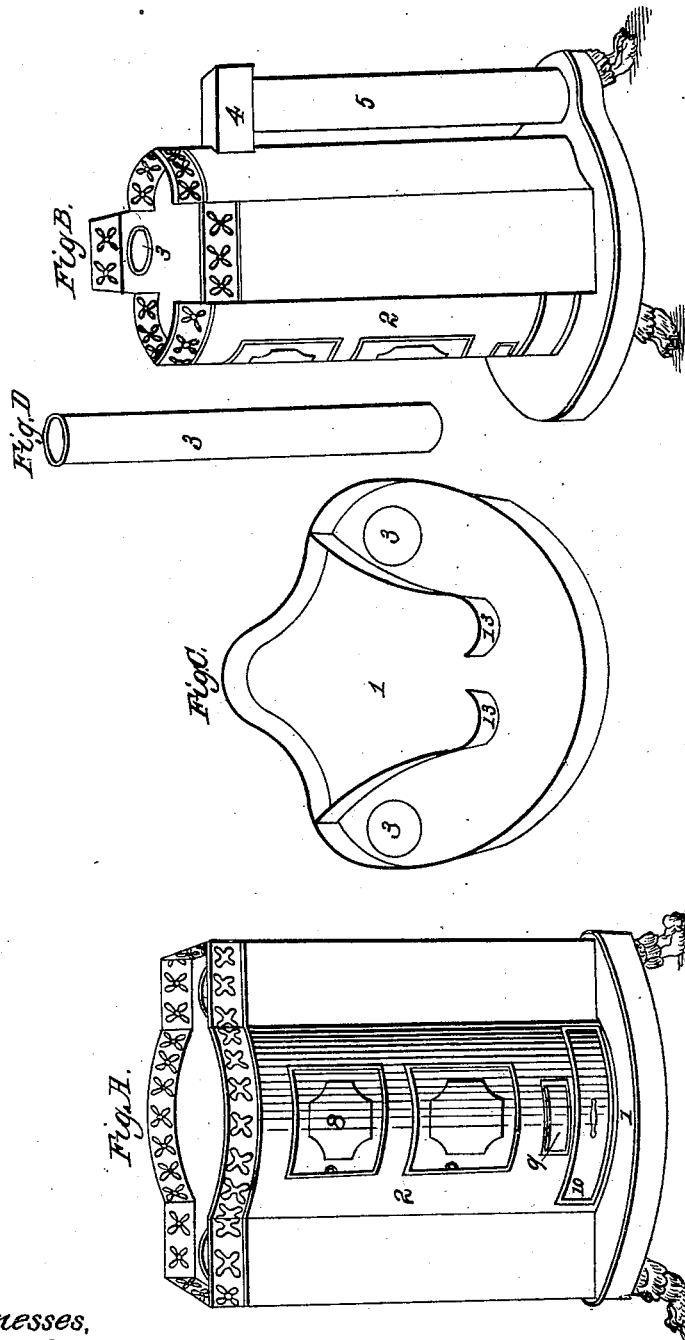


J. & E. BACKUS.
Heating Stove.

No. 1,981.

Patented Feb. 18, 1841.



Witnesses,
James Watt
S. J. Burr.

