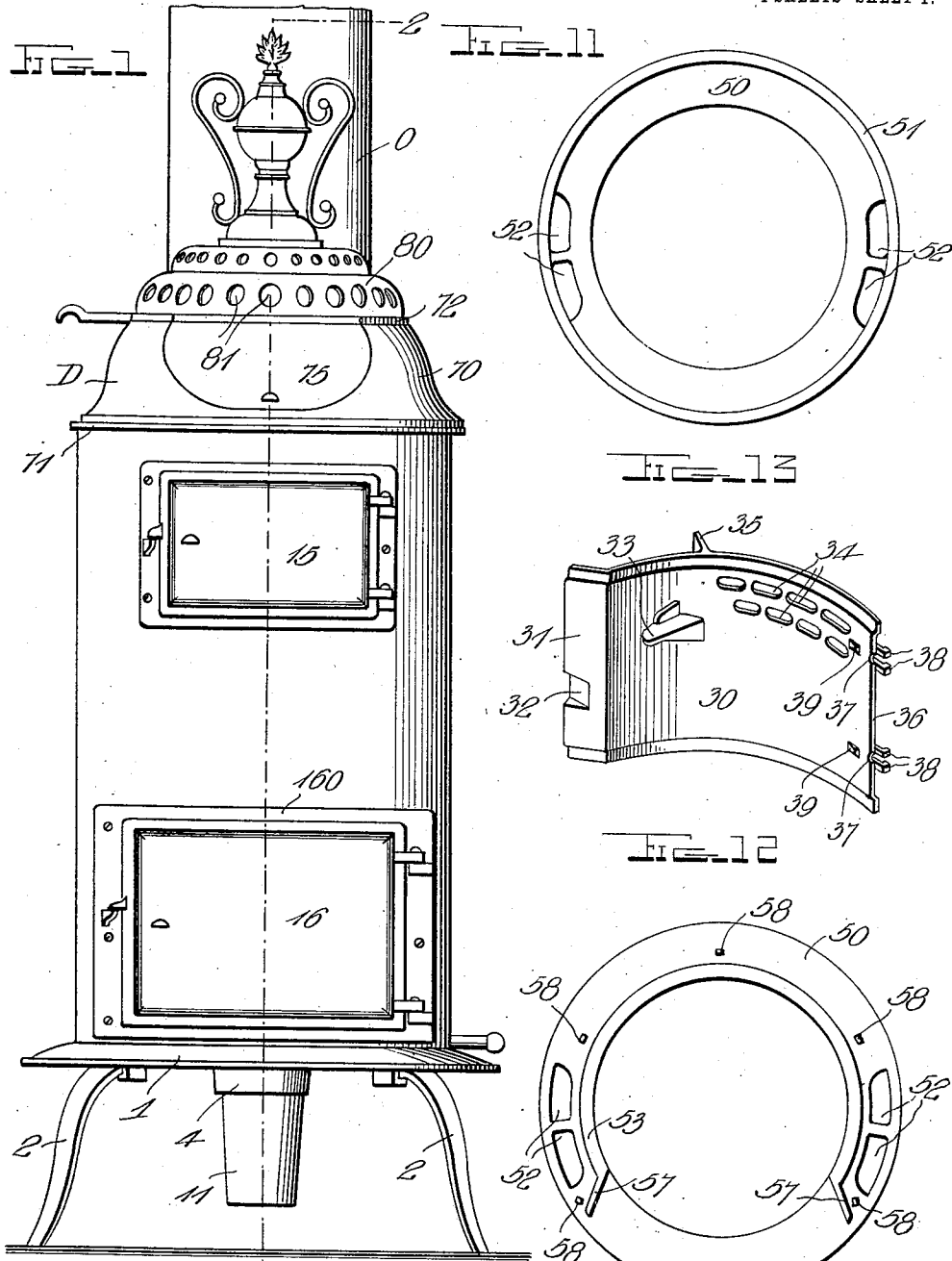


E. J. PARKER.
HEATING STOVE.
APPLICATION FILED SEPT. 30, 1911.

1,015,973.

Patented Jan. 30, 1912.

