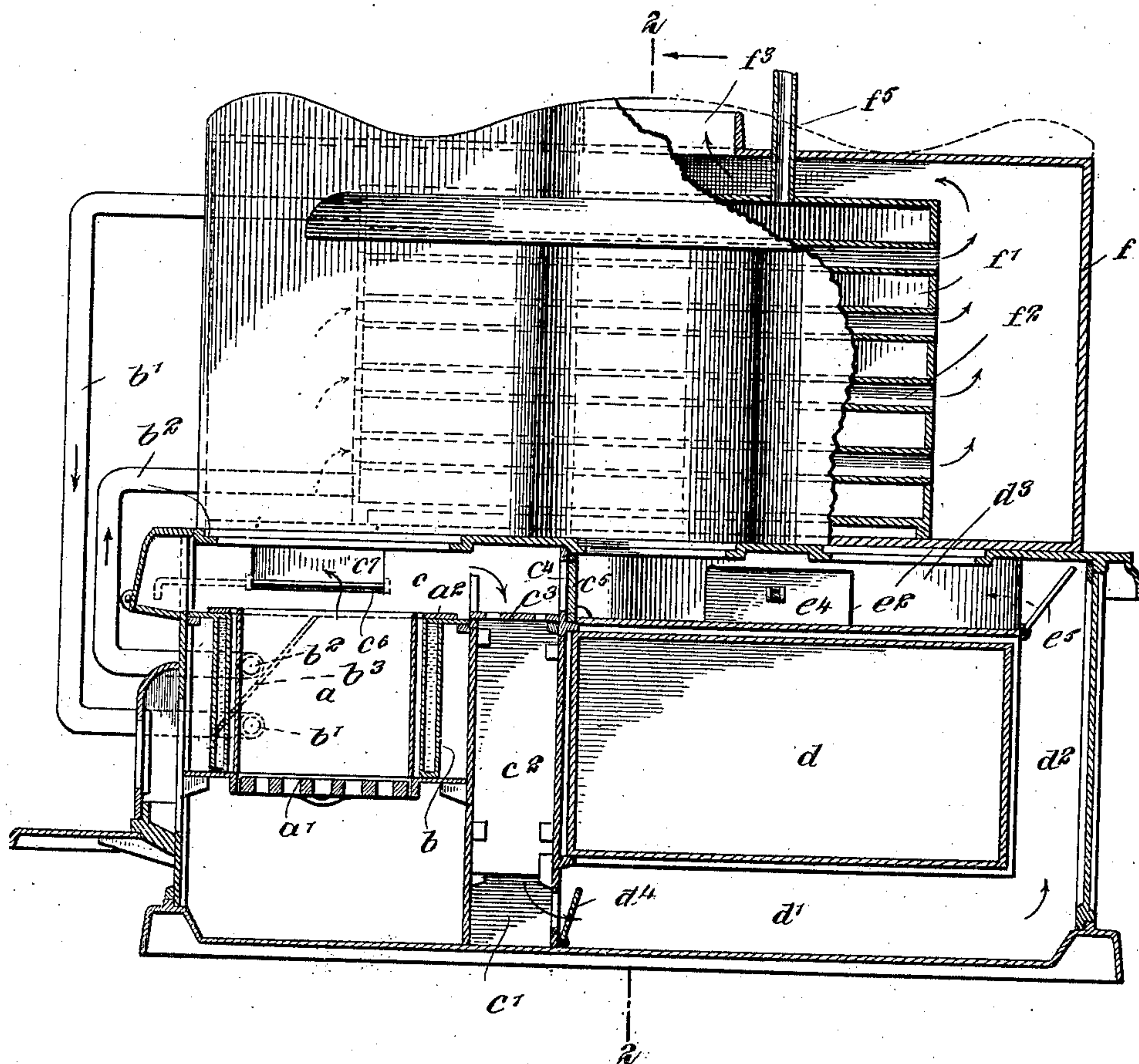
Patented Feb. 18, 1902.

(No Model.)

(Application filed June 3, 1901.)

3 Sheets—Sheet 1.

Fig. 1.



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3 Sheets—Sheet 3.

Fig. 4.

