

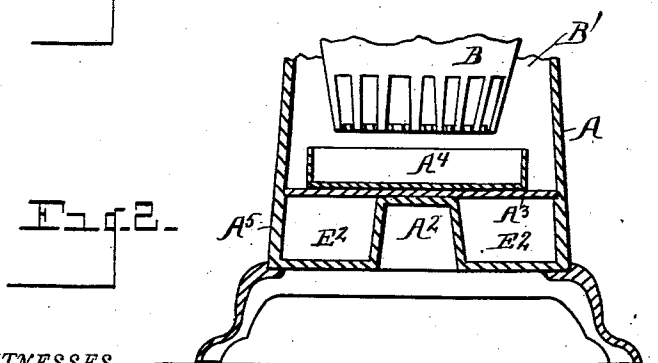
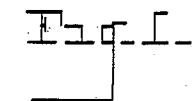
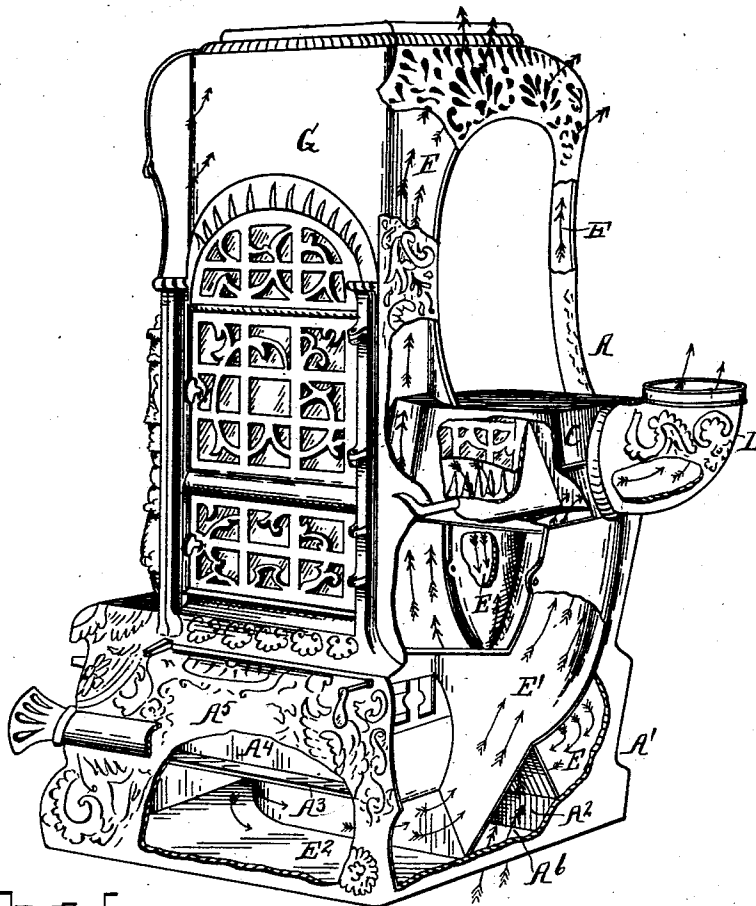
(No Model.)

2 Sheets—Sheet 1.

G. W. COPE.
COAL STOVE.

No. 569,176.

Patented Oct. 13, 1896.



