

(No Model.)

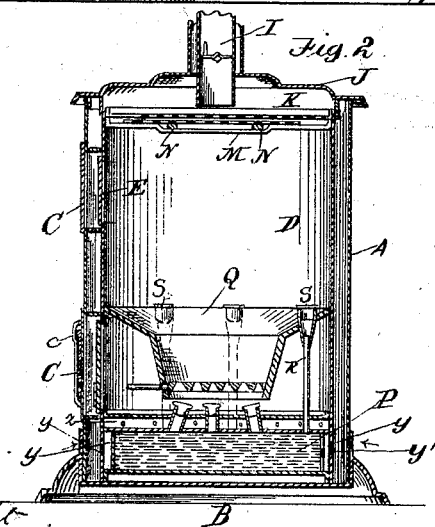
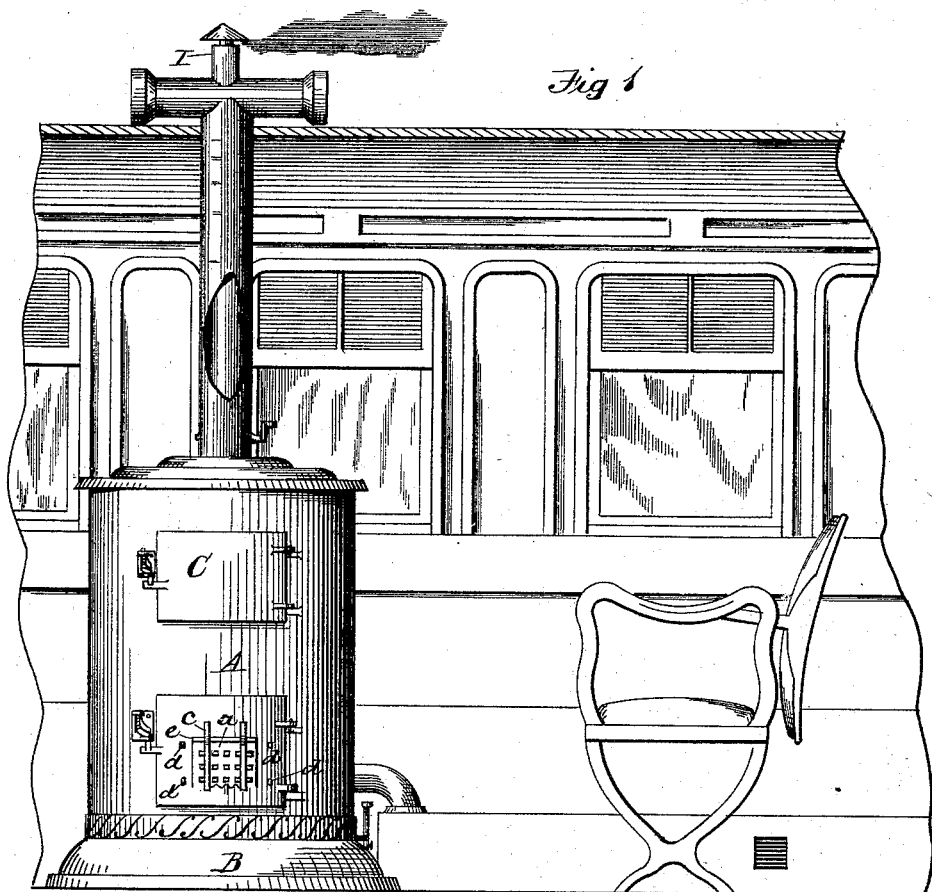
2 Sheets—Sheet 1.

W. F. CONDON.

SELF EXTINGUISHING STOVE AND VENTILATOR.

No. 263,118.

Patented Aug. 22, 1882.



WITNESSES:

W. H. Knight
J. C. Ross

INVENTOR:

