No. 646,043. Patented Mar. 27. 1900.

R. S. STEPHENSON.

HEATING ATTACHMENT FOR STOVES.

(Application filed Nov. 12, 1898.)

(No Model.) 2 Sheets—Sheet 1.

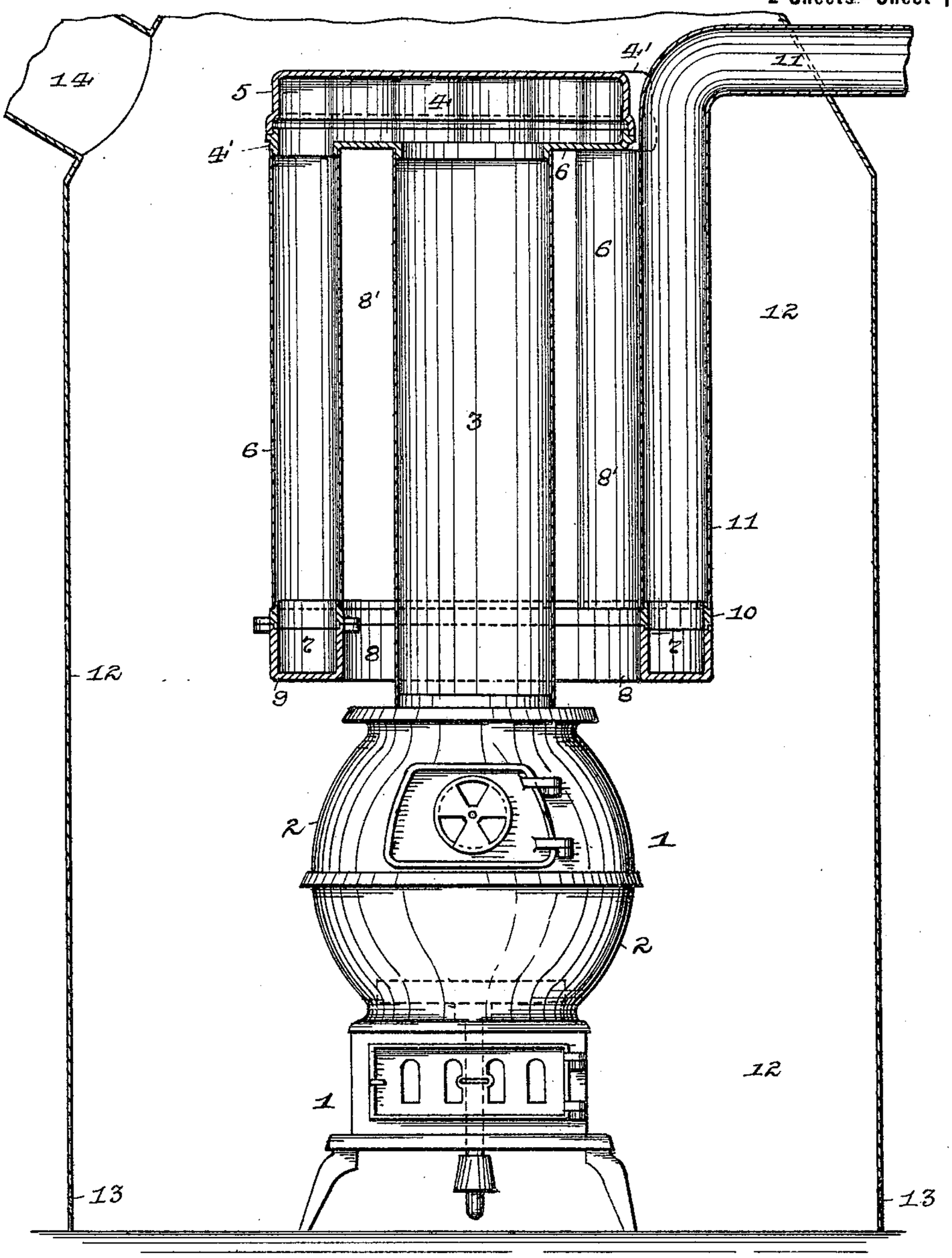

Fig. 1.

