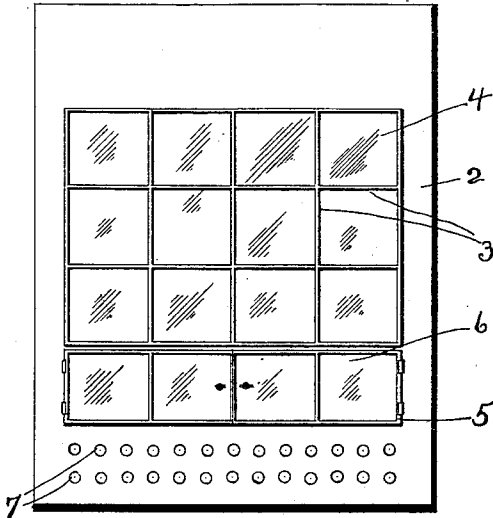


**E. T. BURGESS.**  
**GAS HEATING STOVE.**

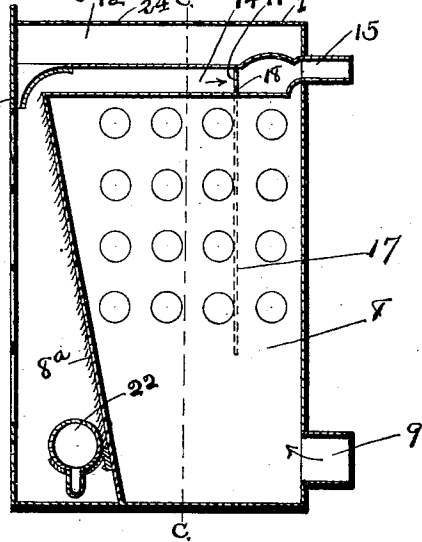
(Application filed Mar. 9, 1900.)

(No Model.)

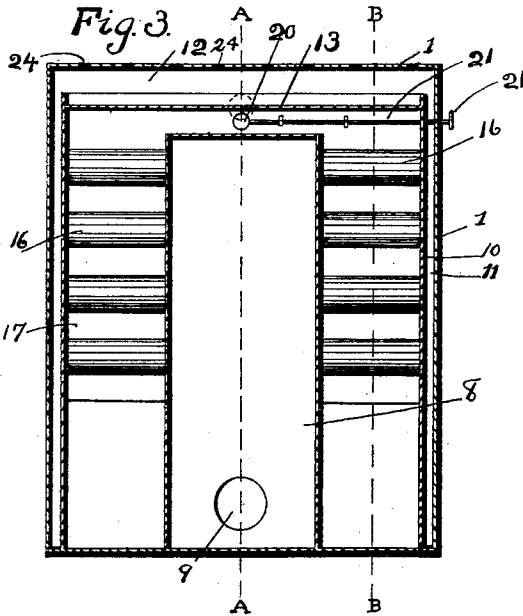
*Fig. 1.*



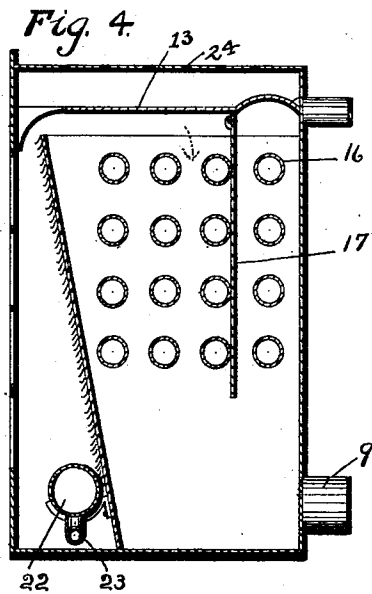
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:  
*R. L. Hessong.*  
*A. L. Phelps.*

INVENTOR  
*Edward T. Burgess.*  
 BY *C. C. Shepherd*  
 ATTORNEY

# UNITED STATES PATENT OFFICE.

EDWARD T. BURGESS, OF COLUMBUS, OHIO.

## GAS HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 677,115, dated June 25, 1901.

Application filed March 9, 1900. Serial No. 7,965. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD T. BURGESS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Gas Heating-Stoves, of which the following is a specification.

My invention relates to the improvement of gas heating-stoves; and the objects of my invention are to provide an improved stove of this class of superior construction and arrangement of parts, to provide improved means for heating an incoming volume of fresh air, and to otherwise produce an improved gas-stove of such construction and arrangement of parts as to result in the radiation of a high degree of heat by the consumption of a comparatively small amount of gas and to produce other improvements the details of construction and arrangement of parts of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation of my improved stove. Fig. 2 is a central vertical section on line A A of Fig. 3, the damper which I employ, as hereinafter set forth, being omitted for the sake of illustration. Fig. 3 is a sectional view on line C C of Fig. 2, and Fig. 4 is a sectional view on line B B of Fig. 3.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention I employ an external casing 1, the front plate or wall 2 of which is provided with an opening of suitable size, the latter being filled with a framework consisting of bars 3, intersecting each other at right angles, the square spaces formed by said intersecting bars being preferably filled with plates of isinglass or other suitable transparent material 4. Below the isinglass-filled openings above described I provide an oblong doorway 5, which is adapted to be closed by suitably-formed double doors 6. Beneath the doors 6 the front wall 2 of the casing 1 is preferably perforated, as indicated at 7.