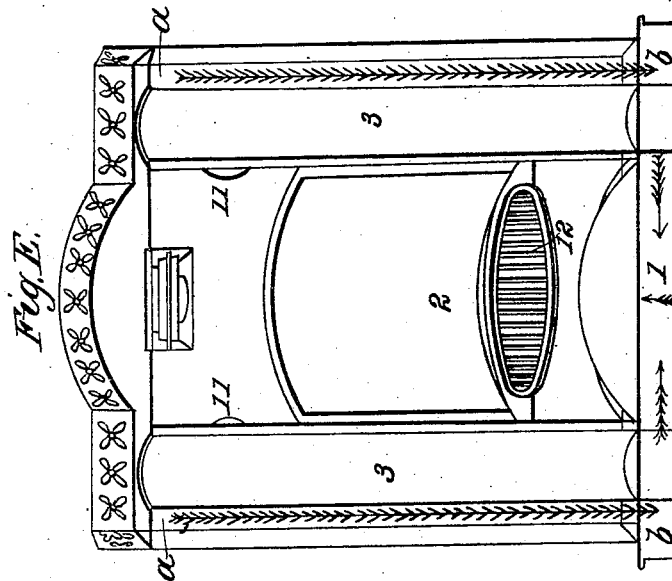
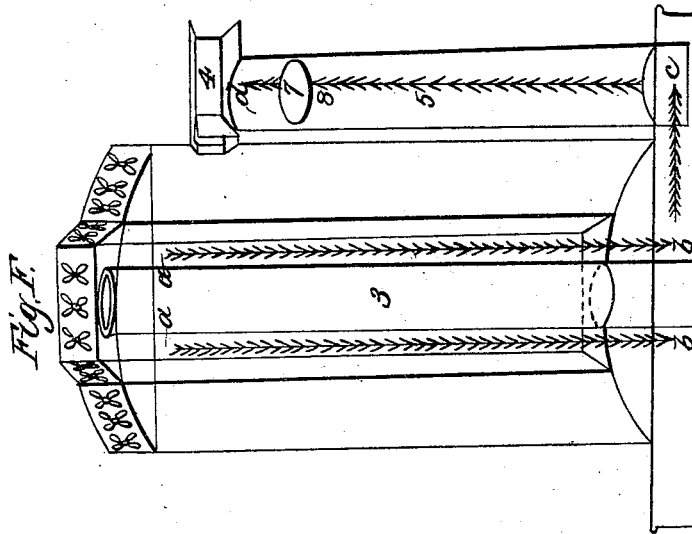
Inventors,
John Backus
Oliver Backus

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J. M. V. C. B. Burr.

Inventor.
John Backus
Elias Backus.

UNITED STATES PATENT OFFICE.

JOHN BACKUS AND EVENS BACKUS, OF NEW YORK, N. Y.

PARLOR-STOVE.

Specification of Letters Patent No. 1,981, dated February 18, 1841.

To all whom it may concern:

Be it known that we, JOHN BACKUS and EVENS BACKUS, of the city, county, and State of New York, have invented a new and useful Improvement in Stoves; and we hereby declare that the following is a full and accurate description thereof.

This invention is called Backus's combination stove.

10 The nature of this stove consists in a combination of the radiator and the hollow base, by which combination the smoke is made to descend through sides or ends of the stove into the hollow base, and to ascend thence
15 through a draft pipe at the back of the stove; and while in this passage the smoke heats the air which is constantly passing through the radiators which are open at bottom and top to allow free way for the atmosphere of the room.

To enable others to make and use our invention we proceed to describe its construction and operation, reference being had to the drawing hereunto annexed and forming
25 a part of this specification.

The stove is made of sheet iron or any other suitable material, and is built in the ordinary forms of cylinder stoves, being so constructed that the bottom of the stove
30 rests permanently upon the top of a hollow base, (1). The sides or ends of the stoves are so extended beyond the cylinder or fire chamber, (2), as to admit of the introduction through them of radiators (3), which
35 radiators are hollow tubes open only at the top and bottom for the admission below and escape above of the surrounding air, which becomes heated in its passage through them. Holes (11) are cut through the partitions
40 separating the cylinder or fire chamber from the extended sides or ends of the stoves and just above the fire chamber, through which the smoke may be discharged so as to heat the air passing through the radiators. The
45 main or smoke pipe (4) leading from the back of the stove to the chimney, contains a damper (6), which when closed stands vertical immediately in front of the upper or discharging orifice of the draft pipe (5), and this damper (6) is used to direct the
50 course of the smoke. When this damper is closed the smoke passes through the holes (11), and when it is open the smoke passes directly through the main or smoke pipe
55 into the chimney. The draft pipe (5) stands vertically behind the stove, and extends only

