

(No Model.)

F. E. BACKUS.
FIREPLACE HEATER.

No. 563,005.

Patented June 30, 1896.

Fig. 1.

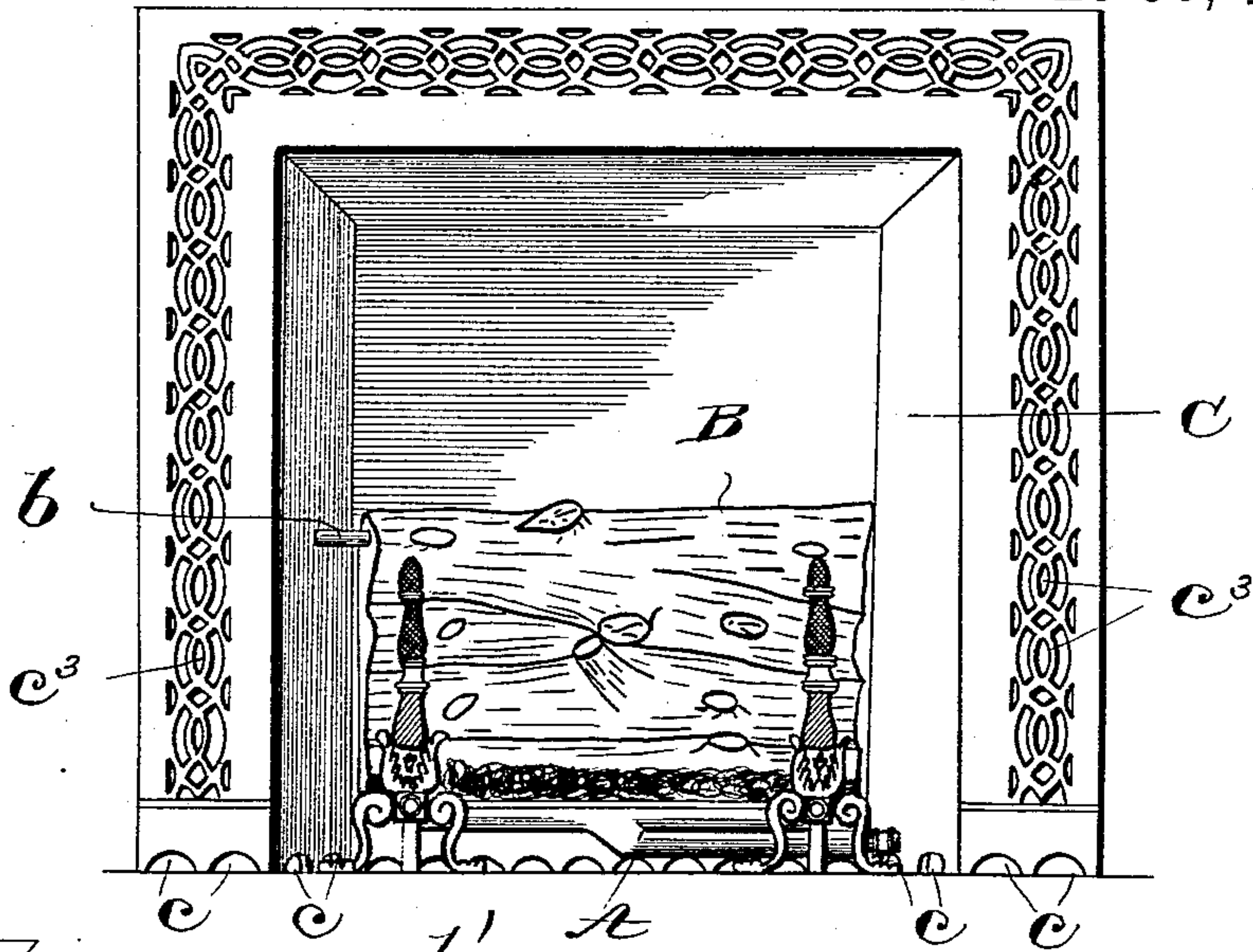


Fig. 2.

