March 6, 1928. 1,661,306

R. W. ROGERS

STOVE

Filed May 18, 1922 2 Sheets-Sheet 1

Fig. 1

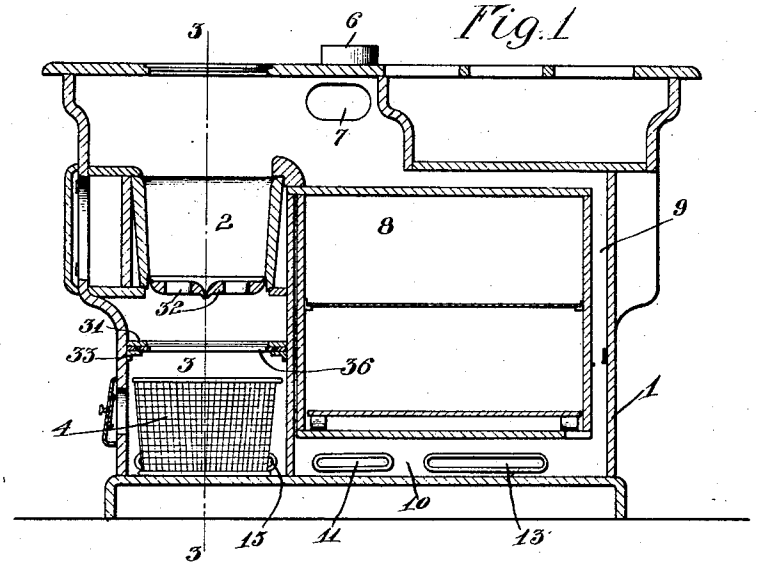
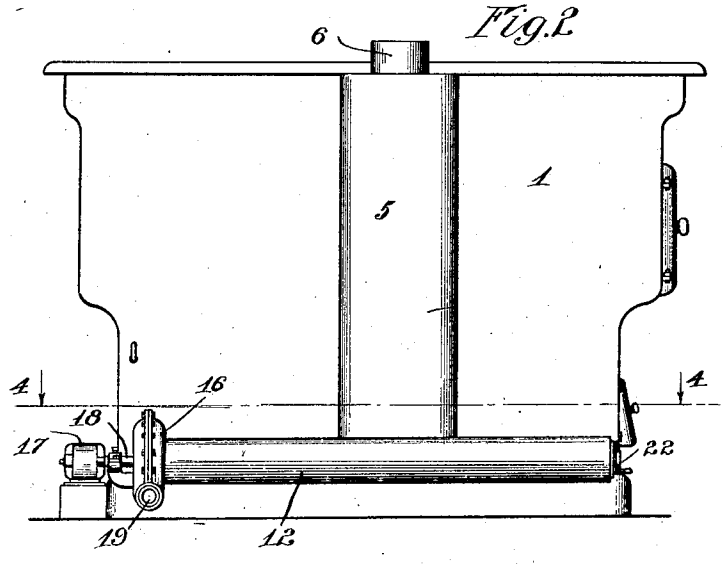


