W. F. CONDON.

Self-Extinguishing Stove.

No. 210,918. Patented Dec. 17, 1878.

Fig. 1.

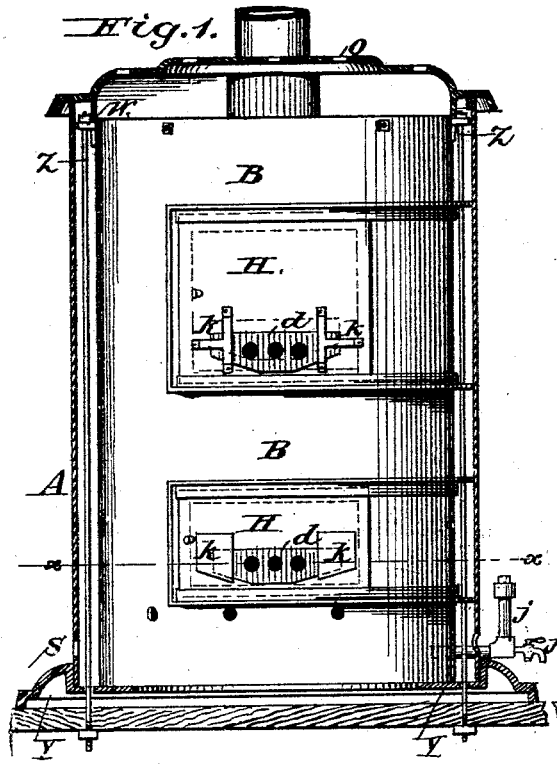


Fig. 2.

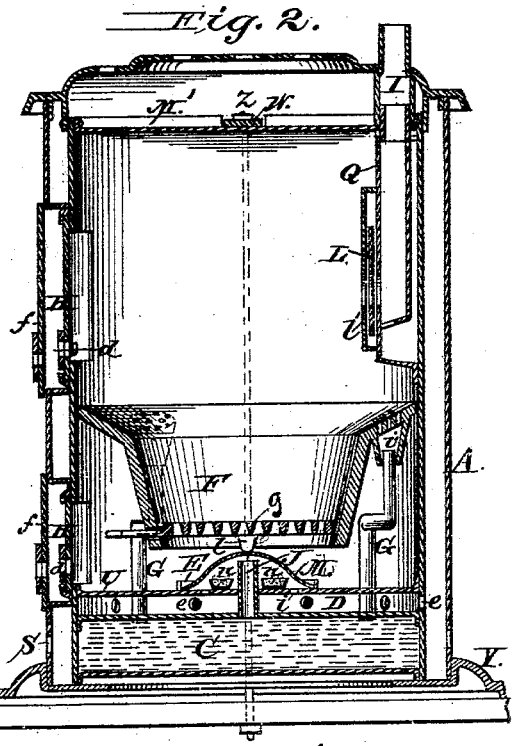


Fig. 3.

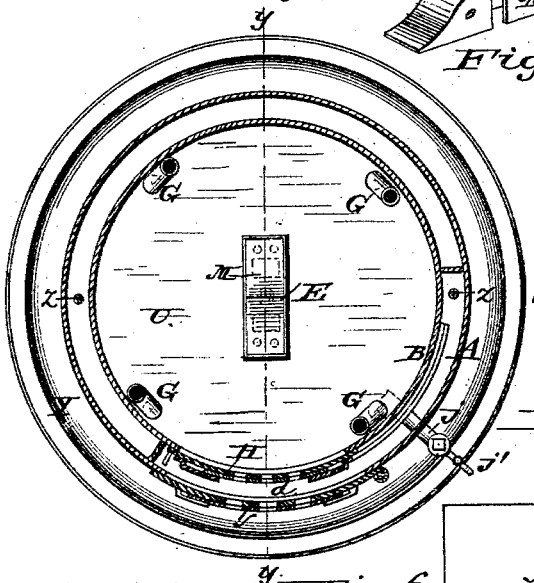


Fig. 4.