4 SHEETS—SHEET 1.



Witnesses
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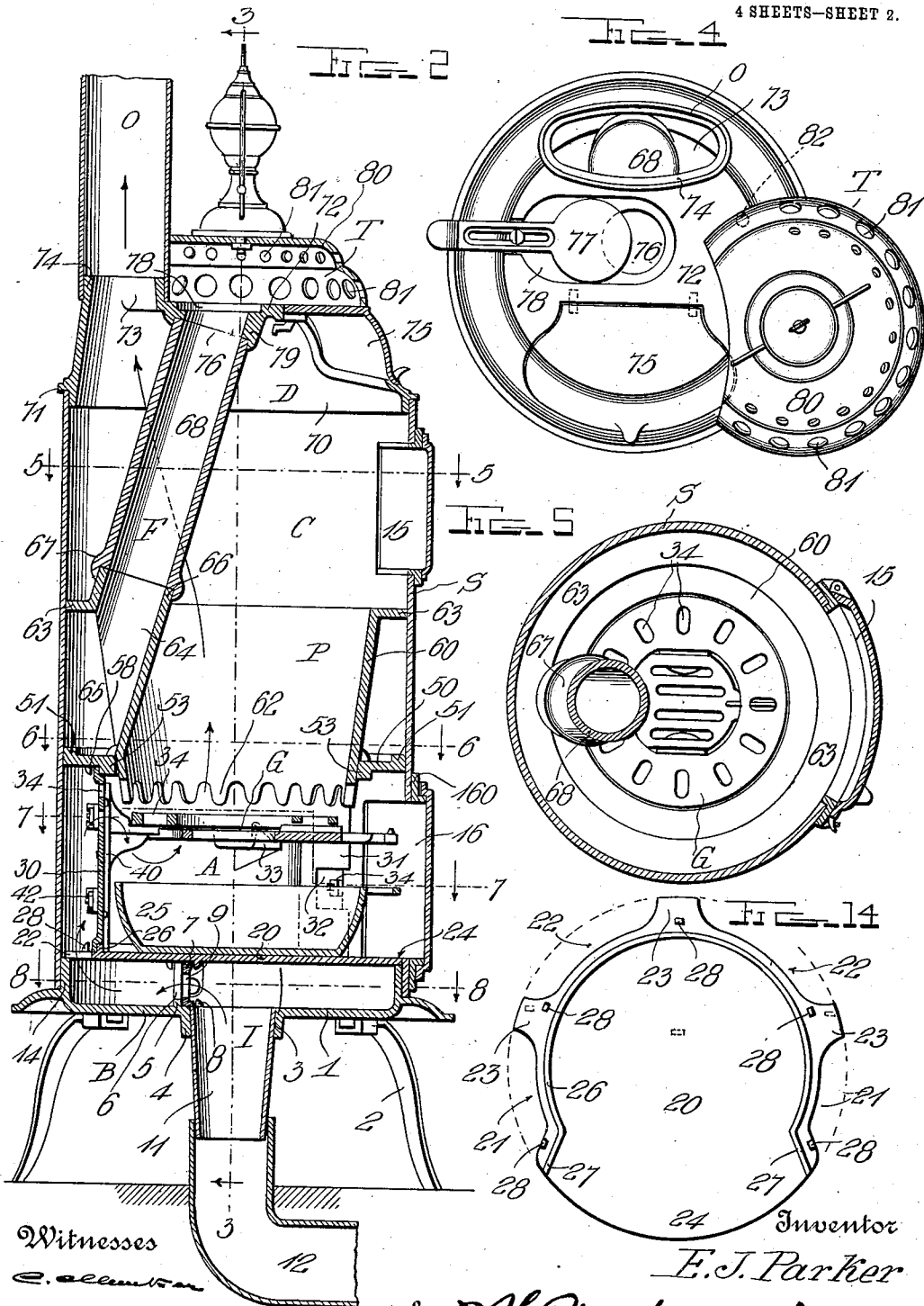
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4 SHEETS—SHEET 2.



