LA FAYETTE BLAIR.

Improvement in Gas-Retorts and Apparatus for Charging.

No. 127,144. Patented May 28, 1872.

Fig. 4.

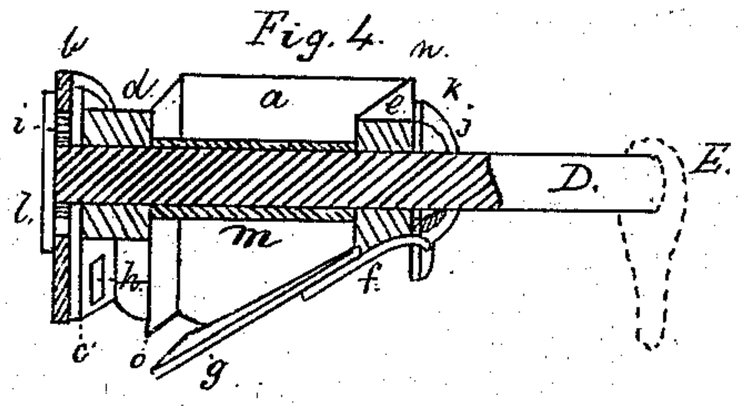


Fig. 5.

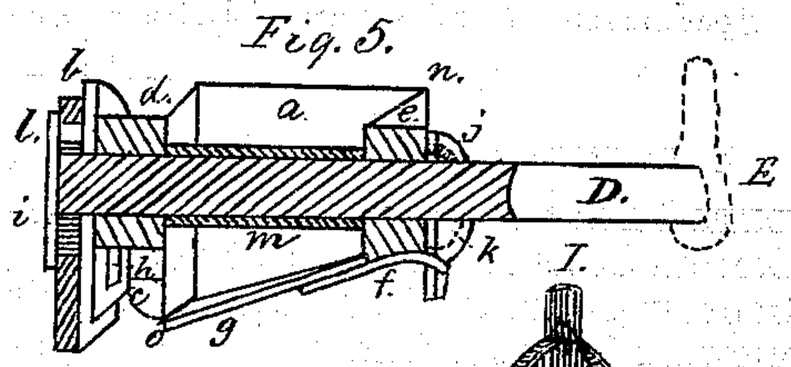


Fig. 3.

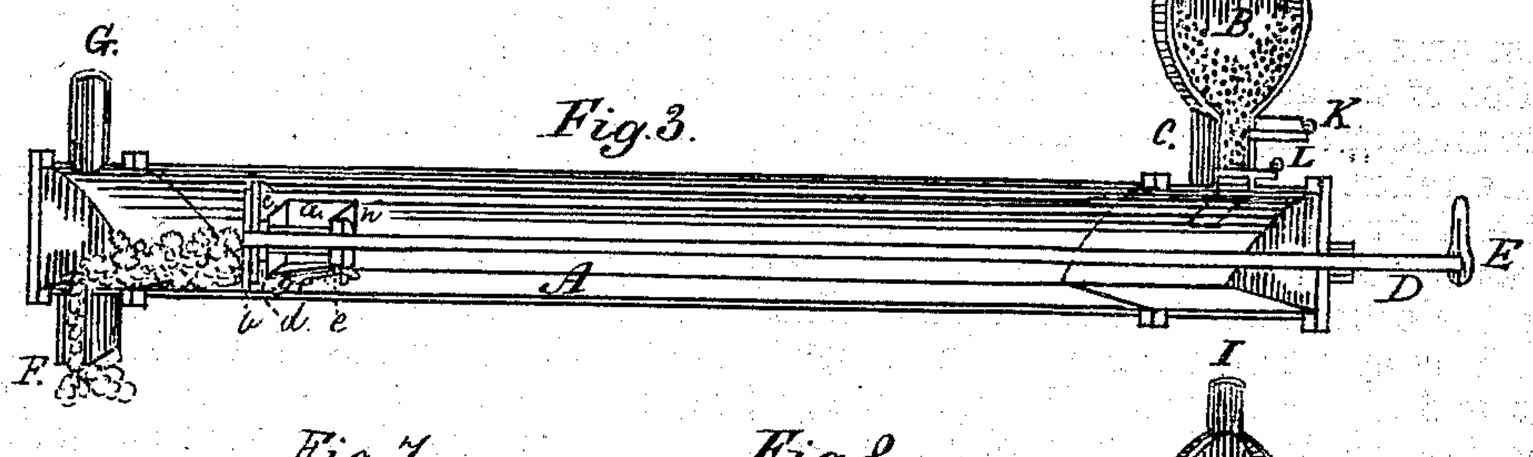


Fig. 7.

Fig. 8.

Fig. 2.