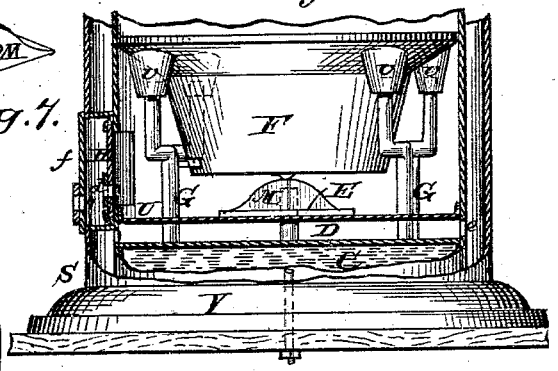


Fig. 4.

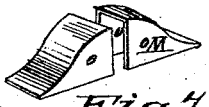


Fig. 5.

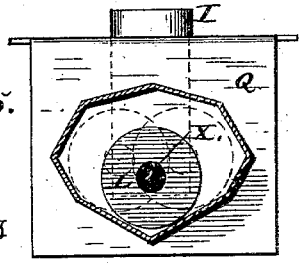
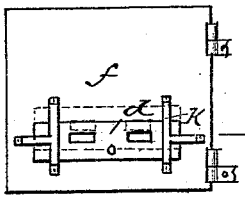


Fig. 6.



Attest:

H. C. Dennis

Wm. G. Henderson.

Inventor.

William F. Condon

UNITED STATES PATENT OFFICE.

WILLIAM F. CONDON, OF ZILWAUKEE, MICHIGAN.

IMPROVEMENT IN SELF-EXTINGUISHING STOVES.

Specification forming part of Letters Patent No. **210,918**, dated December 17, 1878; application filed December 9, 1878.

To all whom it may concern:

Be it known that I, WILLIAM F. CONDON, of Zilwaukee, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Self-Extinguishing Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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.

Figure 1 is a vertical view, with section of jacket broken away. Fig. 2, a vertical section through *y y* of Fig. 3; Fig. 3, a cross-section through *x x*, Fig. 1; Fig. 4, a section of lower part of stove, with jacket and cylinder broken away to show the fire-pot; Fig. 5, a detached view of smoke-flue, with valve-casing; Fig. 6, a detached view of a door, with cut-off valve; and Fig. 7, a perspective of sectional cover to salt-chamber.

My invention relates to self-extinguishing fire-stoves; and consists, first, in making the stove-cylinder in one piece, with fire-pot, air-chamber, and water-chamber within it; secondly, in the combination of the stove-cylinder and jacket, having doors provided with sliding shut-offs; thirdly, in providing within the interior of the stove-cylinder a water-tank, with an air-chamber above the same; fourthly, in connecting the fire-pot and water-tank by means of pipes; fifthly, in the construction of the fire-pot; and, sixthly, in providing a salt-chamber within the interior of the stove-cylinder, over the air-chamber and beneath the fire-pot, all of which will be hereinafter more particularly set out.

In the accompanying drawing, the letter A indicates the jacket to the stove, which jacket rests on the base *y*. This jacket has two swinging doors, *f f*, one above the fire-pot and the other below, and both provided with self-acting shut-offs *d*, admitting of a vertical and side adjustment. These shut-offs are held in position by means of guards K, and their function is to close the openings in the doors if the stove should be overturned, so as to cut off all draft, and thus assist in extinguishing the fire and preventing all particles of the burning material from falling out. This jacket has also a perforated top, O, to let off hot air, and also has perforations S, near its bottom, to let in cool air. The base on which this jacket rests may be bolted direct to the floor, or it may be supported on legs resting on the floor. Within this jacket and resting on the same base is the stove-cylinder B, which is provided with sliding doors H, opposite to the doors of the jacket, and provided with self-acting shut-offs *d*, constructed and operating the same as the shut-offs to the jacket-doors. Within this cylinder, at its bottom, is formed a water-tank, C, which communicates by means of elbow-pipes G, passing through the air-chamber D, with the fire-pot F. These pipes are elbowed, so as to prevent the water splashing into fire-pot by the jolting of the stove.

The fire-pot F is set within the cylinder B, and has a flaring upper edge, which edge is perforated, and has on its under side sockets *v*, which fit over the pipes G. The pot may rest on these pipes, or it may be supported by the sides of the cylinder B, or by projections on the inside thereof. The fire-pot is provided with the usual grate *g*, which in this instance has a stud, *l*, on the lower part thereof.