Witnesses

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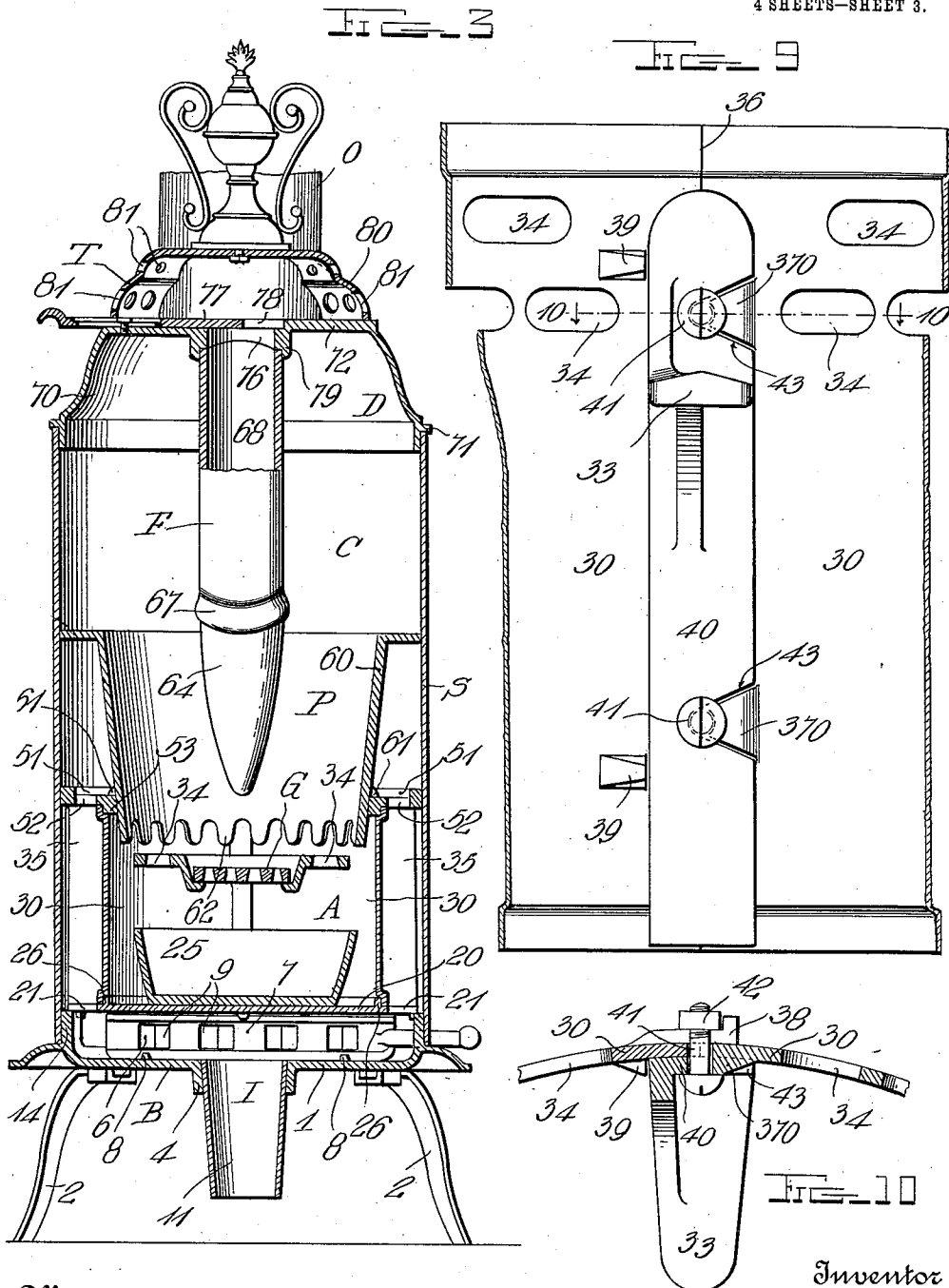
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4 SHEETS—SHEET 3.



Witnesses

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4 SHEETS—SHEET 4.