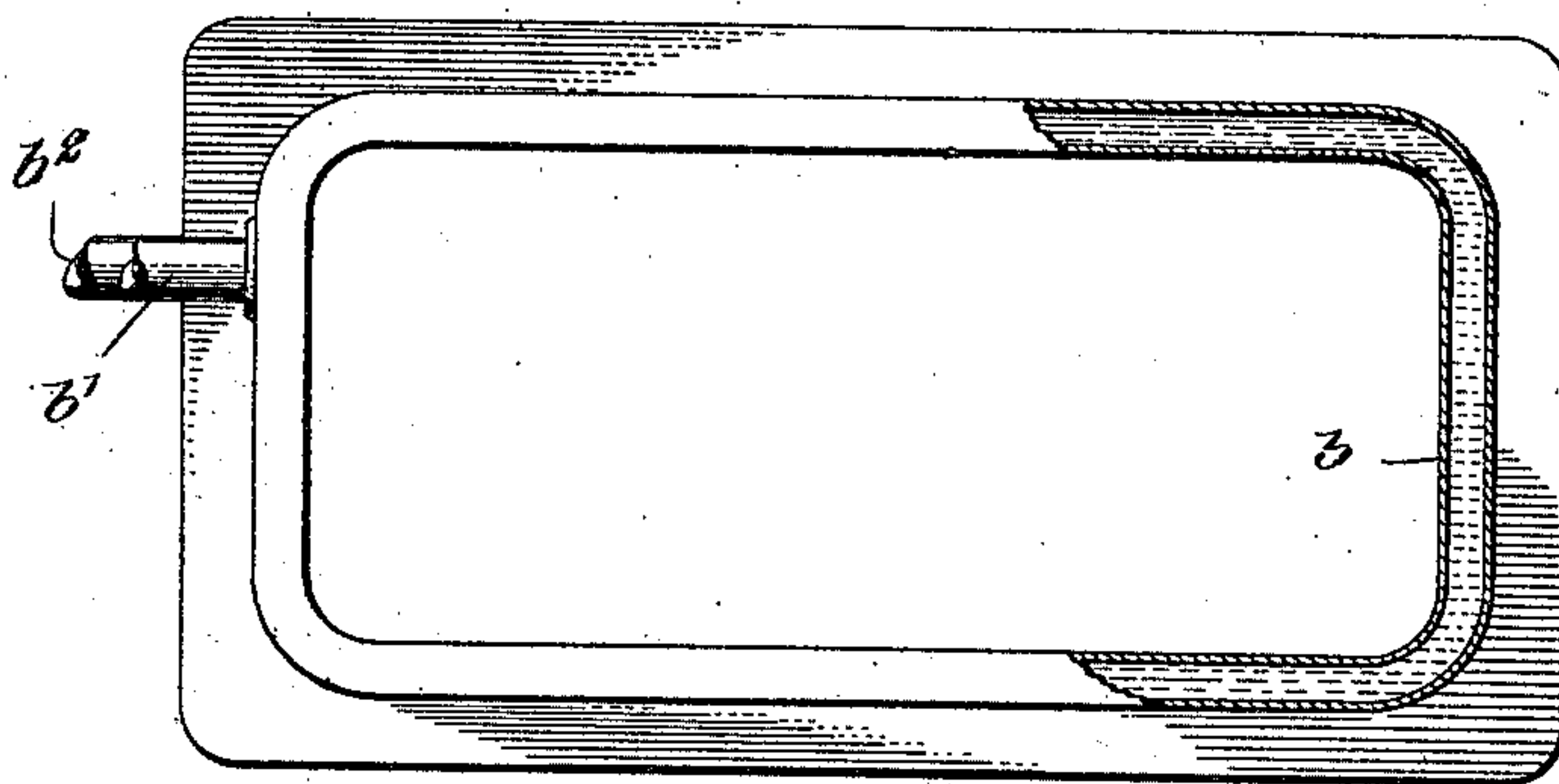
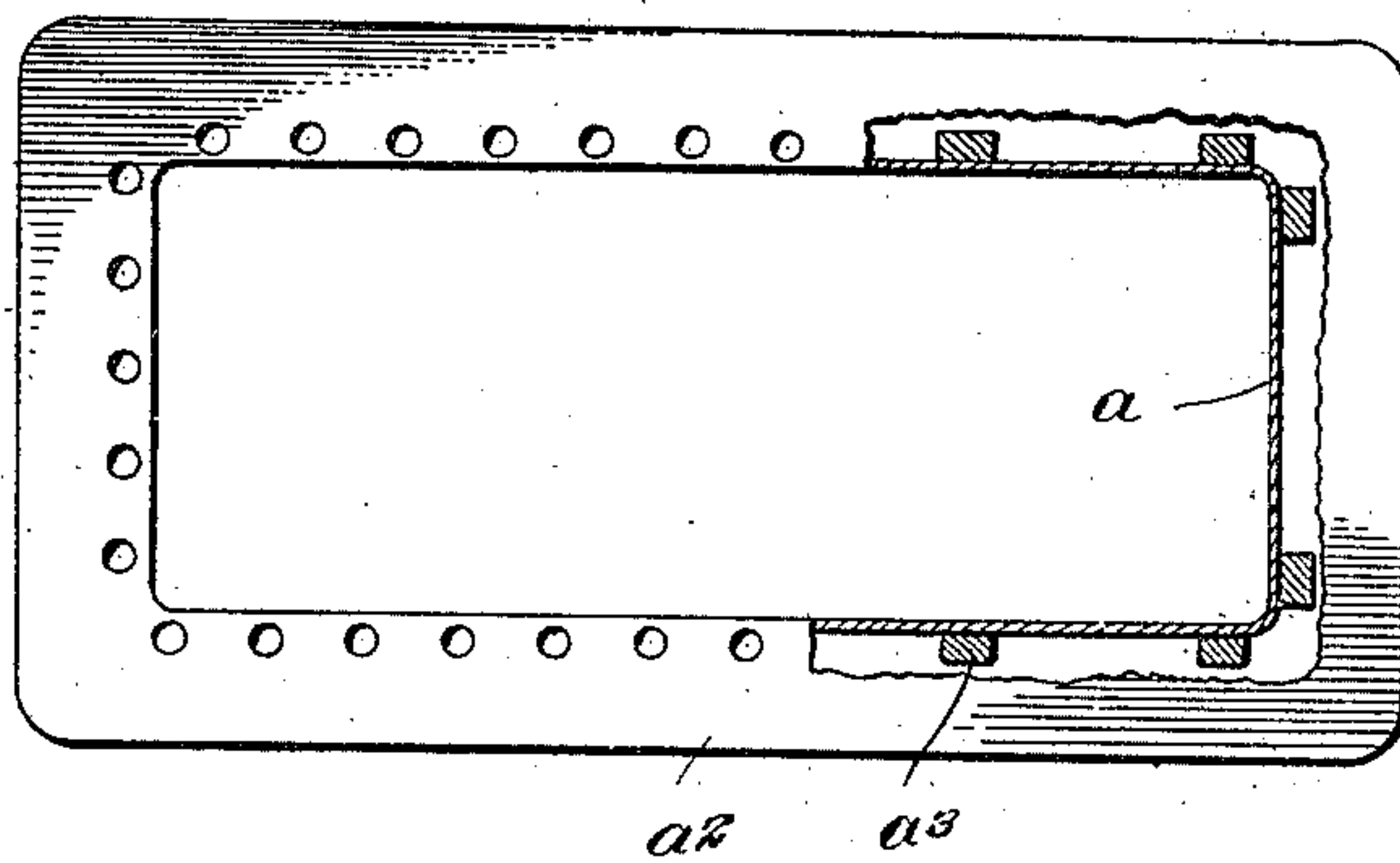