WITNESSES

O. J. Krueger,
M. A. Martin

INVENTOR

George W. Cope
By *his Attorney*
Marcell S. Wright

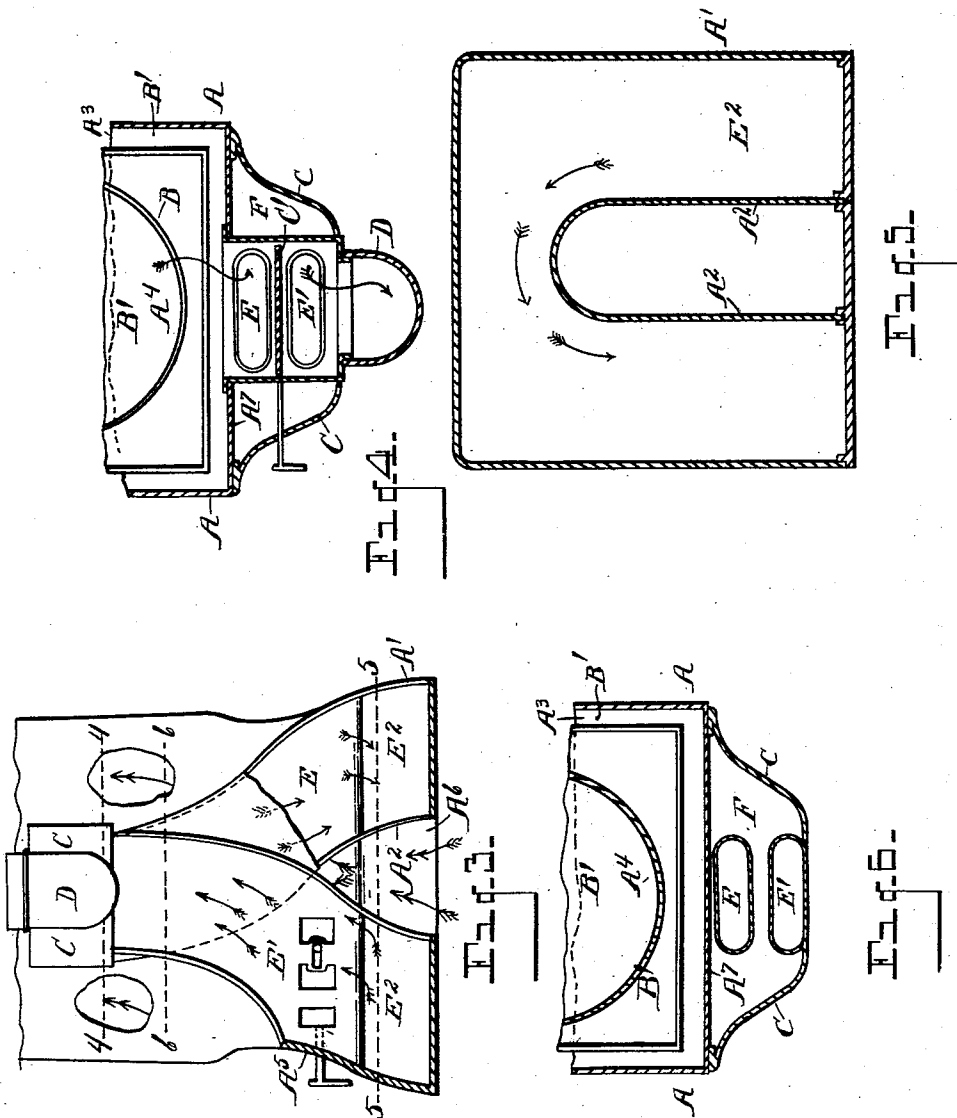
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UNITED STATES PATENT OFFICE.

GEORGE W. COPE, OF DETROIT, MICHIGAN, ASSIGNOR TO THE ART STOVE COMPANY, OF SAME PLACE.

COAL-STOVE.

SPECIFICATION forming part of Letters Patent No. 569,176, dated October 13, 1896.

Application filed October 16, 1895. Serial No. 565,858. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COPE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement is a Base-Burner Coal-Stove; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My invention is designed to provide an improved base-burner coal-stove especially adapted and designed to provide a larger cold-air-heating-surface capacity than in previous stoves of this class, whereby more cold air can be taken into the stove and heated to a higher degree than in any base-burner heretofore on the market. I accomplish these results by a novel construction and arrangement of flues, enabling an extra large volume of cold air to be taken in at the bottom, to heat the same to a high degree of temperature, the air so heated being passed out at the top of the stove into the room.

My invention also contemplates other features included in the general construction, combination, and arrangement of devices hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective, illustrating my invention, showing portions of the shell and other parts broken away to disclose the interior construction. Fig. 2 is a vertical cross-section through the base of the stove through the sides thereof. Fig. 3 is a partial rear elevation showing portions of the flues removed, parts also being in section. Fig. 4 is a partial horizontal section on the line 4 4, Fig. 3. Fig. 5 is a horizontal section on the line 5 5, Fig. 3. Fig. 6 is a longitudinal section on the line 6 6, Fig. 3.

I carry out my invention as follows:

A represents the outer shell of the stove. B is the fire-pot within the combustion-chamber B'.

The rear of the stove is provided with a

smoke-chamber C, communicable with an elbow D and with the combustion-chamber, the smoke-chamber being provided with a damper C', which when closed divides the smoke-chamber C. Communicable with the smoke-chamber C are two smoke-flues E and E'.

The base A' of the stove is formed with a flue E², passing from the rear of the stove at one side around to the front portion of the base and rearward. The base of the stove is preferably cast with a dividing-wall A², projecting upward to and supporting a base-plate A³. There is thus formed a continuous flue in the base of the stove between the outer shell, the bottom, the wall A², and the base-plate A³, from the rear of the stove around about the front portion of the base to the rear on the opposite side of the wall A². The flue E leads downward from the smoke-chamber C, adjacent to the combustion-chamber diverging to the right hand of the stove, as viewed in rear elevation, and communicates with the flue E² at the base of the stove. The flue E' leads from the flue E² on the opposite side of the wall A² upward into the smoke-chamber C.

It will be observed that when the damper C' is closed the products of combustion will pass from the combustion-chamber into the smoke-chamber C in front of the damper C', and thence downward through the flue E and about the base of the stove through the flue E², thence upward through the flue E' into the smoke-chamber C on the opposite side of the damper, and escaping through the elbow D.

Practically the flues E, E², and E' form one continuous flue downward from the smoke-chamber in front of the damper and about the base of the stove, and thence upward into the smoke-chamber at the rear of the damper. Thus the products of combustion may be passed downward from the smoke-chamber entirely about the base of the stove and upward again into the smoke-chamber before their escape into the elbow. By opening the damper C' the products of combustion may pass, if desired, directly from the combustion-chamber, through the smoke-chamber, into

the elbow. The single-headed arrows will indicate clearly the path or course of the products of combustion when the damper is closed. Above the base-plate A^3 is the ash-pit, the ash-pan A^4 being supported upon said plate.