W. F. Condon

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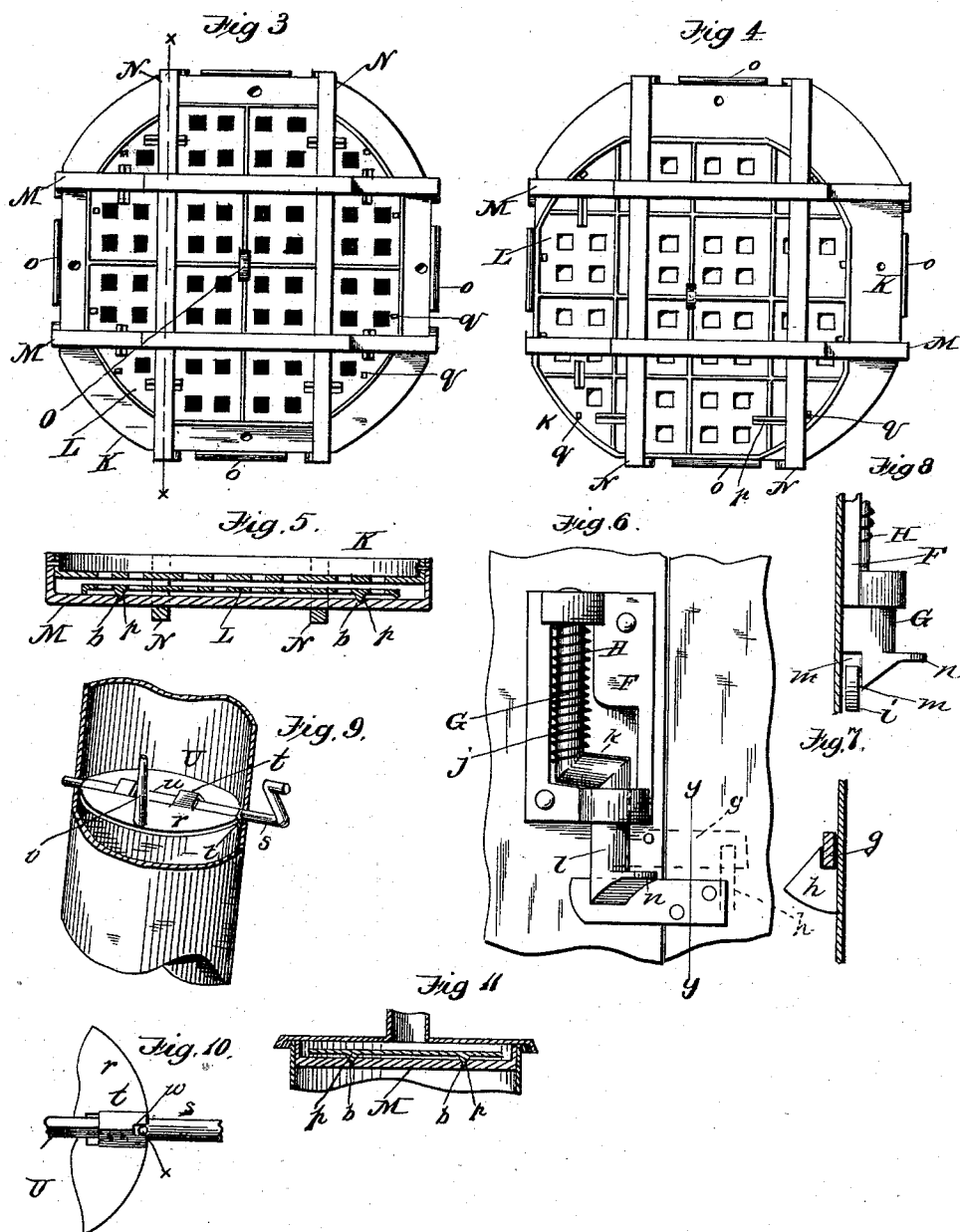
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UNITED STATES PATENT OFFICE.

WILLIAM F. CONDON, OF EAST SAGINAW, MICHIGAN.

SELF-EXTINGUISHING STOVE AND VENTILATOR

SPECIFICATION forming part of Letters Patent No. 263,118, dated August 22, 1882.

Application filed July 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. CONDON, a citizen of the United States, residing at East Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in a Self-Extinguishing Stove and Ventilator, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of the stove in position in a car; Fig. 2, a longitudinal section through the stove; Fig. 3, a plan view of under side of stove-top with holes open; Fig. 4, a like view with holes closed; Fig. 5, a section on line *x x* of Fig. 3; Figs. 6, 7, and 8, details of catch for the door; Figs. 9 and 10, details of damper, and Fig. 11 section through valve when made solid and to fit against top of stove.

My invention relates to a self-extinguishing stove and ventilator; and it consists in the construction and combination of parts hereinafter particularly described, and then sought to be specifically defined by the claims.