Fig. 2



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Fig. 3

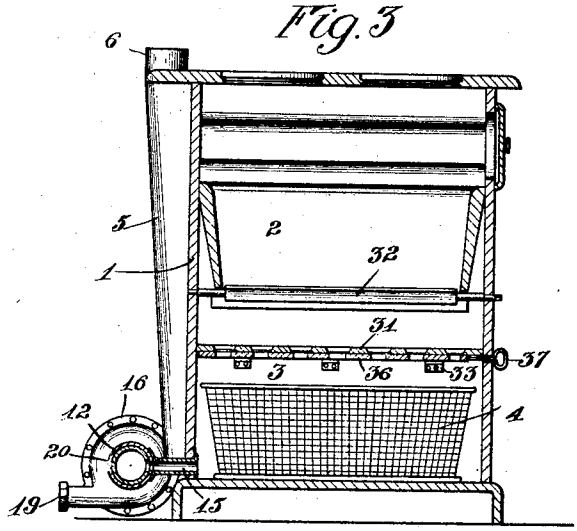


Fig. 6

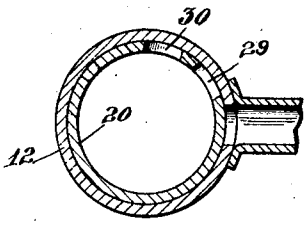


Fig. 7

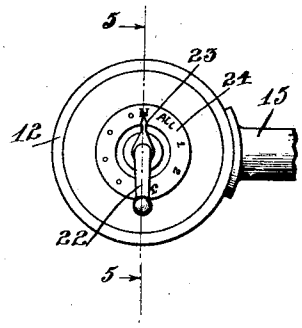


Fig. 4

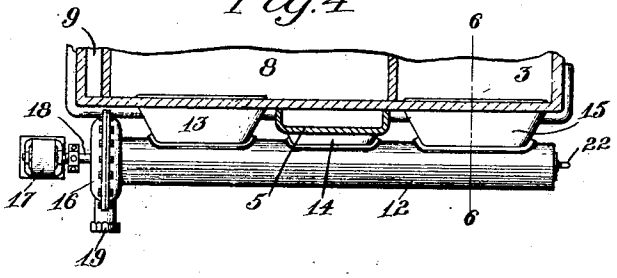
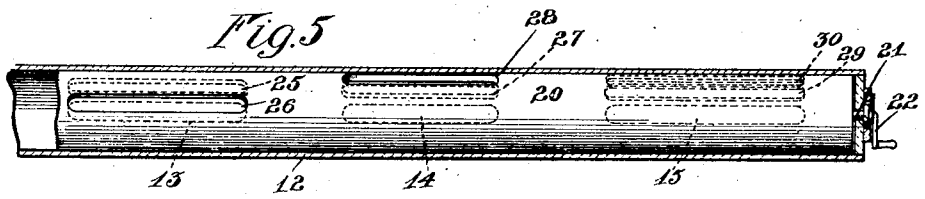


Fig. 5



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Patented Mar. 6, 1928. 1,661,306

UNITED STATES PATENT OFFICE.

ROBERT W. ROGERS, OF FRAMINGHAM, MASSACHUSETTS, ASSIGNOR TO STERLING RANGE AND FURNACE CORPORATION, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

STOVE.

Application filed May 18, 1922. Serial No. 561,813.

My present invention relates to stoves and ranges, being more particularly applicable to those designed for domestic use, and it has for its object to provide a simple, inexpensive and serviceable device in connection with such a stove for removing dust and light ashes from the ash-pit flues or other part where it collects. A further object of the invention is to provide means whereby the operator may exhaust the ashes or dust from one or a number of the parts of the stove either simultaneously or selectively at will. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a central transverse section through a cooking range constructed in accordance with and illustrating one embodiment of my invention;

Figure 2 is a rear elevation of the range;

Figure 3 is a vertical section taken from front to rear through the fire-pot and ash-pit, substantially on the line 3—3 of Figure 1;

Figure 4 is a fragmentary horizontal section on the line 4—4 of Figure 2;

Figure 5 is an enlarged fragmentary section through the exhauster tube showing the valve sleeve in elevation;

Figure 6 is a further enlarged transverse section taken substantially on the line 6—6 of Figure 4, and

Figure 7 is an end view of the exhauster tube of Figure 5 showing the controlling handle and dial.

Similar reference numerals throughout the several views indicate the same parts.

I have illustrated my invention in connection with a familiar type of cooking range 1 having a fire-pot 2 and below it an ash-pit 3 in which may be used an ash pan 4 that is preferably composed of wire netting for purposes that will hereinafter appear. A back smoke flue 5 or smoke pipe base at the rear of the stove terminates at the top in a collar 6 as usual, for the attachment of the smoke pipe, and into this a direct draft opening 7 is provided above the oven 8. Alternatively the draft may be diverted from the opening 7 and caused to traverse three sides of the oven through a flue 9 that communicates with the chamber 10 beneath the oven that is provided at the rear with an opening 11 through which the gases ultimately reach the base of the back smoke flue 5, as is customary in these stoves. It is common experience that dust and ashes collect at the bottom of the oven flue 9 or in the chamber 10; at the base of the smoke flue 5 and, of course in the ash-pit 3, and in the practice of my invention I fit the stove with a vacuum exhauster by means of which accumulations may be removed from these points either selectively or simultaneously.

To this end I arrange across the base of the stove preferably at the rear, a vacuum exhaust pipe 12 provided at intervals with hoods or collars 13, 14 and 15 leading to and opening from respectively the base of the indirect oven flue 9 or chamber 10, the base of the smoke pipe or flue 5 and the bottom of the ash-pit 3. At one end the vacuum pipe 12 communicates with a suitable blower 16 shown in the present instance of the rotary type driven by an adjacent motor 17 through a shaft 18. The pipe 19 from the blower may discharge into any suitable receptacle or conduit.

