R. FUTRAL.

STOVE.

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Patented Jan. 5, 1915.

1,123,725.

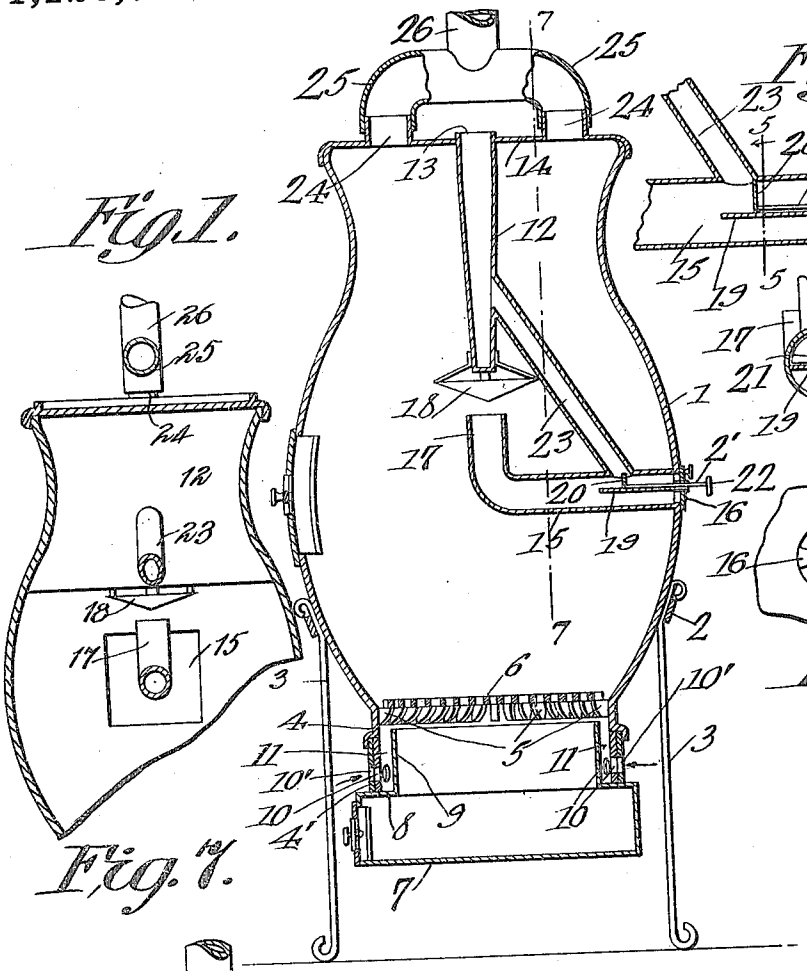


Fig. 1.

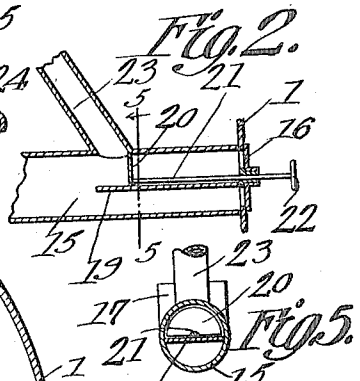


Fig. 2.

Fig. 7.

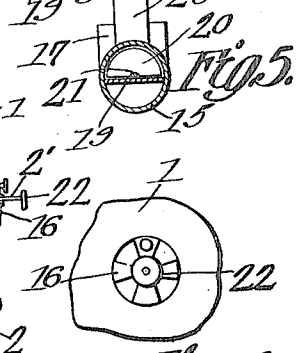


Fig. 5.

Fig. 6.

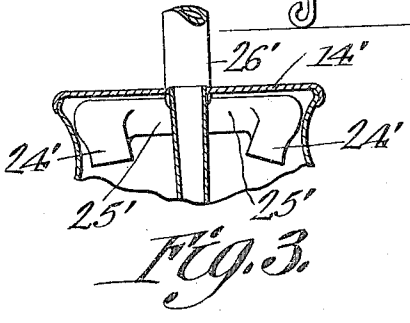


Fig. 3.

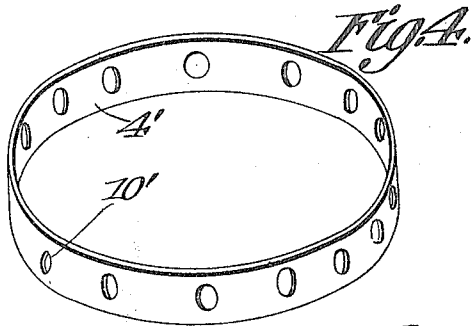


Fig. 4.