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Inventor.
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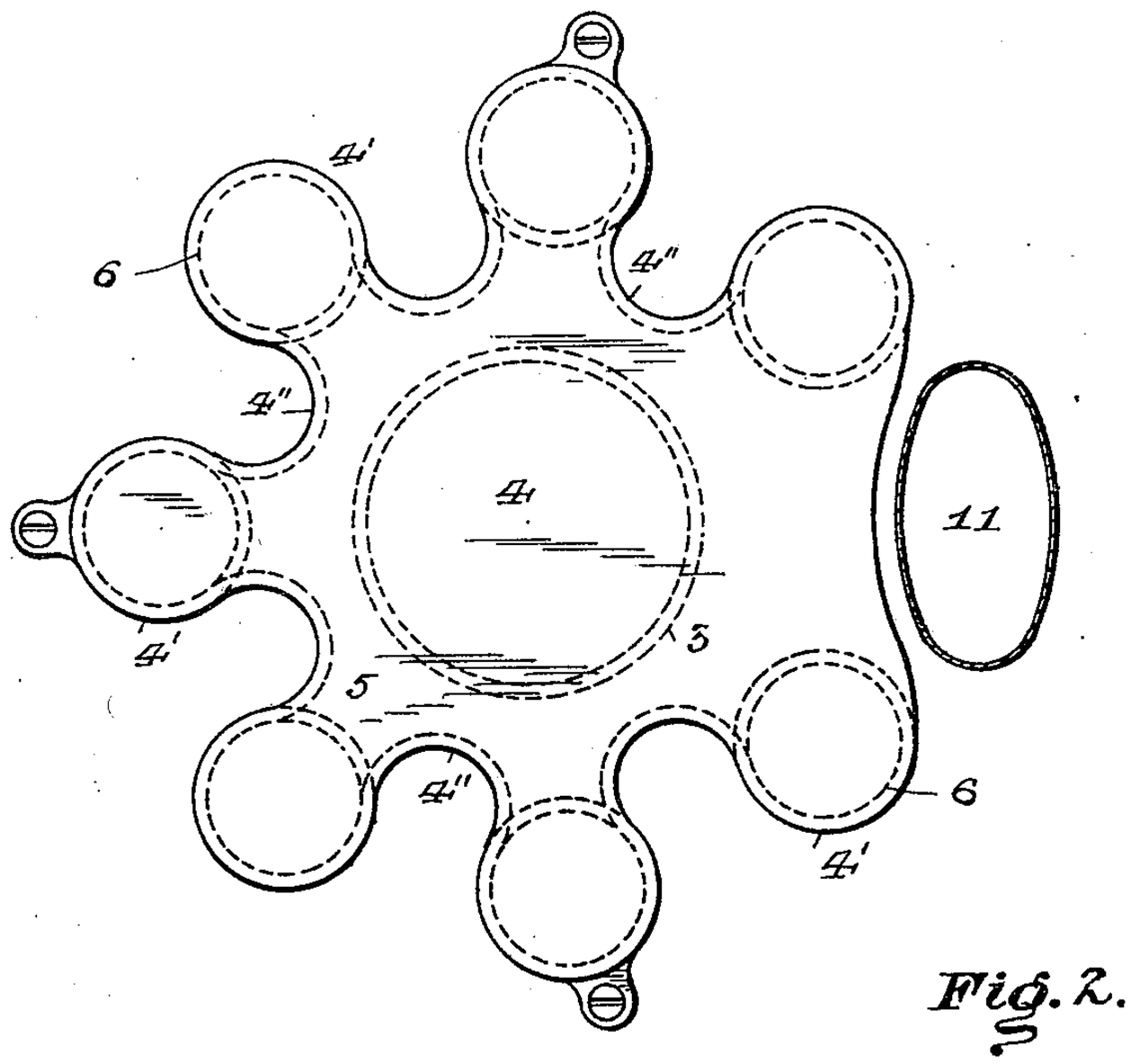

Fig. 2.