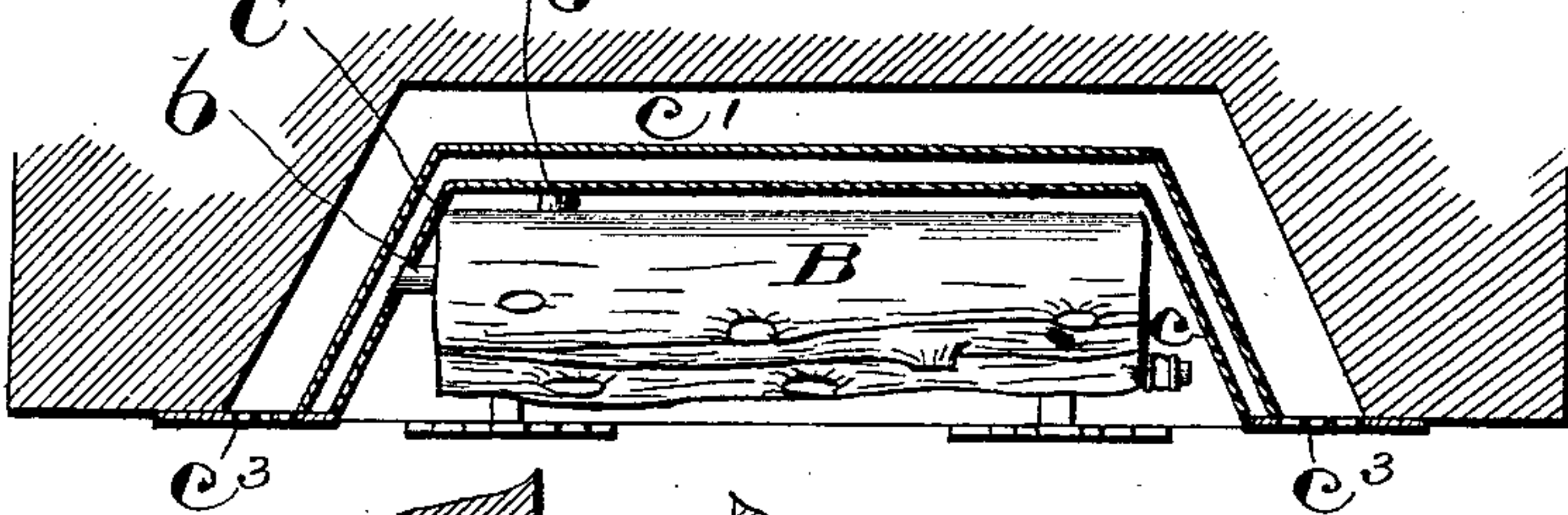
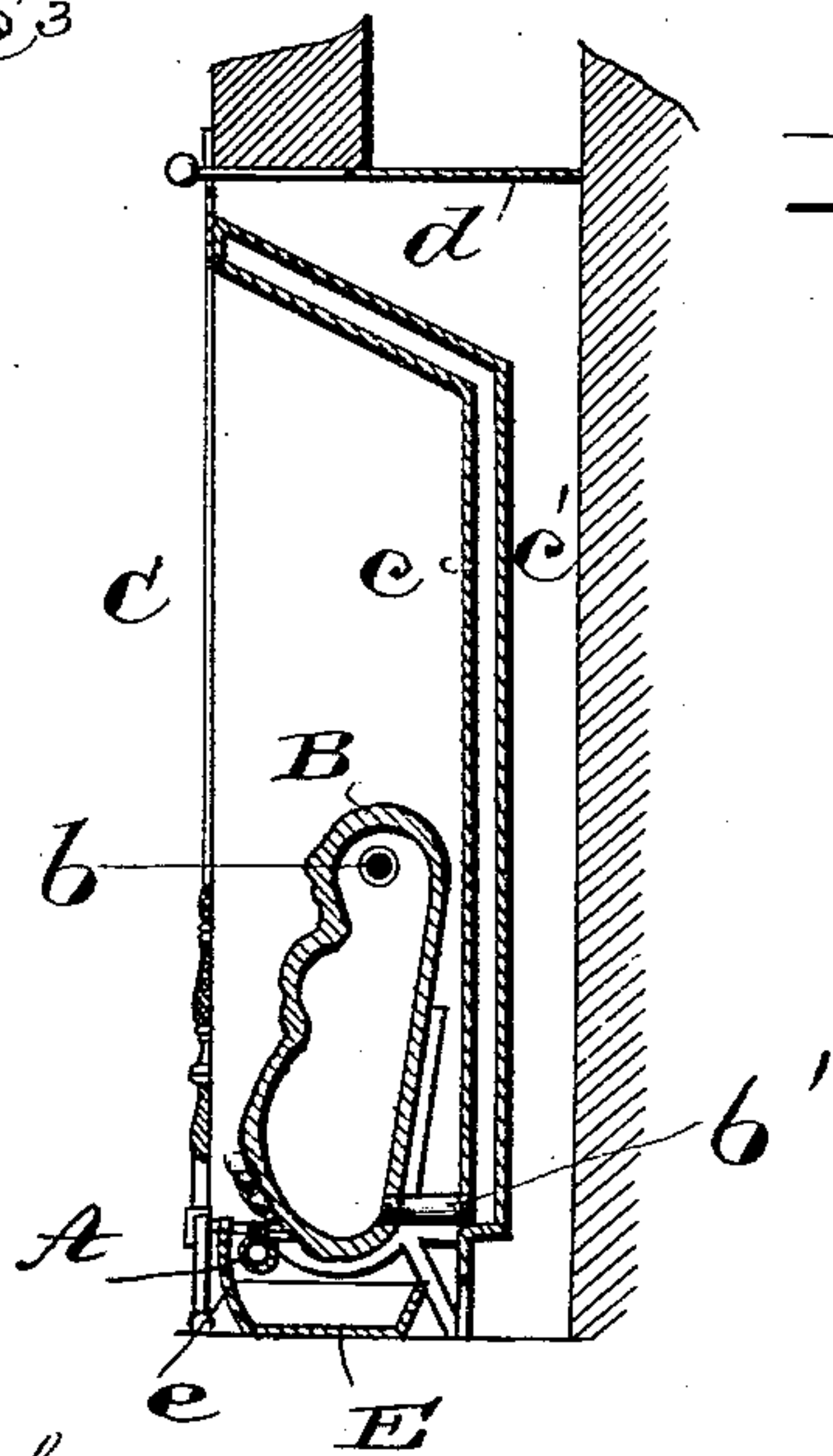


Fig. 3.



