

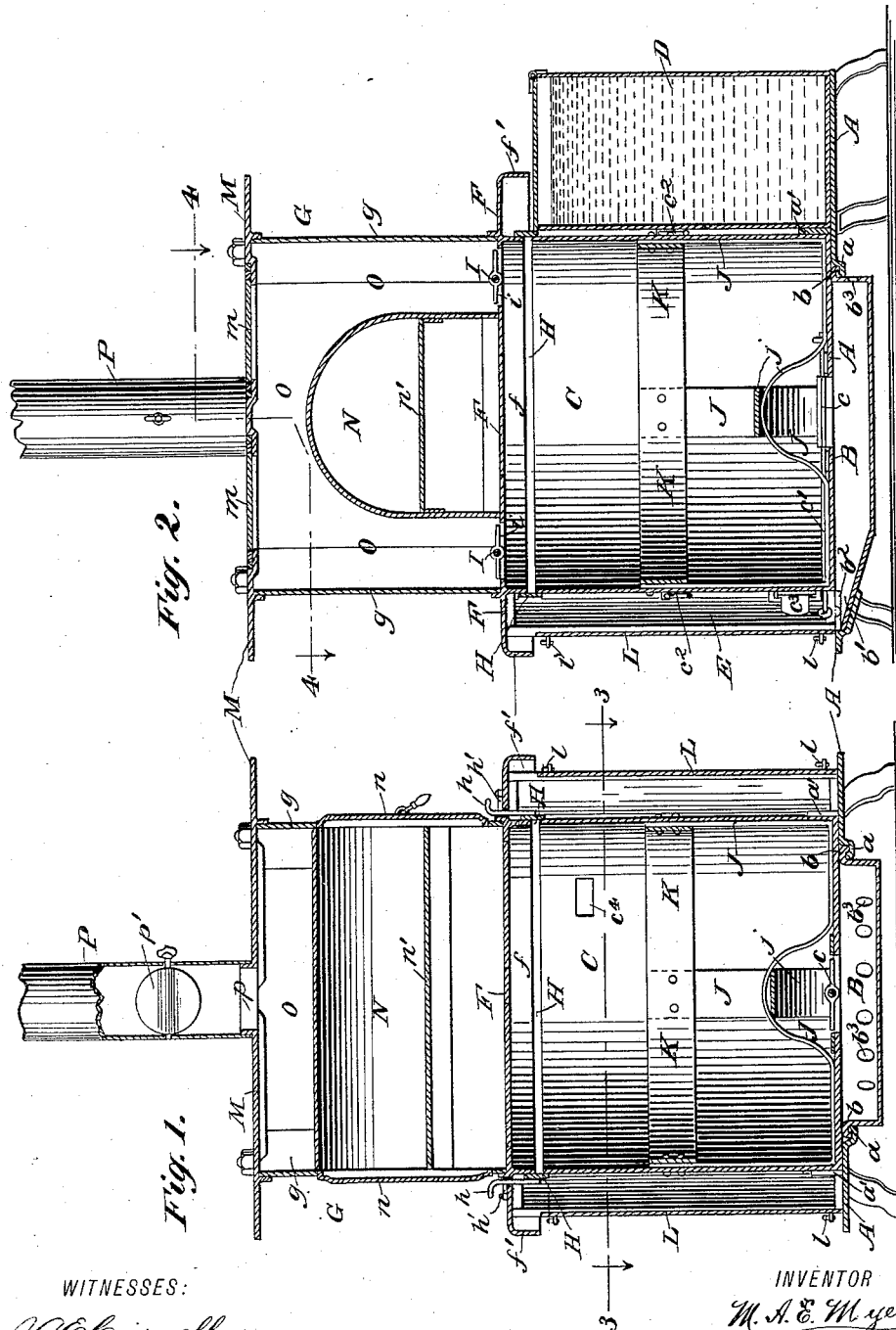
(No Model.)

