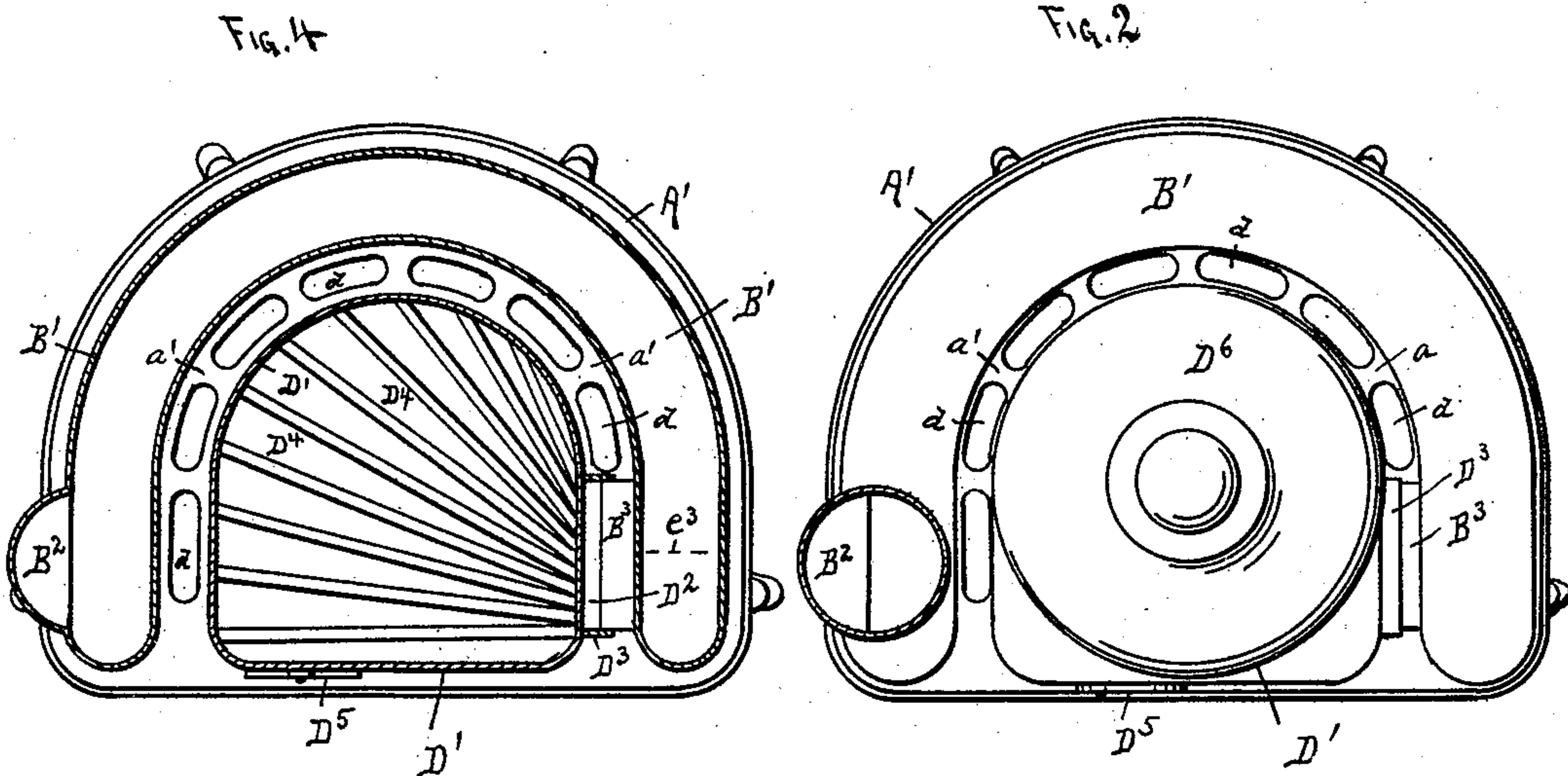