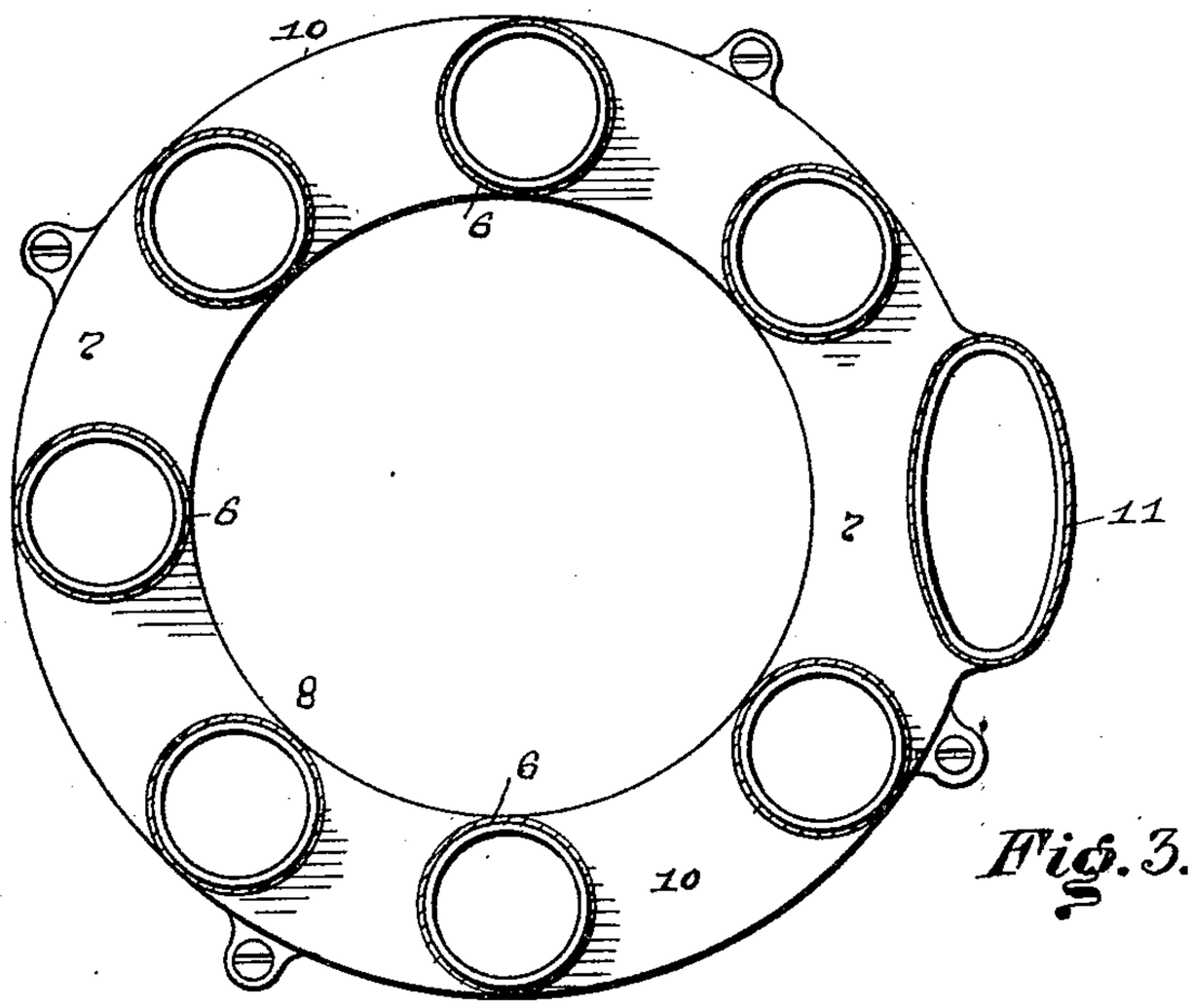

Fig. 3.

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UNITED STATES PATENT OFFICE.

ROBERT S. STEPHENSON, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN S. GRAHAM, OF SAME PLACE, AND SAMUEL R. BALDWIN, OF NEW CASTLE, PENNSYLVANIA.

HEATING ATTACHMENT FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 646,043, dated March 27, 1900.

Application filed November 12, 1898. Serial No. 696,224. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. STEPHENSON, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Heating Attachments for Stoves, of which the following is a specification.

My invention relates to attachments to be applied to stoves, and has especial reference to stoves for burning natural gas and used for heating buildings; and the object of the invention is to provide such an attachment that shall be light, cheap, and simple in operation and construction and with the aid of which the stove will not consume so much gas for heating a given space as without.

My invention consists, generally stated, in the novel arrangement, combination, and construction of parts, as hereinafter more specifically set forth and described, and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improvement, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a vertical central section showing some of the parts in full lines. Fig. 2 is a top or plan view of the upper chamber, and Fig. 3 is a cross-section of the pipe-columns looking down on the lower chamber.

Like numerals herein indicate like parts in each of the figures of the drawings.

