

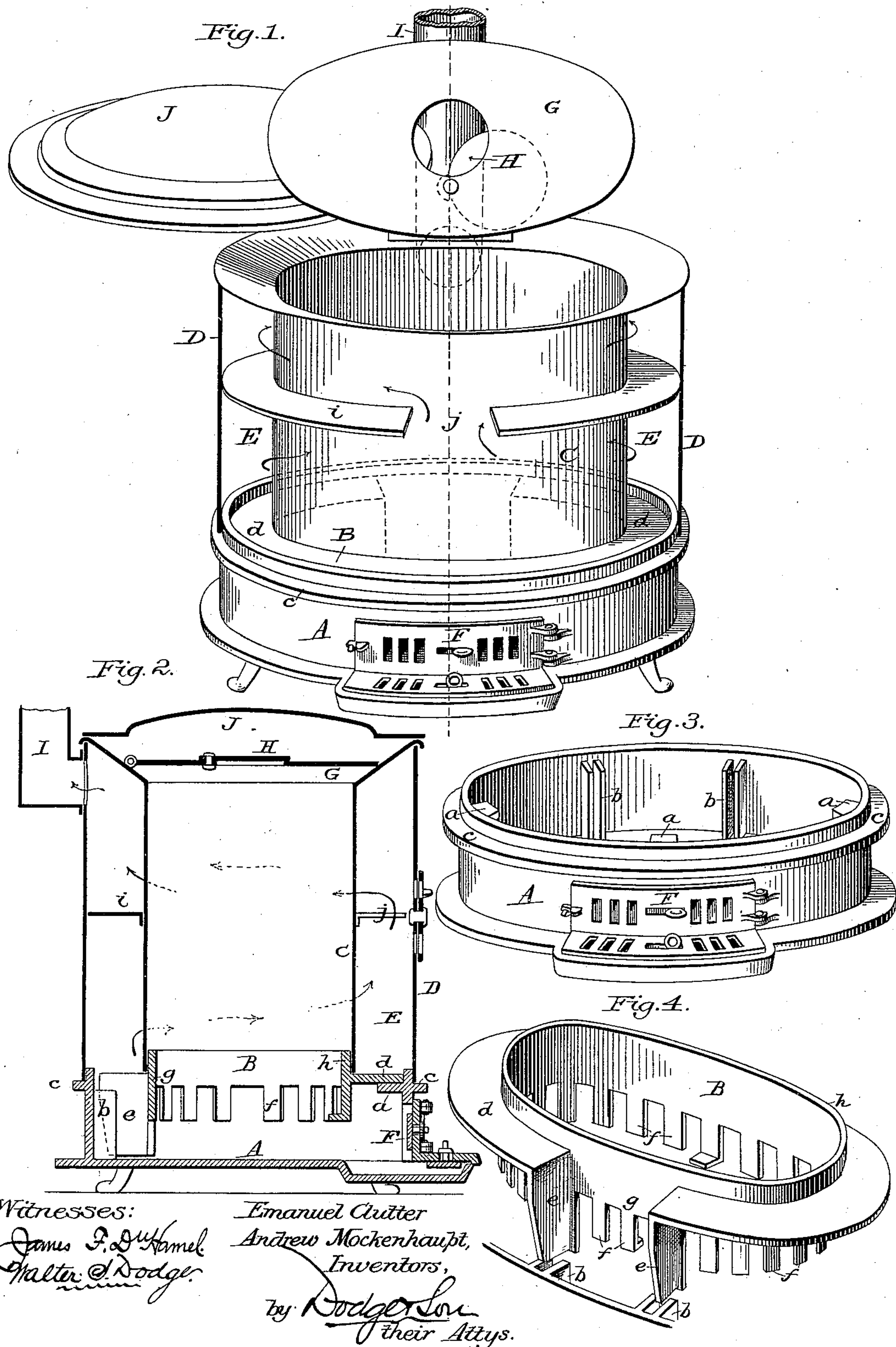
(No Model.)

E. CLUTTER & A. MOCKENHAUPT.

STRAW BURNER.

No. 352,607.

Patented Nov. 16, 1886.



UNITED STATES PATENT OFFICE.

EMANUEL CLUTTER AND ANDREW MOCKENHAUPT, OF PIERRE, DAKOTA TERRITORY, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE NORTH WESTERN STRAW FUEL COMPANY, OF SAME PLACE.

STRAW-BURNER.

SPECIFICATION forming part of Letters Patent No. 352,607, dated November 16, 1886.

Application filed April 21, 1886. Serial No. 199,620. (No model.)

To all whom it may concern:

Be it known that we, EMANUEL CLUTTER and ANDREW MOCKENHAUPT, of Pierre, in the county of Hughes and Territory of Dakota, have invented certain new and useful Improvements in Straw-Burners, of which the following is a specification.