In order to control the application of the exhauster at the three points mentioned, I provide a rotary valve or damper in the pipe 12 in the present form of a tube 20 turning on journals 21, to one of which is fixed an operating crank 22 (Figure 7) provided with an indicator 23 cooperating with an index dial 24. In the region of each of the respective hoods 13, 14 and 15 the valve tube 20 is provided with two circumferentially spaced ports or openings 25 and 26 in the one case, 27 and 28 in the next and 29 and 30 in the next. The groups of pairs of openings are staggered relatively to each other so that in one position of the valve tube all of the hoods 13, 14 and 15 are closed off from the vacuum tube 12 as in Figures 5, 6 and 7. Rotation of the tube by the crank 22 to the right opens all of the hoods into the vacuum tube through the openings 25, 27 and 29 simultaneously; a further rotation of the tube opens only the hood 15 to the ash-pit through opening 30 while further progressive rotary positions of the tube successively open only hood 14 to the smoke pipe through opening 28 and then only hood 13 to the oven flue through opening 26, the other

hoods in each case being closed. Suitable characters on the dial 24 tell of these positions when the indicator 23 registers therewith. By this means when the blower 16 is in operation the flues and ash-pit may be selectively or simultaneously cleaned and collections of dust and loose soot removed. By making the ash-pan 4 of wire screen loose ashes may be removed therefrom through the meshes. It will also be obvious that the vacuum exhauster may, in some cases, be used to induce or stimulate the draft through the stove by exhausting through the hoods 13 or 14.

In order to prevent a down draft from the fire-pot 2 to the ash-pit 3 when the latter is in communication with the exhauster as in Figure 3, I provide means for temporarily shutting the ash-pit off from the fire-pot. This means consists in the present instance of a fixed grill or slotted plate or partition 31 beneath the grate 32 of the firepot against which slides on bracket guides 33 a suitable similarly slotted closure plate 36 operated by a handle 37 at the front of the stove. Ordinarily the openings in the fixed and sliding plates are adjusted into register as in Figure 3, but when the vacuum exhauster is in use the solid portions of the sliding plate close the slots in the fixed plate.

I claim as my invention:

1. The combination with a stove having a fire pot and an ash pit beneath the same, of a vacuum exhauster communicating with the ash pit and means for temporarily sealing the latter from the fire pot.

2. The combination with a stove having an ash pit, a smoke flue, an oven, and an oven flue communicating with the smoke flue, of a vacuum exhauster communicating with the ash pit and with the bases of the oven flue and smoke flue, and means for selectively closing off one or all of said points of communication.

3. The combination with a stove having an ash pit, a smoke flue, an oven, and an oven flue communicating with the smoke flue, the ash pit running toward the rear of the stove, and the oven flue and smoke flue being being also arranged at the rear, of a vacuum exhauster embodying a conductor extending across the rear of the stove and communicating with the ash pit, the base of the smoke flue and the base of the oven flue and means for selectively shutting off any or all of said points of communication embodying a rotary tubular valve in the conductor having ports at each point.

4. The combination of a stove comprising bottom, side and top walls, an oven within the stove disposed above the bottom wall and in spaced relation to one of the side walls whereby to form an oven flue, a combustion chamber communicating with the oven flue, a smoke flue disposed at one side of the oven flue and extending substantially from the bottom to the top of the latter and communicating with the same at a point adjacent the bottom thereof, a vacuum exhauster at one side of said oven flue having a suction passage communicating with an opening in the base of the smoke flue and also communicating with an opening in the oven flue and means for selectively cutting off communication between said openings and said passage.

5. The combination of a stove comprising bottom, side and top walls, an oven within the stove disposed above the bottom wall and in spaced relation to one of the side walls whereby to form an oven flue, a smoke flue disposed at one side of the oven flue and extending substantially from the bottom to the top of the latter and having an opening adjacent its base communicating with the oven flue, an exhaust pipe at one side of the stove having inlet openings communicating with the smoke flue and with the oven flue, a vacuum exhauster connected with said pipe and means for selectively closing said inlet openings whereby the exhauster may be connected either with the smoke flue or the oven flue.

6. The combination of a stove comprising a combustion chamber, an oven, an oven flue communicating with the combustion chamber, a vertically disposed smoke flue extending from the base to the top of the oven flue and having an opening adjacent its lower end leading to the base of the oven flue, a vacuum exhauster having a suction passage leading to the smoke flue and to the base of the oven flue and means for cutting off communication between the suction pipe and the smoke and oven flues.

ROBERT W. ROGERS.