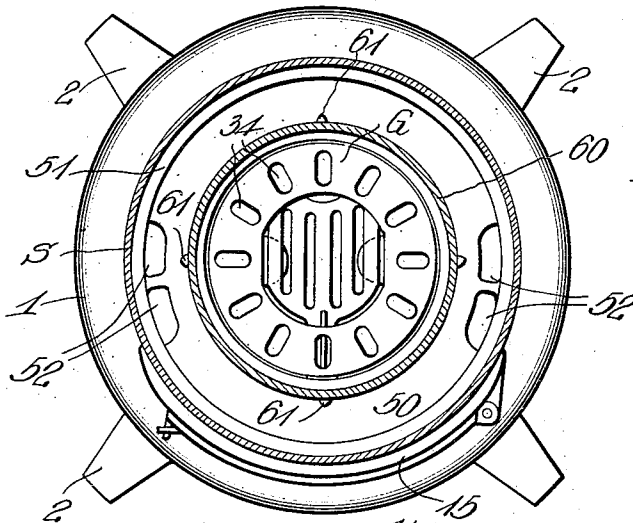


FIG. 6

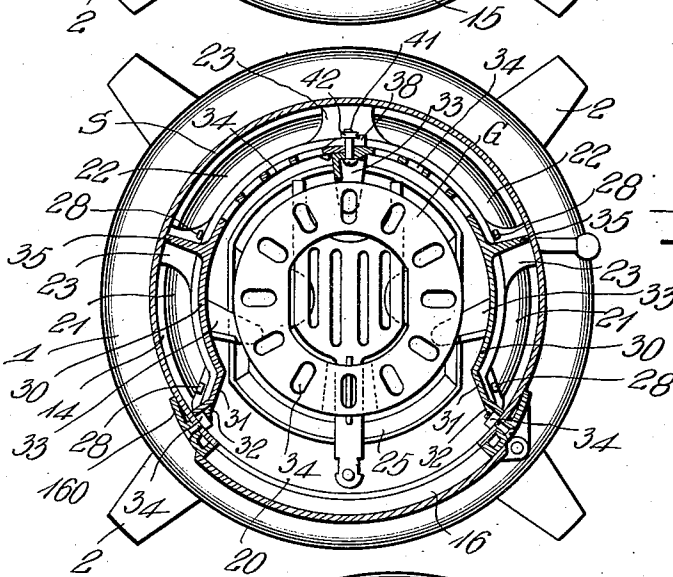


FIG. 7

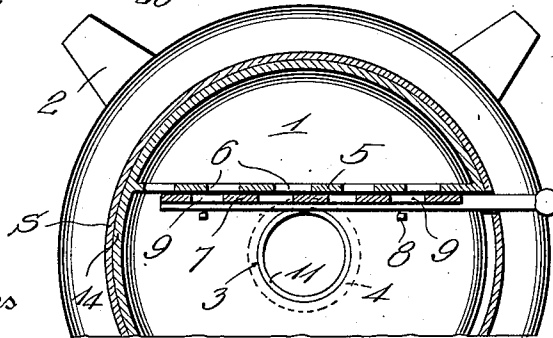


FIG. 8

Witnesses

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UNITED STATES PATENT OFFICE.

ELI JACKSON PARKER, OF IRON CITY, TENNESSEE.

HEATING-STOVE.

1,015,973.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed September 30, 1911. Serial No. 652,107.

To all whom it may concern:

Be it known that I, ELI JACKSON PARKER, a citizen of the United States, residing at Iron City, in the county of Lawrence and State of Tennessee, have invented certain new and useful Improvements in Heating-Stoves; and I do 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.

This invention relates to stoves, and more especially to those intended for heating purposes; and the object of the same is to improve the construction of a stove of this character in such a way that air admitted from a point close to or below the floor of the apartment in which the stove is situated supports the combustion and also furnishes the air which the fire heats, being divided by and within the stove structure so that the products of combustion are passed up the chimney and the heated fresh air is delivered into the apartment. This and other objects are accomplished by the construction hereinafter more fully described and claimed, and shown in the drawings wherein—

Figure 1 is a front elevation; Fig. 2 a vertical section on the line 2—2 of Fig. 1; Fig. 3 a similar section at right angles to that shown in Fig. 2, being taken on the line 3—3 of Fig. 2; Fig. 4 is a plan view with the top swung aside so as to disclose the damper for controlling the outlet of heated fresh air; Figs. 5 to 8 inclusive are sections through Fig. 2 on the lines 5—5, 6—6, 7—7 and 8—8 respectively; Fig. 9 is an enlarged inside elevation of the connection between the two parts or members of the wall of the ash pit; Fig. 10 is a section on the line 10—10 of Fig. 9; Fig. 11 is a plan view of the top plate of the ash pit; Fig. 12 is a bottom plan view thereof; Fig. 13 is a perspective detail of one of the sections or members of said ash pit; Fig. 14 is a plan view of the top plate for the base.

Broadly speaking this improved stove is made up of the following instrumentalities, to wit: a base B having an inlet I, an ash pit A superimposed upon the base and carrying the grate G, the fire pot P above the ash pit and a chamber C above the fire pot, these three members being surrounded by a shell S, a dome D surmounting the shell and supporting the top T of the stove in rear

of which an outlet O leads to the chimney. A flue F leads obliquely upward through the fire pot, chamber, and dome and forms a means of communication between the annular space around the fire pot and the space within the top; and it is the specific construction of this flue and the parts associated therewith which constitutes the gist of the present invention. These various members will now be described separately and with as much detail as necessary to bring out the present invention.

The base B consists of a shallow pan 1 supported above the floor line by legs 2 and having through its center a hole 3 surrounded by a depending flange 4 and in rear of said hole a cross partition 5 pierced with openings 6 as best seen in Fig. 8.

7 is a damper moving over suitable guides 8 and having openings 9 adapted to be brought into register with those in the partition so as to admit more or less air to the space behind the same for combustion purposes as will be described below, but the adjustment of this damper has no effect on the amount of air admitted to the space forward of the partition which is the air that is to be heated and finally passed into the room as also described below.

