

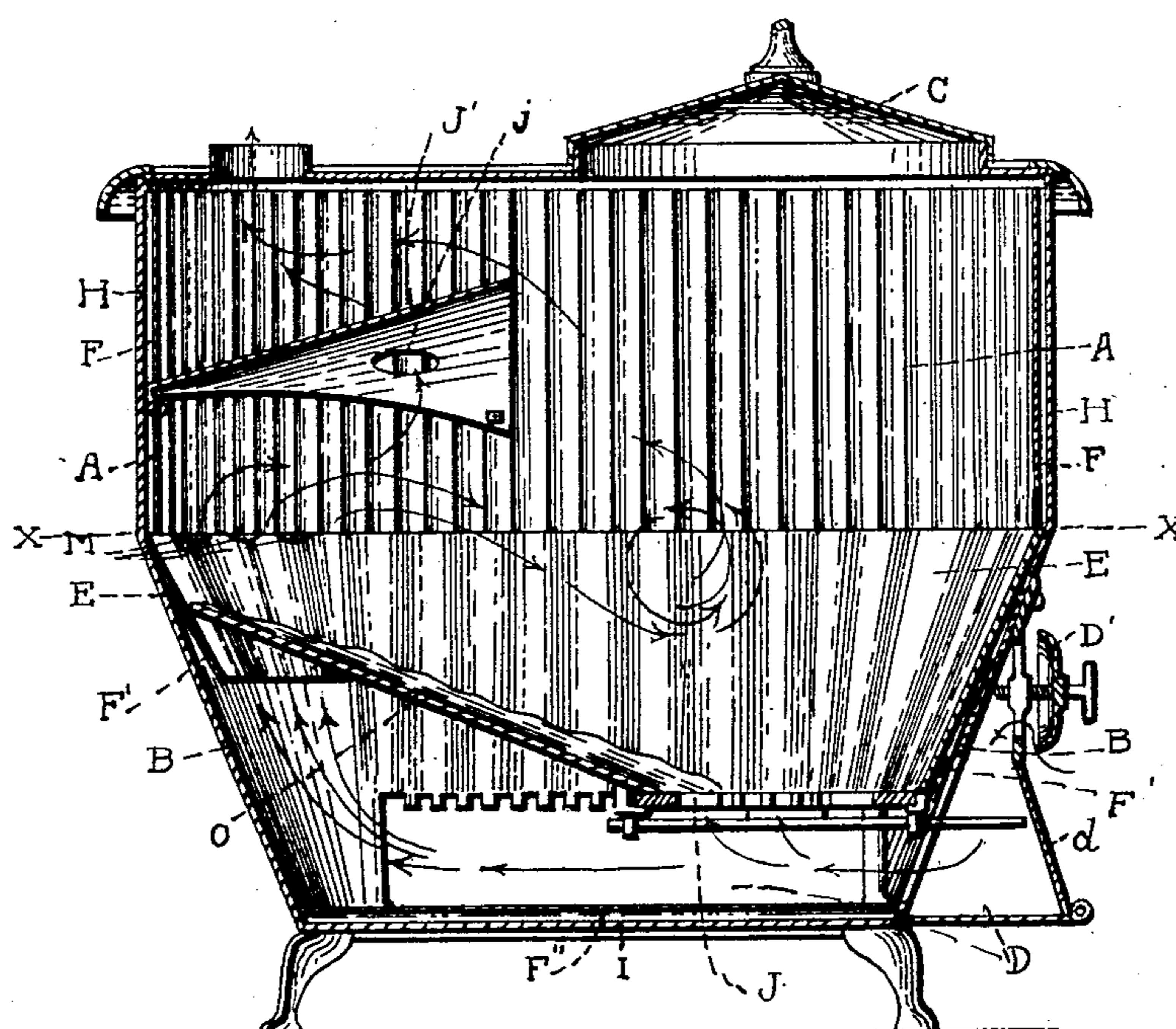
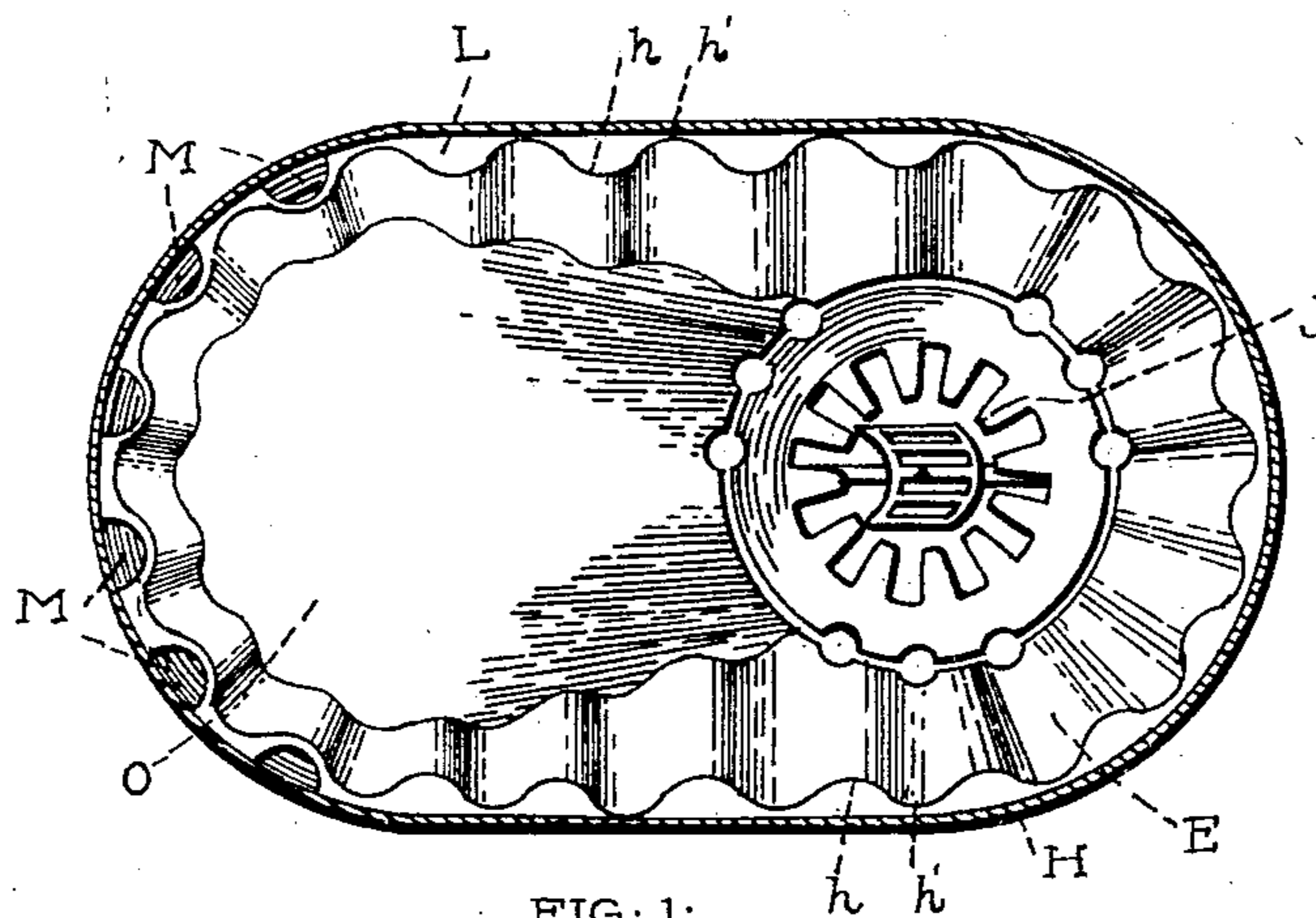
No. 704,331.