Fig. 5.



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EDWARD E. WALTERS, OF LEHIGHTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO BENJAMIN A. MINK, OF LEHIGHTON, PENNSYLVANIA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 693,761, dated February 18, 1902.

Application filed June 3, 1901. Serial No. 62,973. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. WALTERS, a citizen of the United States, and a resident of Lehigh, in the county of Carbon and State of Pennsylvania, have invented a new and Improved Stove, of which the following is a full, clear, and exact description.

This invention relates to a stove which is useful in all branches of cooking and also for house-heating; and it comprises certain novel features which will be fully described hereinafter.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to 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 view of the stove on the line 1 1 of Fig. 2. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a plan view of the body of the stove, showing the top portion removed. Fig. 4 is a bottom view of the water-jacket, and Fig. 5 is a plan of the fire-box.

a indicates the fire-box of the stove, below which is the usual grate *a'*. The fire-box is surrounded by a water-jacket *b*. The fire-box *a* has a top flange *a²* bearing on the water-jacket and is held spaced from the jacket by ribs *a³*. (See Fig. 5.) The flange *a²* is orificed to permit free circulation of air. It will be observed from the illustrations in Figs. 1 and 5 that the fire-box *a* may be removed from the stove, so that the fire may, when desired, be built directly against the walls of the water-jacket. This will apply a maximum degree of heat to the water-jacket, but when the box *a* is in place the water-jacket will not be heated so highly. The purpose of this will hereinafter appear. The water-jacket is provided with a partition *b³* therein, forming a continuous passage for the water which enters the water-jacket through a pipe *b'* and passes out thereof through a pipe *b²*. From the fire-box *a* the burning gases pass into a combustion-chamber *c* above the fire-box. At one side of the fire-box is arranged a downdraft-passage *c'*, in which are located two vertical flues *c²*, at the upper ends of

which is arranged a horizontally-perforated plate *c³*.