Within the stove body or casing formed as above described I provide a vertical chamber or internal casing 8, the front wall 8<sup>a</sup> of which is designed as a burner-back and is made to

incline, as shown in the drawings, from a point in rear of the front plate 2 of the casing 1 and in the upper portion thereof to the bottom of said casing. This burner-back is preferably provided on its outer face with mineral wool, asbestos, or other non-combustible material. This central chamber 8, the back of which is formed by the back plate of the casing 1, has an air-inlet opening in its lower portion, which is shown at 9.

10 represents vertical flue-plates, which are arranged parallel with and on the inner sides of the side walls of the casing 1, the employment of these flue-plates resulting in the production of vertical side flues 11, the upper open ends of which communicate with a horizontal top flue-space or heat-chamber 12, which is formed between the top of the casing 1 and an inner horizontal plate 13, which connects the upper end portions of the flue-plates 10. The side flue-plates 10 and top flue-plate 13 extend from the burner-back 8<sup>a</sup> to the back plate of the casing 1, said burner-back plate extending to and joining the inner sides of the side walls of the casing 1. Between the flue-plate 13 and the horizontal top plate of the air-chamber 8 is formed a horizontal flue 14, which at its forward end communicates with the space in front of the burner-back and which at its rear end leads outward through a suitable outlet tube or neck 15. Extending between the vertical side walls of the chamber 8 and the vertical flue-plates 10 and connecting the flues 11 and chamber 8 are transverse tubes 16, the latter preferably being arranged in vertical and horizontal rows, as shown. Extending downward between two vertical rows of these tubes 16 to points in the lower portion of the space between the chamber 8 and flue-plates 10 are partition-plates 17. The upper portions of these partition-plates are connected by a transverse headpiece 18, which forms a transverse partition in the flue 14 and which is provided with a central damper-opening 19, the latter being controlled by a suitable damper-plate 20, which is adapted to be operated by a rotatable hand-rod 21, which has its outer termination, as shown, on the outer side of the casing 1.

In front of the lower portion of the burner-

back I support a desirable form of gas-burner 22, into which may lead a suitable gas-supply pipe 23.

In utilizing my improved stove the products of combustion which rise from the burner 22 may pass upward along the burner-back, thence through the flue 14, and escape through the outlet 15. In case, however, the damper 20 is turned to a closed position it is obvious that these products in order to make their escape must pass downward on opposite sides of the chamber 8, about the tubes 10, beneath the partition-plates 17, and thence upward and out through the outlet 15. The heat thus generated about the chamber 8 serves to heat the air which enters said chamber through the inlet 9, the air thus heated passing through the tubes 16 from said chamber, to the flues 11, thence to the top flue 12. In this manner it will be observed that the air which enters the inlet 9 becomes thoroughly heated and is discharged into the side and top flues 11 and 12, from which the atmosphere of the room may be readily heated. In order to insure a passing of this heat into the room in which the stove is located, I preferably provide the upper side or top plate of the stove 1 with a suitable number of perforations 24. It is obvious, however, that the side walls of the casing 1 may be also perforated, if desired. As will readily be understood, the operation above described must result in the drawing into the chamber 8 of a comparatively large volume of air through the inlet 9, which air is heated and discharged into the room. It is obvious that the inlet 9 may simply open into the room in which the stove is located or that the same may be connected with a pipe leading to the outer atmosphere.

If desired, I may omit from the construction of the stove herein described the side walls of the outer casing 1, as well as the top plate thereof, thus allowing the heat-conveying tubes 16 to communicate directly with the atmosphere of the room and admitting of the

radiation of heat within said room being direct from the inner casing.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a gas heating-stove, the combination with a casing 1, a central air-chamber 8 having an inlet 9, a transverse burner-plate extending between the side walls of said casing 1 and forming the front of said chamber 8 and a burner supported in front of said burner-plate, of vertical side flues 11 formed between the sides of said outer casing and central air-chamber and top flue 12 formed between the tops of the casing 1 and chamber 8 and connecting said side flues, transverse tubes 16 connecting said central air-chamber and side flues and an outlet-flue 14 extending above said air-chamber and between the front of the stove and an outlet-opening in the rear portion thereof, substantially as specified.

2. In a gas heating-stove, the combination with an external casing 1, an internal air-chamber 8 having an inlet therefor, an inclined burner-back 8<sup>a</sup> extending across the forward portion of said casing 1 and forming a front for said internal air-chamber and a burner supported adjacent to said burner-back, of a horizontal outlet-flue 14 above the air-chamber, vertical side flues 11 and a top heat-flue 12, said side and top flues being arranged respectively between the sides of the inner and outer casings and the tops of said casings, transverse tubes 16 connecting the air-chamber and said side flues, vertical partition-plates extending as described between two rows of said tubes 16 on opposite sides of the inner casing and across the flue 14, said partition-plate having a damper-controlled opening, substantially as specified.

EDWARD T. BURGESS.

In presence of—

C. C. SHEPHERD,  
W. L. MORROW.