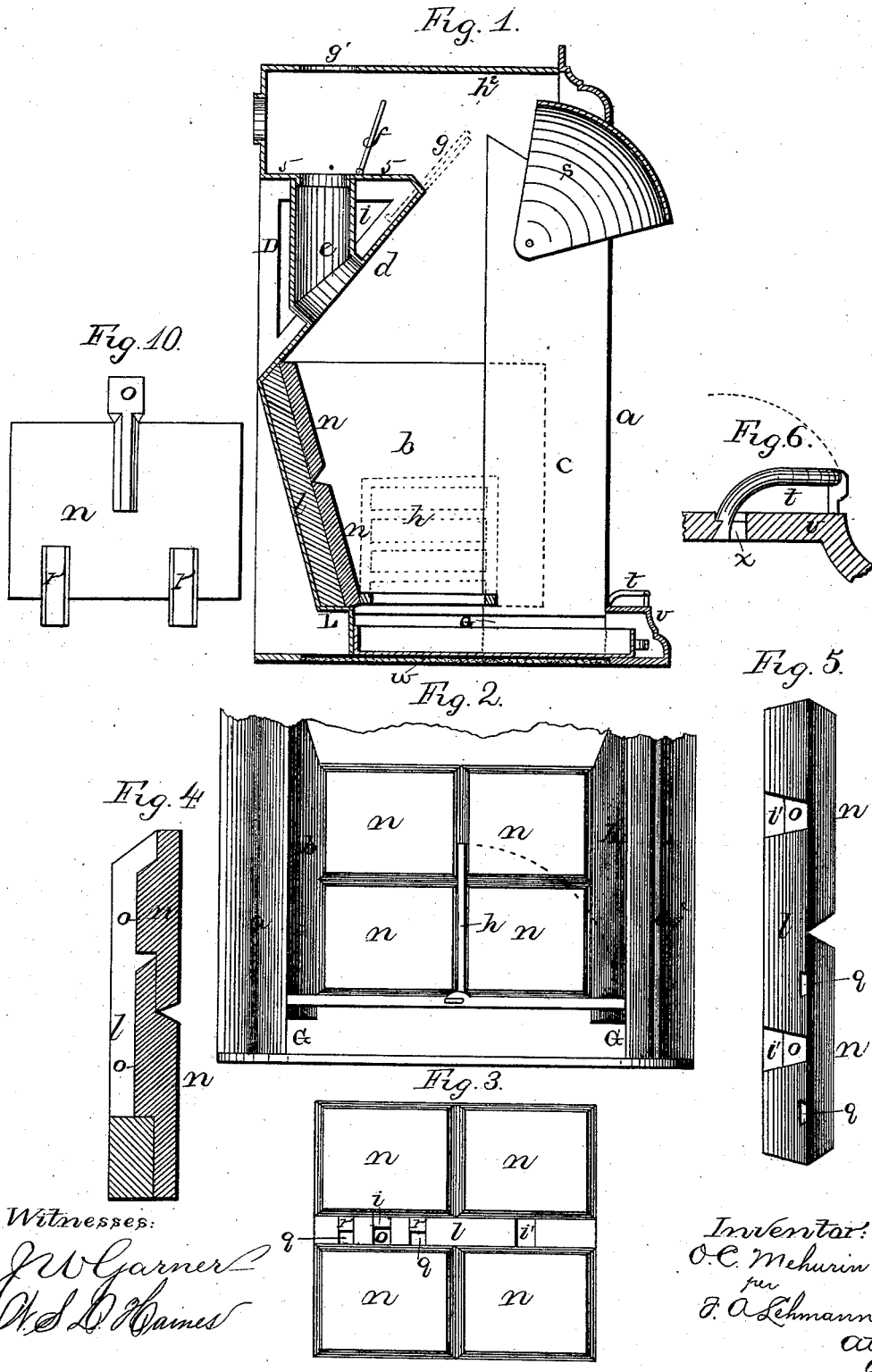


O. C. MEHURIN.
Open-Front Stove.
No. 216,206. Patented June 3, 1879.



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W. S. D. Haines

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Fig. 7.