Beneath the fire-pot and above the water-tank there is formed an air chamber, D, to which air is admitted through openings *e*. This air-chamber is intended to keep the water in the tank cool.

On the top U of the air-chamber, and beneath the fire-pot, is formed a chamber, E, within which are placed pans *n*, containing salt, and the whole covered by a sectional cap, M, which is held in place by the stud *l* on the bottom of the grate. This salt-chamber has perforations *i* in its bottom, which opens into the air-chamber; and a pipe, J, leads from the water-tank to the chamber. Q indicates the smoke-flue, which communicates with exit-pipe I, and which has formed on its side next to the interior of the stove a casing, *l'*, the casing being a plate or sheet of metal constructed with a tapering bottom, and within which is a valve, L.

This valve has an opening, *x*, which corresponds with the openings in the casing and flue, and which is held in position by means of the tapering bottom.

If the stove should be overturned from any cause the valve falls to one side and closes the openings in the casing and flue, and cuts off any communication between the two.

The cylinder D has a top, M′, across which is passed a bar, W, and through the ends of which are passed rods Z, which extend down through the base of the stove, and are held firmly by nuts on both ends. In this way the top is held securely to the stove-cylinder and all the parts firmly braced.

The pipe *j* is for admitting water to the water-tank, and faucet *j′* is to draw water therefrom in cold weather.

The tank may be provided with glass index, to indicate the quantity of water in tank.

The jacket usually has swinging doors, while the stove-cylinder has sliding doors; but it is obvious that all the doors may be sliding doors.

The shut-offs or valves *d*, instead of being on the doors, may be affixed to the drafts on any other part of the stove.

The pipes G, instead of being elbowed, may have a grating within the same, or a ball resting on a seat therein, or any other device that will prevent the water from splashing.

Operation: If the stove from any accident should be overturned the several shut-offs in the doors and the flues close, cutting off communication with the inside. The cover is thrown from the salt-chamber, the salt overturned, mixing with the burning material. Water flows through pipes G into fire-pot and onto the fire, extinguishing the same. The steam generated passes through openings in the bottom of salt-chamber into the air-chamber below, thence through its openings into the space between the stove-cylinder and outer jacket, and passes out through openings near bottom of jacket, and also up to the top of the jacket, and through the openings in the top thereof, thereby cooling the stove. The fire is thus soon extinguished, and any of the burning particles effectually prevented from falling out of the stove onto the floor of the car. The outer jacket protects the cylinder of the stove and makes the whole doubly secure; for if the outer casing should be injured in any way the stove-cylinder is protected.

I do not limit myself to any particular form of stove, nor to any particular material, for it may be made of either boiler or cast iron or other suitable material.

What I claim is—

1. The cylinder B, made in one piece, and provided within its interior with fire-pot F and water-tank C, connected by pipes G, and having air-chamber D between the two, substantially as set forth.

2. The combination of the cylinder B with jacket A, provided with sliding door H and door *f*, each having a shut-off, *d*, admitting of vertical and side adjustment, substantially as set forth.

3. The combination of the water-tank C and air-chamber D, the air-chamber having perforations in its sides and top, substantially as set forth.

4. The combination of water-tank C, fire-pot F, and connecting-pipes G, substantially as set forth.

5. The chamber E, interposed between the fire-pot F and air-chamber D, and communicating with latter through openings in its top, substantially as set forth.

6. The combination of water-tank C, fire-pot F, pipes G, and air-chamber D, substantially as set forth.

7. The combination of water-tank C, fire-pot F, pipes G, chamber E, and air-chamber D, substantially as set forth.

8. The combination of outer jacket, A, and cylinder B, both provided with doors having self-closing shut-offs, water-tank C, fire-pot F, pipes G, and chambers D and E, substantially as set forth.

9. The combination of jacket A and cylinder B with air-chamber D, having perforations in its sides and top, substantially as set forth.

10. The fire-pot F, provided with sockets *v* *v*, having perforations above, substantially as set forth.

11. The fire-pot F, in combination with water-tank C, the two connected by pipe G, constructed to prevent water splashing into fire-pot, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM F. CONDON.

Witnesses:
WM. G. HENDERSON,
A. M. LONG.