

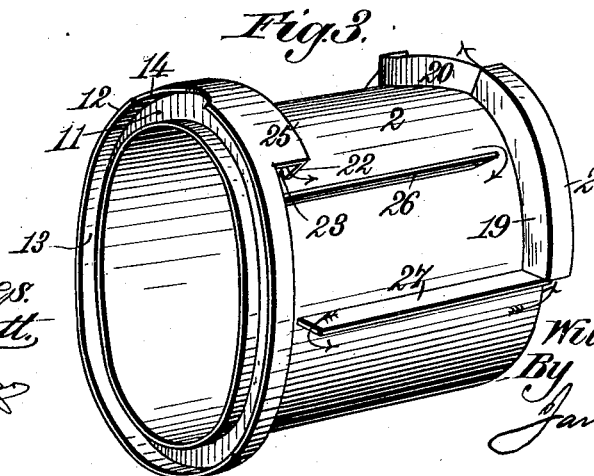
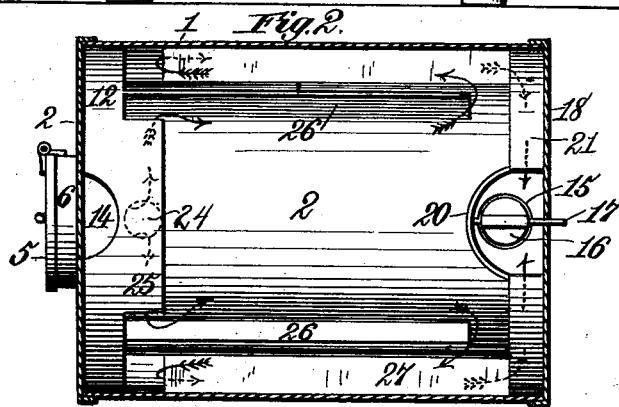
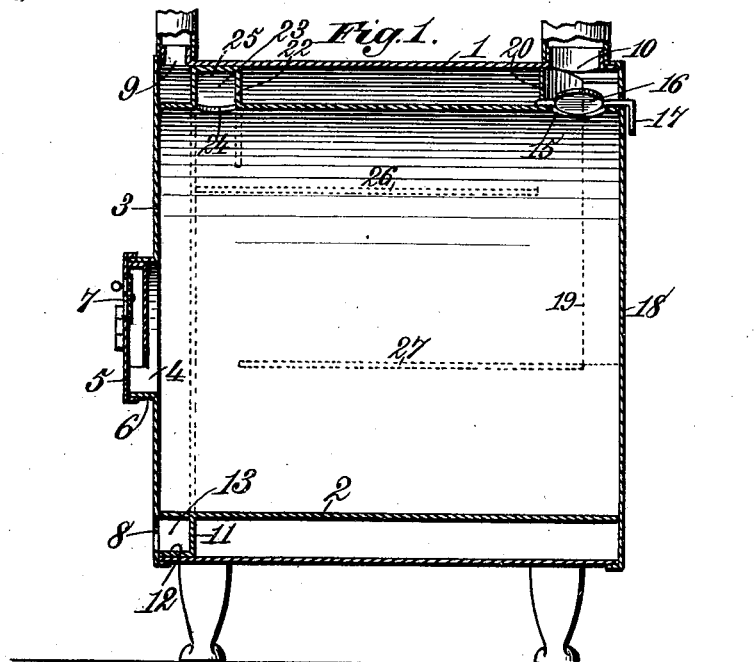
No. 646,853.

Patented Apr. 3, 1900.

W. H. LOY:
STOVE.

(Application filed Jan. 27, 1899.)

(No Model.)



Witnesses:
Robert G. Smith,
J. B. Keefe

Inventor:
William H. Loy.
By
James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. LOY, OF CEDAR RAPIDS, IOWA, ASSIGNOR OF ONE-HALF TO
JOHN G. CAIN, OF PALO, IOWA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 646,853, dated April 3, 1900.

Application filed January 27, 1899. Serial No. 703,599. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LOY, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented new and useful Improvements in Stoves, of which the following is a specification.

This invention has for its object to improve and render more desirable, efficient, and useful the wood-burning heating drum or stove described and shown in Letters Patent No. 567,034, issued to me September 1, 1896. This object is accomplished in the manner and by the construction and arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a vertical central longitudinal section through a stove constructed in accordance with my invention. Fig. 2 is a central horizontal section through the outer casing or drum, with the inner drum in plan; and Fig. 3 is a detail perspective view of the inner drum.

Like reference-numerals indicate like parts in the different views.

My improved stove is made up of an outer casing or drum 1 and an inner drum 2, both being preferably formed elliptical in cross-section and slightly separated one from the other, so as to form an annular space between them. The outer drum 1 has formed in its front head 3 a central opening 4 for the insertion of the fuel, which opening 4 is closed by a suitable door 5, hinged or otherwise movably connected with the ring or collar 6 and having a draft-passage 7, controlled by a suitable damper, leading from a point adjacent to its upper end and terminating on the inside of the stove at a point adjacent to its lower end, so that the air to support combustion is heated prior to its actual admission to the fire-chamber. The head 3 of the drum 1 is further provided with an opening 8 at a point near its lower end, and a similar opening 9 is formed in the body of the drum 1, adjacent to the upper edge of the head 3. At the opposite end of the drum or casing 1 and in line with the opening 9 is another opening 10, to which the pipe or flue for the escape of the products of combustion may be applied.