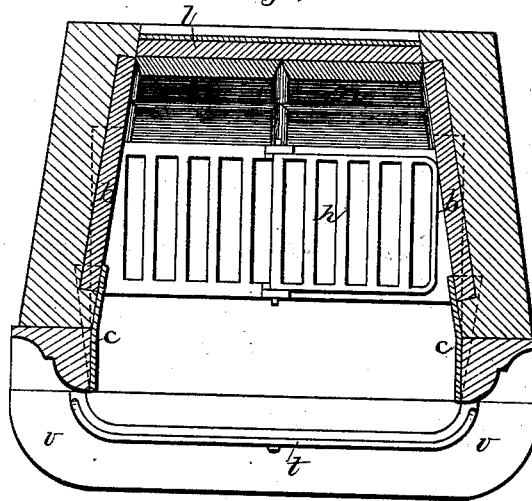


Fig. 11.

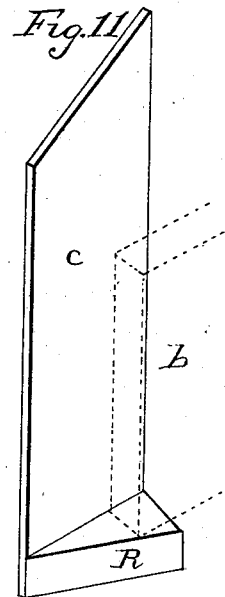


Fig. 8.

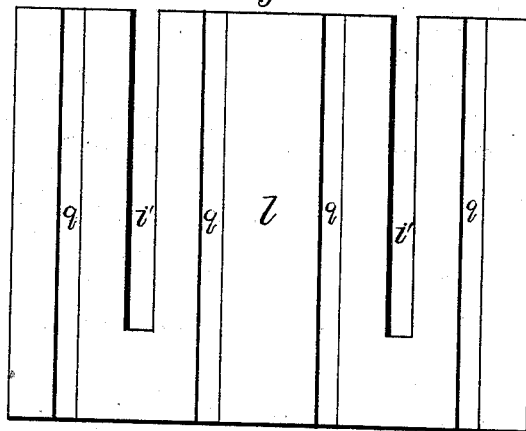
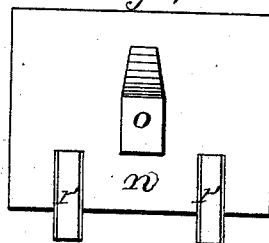


Fig. 9.



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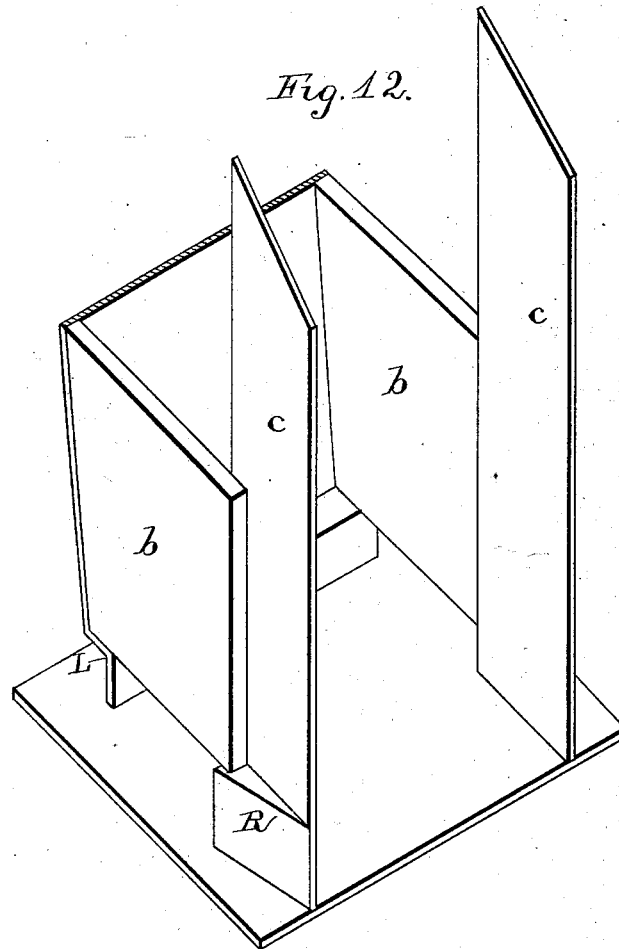
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UNITED STATES PATENT OFFICE.