2 Sheets—Sheet 1.

M. A. E. MYERS.
STRAW BURNING STOVE.

No. 417,879.

Patented Dec. 24, 1889.



WITNESSES:

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MARTHA A. E. MYERS, OF ALBIA, KANSAS.

STRAW-BURNING STOVE.

SPECIFICATION forming part of Letters Patent No. 417,879, dated December 24, 1889.

Application filed April 25, 1889. Serial No. 308,523. (No model.)

To all whom it may concern:

Be it known that I, MARTHA A. E. MYERS, of Albia, in the county of Washington and State of Kansas, have invented a new and Improved Straw-Burning Stove, of which the following is a full, clear, and exact description.

My invention relates to stoves specially adapted for burning straw, stubble, or barn refuse, and has for its object to provide a simple, inexpensive, easily-operated, and efficient stove of this character.

The invention consists in certain novel features of construction and combinations of parts of the stove, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a transverse vertical section of the stove, taken on the line 1 1 in Fig. 3. Fig. 2 is a vertical sectional view taken at right angles to Fig. 1 and on the line 2 2 in Fig. 4. Fig. 3 is a plan view of the stove in horizontal section on the line 3 3 in Fig. 1. Fig. 4 is a plan view partly in section and on the line 4 4 in Fig. 2. Fig. 5 is a front view of the fuel-magazine of the stove, and Fig. 6 is a front elevation of a modified form of the stove adapted only for heating purposes. Fig. 7 is a detail view to better show ring *f* and its adjusting devices.

The bottom or base plate A of the stove has a general rectangular form, rounded at the corners, as shown in Fig. 3 of the drawings, and is provided with a central opening surrounded by a hook-shaped lip or flange *a* to receive the marginal lip *b*, formed on the upper edge of the removable ash-pan B, which has a rounded form horizontally for the most part, and is provided with a front lip or portion *b'*, which projects forward beyond the fuel-magazine C and is covered by a damper-plate *b''*, by removing which a shovel may be introduced into the ash-pan to clear it of ashes at any time. The general form of the ash-pan is shown in dotted lines in Fig. 3 and in full lines in Figs. 1 and 2 of the drawings. The latter figures also show a series of holes *b'''*, preferably six holes, in the rear wall of the ash-pan to give draft to the stove from below. The base-plate projects rearward from

the fuel magazine sufficiently to support a hot-water heater D behind and next the magazine, the heat from the side wall of which warms the water in the heater. The heater has upper hinged covers or lids *d d'* to admit a dipper or vessel to remove the hot water, and the heater is preferably held closely but removably to the hot-fuel magazine by a couple of hooks *d' d''*, engaging eyes fixed to the two rear legs or standards E E, which, with two like front legs, support the cooking-stove proper and its oven above the fuel-magazine.

The four standards E are preferably made of cast or wrought iron, and are bolted securely to the main base-plate A and to the bottom plate F of the stove proper G to sustain it above the fuel-magazine. The base-plate A is provided with an upwardly-extending semicircular flange *a'*, which serves as a guide and stop to the fuel-magazine C to center it in proper position after it is slid or pushed in between the two front standards E of the structure. When the magazine is thus adjusted, it will be immediately below a vertically-movable ring H, which is fitted loosely on a depending flange *f* of the bottom plate F of the stove G. This ring is provided with a pair of oppositely-disposed lifter-bars *h h'*, which project upward through the stove-plate F, and have a couple of notches or holes, with either of which a spring *h'* on the plate F may engage to either hold the ring H up clear of the top of the exhausted fuel-magazine C while it is being removed and a freshly-filled magazine is put into its place, or to lock the ring in place on the magazine. Two magazines are supplied with each stove to allow one to be filled with straw, cornstalks, barn-refuse, or other light fuel of this character while the other magazine is in use in the stove. It is obvious that when the freshly-filled magazine is put in place and the spring catches *h'* are disengaged from the ring lifter-bars *h* the ring may be let down onto the top of the magazine to make a tight joint therewith and confine the products of combustion below the stove-plate F, except as they are allowed to escape through one or more of a series of holes *i*, having dampers I, adjustable by means of stems *i'*, extending through the side walls of the stove G, for purposes here-

inafter explained. The plate F is preferably provided with a pendent marginal flange f' , which conceals the magazine-cap ring H from view.