My invention is shown as applied to a stove 1, which is supplied with gas from a supply-pipe in any suitable manner connected to a suitable burner located within the fire-chamber 2 of the stove 1, which can be filled with broken fire-brick or other suitable refractory material, if desired, and the stove 1 or supply-pipe supplied with suitable air connections for supplying air to the burner therein. Extending up from the top of the stove 1 and communicating with the fire-chamber 2 is the usual sheet-metal stove or uptake pipe 3. Seated upon the upper end of the stovepipe 3 is a cast-metal upper chamber 4, preferably constituted by the upper plate 5 and lower plate 6, secured together in any suitable manner, and the upper chamber 4 is provided with the outwardly projecting or enlarged portions 4′ and the recessed portions 4″ thereon. Connected to the lower plate 5 at the enlarged portions 4′ of the upper chamber 4 and communicating therewith is a series of sheet-metal downtake-pipes 6, which extend down around the uptake-pipe 3 and communicate with a cast-metal lower chamber 7, supported by the pipes 6 or in any suitable manner around the uptake-pipe 3, so as to form the passage-way or opening 8 between uptake-pipe 3 and the lower chamber 7, which communicates with the space 8′ below the upper chamber 4 between the uptake-flue 3 and the downtake-pipes 6. The lower chamber 7 is formed of the lower plate 9 and the upper plate 10, connected together in any desired manner, and the lower ends of the downtake-pipes 6 are connected to the upper plate 10. Leading up from the upper plate 10 and communicating with the lower chamber 7 is the sheet-metal draft or escape flue 11, which communicates with the open air or chimney, as desired, and passes through a casing 12, which extends around the stove 1 and its connecting parts and is provided with the air-ports 13 at its base and the hot-air flues 14, leading therefrom at its top to the several apartments in the building or house in which the heater is located. A suitable door (not shown) can be applied to the casing 12 in front of the stove 1 for access to the interior of the casing and to enable a person to start and operate the heater or to examine the same, as desired.

The operation of my improvement is as follows: The parts being assembled ready for operation and the gas turned on and lighted in the burners within the fire-chamber 2 of the stove 1, the draft of the stove 1 will draw in the air through the air-ports 13 in the casing into the stove 1 in the usual manner and the gases or products of combustion from the fire-chamber 2 will pass or be drawn up the uptake flue or pipe 3 into the upper chamber 4. The gases or products of combustion in entering the chamber 4 will strike against the upper plate 5 thereof and be deflected therefrom and be drawn down the series of

downtake-pipes 6 into the lower chamber 7, where they will pass or be drawn into the draft or escape flue 11, which leads out through the casing 12 into the chimney-flue or open air. The air, being highly heated by its passage through the opening 8 between the lower chamber 7 and the pipe 3 and around the pipes 6 and upper chamber 4, passes into the hot-air flues 14 to the places of use.

It will thus be seen that my improved heater is light, cheap, and simple in its construction and operation, and practical experience and use have proven that the hot air generated by the heater will almost wholly be drawn through the opening between the lower chamber and uptake-flue and through the space between the downtake-pipes and the uptake-flue, as well as around these different parts, into the flues leading to the different apartments with an exceedingly-small consumption of gas within the stove. By the formation of the passage-way or opening between the uptake-flue and the lower chamber it allows the currents of hot air to be drawn upward along the uptake-flue and downtake-pipes, so as to prevent the same from burning out by the intense heat generated in the heater, and enables this flue and these pipes to be formed of very thin sheet metal, thereby saving cost in manufacture and obtaining better results in heating. It is also evident that any kind of stove can be used as part of the heater by simply attaching the parts located above the same thereto, and it is also evident that the heater proper can be used for heating an apartment when desired by doing away with the surrounding casing and its hot-air flues.

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

1. As a new article of manufacture, an attachment to be applied to stoves, comprising an upper chamber adapted to be seated on the stovepipe or the exit-flue of a stove, a series of pipes leading downwardly from said chamber and opening into a lower annular chamber extending around the stovepipe or a portion of the stove and of such internal diameter as to leave a space for the passage of air between it and said stovepipe or stove portion, and an exit-flue extending from said attachment and adapted to be connected directly to the chimney or to a pipe leading thereto.

2. As a new article of manufacture, an attachment to be applied to stoves, comprising an upper chamber adapted to be seated on the stovepipe or the exit-flue of a stove, a series of pipes leading downwardly from said chamber and opening into a lower annular chamber extending around the stovepipe or a portion of the stove and of such internal diameter as to leave a space for the passage of air between it and said stovepipe or stove portion, said lower annular chamber having an exit-flue opening adapted for connection to the chimney or to a pipe leading thereto.

In testimony whereof I have hereunto set my hand at Pittsburg, in the county of Allegheny and State of Pennsylvania, this 8th day of November, A. D. 1898.

ROBERT S. STEPHENSON.

Witnesses:
JOHN S. GRAHAM,
J. N. COOKE.