Our invention relates to straw-burners, and has for its object to simplify and cheapen the construction and obtain the greatest possible amount of heating-surface.

In the drawings, Figure 1 is a perspective view of the improved burner, partly in section; Fig. 2, a vertical central section of the same from front to rear; and Figs. 3 and 4, views illustrating certain details hereinafter referred to.

The burner in its general appearance resembles an ordinary stove, and comprises a base, A, a grate-section, B, a magazine, C, and an encircling case or jacketing, D, the latter two forming a chamber, E, as clearly shown in Figs. 1 and 2.

The base-section or ash-chamber A is closed at the bottom, formed with a door, F, having suitable valved openings, furnished with three or more inwardly-projecting lugs, *a*, provided with two vertical grooved guides, *b*, and finally with a laterally-extending circumferential flange, *c*, as clearly shown in Figs. 1, 2, and 3.

The grate B, as clearly shown in Figs. 2 and 4, is provided with a laterally-extending flange, *d*, to rest upon the lugs *a* of section A, the flange *d* extending nearly all the way round the grate to its rear side, while it is formed into downwardly-extending arms *e*. These downwardly-extending arms *e* fit into the sockets or guides *b*, as shown in Fig. 2, and aid in supporting the grate and preventing lateral movement thereof. The grate is further provided along its lower edge with a series of fingers or bars, *f*, as shown in Figs. 2 and 4, several of these fingers having their lower ends bent inward, as shown, to support and hold the bundle or bale of straw, and prevent the latter from dropping down out of place.

The grate B, with its flange *d* and fingers or bars *e f*, will preferably be cast in one piece.

It will be noticed that the ends of the flange *d*, where they are turned down to form arms *e*, are separated quite a distance, as clearly shown in Fig. 4, and form an outlet or opening, *g*, for the smoke, &c.

The grate B is provided with an upright flange, *h*, around which is fitted the magazine C, as clearly shown in Fig. 2, the magazine resting upon the lateral flange *d* of the grate. The magazine is elliptical in cross-section, and is provided with vertical side walls, which are partially encircled by a flange, *i*, which, as shown in Fig. 1, is cut away to form an outlet or opening, *j*, at the front side of the magazine. The walls of the magazine are flared outwardly at their upper ends, as shown in Figs. 1 and 2, pass over and rest upon the upper edge of the jacket D, and form the top of the chamber E. From this construction it will be seen that the dirt and loose straw falling from the bundle, on being placed in the magazine will be caught by this projecting flange or flared end and prevented from falling on the floor. The magazine is furnished with a door, G, (shown in Figs. 1 and 2,) which is provided with a valve or damper, H.

It will be noticed that the chamber E, formed by and between the magazine C and the jacket D, extends entirely around the former, is partially closed at its bottom by the flange *d*, and is closed at its top by the flared mouth of the magazine. The flange *i* divides the chamber E horizontally at a point about midway of its height, as clearly shown in Figs. 1 and 2.

The incasing-jacket D is provided with a smoke flue or outlet, I, communicating with the chamber E at its upper end at the rear.

The burner is provided with a laterally-swinging cover, J, as clearly shown in Figs. 1 and 2, which, when it is in its normal position, rests upon the top of the flared mouth of the magazine.

The straw used in this burner will preferably be baled into a comparatively compact mass; but this is not essential.

The smoke and flames pass up on the rear side of the grate through the opening *g* into the chamber E, where they are caused to travel to the front side of the burner by the flange *i*.

The smoke and flames now escape through the opening *j* and pass around the magazine to the rear side, where they escape through the pipe or outlet I.

5 It will be noticed that the smoke and heat pass entirely around the magazine C, in contact with the jacket D, twice before being discharged, and the heat is thus utilized to the fullest extent.

10 Having thus described our invention, what we claim is—

1. In combination with base A, grate B, resting thereon, magazine C, resting upon said grate and provided with a flared mouth, and a jacket, D, resting upon the base A, and encircling the magazine and forming an intermediate chamber, E, as and for the purpose set forth.

20 2. In combination with base A, having lugs *a*, grate B, provided with a flange, *d*, to rest thereupon, and with an outlet, *g*, magazine C, provided with flange *i* and opening *j*, and jacket D, all arranged substantially as shown.

3. In a straw-burner, the combination, with base-section A, provided with lugs *a* and sockets *b*, of grate B, provided with flange *d* and arms *e*, arranged substantially as shown. 25

4. The grate B, having the inwardly-turned fingers *f* rigidly secured on two or more sides, when combined and arranged to operate substantially in the manner shown. 30

5. The herein-described straw-burner, comprising base A, grate B, provided with flange *d*, opening *g*, and bent fingers *f*, magazine C, provided with flange *i*, opening *j*, and a flared mouth, incasing-jacket D, provided with outlet I, cap J, and door G, secured to the top of the magazine. 35

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Witnesses:

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