Patented July 8, 1902.

L. HOWARD.  
HEATING STOVE.

(Application filed Feb. 27, 1902.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LINCOLN HOWARD, OF SAVANNAH, MISSOURI.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 704,331, dated July 8, 1902.

Application filed February 27, 1902. Serial No. 95,845. (No model.)

*To all whom it may concern:*

Be it known that I, LINCOLN HOWARD, a citizen of the United States, residing at Savannah, in the county of Andrew and State of Missouri, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My object is to provide a heating-stove that will produce a greater degree of heat with a given quantity of fuel and distribute the same to better advantage than has heretofore been possible, and my improvements are especially adapted to be used in the construction of a heating-stove upon which Letters Patent of the United States were granted to me August 28, A. D. 1900, numbered 656,978.

In the accompanying drawings, Figure 1 is a horizontal section of the stove and is a top view of that part of the stove below line  $x x$  in Fig. 2, and Fig. 2 is a longitudinal vertical section showing the interior of the stove.

Similar letters refer to similar parts in the two views.

In the drawings, A represents the drum of the stove, and B an inverted conical base. The top of the stove is provided with a lid C, which affords access to the interior for supplying the cast-iron vertically-corrugated fire-pot E with fuel.

D is the ash-pit, provided with door  $d$ , hinged at the bottom, and a damper  $D'$  is above the ash-pit door in the cast-iron pouch. The interior of the drum of the stove is provided with a hot-air space F between lining H, preferably corrugated, and the casing, and the corrugated inverted conical base of the stove is furnished with a similar somewhat wider hot-air space F' between the corrugated fire-pot E and the casing.