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UNITED STATES PATENT OFFICE.

RICHARD FUTRAL, OF TAHLEQUAH, OKLAHOMA.

STOVE.

1,123,725. Specification of Letters Patent. Patented Jan. 5, 1915.

Application filed September 1, 1914. Serial No. 859,683.

To all whom it may concern:

Be it known that I, RICHARD FUTRAL, a citizen of the United States, residing at Tahlequah, in the county of Cherokee and State of Oklahoma, have invented a new and useful Stove, of which the following is a specification.

The present invention relates to improvements in stoves, one object of the invention, being the provision of means that causes the flame from the products of combustion to travel adjacent to the walls of the stove instead of from the center which is the usual custom, thus fully heating the walls thereof before the products of combustion enter the flue, and distributing the heat so that the walls will more effectually distribute or radiate heat.

A further object of the present invention, is the provision of a novel form of air inlet structure for the lower end of the stove, by means of which the air is supplied circumferentially of the grate instead of centrally thereof, thus causing the fuel body to be burned from the outer edges toward the center instead of from the center toward the outer edges as is the usual custom, such burning of the fuel tending to concentrate the heat upon the outer walls of the stove thus procuring therefrom the greatest possible units of heat for distribution into the room and at the same time increasing the life of the stove due to the distribution of the heat which in stoves of the present type causes the cracking, breaking and otherwise distorting of the stove.

A still further object of the present invention, is the provision of a means for distributing air above the body of the fuel and centrally thereof to assist in the complete combustion of the flames which carry to a great extent free carbon, there being disposed a means that divides the flames and cause them to follow the inner line of the walls of the stove and concentrate the heat thereupon instead of centrally of the stove as is the usual custom.

A still further object of the invention, is provision of a stove with two separate flues and means for causing the flames from the burning fuel to be directed along the inner walls of the stove before entrance to the flues, said flues being connected to a common flue at a point exteriorly of the stove.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a vertical central sectional view through a complete stove embodying the present invention. Fig. 2 is an enlarged detail sectional view showing the air controlling means for the accelerator. Fig. 3 is a sectional view of the upper end of the stove showing a modified form of flue construction. Fig. 4 is a detailed perspective view of the damper ring of the main draft appliance removed. Fig. 5 is a section on line 5—5 of Fig. 2. Fig. 6 is a fragmental side elevation of a portion of the stove. Fig. 7 is a section, upon a reduced scale, taken on line 7—7 of Fig. 1.

Referring to the drawings, the numeral 1 designates the stove body proper, having the usual fuel body and combustion chamber, the same being supported in place by means of the legs 3 which are attached to the body by means of the ring 2. Any form of leg, however, may be employed to support the body 1. The lower end of the body 1 is provided with a rim 4, which has the internal grate supporting members 5 for carrying the grate 6. The ash box 7 which is carried upon the lower end of the rim 4 is provided with the offset portion 8 and with the upstanding rim 9, which forms with the adjacent portion of the rim 4, an air admitting annular channel 11 with the inlet openings 10 formed in the rim 4. In order to control the openings 10 there is disposed concentric of the rim 4 and externally or internally thereof, the band 4′ which is provided with the openings 10′, which are disposed to be placed into and out of registration with the openings 10 or partially therewith so as to control the inflow of air as indicated by the arrows in Fig. 1. By this means, the air is directed circumferentially of the grate adjacent the outer edges thereof and will consequently cause the burning of the coal from the walls toward the center instead of from the center toward the walls as is the usual practice.

A partition member 12, which is hollow and provided with the open end 13 is supported in the top 14 of the stove and de-

pends centrally thereof so as to divide the upper portion of the combustion chamber into two compartments, there being supported in the wall of the member 1 and extending toward the center, an air induction pipe or flue 15, having the outer damper controlled inlet end 16 and the concentrically disposed upwardly extending outlet portion 17, the same being disposed to project the air against the inverted cone member 18, supported below the under side of the partition 12, as clearly illustrated in Fig. 1. By this means air entering the pipe or flue 15, will be projected against the cone deflector 18, and will consequently pass upon both sides of the partition 12 and thence commingle with the flames from the fuel so as to insure the burning of the products of combustion carried thereby.