OSCAR C. MEHURIN, OF NEWARK, OHIO.

IMPROVEMENT IN OPEN-FRONT STOVES.

Specification forming part of Letters Patent No. **216,206**, dated June 3, 1879; application filed April 16, 1879.

To all whom it may concern:

Be it known that I, OSCAR C. MEHURIN, of Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Open-Front Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in open-front stoves; and it consists in the arrangement and combination of parts whereby an entirely open-front stove is constructed that will not smoke, and that has a very large radiating-surface, as will be more fully described hereinafter.

Figure 1 is a vertical section of my invention. Fig. 2 is a front view of the lower part of the stove. Fig. 3 is a front elevation of the fire-back with the parts slightly separated. Fig. 4 is a vertical cross-section of the back. Fig. 5 is a plan view of the same. Fig. 6 is an enlarged vertical section of the fender. Fig. 7 is a horizontal section of the stove. Fig. 8 is a front view of the back plate. Figs. 9 and 10 are elevations of the parts *n*, taken from their rear sides, showing the dovetail catches in slightly different positions. Figs. 11 and 12 are perspective views of the cheek-plates upon which the tiles are supported at their front ends.

a represents the front of the stove; *b*, the sides of the fire-chamber, which are covered with tiles; and *c*, the movable cheek-plates which hold the tiles in place. Through the inclined deflector *d* is made the flue *e*, which is provided with the damper *f*, for regulating the draft. This inclined deflector extends forward toward the front of the stove at any desired angle, and from the upper edge of this deflector the horizontal plate 5 extends backward and connects the deflector to the back of the stove. This deflector and plate 5 form a recess, *D*, in the back of the stove, as shown in Fig. 1, for the purpose of giving an increased radiating-surface, and through this recess the flue extends. Upon the upper edge of this inclined deflector is the sliding plate *g*, which is adjustable back and forth, for the purpose of

causing the products of combustion to rise upward toward the top *h*² of the stove, and thus cause them to travel a greater or less distance, according as it is desired to increase or decrease the draft or to throw more or less heat out into the room.

As shown in Fig. 1, the whole top of the inclined deflector *d* forms a radiating-surface, and the flue *e* being exposed on all sides to the air which flows in through the openings *i* in the side of the stove, an additional surface for heating the room is formed, besides the fire from the front. There being an open space all around this flue, as shown, whether the damper *f* is open or closed, it forms a very powerful radiator, from which an immense amount of heat is thrown off into the room.

When the damper *f* is opened the products of combustion pass directly up the chimney and cause an intense draft, that very quickly makes the fire roar and burn as if a blower was placed over the front of the stove.

Through the top of the stove is made an opening, *g'*, for the purpose of heating water, or for cooking purposes, and this opening is just over the top of the flue *e*, so that whether the products of combustion are passing through the flue *e* or up over the front edge of the cap, the heat is thrown directly up against any vessel placed on the opening *g*. By this construction the stove can be used for both heating and cooking.

When the weather is not very cold, or during the summer, when only enough heat is needed to do a little cooking, but a very small amount of fire is necessary; but in order to concentrate the heat and keep the fire burning briskly, there must be some special arrangement of the grate. In order to accomplish this I form the grate in two parts, one of which, *h*, is pivoted to the other, so that it can be raised from a horizontal to a perpendicular position, as shown. By this means the holding capacity of the grate is reduced just one-half, thereby enabling all the fire to be kept briskly burning at one end. No claim is made in this application to this grate, but a separate application will be filed therefor.