In the accompanying drawings, the letter A indicates the jacket to the stove, which rests on a base, B. The jacket has swinging doors C, provided with self-acting shut-offs *a*, held in place by cross-straps *c* and studs *d*, and incloses the stove-cylinder D. This cylinder is provided with hinged or sliding doors E, which have self-acting grated shut-offs held in place by cross-straps and studs the same as the doors to the jacket. The doors have a rib, *e*, across their face, which rests on a lug or in a groove formed on the inside of the straps *c*, so as to prevent the doors from turning and to serve as a guide to their movement. The shut-offs are free to slide endwise and vertically, and are provided with notches *f* on the lower edge to engage with a lug or pin on the stove, so as to be prevented from jarring endwise out of place after the valve has been adjusted to either an opened or closed position. The doors are held by the hook *g* and catches *h* on the inside of the stove, as in the ordinary stove-doors, and as an additional security they are secured by means of a spring-lock made to engage with a lip, *i*, formed on the front edge of the door.

The lock consists of a casing, F, bolted or

otherwise secured to the outside of the cylinder or jacket next to the door, and a bolt, G, preferably of the form shown—that is, having a shank, *j*, encircled by a spiral spring, H, a shoulder, *k*, to limit its movement, a tongue, *l*, having recess *m* to fit over the lip *i* of the door, and a thumb-piece, *n*, for use in unfastening the lock, the end of the tongue being inclined or beveled from its recess to the thumb-piece, so that when the lip strikes the end of the bolt it will gradually move the bolt upward till the lip passes into the recess, when the spring will force down the bolt and hold it over the lip. The door will thus have a double fastening and be doubly secure.

The smoke-flue I is surrounded by a jacket to form an air-channel, and is capped by a two-way air-duct, and passes upward from the top of the inside cylinder through the outside casing. The top J is bolted to the cylinder, and has bolted to its under side a grated plate, K, which has cast therewith or bolted thereto pendent lips *o*, for purposes hereinafter explained.

Beneath the grated plate K a grated valve, L, is secured by rods M and cross-bars N, both having upturned ends, through which bolts pass to hold them to the plate K. The grated valve is free to move in all directions, and is provided on its under side with V-shaped ribs *p*, which normally fit into correspondingly-shaped ways or grooves *b*, formed in the rods M and bars N, so as to prevent the valve from being jarred by the movement to close the openings in the grated plate, and yet permit the valve, when the stove is overturned, to rise till the ribs are out of the grooves and then slide to close the openings and prevent the escape of live coals. In practice the ribs will not rise entirely from out of their grooves, but only to the top edge thereof, so that when the stove is righted the lids will slip down the inclines of their grooves and thus quickly adjust the valve to its proper and normal position. If, however, the valve be made, as it may be, to slide until the ribs are entirely from out of the grooves, the groove will serve as a guide to the replacement of the valve, for as soon, in the movement of the valve, as the ribs strike the incline of the grooves the valve will fall into its position. As already stated, the valve

fits loosely between the grated plate and the rods and bars, so as to fall and fit snugly against the grated bar and also slide so as to bring the solid portions thereof over the opening in the plate when the stove is overturned. The ends of the valve are rounded and its sides straight, and to prevent the valve from turning too far in either direction lugs *q* are cast or otherwise formed thereon, so as to be on opposite sides of the supporting-rods, and when they are swung, with the valve, against the rod the movement of the valve is checked. The movement or play thus allowed to the plate is such that when the edge of the straight portion of the valve strikes against the pendant lip on the grated plate the valve will swing around until it fits squarely between the plate and the bars. The movement just described closes or shuts off the openings in the grated plate, so that no fire can escape, and when the V-shaped lips and grooves are not used the valve can be moved so as to uncover the openings by means of a finger-pin, *O*, on the bottom of the valve. It will rarely, if ever, happen that the jerking or rolling of the car will move the valve so as to close the openings unless in case of the stove overturning; but when the V ribs and grooves are used the valve will at all times, whenever necessary, readily adjust itself, so that with the ribs and grooves the valve may be said to work automatically.

Instead of making the valve grated, it may be made solid, and in that event the smoke will pass around the edges of the valve, and then in between the valve and upper plate, and thence out through the smoke-flue.