In order to provide a means for causing the air entering the inlet end of the flue 15 to be directed into the partition 12 and consequently out through the outlet 13 thereof, the partition 19 is disposed in one end of the flue 15, as clearly illustrated in Figs. 1 and 2. Mounted slidably in the flue 15, is the semi-circular disk or damper 20 controlled by the rod 21 and the handle 22 from the outside, the same being disposed to be moved to and from the lower end of the inclined pipe or flue 23, which is in communication above the inner end of the partition 19 with the upper portion of the flue 15 and the partition 12. Thus if the damper 20 is moved to the left, as viewed in Fig. 2, the space above the partition 19 is placed in communication with the flue 23, and the outside air is permitted to enter the partition 12 and be heated and consequently pass out of the outlet 13 directly into the room. By moving the damper 21 to the position as shown in Fig. 1, the flue 23 is cut off so that no air is permitted to pass into the partition 12.

In order to provide a means to insure the passage of the flames adjacent the wall of the inlet body of the stove 1 throughout its height, there is disposed in the top 14, one at each side of the partition 12, the flame directing outlets 24, which are adapted to communicate with the branches 25 of the main flue 26.

In the structure shown in Fig. 3, the flame directing portions 24′ are disposed below the top 14′ and within the body of the stove, with the branch portions 25′ also below the top so that the main outlet flue 26′ is connected thereto at the top line and is the only portion in view when the stove is properly assembled.

It will thus be seen that with this structure, the fuel is burned primarily adjacent to the walls of the stove and the flames are directed to the flue also adjacent to the walls, thus insuring the greatest radiation of heat from the smallest consumption of fuel, and at the same time protecting the stove against burn outs, bursting or cracking due to the too sudden heating and cooling and the necessary furious burning of the coal or fuel when it is desired to secure from a stove the maximum amount of heat.

What is claimed is:

1. A stove, including a body comprising the fuel and combustion chamber, a grate, means for conducting air to the periphery of the grate into the fuel chamber, means dividing the upper portion of the combustion chamber into two vertical compartments, a flue for each compartment, and a main flue into which the first flues lead.

2. A stove, including a body comprising the fuel and combustion chamber, a grate, means for conducting air to the periphery of the grate into the fuel chamber, means dividing the upper portion of the combustion chamber into two vertical compartments, a flue for each compartment, a main flue into which the first flues lead, and means for delivering and accelerating air draft to the center of the combustion chamber below the partition.

3. A stove, including a body having a fuel and combustion chamber, means for directing air to the lower end of the stove body, a hollow partition extending from the top of the body into the combustion chamber and dividing the upper portion of such chamber into two compartments, a flue outlet to each compartment, and a main flue connected to both of said outlets.

4. A stove, including a body having a fuel and combustion chamber, means for directing air to the lower end of the body, a hollow partition extending from the top of the body into the combustion chamber and dividing the upper portion of such chamber into two compartments, a flue outlet to each compartment, a main flue connected to both of said outlets, and means for directing and accelerating air draft into the combustion chamber at a point below the partition.

5. A stove, including a body having a fuel and combustion chamber, means for directing air to the lower end of the body, a hollow partition extending from the top of the body into the combustion chamber and dividing the upper portion of such chamber into two compartments, a flue outlet to each compartment, a main flue connected to both of said outlets, means for directing and accelerating air draft into the combustion chamber at a point below the partition, and a damper controlled flue in communication with the last means and the lower end of the hollow partition for conducting air from the outside through the partition and out of the top of the stove.

6. A stove, including a body having a fuel chamber and a combustion chamber, a grate,

means for controlling the direction of draft air to the periphery thereof, a hollow partition open through the top of the stove and depending from the top into the combustion chamber and dividing the upper portion of such chamber into two compartments, each compartment being provided with a flue outlet, a main flue connected to said outlet, a laterally disposed pipe open through one side of the stove body and having its outlet below and spaced from the lower end of the partition, a deflector disposed thereabove to deflect the air upon both sides of the partition, a pipe connecting said last flue pipe to the lower end of the partition, and a damper disposed in the last flue for controlling the flow of air therethrough into the partition.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

RICHARD FUTRAL.

Witnesses:
THOMAS COMBS,
J. E. INGALLS.

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