A^5 indicates a damper controlling communication between the ash-pit and the smoke-flue E' . The flues E and E' are spaced one from another and from the side walls of the shell A adjacent thereto, affording an air passage or flue, as indicated at F , through which project the smoke-flues E E' . The base of the stove is constructed with an opening A^6 , communicating into the base of the air flue or chamber F .

At the upper portion of the stove the shell thereof is spaced from the magazine G to form a continuation of the air-passage F , said passage opening through the shell at the top of the stove to permit the exit of the heated air from the flue F to pass therethrough into the room. The passage for the cold air entering into the flue F at the base of the stove and circulating upward in proximity to the flues E E' , the back ash-wall A^7 , and about the magazine portion is indicated by the double-headed arrows. It is well understood that heretofore the back ash-wall of the base-burner, as commonly constructed with the heat on both sides thereof, is liable to burn out quickly. In my improved stove, however, the back ash-wall has the air-passage F on one side thereof, by which the burning out of the ash-wall is prevented. By providing a large opening in the bottom a stove so constructed may take the cold air in thereat and pass it, as above explained, around and between the heated smoke-flues and about the magazine, whereby it comes in contact with a very large heating-surface and is passed out of the stove at the top thereof in large volume heated to a high degree of temperature.

It will be seen that the two smoke-flues E E' depend from the smoke-chamber, the one to the rear of the other, leaving space between them and the shell laterally to form the flue F .

It will be seen that the shell of the stove extends rearward to embrace the smoke-flues and to form the flue F , already described.

What I claim as my invention is—

1. In a base-burner stove, the combination of a shell, a base provided with a flue E^2 passing from the rear about the front and again to the rear, a combustion-chamber, a smoke-chamber connecting with the combustion-chamber, a smoke-flue leading from the smoke-chamber adjacent to the combustion-chamber downward into one end of the flue E^2 , and an additional smoke-flue communicating with the other end of the flue E^2 and with the outlet for the products of combustion, said smoke-chamber provided with a damper between the adjacent ends of the smoke-flues, said shell extending rearward to embrace said smoke-flues, said smoke-flues

and shell spaced the one from the other and forming an air-flue between the flues and between the flues and shell, substantially as and for the purpose set forth.

2. In a base-burner stove, the combination of a shell, an ash-wall, a base formed with a flue E^2 passing from the rear about the front and again to the rear, a combustion-chamber on one side of the ash-wall, a smoke-chamber, a smoke-flue separated from the ash-wall communicating with the combustion-chamber and with one end of the flue E^2 , and an additional smoke-flue communicating with the other end of the flue E^2 and with the outlet for the products of combustion, said shell extending rearward to embrace the smoke-flues, said smoke-flues separated one from another and from the shell of the stove to form a hot-air flue between the smoke-flues and between the smoke-flues and the shell, substantially as set forth.

3. In a base-burner stove, the combination of a shell, a combustion-chamber, an ash-wall, a base provided with an upwardly-projecting wall A^2 intermediate its sides, a base-plate A^3 above said wall forming a flue E^2 passing about said wall from rear to rear of the base, a flue E communicating with the combustion-chamber and with one end of the flue E^2 , and a flue E' located to the rear of the flue E communicating with the other end of the flue E^2 and with the outlet for the products of combustion, said flues E and E' spaced from the shell of the stove to form a hot-air flue therebetween, substantially as set forth.

4. In a base-burner stove, the combination of a shell, a magazine separated therefrom, a combustion-chamber, an ash-wall to the rear of the combustion-chamber, a smoke-chamber separated laterally from the shell, a base formed with a flue E^2 led about three sides thereof, a downwardly-extended smoke-flue E separated from the ash-wall and from the shell of the stove to lead the products of combustion into the flue E^2 , and an upwardly-extended smoke-flue E' located to the rear of the flue E and spaced therefrom to carry the products of combustion to the outlet therefor, and an air-passage F opening through the base of the stove and passing around and between said smoke-flues around said smoke-chamber and around and between the shell and the magazine, said air-passage opening through the shell of the stove at the top thereof, substantially as set forth.

5. In a base-burner stove, the combination of a shell, a combustion-chamber, a magazine separated from the shell, a divisible smoke-chamber C separated laterally from the shell, an ash-wall, a base formed with a flue E^2 , smoke-flues E E' depending from the smoke-chamber, the one to the rear of the other and separated laterally from the shell forming an air-flue F at the sides of said smoke-flues and smoke-chamber, said smoke-flues E E' communicating with the interior of the smoke-

chamber, and with the flue E² in the base of
the stove, said air-flue F open at the base and
passing around and between said smoke-flues,
and between the ash-wall and adjacent flue,
5 also about the smoke-chamber and between
the magazine and shell, for the purpose set
forth.

In testimony whereof I sign this specification
in the presence of two witnesses.

GEORGE W. COPE.

Witnesses:

N. S. WRIGHT,
O. B. BAENZIGER.