Within the lower part of the cylinder there is sustained a water-tank, *P*, which may be removable or fixed, and above it is the fire-pot *Q*. The tank and pot are connected by pipes *R*, which pass out from the tank through the flaring flange around the top of the pot. These pipes, instead of being elbowed to prevent water from splashing from the tank into the pots, are provided with capped plugs *S*, the stems of which fit down into the tubes and the caps on their mouths. These capped plugs effectually prevent the water from splashing and the pipes from becoming stopped up with cinders, and yet, in the event of an accident and the overturning of the stove, will easily fall out of the pipes and allow the water to flow onto the coals to extinguish the fire. Other tubes, *T*, likewise plugged, extend from the tank to the under side of the pot, converging toward the center thereof, so that in the event of the stove turning over water will be thrown onto both the top and bottom of the fire in the pot. The tank may be provided with an indicator and a cock to indicate the depth of water therein, and for the withdrawal of water therefrom.

The smoke-flue is provided with a damper, *U*, composed of the valve *r* and rod *s*. The valve is formed with oppositely-inclined

V or other suitably shaped collars *t*, arranged, substantially as illustrated, so as to hold the rod *s* when passed through them, as shown. It is further formed with slot *u*, for the escape of smoke, an arm, *v*, at a right or other angle to the face of the valve, to strike against the sides of the pipe on one side or the other, as the valve is closed or opened, so as to prevent the valve from turning around, and to weight it so as to hold it either open or closed. The position of the handle of the rod is also such as to aid in holding the valve either horizontal or perpendicular. The end of one of the V-shaped collars next to the rod-handle is formed with a notch, *w*, to receive a pin, *x*, on the rod, which pin will prevent the rod from being drawn out of its bearings in the valve while the valve is in the pipe. It will also prevent the rod from turning in the valve, if a round instead of other shaped rod be used.

Instead of the arm *v*, a lug or pin may be made on the inside of the smoke-pipe, so that when the edge of the valve strikes it the rotation of the valve will be checked.

The lock to the stove-door is represented as on the jacket; but it will be understood that it may be on the inside instead of the outside doors, and in practice it usually is on the inside door. It may, however, be placed on both the inside and outside doors, and the self-acting shut-offs may likewise be on both inside and outside doors; but they are generally placed on the lower doors only.

The jacket and cylinder are bolted to each other and to the base in the manner shown in my patent, No. 210,918, dated December 7, 1878.

The water-tank is made somewhat smaller in diameter than the inside cylinder, so as to leave an air-space, *y*, around the same, into which air passes through openings *y'* made in the cylinder, and then up into the air-chamber *z* above the tank. By so constructing the parts the water in the tank is kept cooler than when the parts are otherwise constructed.

If desired, the water-tank may be set upon legs and air admitted through openings in the cylinder into the space thus formed between the casing and bottom of the tank.

The door-fastenings and the damper above described I do not herein claim specifically, but reserve the right to make these inventions the subject of separate applications.

Having described my invention, what I claim is—

1. The combination, with the valve constructed and operated, as described, to close the stove-exit, and a stove-door having a fastening-lip, of a spring-actuated bolt having a beveled end, adapted to be raised by the lip of the door striking against the same and then by the spring forced over the lip, substantially as set forth.

2. The combination, with a stove and its smoke-escape, of a valve having a horizontal, circular, and vertical play, and provided with

lugs to limit its circular movement, substantially as set forth.

3. The combination of a stove and its smoke-escape, a valve having a horizontal and vertical play, and provided with a bead on its bottom face, and a bar for the valve to play on, provided with a groove corresponding to the bead for its reception, substantially as set forth.

4. The combination, with a stove and its smoke-escape, of a horizontally and vertically moving valve provided with lugs projecting below its face, transverse rods for the valve to move on and the lugs to strike against, and pendent lips for the edge of the valve to strike against, substantially as set forth.

5. The combination of a stove and its smoke-escape, a plate, K, provided with pendent lips, *o*, a valve, L, provided with lugs *q* and ribs *p*, and rods M, provided with grooves *b*, substantially as set forth.

6. The combination of a stove, a fire-pot, Q, water-tank P, and pipes connecting water-tank and fire-pot, provided with plugs S, substantially as set forth.

7. The combination of a stove, fire-pot Q, water-tank P, pipes R, connecting the water-tank with top of fire-pot, pipes T, converging from the water-tank to the bottom of the fire-pot, and plugs S, for closing the pipes, substantially as set forth.

8. The combination, with a stove-door, of a valve, *a*, provided with a bead, *e*, and a strap for holding the valve to the door, provided with a recess for the bead on the valve, substantially as and for the purpose set forth.

9. The combination of a cylinder, D, water-tank P, and communicating air-spaces *y z* around and above the water-tank, substantially as set forth.

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

WILLIAM F. CONDON.

Witnesses:

A. J. HENDERSON,
WM. G. HENDERSON.