5 The fuel-magazine C is peculiarly constructed, as follows: It is made principally of sheet metal, and at the center of its bottom is provided with a draft-opening controlled by a damper c , operated by a stem or handle
10 c' , extending through the front wall of the magazine. The damper c is protected from clogging by the fuel placed in the magazine by means of a guard consisting of the raised crossed central parts j, j of two metal plates
15 J J, which extend across the bottom of the magazine and are bent upward at opposite ends and next the inner face of the magazine side wall. The upper extremities of these plates J J are riveted to a plate-metal
20 ring or band K, which extends horizontally around the magazine about half-way up its side wall. The plates J J and ring K, when secured to each other and to the magazine, make a strong skeleton-frame re-enforce to its sheet-metal sides and bottom to
25 protect it from being battered out of shape by rough handling, to which such structures are ordinarily subjected. Opposite handles c^2, c^2 on the magazine are pivoted to it where
30 the bearings or fastenings of the handles may pass through the re-enforcing frame J K, whereby a most substantial connection of the handles is assured. The fuel-magazine is also provided with a lower sliding damper c^3
35 in its side wall at the front and with a number of sliding dampers c^4 in its side wall near its top and disposed equidistant around the magazine. I prefer to use three upper dampers c^4 and but one lower damper c^3 ; but the
40 number may vary as may be preferred.

To protect persons' clothing from the heat radiated from the fuel-magazine, I purpose using sheet-metal plates L at the three sides
45 not occupied by the hot-water heater, or at all four sides should this heater not be used. These guard-plates are preferably held around the magazine by hooks l , engaging
50 eyes on the standards E of the stove structure, and as shown in Figs. 1, 2, and 3 of the drawings.

I particularly describe the stove proper G as follows: The side walls g of the stove are held securely between its bottom plate F and
55 top plate M by bolts f^2 , extending between said plates. The oven N of the stove extends transversely across the interior of the stove-body at its center and fits closely at its ends to two opposite walls of the body, where-
60 at the oven is provided with suitable doors n, n , giving access to it. The oven is narrower than the stove-body and also lower than it, and has an arched top, thereby providing a hot-air chamber O within the stove-body and
65 said chamber having communication with the fuel-magazine through the openings i in the plate F, controlled by the dampers I and hav-

ing an outlet to any suitable chimney-flue or to the atmosphere through a pipe P, fitted to an opening p at the center of the top plate M. The plate M is provided with a series of holes
70 or openings covered by ordinary lids m , and, it may be, by rings m' outside these lids, to accommodate kettles, pans, or other cooking-vessels. I prefer to make four openings in
75 the stove-top to receive these vessels, thus allowing four different articles of food to be cooked at once on the stove-top, while one or more substances may be cooked inside the
80 oven N, which preferably has a shelf n' dividing it into upper and lower compartments. The pipe P is provided with an ordinary damper p' , by which the draft through the
85 stove may be controlled.

When the freshly-filled fuel-magazine C is
85 adjusted on the main plate A below the stove proper G and the ring H is adjusted to the top of the magazine, the fuel will be lit at the top through one of the upper draft-damper
90 openings, and the fire burns downward and toward the center of the magazine. When the three upper magazine-dampers c^4 are shut and the lower damper c^3 and the pipe-damper
95 p' are open, the fire burns fast and hotly, and when the dampers c^4 are open and the dampers c^3, p' are closed or partly closed the fire
100 burns more slowly. One or more of the dampers I in the plate F will also be opened to control the draft to the flue-pipe P and around the oven N, which will be evenly heated by
105 proper manipulation of the dampers I, causing the hot products from the magazine to pass up at both sides of and over the top of the oven to the center flue P to cause even
110 and perfect baking or cooking of any substances placed in the oven. A proper manipulation of the center draft-damper c at the bottom of the magazine will control the draft
115 to the magazine through the openings b^3 of the ash-pan B, and the ashes from the fuel will fall directly through the center bottom opening past the damper c into the ash-pan, thus preventing the stove from clogging up with the ashes and assuring complete and perfect combustion or consumption of the
120 fuel.