The inlet I is by preference a short piece of tubing 11 secured to and depending from the flange 4 to a point near the floor line as seen in Fig. 1 so as to admit the coldest air in the room, but in some cases I may continue this piping through the floor as seen at 12 in Fig. 2 and admit cold air from a point outside the apartment in which the stove is situated. Therefore I do not wish to be limited in this respect. The shell S is by preference secured to and rests upon a flange 14 surrounding the base B, and rises thence past said base, the ash pit and grate, and the fire pot, inclosing all said members as best seen in Figs. 2 and 3; and the former view illustrates how this shell at its front may be provided with doors 15 and 16 for feeding coal and removing ashes respectively.

The ash pit A is made up of a plate (see Fig. 14) which forms the top of the base B; the door 16, two members (see Fig. 13), a special connection as shown in Figs. 9 and 10 between the ends of said members which meet at the rear, and a ring-shaped top plate as shown in Figs. 11 and 12. Assuming that the body of this stove is cylindrical

as usual, the bottom plate 20 is of circular outline as seen by the dotted lines in Fig. 14, its periphery being notched or scalloped as at 21 to produce two side openings and as at 22 to produce two rear openings between all of which are ears 23, while the front edge of the plate is left intact in a lip 24 over which the ash pan 25 can be slipped when the door 16 is open as will be seen from Fig. 2. Cast upon and rising from this plate is an annular flange 26 disposed some little distance inside the scallops and having diverging extensions 27 at its front ends, and just outside the same are lugs 28 cast upon the several ears and the ends of the lip 24. Mounted upon this plate 20 are two complementary and substantially similar sections or members which, with the door 16, constitute the inner wall of the ash pit A, it being understood of course that the shell S constitutes the outer wall thereof; and one of said members is illustrated in perspective in Fig. 13. The same comprises a curved body 30 whose lower edge is adapted to rest upon half of the rearmost ear 23 and to extend across one of the side ears and rest upon that outside the extension 27 of the base plate, and to stand between the flange 26 and the lugs 28, and the front end of said body has an outwardly deflected wing 31 provided at a proper point with a groove 32 for receiving the fastening device 34, shown in Fig. 7 as the nut of a bolt, by means of which the door frame 160 is secured to this member. Said body 30 carries a bracket 33 on which is mounted the grate G in such manner that it may be shaken or dumped (but I will not describe the same in detail as it forms no part of the present invention). Toward its rear end the body 30 is pierced with openings 34 for admitting air to the fire, and on its outer side it is provided with an upright web 35 cast thereon at such point that it will rest upon the side ear 23 of the base plate as best seen in Fig. 7 when the parts are assembled. The other member forming the wall of the ash pit A is of like construction as far as has been described. The rear ends of these members meet at the center of the back of the stove and are cut off on an upright line 36 provided at intervals with semi-circular notches 37, and opposite the latter one of said members carries a pair of spaced fingers 38 adapted to pass outside the rear end of the other member in a manner best illustrated in Fig. 10; while a short distance back from the meeting edge 36 the members are by preference provided with lugs 39 and 370 for a purpose to appear.

The connecting device for the members above described consists of an upright strip 40 adapted to overlies the crack formed between their meeting ends 36 and to fit between the lugs 39 and 370 as best seen in

Figs. 9 and 10, and by preference this strip carries a third bracket 33 for supporting the rear of the grate. Finally bolts 41 are passed through holes in said strip, through the registering notches 37 in the two members, and between the pairs of fingers 38 on one of said members, and their nuts 42 are applied from the outside as best seen in Fig. 10. If preferred the lugs 370 on one member may be so disposed as to enter notches 43 in the strip 40 as seen in Fig. 9 so as to reliably connect all parts and hold the strip from vertical movement, and the heads of the bolts 41 will then bear on the inner ends of these lugs 370 as shown. The top plate of the ash pit A is a ring best seen in Figs. 11 and 12. The body 50 of this ring is flat on top except that it is surrounded by a raised peripheral flange 51 extending all the way around, and adapted to fit closely within the shell S as seen in Fig. 2; and just inside this flange said body is pierced at its sides with openings 52 at points which, when the parts are assembled, will cause them to stand outside the members 30 and forward of their webs 35 but in rear of their wings 31. On its lower side (see Fig. 12) this ring is provided around its inner edge with a flange 53 extending around the back and both sides thereof but terminating at its front ends in diverging extensions 57 adapted to stand above those numbered 27 on the bottom plate 20 so that these extensions brace the wings 31 of the members 30; and just outside said flange 53, are lugs 58 between which and the flange the upper edges of the members 30 are received.