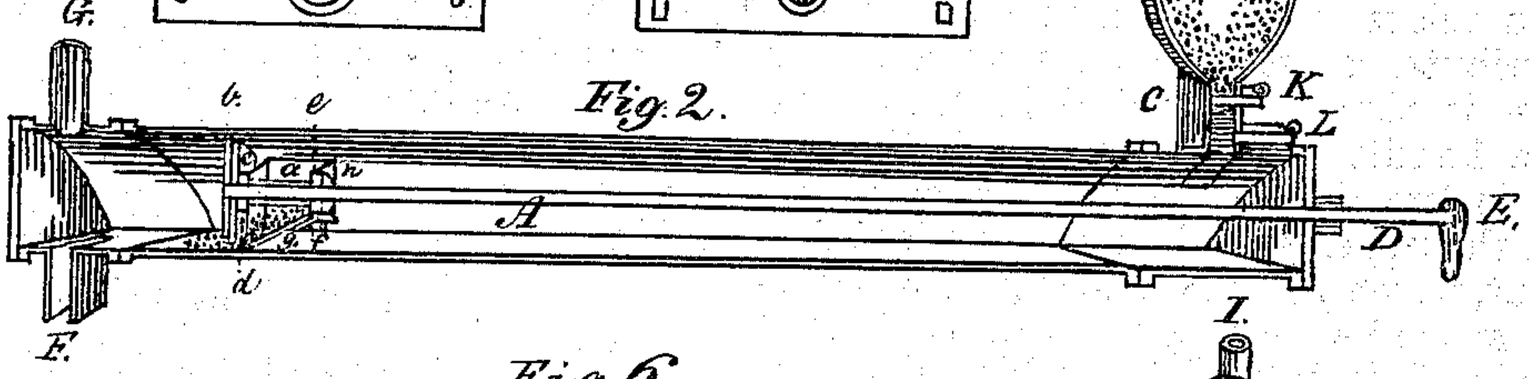
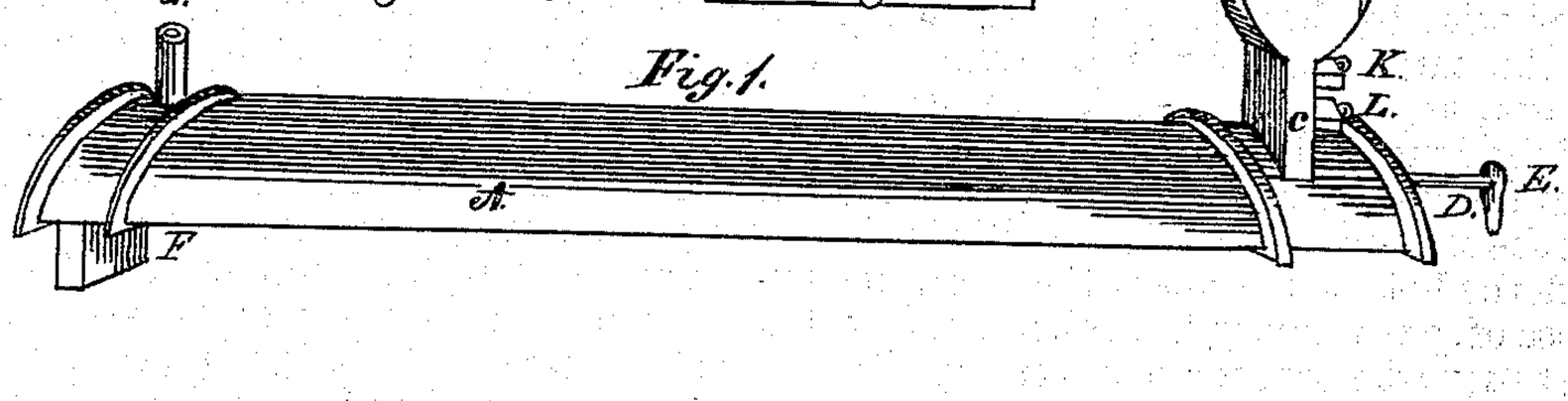


Fig. 6.

Fig. 1.



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Wm. H. Fowler

Inventor.
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127,144

UNITED STATES PATENT OFFICE.

LA FAYETTE BLAIR, OF PAINESVILLE, OHIO.

IMPROVEMENT IN GAS-RETORTS AND APPARATUS FOR CHARGING.

Specification forming part of Letters Patent No. 127,144, dated May 28, 1872.

SPECIFICATION.

I, LA FAYETTE BLAIR, of Painesville, in the county of Lake and State of Ohio, have invented certain Improvements in Gas-Retorts, of which the following is a specification:

Nature and Objects of the Invention.