When the lining of the stove is made in a single piece, or when made in separate pieces that are rigidly fastened in place, and any

part of it becomes burned or broken, it either becomes necessary to replace the whole lining, or considerable expense and trouble are occasioned to replace the part that is burned. To overcome this defect, the plate *l* can be inclined forward at its upper edge, and then have any one of the parts of the lining removed without removing the plate *l*, and at once replaced by another piece. I form the dovetailed slots *i'* in the plate *l*, to which the parts *n* of the lining are attached. Each one of the parts *n* has a dovetailed tongue or projection, *o*, cast with it upon its back, and which slides into the slot in such a manner as to fasten the part *n* securely to the plate. To more securely fasten each part in place, and prevent any twisting or turning, that might have a tendency to break the projections or tongues off in the back of the plate *l* on each side of the slot, there is formed a groove, *g*, in which the projections or guides *r* catch, and thus cause the parts *n* to slide squarely into place. Thus held in the center and at the edges, every part will remain in place, no matter how much they may be warped or strained by the heat, and yet every part can be quickly and easily removed when it becomes necessary to do so. The projections on the back of each part, being where the fire cannot reach or act upon them, will always remain perfect and ready for use, and, being cast with the parts, cause no extra expense or trouble to make them.

By means of this construction, when one of the parts *n* gets worn out, a person has only to buy a new part and put it in position himself, without calling in some skilled workman to do it.

Just inside of the top of the stove there is pivoted to the movable cheek-plates a hood, *s*, which can be closed back into the stove when not needed, or drawn forward to any desired extent to cause a better draft, or to prevent dust and ashes from coming out into the room.

Each of the ends of the guard *t* on the fender *v* has a notch, *x*, cut in it, so that when the ends of the guard are passed down through the holes *y* in the fender they will catch under the fender, as shown in Fig. 6, and thus prevent them from being raised upward out of position, unless raised from the outer edge in a circle, as shown. No claim is here made to this fender.

As it is desired to have the stove set down as near as possible to the floor, and in order to prevent the floor or carpet from being scorched or burned, a non-conducting substance, *w*, is placed in the bottom of the stove, so as to prevent any heat from passing through.

Any non-conducting substance—such as asbestos, calcined plaster, or other equivalent material—may be used, and which may be held in place by means of a plate that is secured to the under side of the stove, as here shown, or in any other way.

By attaching the hood to movable cheek-plates, which can be applied to the inside of any grate, I am enabled to apply the hood to any chimney, and thus prevent it from smoking—a thing which has not heretofore been accomplished. Many grates are so constructed that the hood can only be applied by means of screws or clamps, which will not permit the hood to be adjusted back and forth, and hence the hood becomes at times an incumbrance by projecting out too far.

In order to prevent the ashes from falling around the outside of the pan, and thus causing the trouble of cleaning out the ashes after the pan has been removed, a square offset, *G*, is formed in the inner side of the lower ends of the movable cheek-plates in the sides of the stove, and under the edges of the side tiles, *b*, as shown in Fig. 2, and in dotted lines, Fig. 7. On the outer side of each cheek-plate is formed the triangular-shaped shoulder *R*, which serves as a support for the tile *b*, as shown in Fig. 11, at its front end. The rear ends of the tiles are supported upon the top of the offset *L* in the back of the stove, so that the lower edges of the tiles project out over the ash-pit, as shown in Fig. 2. Where the fire-chamber extends backward at an angle this offset on each side extends straight back, and thus enables a square pan to be used, the side edges of which pan are overhung by the tiles *b*, and the rear edge by the parts *n* of the fire-back.

By this construction not only can a square pan be used, but one that is so much larger than the grate that no ashes can fall outside of the pan when it is in place.

Having thus described my invention, I claim—

1. In an open-front stove, the flue *e*, passing through the recess formed in the back of the stove by the inclined deflector *d* and plate *5*, in combination with the damper *f*, substantially as shown.

2. In an open-front stove, the flue *e*, passing through the recess formed in the back of the stove, in combination with the frame of the stove, having the openings *i* through its sides, substantially as described.

3. In a fire-place or open stove, the sections *n*, having the projections *o* extending above their top edges, and the guides *r* projecting below their lower edges, substantially as specified.

4. The cheek-plates *c*, having the shoulders *R* to support the front ends of the tiles *b*, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of April, 1879.

O. C. MEHURIN.

Witnesses:

W. S. D. HAINES,
J. W. GARNER.