The fire pot P has a tubular body 60 which preferably tapers slightly downward so as to fit closely through the hole in the ring 50, above which it may have exterior lugs 61 resting thereon, and its lower edge is by preference scalloped as shown at 62 while its upper edge has a radially projecting annular flange 63 which fits closely within the shell S. The peculiar structural feature of this fire pot is that, while its body as a whole follows a path somewhat remote from the shell S so as to leave an annular space between them, at the rear side it is formed or cast with an obliquely disposed flue section 64 whose lower and rear side communicates through an inlet opening 65 with said annular space while its upper end 66 rises slightly above said flange 63, all as best seen in Fig. 2.

The combustion chamber C of the stove is that portion thereof next above the fire pot P, and may be formed as desired as it constitutes no part of the present invention. The flue F is here shown as a heavy piece of piping 68 having a bell mouth 67 at its lower end communicating with the upper end 66 of the flue section 64 within the

chamber C, the whole being obliquely disposed and extending upward throughout the chamber and dome toward the center of these members but leaving a clear space between it and the shell S. The dome D has the general configuration of a dome, and just above its lower end it has a surrounding flange 71 which rests upon the upper end of the shell S, its body 70 converging on all sides and thence upward to a flat top plate 72 having a preferably oval hole 73 at the rear surrounded by a flange 74 over which fits the outlet pipe O leading to the chimney, and having a hinged door 75 closing a hole at the front of said plate as best seen in Fig. 4. This door may be used in place of that numbered 15, or the latter could be used without the former, or in some cases both might be employed. This detail forms no part of the present invention. At about its center said top plate 72 is pierced with an opening 76 which is controlled by a damper 77 here shown as sliding in a recess 78 and having a laterally projecting handle, see Fig. 4. Around said hole 76 the top plate is cast with a depending annular flange 79 which forms a bell mouth for receiving the upper end of said piping 68 constituting the flue F. The top T may be of any suitable and by preference ornamental construction, but will have its body 80 provided with a number of perforations 81 so that the heated air therein may escape, and this body should be loosely connected as at 82 with the top plate 72 of the dome D so that the entire top can be turned aside as seen in Fig. 4 when it is desired to gain access to the door 75 or the damper 77. It is obvious that coal can be fed to the stove through this door, or through the other door 15 if used. The various parts of this stove are of the desired sizes, shapes, proportions and materials, and such changes in details may be made as do not depart from the principle of my invention.

In use, the fire is built upon the grate and the live coals will stand within the fire pot P, fresh air being supplied through the inlet I. To increase the draft the damper 7 is opened more or less thus feeding more or less fresh air through the partition 5 in the pan 1 of the base B, to the rear under the base plate 20, upward through its rearmost scallops 22, behind the two members 30 in rear of their upright webs 35, and forward through their openings 34 beneath the grate G; and it will be seen that the adjustment of this damper 7 is the only means provided for controlling the burning of the fuel. Whether said damper is open or closed, some, and in fact much, of the fresh air admitted through the inlet I forward of the partition 5 beneath the base plate 20 will pass upward through its front scallops 21, outside of the body members 30 between

their wings 31 and webs 35 where this air is heated by its proximity to the ash pit A, thence upward through the openings 52 in the ring 50 and into the annular space around the fire pot P where this air is again and more highly heated by the heat in said fire pot, whence it passes through the inlet opening 65 into the lower end of the flue F and is directed upward and obliquely forward by said flue (across the direction in which the products of combustion are passing up the chimney) where this air is finally heated, and at last it is delivered out the opening 76 (controlled by the damper 77) whence it issues through the perforations 81 in the top T and finds its way into the apartment being heated.

Thus it will be seen that I have produced a stove wherein the cold fresh air admitted and finally delivered into the apartment being heated, is warmed three times; first around the ash pit, next around the fire pot, and finally within the flue which extends upward through the chamber and dome of the stove and may therefore be of considerable length. The outlet of the hot air is controlled by the uppermost damper only, the closing of which simply shuts off escape into the room while retaining that already heated so that at any subsequent time it may be let out into the room and the latter warmed. Meanwhile such portion of the air of the inlet as desired is admitted through the lower damper 7 and diverted from its channel upward into the room, backward behind the ash pit, up a flue of its own and in under the grate, and this air supplies the fire and when burned mingles with the products of combustion and flows upward around the flue F and out the chimney without having come into contact with the air that is to be heated and supplied to the apartment; and thus the burning of the fire is controlled by a single damper at the bottom of the stove. The latter is by preference built up in parts as has been described, and these may be removed for repair or replacement, their specific construction having no bearing on the present invention save as has been described and will be claimed. The lower door 16, which is without a damper, although one could be placed therein if desired, will be opened when it is desired to shake or dump the grate or to remove the ash pan; and as the passage for fresh air is entirely out of communication with the interior of the ash pit, no dust can get into it and the heated air is delivered into the apartment in a pure condition, having been sterilized by the high temperature to which it is subjected on its way from the inlet into the room.