Adjacent to the front of the inner drum 2 and secured to the outer surface thereof is an annular rib or strip 11, provided with a side flange 12 and forming when the parts of the stove are in place a circular fresh-air passage 13, located within the front end of the stove and leading from the opening 8 to the opening 9 in the drum 1, said passage being cut off from the remaining space between the drums 1 and 2. The flange 12 is cut away, as shown at 14, adjacent to the opening 9, so as to permit of a communication between the passage 13 and said opening 9. By this construction it will be observed that cold air may be admitted through the opening 8, caused to pass in a divided stream around the two sides of the passage 13, and be discharged through the opening 9 either directly into the room in which the stove is located or through a suitable pipe or conduit to an adjacent room. At the rear end of the drum 2 is an opening 15, which when the parts of the stove are in place lies directly beneath the opening 10 in the drum 1 and serves as a port for the discharge of the products of combustion into the flue or pipe which is applied to the opening 10. This opening 15 is controlled by means of a pivoted damper 16, provided with a handle 17, which projects out through the rear head 18 of the stove. When a direct draft is desired, the products of combustion from the fire-chamber pass from said chamber to the discharge-flue through the openings 15 and 10. In order, however, that the products of combustion may be caused to take a circuitous or tortuous passage through the space between the inner and outer drums 1 and 2, I form upon the outer surface of the drum 2, adjacent to its rear end, a curved rib or strip 19, the ends of which terminate at points a short distance below the vertical center of the drum 2, and the central portion thereof is bent or deflected inwardly, as shown at 20, so as not to cut off or obstruct the opening 15. In the drawings I have shown the rib or strip 19 formed with side flanges 21, so that close contact may be had between said strip and the inner surface of the outer drum 1. It is obvious, however, that this flange may be dispensed with. A segmental strip 22, similar in construction to the strip 19, but located at

the opposite end of the stove, is secured to the upper surface of the drum 2, forming a passage 23 from an opening 24, communicating with the fire-chamber and formed in the inner drum 2, adjacent to the forward upper end thereof. The passage 23, it will be noted, is bounded or defined on one side by the rib or strip 11, and the strip 22 may or may not be formed with a flange 25. Secured to the outer surface of the drum 2, adjacent to the opposite ends of the passage 23, are longitudinally-extending ribs or deflectors 26 26, the same abutting at their forward ends against the rib or strip 11 and terminating at their rear ends a short distance from the rib or strip 19. The said drum 2 is further provided on opposite sides with longitudinally-extending ribs or deflectors 27 27, the same extending from the lower ends of the rib or strip 19 and terminating a short distance from the rib or strip 11.

As thus described it is thought that the operation of my stove will be readily understood. Briefly stated, however, it is as follows: Fuel being supplied to the interior of the drum 2 through the feed-opening 4 and the damper 16 being opened, with a supply of air entering through the draft-opening in the door 5, a direct draft will be obtained, and the products of combustion will pass from the fire-chamber directly to the flue through the openings 15 and 10. If, however, the damper 16 be turned so as to close the passage through the opening 15, the products of combustion will pass out from the fire-chamber through the opening 24 and into the passage 23 to the space between the inner and outer drums 1 and 2. Leaving the passage 23 from opposite ends thereof they will pass around through the tortuous passage indicated by the arrows to the passage formed between the rib or strip 19, and the rear head 18 being guided by the deflectors 26 and 27, which cause the passage of the products longitudinally back and forth in the space between the drums 1 and 2. The passage formed by the rib 19 being upon the outside of the drum 2, the products of combustion and waste gases can pass directly into the discharge-flue through the opening 10 without going through the opening 15. This construction enables me to secure the greatest possible number of heat units from a given quantity of fuel by forcing the products of combustion before

they escape to pass in close contact with the inner surface of the outer drum 1, which constitutes the radiating-surface of the stove.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A heating-stove having outer and inner drums 1 and 2, separated from each other, the fresh-air inlet 8 at the bottom of the front end, the warm-air-escape opening 9 and smoke-opening 10 at the front and rear ends, respectively, of the outer drum, the smoke-openings 15 and 24 in the rear and front ends, respectively, of the inner drum, the circular fresh-air passage 13 formed within the front end of the stove, bounded by the periphery of the latter, separated from and having no communication with the space between the two drums and leading from said bottom fresh-air inlet continuously around between the drums to said warm-air-escape opening, and deflectors 26 arranged longitudinally in the space between the drums, substantially as and for the purposes described.

2. A heating-stove, consisting of an outer drum having at the top of its front and rear ends, respectively, the warm-air-escape opening 9 and smoke-opening 10, the front head 3 having a draft-passage 7, and a fresh-air inlet 8 below the latter, an inner drum 2 having the smoke-openings 15 and 24 in the top of its rear and front ends, respectively, the vertical curved rib 19 near its inner end, having the top, forward deflection 20, the vertical, continuous rib 11 surrounding the front end portion of the inner drum to provide the circular fresh-air passage 13 in the front end of the stove, bounded by the periphery of the latter, separated from the space between the drums and leading from said bottom fresh-air inlet around between the drums to the said top warm-air-escape opening, and the horizontal deflectors 26 located in the space between the two drums and bearing at the ends, alternately, against said front and rear vertical ribs, substantially as and for the purposes described.

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

WILLIAM H. LOY.

Witnesses:

E. A. MCARTHUR,
A. C. JOHNSON.