The first part of my invention relates to the construction of the gas-retort A. Said retort is built up in masonry in the usual manner. Both ends of the retort extend outside of the walls, the front end for the convenience of filling the coal-magazine B, and the rear end for discharging the coke from the aperture F. The magazine B is attached on the top and near the front end of the retort. The contents of the magazine are kept in their place by the slides K and L, which pass into the conductor C of the magazine. The second part of my invention relates to the combination of the coal-distributer *a* and the coke-scraper *b*. Its operation is thus: The rod D is drawn out with the handle E, turned up until the distributer is directly under the conductor-pipe C; then the upper slide K in the conductor is drawn out, which permits a charge to descend into the space between the two slides K and L; the slide K is then closed, which shuts off the charge from the magazine; the lower slide L is then opened, which allows the charge to fall into the distributer. The reason the rod D is turned with the handle E upward is, the action of the cam *k* on the rod D, when it is turned down, acts on the ring *j*, causing the closing of the hinged bottom *g*. This prevents the premature discharge of the coal. At the same time the coke-scraper *b* is lowered down in action with the bottom surface of the retort, for the purpose of pushing out the coke. The rod being pushed in, the scraper removes the coke ahead, which is discharged through the aperture F at the end of the retort. When the distributer is at the far end of the retort the rod is turned with the handle E pointing down, when, by the reversed action of the cams, the bottom of the distributer is dropped and the scraper is raised. The rod is then drawn outward and the coal runs out of the distributer and is evenly spread over the bottom of the retort. By the return action of the front plate O said plate forms the front of the distributer. The rod passes through the head of the retort and is packed gas-tight in any convenient manner. The object of this combination is to place a small amount of coal, in a finely-divided condition, over the bottom of the retort, so that the heat may have instant action thereon, and a perfect extracting of the gas, which, in this case, leaves no tar. This process is economical, making more gas to the pound of coal, and it takes a less heat; therefore it prevents so great a wear on the retorts.

Description of the Accompanying Drawing.

Figure 1 is a view of the exterior of the retort, and shows the coal-magazine, the conductor C, the slides K and L, discharge-passage for coke F, gas-discharge G, rod D, and handle E; Fig. 2, longitudinal section, showing the distributer in action; Fig. 3, longitudinal section, showing the scraper in action; Figs. 4 and 5, enlarged views of the distributer, and shows their various parts; Fig. 6, view of the back-plate of the distributer, and showing the action of the cam K; Fig. 7, view of scraper *b* and cam *i;* Fig. 8, view of slotted guide-plate *c* with its guide-slots *h*.

General Description.

A, Fig. 1, shows a retort, which is set in masonry in the usual manner, with the front end, which is outside the flange, projecting outside the wall. On the top of the retort the magazine B is attached, which is filled with fine coal through the aperture I. The slide K is to shut off the heat from the coal in the magazine, and, at the same time, cut off a charge from the magazine. The slide L is for the purpose of measuring a charge, and, when opened, permits the charge to drop into the distributer *a*. The rear end of the retort also extends beyond the rear wall to allow the coke to be discharged through the passage F, which is placed in the under side of the retort, near the rear end. The gas-pipe G is for the discharge of the gas as fast as it is made. At Fig. 2 is shown the coal-distributer *a*, which is attached to the end of the rod D. On the outside end of the said rod is a flat handle, which is attached near its end to the said rod D for the purpose of acting as a guide in directing the rod D in its work. The coal-distributer *a* is an oblong box, made to conform to the interior form of the retort. The said box has the hinged

sloping bottom *g* attached to it for the purpose of keeping the coal in it until by the action of the cam *k* on the rod D it is opened and the coal is discharged. The cam *k* is secured to the rod D at the point where the rod enters the rear side of the box. Said cam revolves in the ring *j*, and by its revolving lifts the ring up, and lifting at the same time the hook *f*, which is secured to the drop bottom *g* of the distributer *a*. Its action is shown at Figs. 4 and 5. The bottom of the distributer is closed by a reversed action of the cam *k*. The action of the cam *k* is shown at Fig. 6. The scraper *b* is secured by screws to and works up or down on the face of the slotted plate *c*. Said slotted plate has four slots cut through it, one at each corner, and is permanently secured to the distributer *a* by the collar *d*. Said collar has an opening to allow the rod D to pass through it, through the slotted plate *c*, and through the coke-scraper *b*. On the end of the rod D the cam *i* is secured, which by its action lifts the scraper up and off the bottom of the retort; or, by its reverse action, lowers it on the bottom of the retort. The slotted plate *c* is shown at Fig. 8, and the coke-scraper *b* at Fig. 7; also, it shows the cam *i*. *l* is a plate, which is secured on the face of the scraper to keep dust out of the cam *i*. *m* is a tube, that surrounds and protects the rod D, and keeps the coal-dust from clogging the cam *k*.

I claim as my invention—

1. The combination of the retort A, the magazine B, conductor C, and the slides K and L, and the coke-aperture F, substantially as and for the purpose as hereinbefore set forth.

2. The coal-distributer *a*, substantially as and for the purpose as hereinbefore set forth.

3. The coke-scraper *b* and slotted plate *c*, substantially as and for the purpose as hereinbefore set forth.

4. The combination of the distributer *a* with its drop-bottom *g*, the cams *k* and *i*, ring *j*, scraper *b*, slotted plate *c*, the rod D with its handle E, and guard-tube *m* with the combined retort A, substantially as and for the purpose as hereinbefore set forth.

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