What is claimed as new is:

1. In a stove, the combination with the

body, an oblique flue extending upward through the body, and a damper for controlling its outlet into the room; of the ash pit and grate, a hollow base, a partition
 5 dividing it into two chambers one of which is in constant communication with the fresh air inlet, means for connecting this chamber with said flue and the other with the ash
 10 pit beneath the grate, said partition having openings, and a damper controlling said openings.

2. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, a
 15 flue section formed in one wall of said pot and communicating at its lower end with said chamber, the body, a flue leading from said section upward through the body, and
 20 means for controlling the outlet from said flue into the room; of the ash pit, a hollow base, a partition therein dividing it into two chambers, means for placing one of the
 25 latter in constant communication with said annular chamber and the other with the ash pit, said partition having openings, and a damper controlling said openings.

3. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, a
 30 flue section formed in one wall of said pot and communicating at its lower end with said chamber, and a flue leading from said section upward and having an outlet into the room; of a hollow base having a low
 35 fresh air inlet, an ash pit whose wall is spaced from said shell so as to leave a chamber between them and is provided at points with openings, upright webs connecting said wall and the shell and producing two
 40 sets of passages whereof only one set communicates with said openings, a plate between the ash pit and base having scallops communicating with all said passages, and a ring around the fire pot closing the pas-
 45 sages which communicate with said openings into the ash pit and itself having openings throwing the other passages into communication with the annular chamber around the pot.

4. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, and a flue leading from said chamber up-
 50 ward and having an outlet into the room; of a hollow base having a low fresh air inlet, an ash pit whose wall is spaced from said shell so as to leave a chamber between them and is provided at points with open-
 55 ings, upright webs connecting said wall and the shell and producing two sets of passages whereof only one set communicates with said openings, a plate between the ash pit and base having scallops communicating
 60 with all said passages, a ring around the fire pot closing the passages which communicate

with said openings, into the ash pit and itself having openings throwing the other passages into communication with the annular chamber around the pot, and a damper in the base between its inlet and one
 70 set of said passages.

5. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, and a flue leading from said chamber up-
 75 ward and having an outlet into the room; of a hollow base having a low fresh air inlet, an ash pit whose wall is spaced from said shell so as to leave a chamber between them and is provided at points with open-
 80 ings, upright webs connecting said wall and the shell and producing two sets of passages whereof only one set communicates with said openings, a plate between the ash pit and base having scallops communicating
 85 with all said passages, a ring around the fire pot closing the passages which communicate with said openings, into the ash pit and itself having openings throwing the other passages into communication with the
 90 annular chamber around the pot, a partition across said base between its inlet and the set of passages leading to said pit, and a damper in this partition.

6. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, a
 95 flue section formed in one wall of said pot and communicating at its lower end with said chamber, and a flue leading from said section upward through the stove and hav-
 100 ing an outlet into the room; of a hollow base having a fresh air inlet, an ash pit whose wall is spaced from said shell so as to leave a chamber between them and is pro-
 105 vided at points with openings, upright webs connecting said wall and the shell and producing two sets of passages whereof one set communicates with these openings and the
 110 other set with the chamber around said pot, and means for controlling the flow of air to one set of said passages.

7. In a stove, the combination with the shell, a fire pot disposed therein so as to leave an annular chamber between them, a
 115 flue section formed in one wall of said pot and communicating at its lower end with said chamber, and a flue leading from said section upward through the stove and hav-
 120 ing an outlet into the room; of a hollow base having a fresh air inlet, an ash pit whose wall is spaced from said shell so as to leave a chamber between them and is pro-
 125 vided at points with openings, upright webs connecting said wall and the shell and producing two sets of passages whereof one set communicates with these openings and the
 130 other set with the chamber around said pot, and a damper in the base between its inlet and one set of said passages.