I is a corrugated iron floor fitting in closely against the casing, the corrugations leaving air-spaces F'' F'' between said floor and the bottom casing. J is the stove-grate, and J' is the diaphragm check-draft, rigidly attached to the side of the drum of the stove

and provided with circular openings  $j j$ . The top of the corrugated fire-pot is provided with a lateral flange L, formed by the top edge being cast outward across the top of the narrow hot-air space F' until it fits closely with the casing, thus entirely closing said hot-air space at its top, except at the rear of the stove, where six, more or less, circular or V-shaped openings M M are cut out of said lateral flange between the furrows of the corrugations, as shown in Fig. 1.

O is a fuel-support piece, preferably cast-iron, depressed through its center, its front end being adapted to fit down closely around the back of the grate, while its elevated back end rests against the corrugated fire-pot below the fire-pot flange. The sides and back of said fuel-support are scalloped, so that it fits closely into the ridges  $h h$  and valleys  $h' h'$  of the corrugations of fire-pot E, thus adapting it to fit closely and securely in the fire-pot. By the use of this fuel-support when the stove is constructed in oval shape the coals in the fire-pot are bedded up forward into smaller space, and the air-space at the bottom of the back of the stove is enlarged. This air-space is further enlarged by shortening the corrugated fire-pot at the back part, as shown in Fig. 2, thus consolidating that which would otherwise be the lower part of the hot-air space F' at the back of the stove with the air-space beneath the grate and beneath and back of the fuel-support. By this construction a free draft is made possible between the damper and the rear draft-openings M M in lateral flange L.

In the manufacture of round stoves I reserve to myself the right to dispense with fuel-support O as well as the shortening of the back section of the corrugated fire-pot.

From the foregoing description it will readily be seen that of the cold air entering the stove through the damper at the front a part will pass up through the grate, while a large part will be drawn back through the ash-pit into the large air-space below fuel-support O, where it will be greatly heated by the intense heat of this support and will be drawn between the fire-pot and the casing of the inverted conical base of the stove up through openings M M in the flange of the fire-pot and thence into the combustion-chamber im-

mediately above the fire, where it will mix with the gases cooked out of the bed of coals, making a perfect combustion, thus giving off intense heat, while the bed of coals is but slightly consumed, economizing largely in fuel and rendering the stove comparatively smokeless.

What I claim, and desire to secure by Letters Patent, is—

1. In a heating-stove the combination of an inverted conical casing inclosing a combustion-chamber, a corrugated floor, said corrugations forming air-spaces between said floor and the bottom of the casing, a vertically-corrugated fire-pot supported by said floor, a fuel-support its front end contacting with the rear of the stove-grate and its elevated back end with the rear of the fire-pot, a lateral flange at the top of said fire-pot adapted to fit closely around against the stove-casing and provided with semicircular openings in that portion contacting with the rear part of the stove-casing to serve as draft-vents from beneath the combustion-chamber under the grate and fuel support up between the corrugations at the back of the fire-pot and the stove-casing into the space above the fuel-bed, substantially as described and for the purpose specified.
2. In a heating-stove the combination with an inverted conical combustion-chamber and a vertically-corrugated fire-pot open at the lower part of the back thereof and located within said chamber and spaced therefrom to form a heating-chamber, of a fuel-support set back of the stove-grate and elevated at its

rear end thereby forming an enlarged upward extension of an air-chamber, of a corrugated floor beneath the fire-pot, spaced therefrom allowing said air-chamber to extend through the entire base of the stove, of a flange on the top of the corrugated fire-pot provided at the rear of the stove with openings adapted to carry the draft of the stove up from said air-chamber and its upward extension into the chamber above the fuel-bed to form perfect combustion with the gas therein, substantially as described and shown.

3. In a heating-stove comprising in combination a combustion-chamber, a heating-drum supported thereon and a perforated check-damper therein spanning that portion adjacent to the flue connection, a vertically-corrugated fire-pot having its lower rear portion cut away, a grate set therein at the front, a fuel-support extending backward from said grate and bearing upward at an angle with its edge adapted to fit into the side and back corrugations of the fire-pot and close the opening made in the fire-pot at the cut-away portion thereof, and a lateral flange on the rim of the fire-pot above said cut-away portion provided with draft-openings at the tops of corrugations, substantially as set forth and shown.

In testimony whereof I affix my signature in presence of two witnesses.

LINCOLN HOWARD.

Witnesses:

T. A. COLBURN,  
EMMA HECKEL.