

A. KURZWERNHART.
SELF FEEDING STOVE.
APPLICATION FILED JAN. 7, 1907.

996,263.

Patented June 27, 1911.

Fig. 1

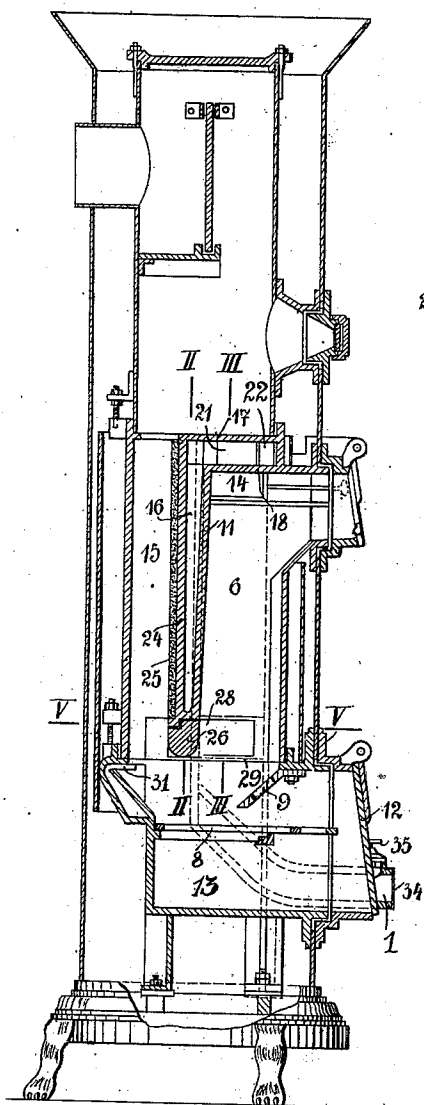


Fig. 2

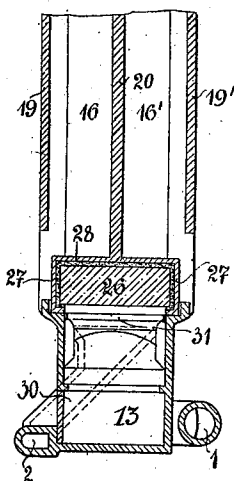


Fig. 3

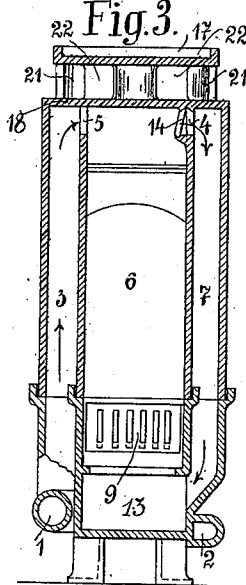


Fig. 4

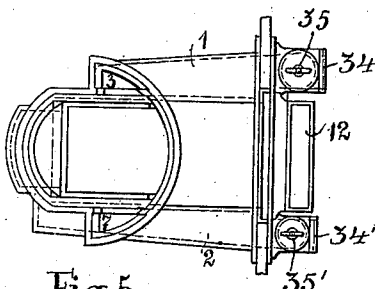
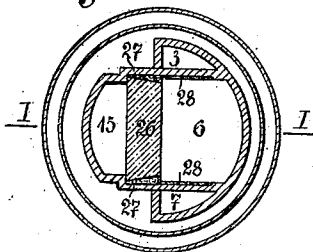


Fig. 5



WITNESSES:

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SELF-FEEDING STOVE.

996,263.

Specification of Letters Patent. Patented June 27, 1911.

Application filed January 7, 1907. Serial No. 351,212.

To all whom it may concern:

Be it known that I, ADALBERT KURZWERNHART, gentleman, a subject of the Emperor of Austria-Hungary, and residing at
5 XIII./4 Hochsatzengasse 18, Vienna, in the Empire of Austria-Hungary, have invented new and useful Improvements in Self-Feeding Stoves, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which they
10 appertain to make and use the same.

The invention relates to heating stoves and more particularly to self-feeding stoves or base-burners provided with primary and
15 secondary air-circulating passages.

The object of the invention is a self-feeding stove having a fuel chamber which is separated by a hollow partition from the combustion chamber. The fuel slides down-
20 ward along a slanting grate upon a horizontal grate and receives primary air through the grating, after such air has passed through certain channels in the stove. Secondary air enters the combustion cham-
25 ber through a slot in the back wall of the stove.

In the drawings: Figure 1 is a vertical section along the line I—I of the Fig. 5; Fig. 2 is a vertical section through the cen-
30 tral piece containing the fuel chamber and the combustion chamber along the line II—II of the Fig. 1, viewed from the front of the stove; Fig. 3 represents another vertical section through the central part along the
35 line III—III of Fig. 1 and looked upon from the back part of the stove. Fig. 4 is a plan view upon the bottom part of the stove containing the ash-pit and Fig. 5 is a cross section through the stove along the line
40 V—V of Fig. 1.