Witnesses

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FREDERICK ELLSWORTH BACKUS, OF WILLIAMSPORT, PENNSYLVANIA.

FIREPLACE-HEATER.

SPECIFICATION forming part of Letters Patent No. 563,005, dated June 30, 1896.

Application filed December 6, 1895. Serial No. 571,239. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK ELLSWORTH BACKUS, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Fireplace-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to the art of steam and like systems of heating, and more particularly to those in which the direct heat of the burner or other heating device is utilized, as well as the heat from steam generated by the burner or from some other circulating medium heated in the same manner.

In the accompanying drawings I have illustrated one form in which I have contemplated embodying my invention, and the said invention is disclosed in the specification and claims.

In the drawings, Figure 1 is a front view of my improved device, and Fig. 2 is a horizontal section of the same, and Fig. 3 is a vertical transverse section.

My improved heating device is designed to be placed wholly within the fireplace-niche of an ordinary and common construction or within a recess of like character constructed to receive it. In case it is placed and used in a fireplace, as illustrated in the drawings, I close the chimney-throat, either permanently or by a damper *d*, which may be moved to open the chimney to lower the temperature of a room when overheated or during extremely hot weather. The complete article which forms my present invention is composed of three main parts, the heating device A, which in this instance is a gas-burner; the water-log B, which serves as a boiler or steam-generator, and the radiator C. The radiator is made to conform to the shape of the fireplace-niche, and itself forms a niche or recess within which the water-log and burner are placed. The radiator is made in the form shown, of plates placed closely together, forming a narrow chambered structure constituting the top, back, and jambs of the fireplace or the lining thereof. In the drawings, *c* is the inner and *c'* the outer wall of the

radiator. The inner wall extends downward below the outer wall, and the lower end of the inner wall is provided with apertures *c*² to admit air to the rear of the radiator, the radiator being made smaller than the fireplace-niche, so as to leave a space between it and the wall of the fireplace or recess. The upper part of the water-log is connected with the interior of the radiator by the pipe *b* for the passage of steam, and a connection for the return of the water of condensation is formed by the pipe *b'* connecting the lower part of the radiator with the lower part of the water-log. The water-log is preferably made to represent a regular or irregular pile of logs, though this is not essential.

The front edge of the radiator is provided with the fire plate or flange *c*³, which covers the space between the radiator and the walls of the fireplace or niche, extending a greater or less distance over the face of the front of the fireplace surrounding the niche or recess to suit the taste of the maker. This fire plate or flange is provided with openings registering with the space between the radiator and the walls of the fireplace and may be of any preferred form, preferably of such an open-work as will present an ornamental and tasteful appearance, as shown in the drawings. I may place below the burner a water-pan E for holding water to moisten the air, and to facilitate the vaporization of the water a plate *e* may extend from near the burner into contact with the water in the pan, as shown in Fig. 3.

The operation is as follows: The water-log is partially filled with water and the burner lighted. The steam generated passes to the radiator through the pipe *b*. As the heat is taken up by the walls of the radiator and the steam condensed, the water of condensation collects in the bottom of the radiator and is returned to the log by the pipe *b'*. The air in the space between the radiator and the walls of the fireplace or recess is heated and passes out into the room through the openings in the fire plate or flange, and as it issues into the room through them the colder air of the room passes through the openings below the radiator, and is in its turn heated and discharged into the room. The air coming into contact with the inner wall of the

radiator is also heated, and with the air heated by the direct action of the burner is discharged into the room beneath the current of air issuing from the fireplace or recess. The
5 heated air is therefore carried well away from the wall above the heater and the deposition of dust upon such wall is avoided.

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

10 1. In a steam-heater, the combination with the radiator forming the back and jambs of a fireplace-lining, of a water-log connected with said radiator, and the burner substantially as described.

15 2. In a steam fireplace-heater, the combination with a radiator forming the back and jambs of a lining for a fireplace or recess, of

the water-log and burner located within the recess of the said lining, substantially as described.

20 3. In a steam fireplace-heater, the combination with the radiator forming the top, back and jambs of a fireplace-lining, of a water-log connected with said radiator, the burner and water-pan, the said water-log burner and
25 water-pan being located within the niche of the radiator, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK ELLSWORTH BACKUS.

Witnesses:

H. RUSSELL HILL,

J. J. CROCKER.