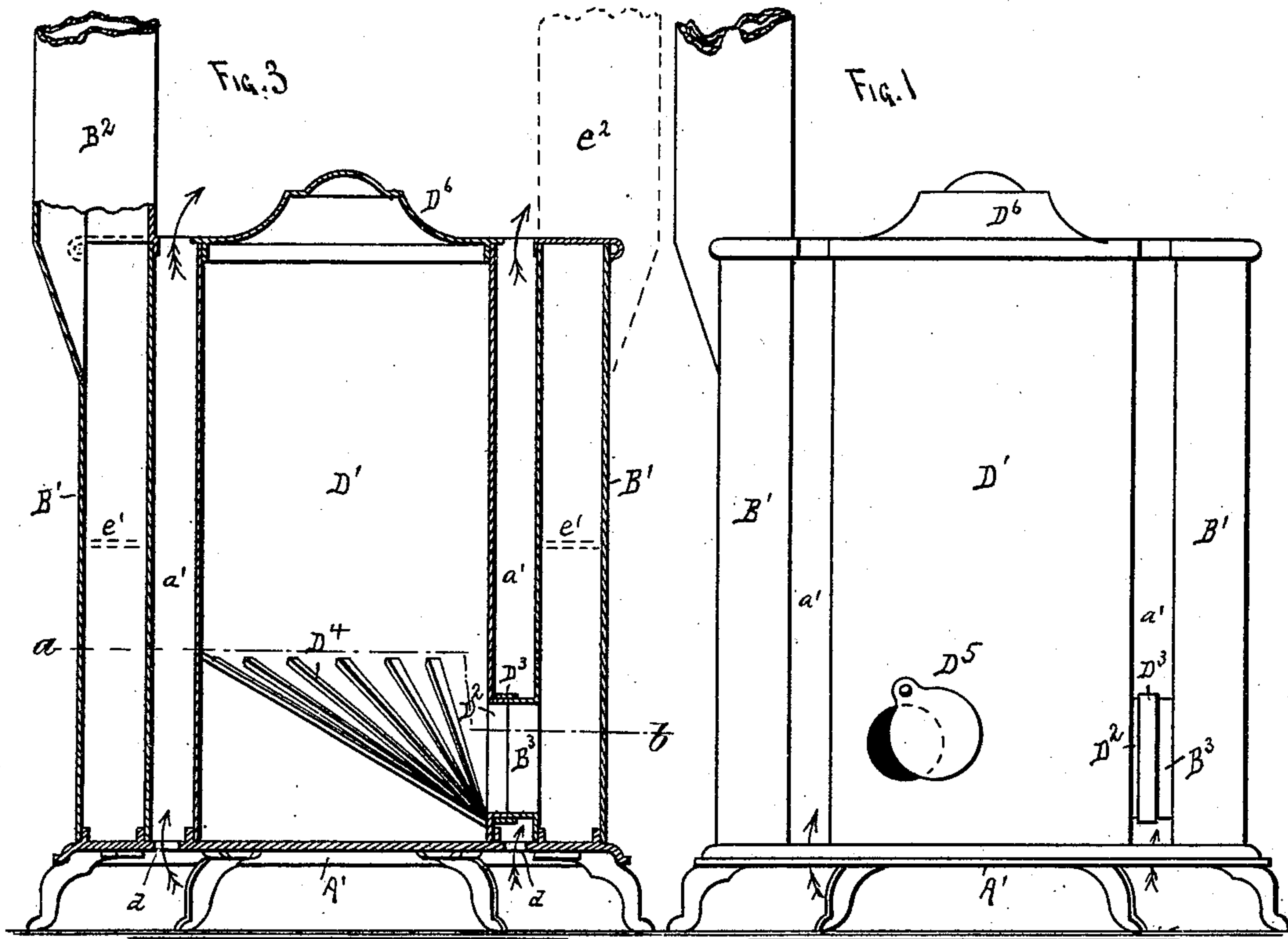


