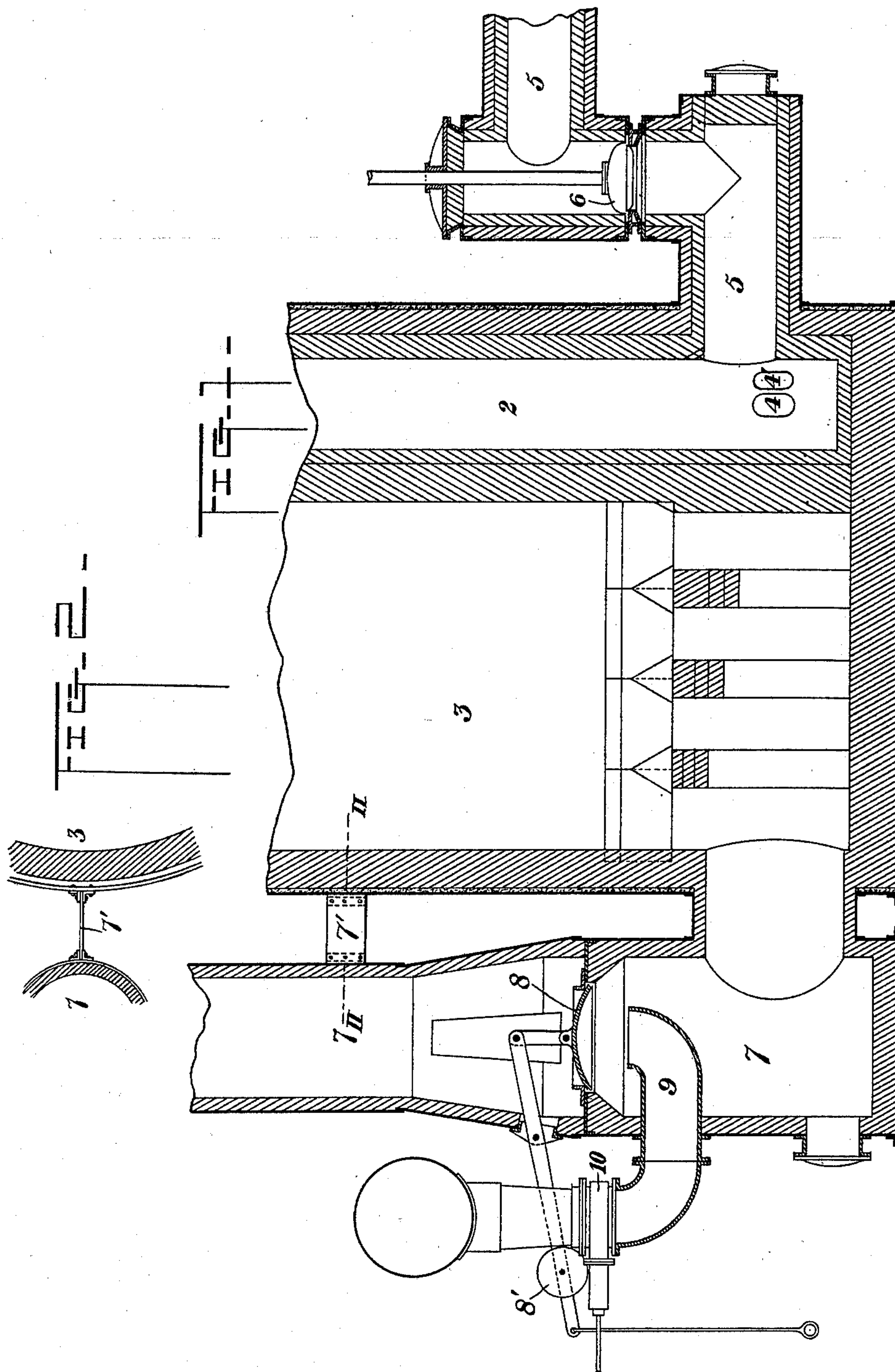


(No Model.)

G. W. McCLURE & C. AMSLER.  
HOT BLAST STOVE.

No. 509,547.

Patented Nov. 28, 1893.



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

GEORGE W. McCLURE AND CARL AMSLER, OF PITTSBURG, PENNSYLVANIA.

## HOT-BLAST STOVE.

SPECIFICATION forming part of Letters Patent No. 509,547, dated November 28, 1893.

Application filed October 1, 1892. Serial No. 447,522. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE W. McCLURE and CARL AMSLER, both of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Hot-Blast Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows in vertical central section the lower part of a hot-blast stove embodying our improvement. Fig. 2 is a horizontal section on the line 11—11 of Fig. 1.

In the drawings, the stove shown is a two-pass stove, having vertical flues 2, 3, the flue 2 being the one in which the initial combustion of the gaseous fuel is effected. These flues are connected at the top in the usual way, and in practice the burning gas is caused to pass through the flues 2 and 3 in succession, and when they have been duly heated the gas is shut off, and an air-blast is caused to pass in succession through the flues 3 and 2, abstracting therefrom the heat stored up in their walls.

4 is the gas-inlet controlled by a suitable valve. There are also air-ports (4') by which air is admitted to unite in combustion with the gas.

5 is the hot-blast flue which leads from the flue 2 to the furnace and is controlled by a valve 6.

7 is a vertical stack flue situate near the stove which extends vertically directly from the base of the flue 3 and discharges into the atmosphere. This stack is joined to the stove at intervals, by brace rods or ties 7' and is controlled by a stack-valve 8, beneath which is the cold-blast inlet pipe 9, having a valve 10. The valve 8 preferably seats upwardly and is provided with a counterweighted lever 8', the weight being so proportioned that when the blast is turned off the weight of the valve will lower the same and allow the products of combustion to pass up the stack. When, however, the blast is turned on, even moderately, the counterweight together with the blast pressure will hold the valve to its seat.

To heat the stove, the valves 6 and 10 are closed, and the valve 8 is opened. Gas is then admitted into the flue 2, and burning therein

passes through the flues 2 and 3 and through the stack-flue 7. When the flues have been sufficiently heated, the valve 8 and the gas-valve 4 are closed, and the valves 10 and 6 are opened. The cold-blast then passes through the flues 3 and 2, and in a heated condition passes to the furnace through the flue 5.

The advantage of using for the stove an individual stack-flue 7 leading directly from the base of the last air-pass flue, is that we get in this way the best conditions for draft, and as the stack is braced by the heavy stove structure, the construction is cheap and simple. The main advantage, however, accrues from the directing of the air into the stack whence it drifts in large volumes into the stove without the cutting action which invariably takes place where a single stack is used for several stoves, and the cold air is forced directly into the stoves.

As our improvement relates to the construction and arrangement of the stack-flue, the other flues of the stove may be modified in construction without departure from the principles of the invention.

We claim—

1. The combination with a hot-blast stove, having a gas inlet, hot-blast outlet, controlling valves, and vertical flues forming passes for gas and air, of an individual vertical stack-flue leading directly from the base of the last air-pass flue and situate adjacently to the stove, and a cold blast inlet leading into the stack; substantially as and for the purposes described.

2. The combination with a hot-blast stove having a gas-inlet, cold-blast inlet, hot-blast outlet, controlling valves, and vertical flues forming passes for the gas and air, of an individual vertical stack-flue leading directly from the base of the last air-pass flue, said stack being joined to and braced by the stove structure; substantially as and for the purposes described.

In testimony whereof we have hereunto set our hands this 26th day of September, A. D. 1892.

GEORGE W. McCLURE.  
CARL AMSLER.

Witnesses:

H. M. CORWIN,  
W. B. CORWIN.