d indicates the oven, beneath which passes a flue *d'*, communicating with the lower end of the flue *c'*, such communication being commanded by a damper *d⁴*, having an operating-stem *d⁵*. (See Fig. 2.) The outer or opposite end of the flue *d'* communicates with an updraft-flue *d²*, leading past the outer end of the oven and into a flue *d³*, arranged at the top of the oven.

e indicates a partition which is mounted between the top of the oven and the top of the stove and which forms a by-pass flue or space *e'* in communication with the flue *d³* by an opening *e²* in the partition *e* and in communication with the flue *d²* by an opening *e³* in the partition *e*. The opening *e²* is commanded by a damper *e⁴* and the opening *e³* by a damper *e⁵*. The left-hand end of the flue *d³* communicates with the combustion-chamber *c* by means of an orificed partition *c⁴*, commanded by a sliding damper *c⁵*. From the flue or chamber *e'* the smoke and burning gases pass by an outlet *e⁶*, (see Fig. 3,) and from the combustion-chamber *c* said gases may pass through an outlet *c⁶*.

Arranged at the upper rear portion of the stove and communicating with the outlets *e⁶* and *c⁶* is a casing *f*, containing a boiler *f'*, through which pass a number of fire-tubes *f²*, these tubes extending longitudinally through the boiler and opening at their ends into the casing *f*. The top of the casing *f* is provided with an outlet *f³*, adapted to carry the smoke off into the chimney with which the stove is connected. The casing *f* contains a flue *f⁴*, which communicates with the outlet *e⁶* and passes by the side of the boiler *f'* and directly to the outlet *f³*. The outlet *c⁶* is commanded by a damper *c⁷*, and this opening communicates with the casing *f* at one end thereof. When the damper *c⁷* is closed and the draft is led around the damper and out through the opening *c⁶*, it passes directly through the flue *f²* and out of the casing *f*; but when the damper *c⁷* is open and the dampers *e⁴* and *e⁵* are closed the draft passes through the outlet *c⁶* and through the fire-tubes *f²* and thence out by way of the outlet *f³*. This latter passage of the draft thoroughly heats the water in the boiler *f'*.

By closing the dampers c^7 and c^5 the draft may be caused to pass down the flue c' , around the oven, and up either directly into the flue e' or into said flue by way of the flue d^3 . If the damper e^4 is closed, the draft passes through the opening e^3 into the flue or chamber e' , and if the position of the dampers e^4 and e^5 is reversed the draft passes into the flue f^2 and thence through the flue e' . If the damper c^5 be opened, the draft passes directly over the top of the oven as contradistinguished from under and past the side thereof. The water heated in the boiler f' may be used for house-heating, and this boiler is connected with the water-jacket b of the fire-box by means of the pipes b' and b^2 , as shown, so that the water circulates continuously from one to the other. f^5 indicates the feed-pipe for the boiler f' . If desired, the water-jacket b and boiler f' may be used independently—that is to say, if the house is not to be heated the boiler f' may not be used and the water-jacket used alone to furnish water for culinary purposes. When the boiler f' is used, it will be advisable to remove the box a , so as to heat the water as much as possible. When the boiler is not used, all necessary heat may be attained with the fire-box in place.

The top g of the stove is formed with a number of openings therein for the reception of cooking utensils, as usual. These openings may be fitted with covers of any desired sort.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

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

1. A stove having a fire-box, a water-jacket arranged around it, means in the water-jacket to form a continuous passage passing around the fire-box, a water-boiler, connections between the ends of said passage in the water-jacket and the water-boiler to provide for the circulation of water from the boiler into the water-jacket and back to the boiler, said boiler comprising a shell with fire-tubes passing through it, a casing inclosing the boiler and having an outlet for the products of combustion, means forming passages carrying the draft from the fire-box into the end of the casing and through the water-tubes or into the side of the casing past the boiler, and dampers controlling said passages.

2. A stove having a grate, a water-jacket arranged above it, a fire-box removably set inside of the water-jacket, ribs fastened to the outside of the fire-box and engaging the water-jacket to space the fire-box therefrom, the fire-box having a flange at its upper edge, the flange projecting outward over the fire-box and being perforated to allow for the circulation of air between the fire-box and water-jacket, a water-boiler in communication with the water-jacket, said boiler comprising a shell with fire-tubes passing through it, a casing inclosing the boiler and having an outlet for the products of combustion, means forming passages for carrying the draft from the fire-box into the end of the casing and through the boiler-tubes or into the side of the casing past the boiler, and dampers controlling said passages.

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

EDWARD E. WALTERS.

Witnesses:

B. A. MINK,
B. J. KURTZ.