It will be noticed that in my stove there are no pipes which could easily clog with soot and creosote to interfere with a well-regulated draft through the stove, and the free es-
125 cape of ashes through the center draft-opening of the magazine prevents clogging by ashes, and what little stirring of the fire is required may be done through the lower draft-opening past the damper c^3 . After re-
130 moval of the magazine C the ash-pan B may be lifted from the bottom plate A and its contents disposed of, and the pan be replaced before a freshly-filled magazine is set into the stove structure.

In the modified form of stove shown in Fig. 6 of the drawings the upper combustion-chamber and oven are dispensed with, and the top plate M', having a central draft-pipe P', is

held directly to the tops of three standards E, between which the fuel-magazine C is supported on the base-plate A above the ash-pan, this magazine having upper and lower drafts 5 c^4 c^3 and a central lower damper c , and is substantially like the fuel-magazine for the cooking-stove, except that it is higher for its width, the object being to secure a great heat-radiating surface and a small floor-space for 10 the stove. The vertically-movable ring-plate H is also employed with the heating-stove, and is held to its top plate M', and is operated in the same manner as in the cooking-stove.

15 I purpose fitting a couple of stove-lids into holes made in the plate F within the oven, as indicated in dotted lines in Figs. 1 and 2 of the drawings, to allow frying-pans or other cooking-vessels to be used on these holes 20 when the fire in the magazine is low, as will readily be understood.

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

25 1. In a straw-burning stove, the fuel-magazine made with a bottom opening provided with a swinging damper and with arched plates over the damper as a guard thereto, substantially as herein set forth.

30 2. In a straw-burning stove, the fuel-magazine made with a bottom opening, a swinging damper therein, and a re-enforcing frame consisting of bottom plates J, bridged or arched at j above the damper and extending 35 up the sidewalls of the magazine, and a ring K at the tops of the plates J, both plates and ring secured to the magazine-walls, substantially as herein set forth.

40 3. In a straw-burning stove, the combination, with a main base-plate, standards thereon, and a vertical removable fuel-magazine

on the base-plate between the standards and having an open upper end, of a cook-stove body supported by the standards above the magazine and having a central oven provid- 45 ing a chamber at the sides and top thereof, the bottom of the stove-body forming the top of the said fuel-magazine and having openings outside the oven leading into said magazine and provided with dampers, and the top 50 plate of the stove-body having a central draft pipe or flue, substantially as herein set forth.

4. In a straw-burning stove, the combination, with a main base-plate A, standards E thereon, and a vertical removable fuel-maga- 55 zine on the plate A, of a cook-stove G, supported on the standards above the magazine and having a bottom plate F, forming the top of said magazine, and provided with open- 60 ings i leading into the magazine, dampers I, fitted at said openings, an oven N, abutting opposite sides of the stove-body and having doors thereat and forming a chamber O at the sides and top of the oven, said stove-body having top cooking-vessel holes, and a draft- 65 flue P, disposed centrally between said holes and above the oven, substantially as herein set forth.

5. In a straw-burning stove, the combination, with a base-plate, a fuel-magazine there- 70 on, standards on the base-plate, and an upper plate held to the standards and provided with a pendent flange, of a ring fitted loosely on the flange and provided with notched lifter-bars passing through the upper plate, and spring- 75 catches for said lifter-bars, substantially as herein set forth.

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Witnesses:

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LILLIE A. MYERS.