from the top of the hollow base (1), to the bottom of the main or smoke pipe (4). Another damper (7) is placed in the draft pipe just below its upper orifice, which
60 damper is closed when number 6 is open and vice versa. The hollow base (1) contains partitions (13) by which the smoke, when thrown upon the radiators by closing damper 6 and opening damper 7, is turned nearly
65 or quite to the front of the stove before it can make its escape through the draft pipe behind.

Operation.—Fire being kindled in the cylinder or fire chamber (2), upon the hearth or grate (12), damper 7 is closed and damper 6 opened. This creates an immediate
70 draft from the fire through the main or smoke pipe, and a rapid discharge of the smoke. When it is required to heat the radiators, damper 6 is closed and damper 7
75 opened. The smoke now passes through the holes (11) into the extended sides or ends of the stove that contains the radiators which it completely surrounds. It then descends
80 into the hollow base—passes around the partitions (13)—enters the draft pipe at its bottom—ascends through it to the main or smoke pipe (4), and thence escapes to the chimney. By this manner of conducting off
85 the smoke, it heats the radiators and of course the air which passes through them continually from bottom to top, so that the atmosphere of a room in which one of these
90 stoves is placed, is continually warmed by a constant discharge of heated air from the stove itself, and while this discharge continues there is less combustion of fuel going forward in consequence of the subdued and
95 controlled draft downward and upward.

Description of the drawings.—Figure A, is a front view and perspective drawing of the stove. Fig. B, is an end or side
100 view of the same, and also in perspective. Fig. C, is a sectional representation of the hollow base with its partitions (13). Fig. D, represents the radiator. Fig. E, is a sectional drawing showing the positions of the hollow base, the fire chamber, radiators, the main pipe and its damper, the holes in the
105 sides of the cylinder communicating with the extended sides or ends of the stove, the hearth or grate, &c., &c. Fig. F, is a sectional drawing showing the positions of the radiators, main or smoke pipe, the draft
110 pipe and its damper, &c. Figs. E and F, (the two last mentioned) both exhibit the

course of the smoke when discharged upon the radiators, which course is indicated by the letters *a, b, c, d*, as the stand.

No. 1 is the hollow base of the stove.

5 No. 2 is the cylinder or fire chamber; 3, 3, the radiators passing through the body and base of the stove and open at both ends to admit the free passage of the surrounding air from the bottom to the top; the air being heated in its passage through.

10 4 is the main or smoke pipe.

5 is the draft pipe leading from the top of the hollow base to the bottom of the main or smoke pipe, and opening into both.

15 6 is the damper in the main or smoke pipe, and placed directly in front of the upper orifice of the draft pipe.

7 is the damper in the draft pipe, and is placed just below the upper orifice; 8, the door of the stove where the fuel is put in; 20 9, a small draft door below the hearth or grate; 10, the ash pan below the fire chamber; 11, holes in the partitions between the fire chamber and the extended sides or ends

of the stove containing the radiators, and 25 through which the smoke finds a passage to the hollow base when damper No. 6 is closed and damper No. 7 is opened; 12, the hearth or grate; 13, the partitions in the hollow base by which the smoke is thrown front and 30 back and delayed in its effort to escape when the draft is through the draft pipe.

a, b, c, d, show the course of the smoke when cut off from the main or smoke pipe and passing through the hollow base and 35 draft pipe for the purpose of heating the radiators and the base. The course is indicated beginning at *a*, and ending or passing off at *d*.

What we claim as our invention and desire 40 to have secured to us by Letters Patent, is—

The combination of the hollow base and the radiators.

JOHN BACKUS.
EVENS BACKUS.

Witnesses:

ISAAC SCOTT,
S. I. BURR.