(No Model)

A. D. ELLIS.  
HAY, STRAW, OR OTHER STOVE.

No. 583,851.

Patented June 1, 1897.



WITNESSES.  
*J. W. Stevens*  
*H. J. Jewett*

Alfred D. Ellis, INVENTOR.  
By Charles W. Woodward, Att'y.



# UNITED STATES PATENT OFFICE.

AZRO D. ELLIS, OF MINNEAPOLIS, MINNESOTA.

## HAY, STRAW, OR OTHER STOVE.

SPECIFICATION forming part of Letters Patent No. 583,851, dated June 1, 1897.

Application filed January 8, 1897. Serial No. 618,429. (No model.)

*To all whom it may concern:*

Be it known that I, AZRO D. ELLIS, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Straw and Hay Burning Stoves, of which the following is a specification.

This invention relates to that class of stoves in which hay, straw, and similar light material is employed as fuel; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a front elevation, and Fig. 2 is a plan view, of the stove complete. Fig. 3 is a longitudinal sectional elevation. Fig. 4 is a cross-section on the line X X of Fig. 3.

A' is the base, on which is mounted a U-shaped hollow drum B', with the smoke-outlet B<sup>2</sup> leading from one end at the top and with an inlet B<sup>3</sup> leading into the other end near the bottom, as shown.

D' is the fuel-magazine, which is adapted to rest upon the base A' between the sides of the U-shaped drum B', as shown, the magazine conforming in outline to the interior of the drum B', with a space *a'* between them for circulation.

The outlet D<sup>2</sup> from the drum D' corresponds to and is adapted to "register" with the inlet B<sup>3</sup> of the drum B', so that all the smoke and gases from the fuel-magazine pass into the drum B<sup>2</sup> and thence to the outlet B<sup>2</sup>.

The joint between the parts D<sup>2</sup> B<sup>3</sup> is covered with a slip-collar D<sup>3</sup>, so that gas and smoke cannot escape at that point.

In the bottom of the magazine D' is an inclined grating D<sup>4</sup> to hold the fuel up away from the bottom and prevent it from becoming packed down too tightly and interfering with the proper combustion.

D<sup>5</sup> is the draft-door, through which the fire may be applied and through which the proper amount of air may enter to feed the fire.

The base A' is formed with perforations *a*, leading into the space between the drum B' and the magazine, up through which the air-currents will pass to insure the requisite circulation of the air surrounding the drums.

The cover D<sup>6</sup> of the magazine D' is remov-

able, so that the magazine can be supplied with fuel.

A diaphragm may be placed horizontally in the U-shaped drum B', as indicated by dotted lines at *e'*, to cause the air to first pass entirely around the interior of the U-shaped drum in its lower part below the diaphragm and thence entirely around the interior of the drum above the diaphragm before it can escape to the exit-flue, which in that instance will be placed on the same side of the drum B' as the inlet-flue B<sup>3</sup>, as shown by dotted lines at *e''*. When the diaphragm is employed, a damper will be placed in it at *e''*, so as to secure a direct draft in first starting the fire. By this simple arrangement the fuel burns slowly and evenly from the bottom, and the heat radiating from it is utilized to the fullest extent to heat the surrounding atmosphere, not only by causing it to pass around through the U-shaped drum, but also to insure the circulation and heating of the air passing upward between the drum B' and magazine D'. The drum and magazine will preferably be formed of sheet metal, but may be of cast-iron or other metal.

Having thus described my invention, what I claim as new is—

1. In a straw and hay stove, a drum having hollow walls and resting on a base and having the outlet-flue leading therefrom, and a removable fuel-magazine within said drum and communicating therewith near the bottom, whereby the products of combustion pass through said drum on their way to the outlet-flue, substantially as set forth.

2. In a straw and hay stove, a base, a U-shaped drum having hollow walls and resting on said base and with the outlet-flue leading therefrom, a fuel-magazine removably supported upon said base within said U-shaped drum, and means for removably connecting said fuel-magazine to said drum, substantially as and for the purpose set forth.

3. In a hay and straw stove, a base, a U-shaped drum mounted upon said base and with the outlet-flue leading therefrom, a horizontal diaphragm within said drum, a fuel-magazine supported removably within said drum and means for connecting said magazine and drum, whereby the products of combustion pass through said drum in two com-

plete circuits on their way to the exit-flue, substantially as set forth.

4. In a hay and straw stove, a base, a U-shaped drum supported upon said base, a fuel-  
5 magazine resting upon said base within said drum and with a space between them, means for connecting said magazine and drum to cause the products of combustion to pass through said drum, and perforations through  
10 said base between said drum and magazine,

whereby the circulation of the atmosphere is insured, substantially as set forth.

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

AZRO D. ELLIS.

Witnesses:

LEWIS D. MANN,  
C. N. WOODWARD.