The primary air enters the stove through a horizontal channel 1, the bottom part of which is provided with a register 35 for the regulation of the air supply. A vertical
45 channel 3 arranged alongside the fuel chamber 6 (Figs. 3, 4 and 5) is connected with the channel 1 and communicates at its upper end with the fuel chamber 6 by an opening 5. The upper end of the fuel chamber 6
50 communicates by another opening 4 with a second vertical channel 7 situated alongside the opposite side of the chamber and leading into the ash-pit 13, below the grates 8 and 9. The channels 1, 3, 7 and the pas-
55 sages 4 and 5 constitute the primary air con-

duits and have not only to cool the cham-
ber 6 by means of the air which passes through these channels but also to carry away, through the channel 7, gases, rising
60 from the combustibles in a sufficiently rarefied and inexplosible condition so that explosions are prevented. The secondary air enters also at the bottom part of the stove into another horizontal channel 2 and rises
65 in the inclined passage 30, Fig. 2, to the long slot 31 in the back wall of the stove, through which it is discharged into the combustion chamber of the stove. The channel 2 is located at the side of the bottom part so that
70 the secondary air is heated by the heat of the ash-pit 13, and on account of the upwardly arranged passage 30 a draft is produced whereby the air is carried into the combustion chamber. Both the horizontal
75 air-supply channels 1 and 2 are arranged laterally, in order firstly to prevent the ashes from falling down out of the door of the ash-pit upon the registers and secondly to diminish the height of the stove. The
80 front ends of the channels 1 and 2 are covered by caps 34, 34' which may be easily removed in order to clean said channels of any ashes, cinders or pieces of coal.

Sometimes it is impossible to ignite the fuel, especially if such a small quantity of
85 fuel has been brought into the stove that a free space is left between the grate 8 and the fire-proof stone 26 which is arranged between the fuel chamber 6 and the combustion chamber 15 on the lowermost end of the
90 partition 11; in this case the air flows freely through the space left between the grate and the baffle stone without passing through the fuel because, even if the registers 35, 35' of the two channels 1, 2 are closed and the door
95 12 of the ash-pit is opened, the air rises through the flue 7, enters the fuel chamber 6 from above and, passing downwardly, escapes through the space left between the fuel supported by the grate 8 and the stone
100 26 arranged below the partition. The same way the air takes if the fuel chamber 6 is not sufficiently filled and the fuel does not offer sufficient resistance against the passage of the air. Therefore according to the pres-
105 ent invention the chamber 6 may be closed by a sliding damper 14 (Fig. 3). If the sliding damper 14 (Fig. 3) closes the opening 4 (Fig. 1) and the channels 1 and 2 are shut while the door 12 of the ash-pit is
110

opened, the fuel may be readily ignited because then the air has no other way but through the fuel all other passages being shut. The sliding damper 14 may also be
 5 closed if it is desired to burn all the fuel contained in the stove, because finally it will contain a small pile of fuel and the condition will be similar to that one mentioned above.

10 In order to prevent a dry distillation of the fuel contained in the chamber 6 and a development of gases by the heat of the combustion gases rising up in the combustion chamber 15, the walls 11 and 24 are
 15 spaced apart and inclose a cavity 16. Moreover the wall 24 may be covered by fire-proof material 25 or the wall 11 may be fire-proof on that side which is turned toward the fuel chamber. To perfectly isolate the
 20 fuel chamber by a layer of air, the cavity is extended forward above the top of the fuel chamber, and closed by the wall 17 which is joined to the wall 24. The cavity is preferably divided by a rib 20 (Fig. 2) into two
 25 vertically arranged passages 16, 16' which are closed laterally by the walls 19, 19', which extend downwardly to near the top of the stone 26 thus leaving openings at the bottom of the chamber. The space formed
 30 above the top 18 of the fuel chamber 6 is closed all around by a wall 21, provided with openings 22. In this way a circulation of air is possible which enters the passages 16, 16' at the bottom and, rising upwardly,
 35 passes over the top face 18 cooling the same, and escapes through the openings 22.

To the downwardly turned face of the wall 24 a fire-proof baffle stone 26 is secured which has to protect the lower end of this
 40 wall against the flame. In order to carry this baffle stone, the bottom end of the wall is bulged out (Figs. 2 and 5), forming a support 27 for the stone, wherein the stone is secured by filling the spatium with some
 45 fire-proof material 28. This arrangement

makes it possible to replace the stone at any time and to introduce another one through the ash-pit.

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

1. A self-feeding stove having a fuel chamber, a burning chamber, a partition between said two chambers, upright channels which are in communication with each other in the upper part of the fuel chamber, one
 55 of said channels leading from below to the upper end of the fuel chamber, and the other of said channels leading from the upper part of the fuel chamber under the grate of the stove, and a closing means arranged at the
 60 upper part of the fuel chamber and adapted to close the passage between said last named channel and said fuel chamber to prevent air flowing downward through the fuel chamber.

2. A self-feeding stove having a fuel chamber, a burning chamber, a partition between said two chambers, two upright channels formed in the walls of the fuel chamber and communicating with each other in the
 70 upper part of said fuel chamber, one of said channels leading from below to the upper end of the fuel chamber and being provided at its lower end with means for regulating the entrance of the outer air, and the other
 75 of said channels leading from the upper part of the fuel chamber under the grate of the stove, and a damper arranged in the upper part of the fuel chamber and adapted to prevent air flowing upward through said
 80 second channel and down through the fuel chamber.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADALBERT KURZWERNHART.

Witnesses:

FUG. FUGO REIK,
 ALVESTO S. HOGUE.