8. In a stove, the combination with the top having a hole, a damper controlling it, the body, and a flue leading from said hole through the body downward; of the fire pot
 5 having a surrounding annular chamber with which the lower end of said flue communicates, the ash pit and grate, a hollow base connected with a fresh air inlet, a surrounding shell, and partitions between the shell
 10 and other members forming two sets of passages, one of which leads from the inlet into the ash pit and thence through the fire pot outside said flue to the chimney and the other of which leads from the inlet through
 15 the space between the shell and ash pit to the lower end of said flue.

9. In a stove, a base having a pan-shaped body with an inlet through its center, a perforated partition crossing said body at one side of the inlet, a damper for regulating the size of the perforations therein, the shell, and a plate lying over said pan-shaped body and having scallops in its edge producing outlets, some to one side of said partition and some to the other, for the purpose set forth.

10. In a stove, a base having a pan-shaped body with an inlet through its center, a perforated partition crossing said body at one side of the inlet, a damper for regulating the size of the perforations therein, the shell, a plate lying over said body and having scallops in its edge producing openings some to one side and the others to the other
 35 side of said partition for the purpose set forth, ears between said scallops, the shell surrounding said body and plate, an ash pit whose wall is spaced from said shell and perforated to communicate with certain of
 40 said openings, and upright webs on said wall resting on certain of said ears and producing passages communicating with the other of said opening, substantially as described.

45 11. In a stove, a base having a pan-shaped body with an inlet through its center, a perforated partition crossing said body at one side of the inlet, a damper for regulating the size of the perforations therein, the shell, a plate lying over said body and having scallops in its edge producing openings some to one side and the others to the other side of said partition for the purpose set forth, ears between said scallops, the shell
 50 surrounding said body and plate, an ash pit whose wall is spaced from said shell and perforated to communicate with certain of said openings, upright webs on said wall resting on certain of said ears and producing passages communicating with the other
 55 of said openings, the fire pot having a surrounding chamber with which the last-named passages communicate, and a flue leading from said chamber through the
 60 body of the stove and having an outlet into

the room out of communication with the products of combustion rising from said ash pit and grate.

12. In a stove, a base having a pan-shaped body with an inlet through its center, a perforated partition crossing said body at one side of the inlet, a damper for regulating the size of the perforations therein, a plate lying over said pan-shaped body and having sets of openings at opposite sides of said
 70 partition, a flange rising from said plate inside its several openings and having extensions at the front of the stove, an ash pit whose wall has perforations communicating with certain of said openings and is provided with wings engaging said extensions, a shell surrounding said plate and wall and spaced from the latter, upright webs between said wall and shell separating the passages which lead into the ash pit from the others, a ring fitting within said shell and having openings above said other passages for the purpose set forth, a door frame overlying said shell and plate and said wings, and a door within said frame.
 80 90

13. In a stove, an ash pit made up of two complementary members having internal grate supporting brackets and notches in their meeting ends, diverging wings at their opposite ends, pairs of fingers opposite said
 95 notches on the outer face of one member, lugs adjacent said notches on both members, an upright strip having a grate-supporting bracket with its body disposed over the meeting line between said members and fitting between said lugs, and bolts passing between said fingers, through said registering notches, and through said strip.
 100

14. In a stove, an ash pit made up of two complementary members having internal
 105 grate supporting brackets and notches in their meeting ends, diverging wings at their opposite ends, lugs adjacent said notches on both members, an upright strip having a grate-supporting bracket with its body disposed over the meeting line between said members and fitting between said lugs, bolts passing through said registering notches and through said strip, a bottom plate closing said pit and having a lip spanning the
 110 space between the wings of said members, a top member also spanning the space between said wings and with them and said lip defining a door opening, and a door and its frame overlying the latter.
 115 120

15. In a stove, an ash pit made up of two complementary members having notches in their meeting ends, diverging wings at their opposite ends, lugs on both members, an upright strip having its body disposed over the
 125 meeting line between said members and fitting between said lugs, bolts passing through the meeting line between said members and through said strip, a bottom plate closing said pit and having a lip spanning
 130

the space between said wings, a top member therefor spanning the space between said wings and defining a door opening, and a door in the latter.

- 5 16. In a stove, an ash pit comprising two curved members meeting on an upright line at the back of the stove and each having a wing at its front end provided with a groove in its inner face, means for connecting said
10 members where they meet, and top and bottom members having flanges engaging the upper and lower edges of said curved mem-

bers, the flanges having extensions engaging said wings; of a door frame fitting between the latter and between the top and bottom members, and fastening devices lying in said grooves and engaging said frame. 15

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELI JACKSON PARKER.

Witnesses:

L. O. HILTON,
G. W. MUDD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."