

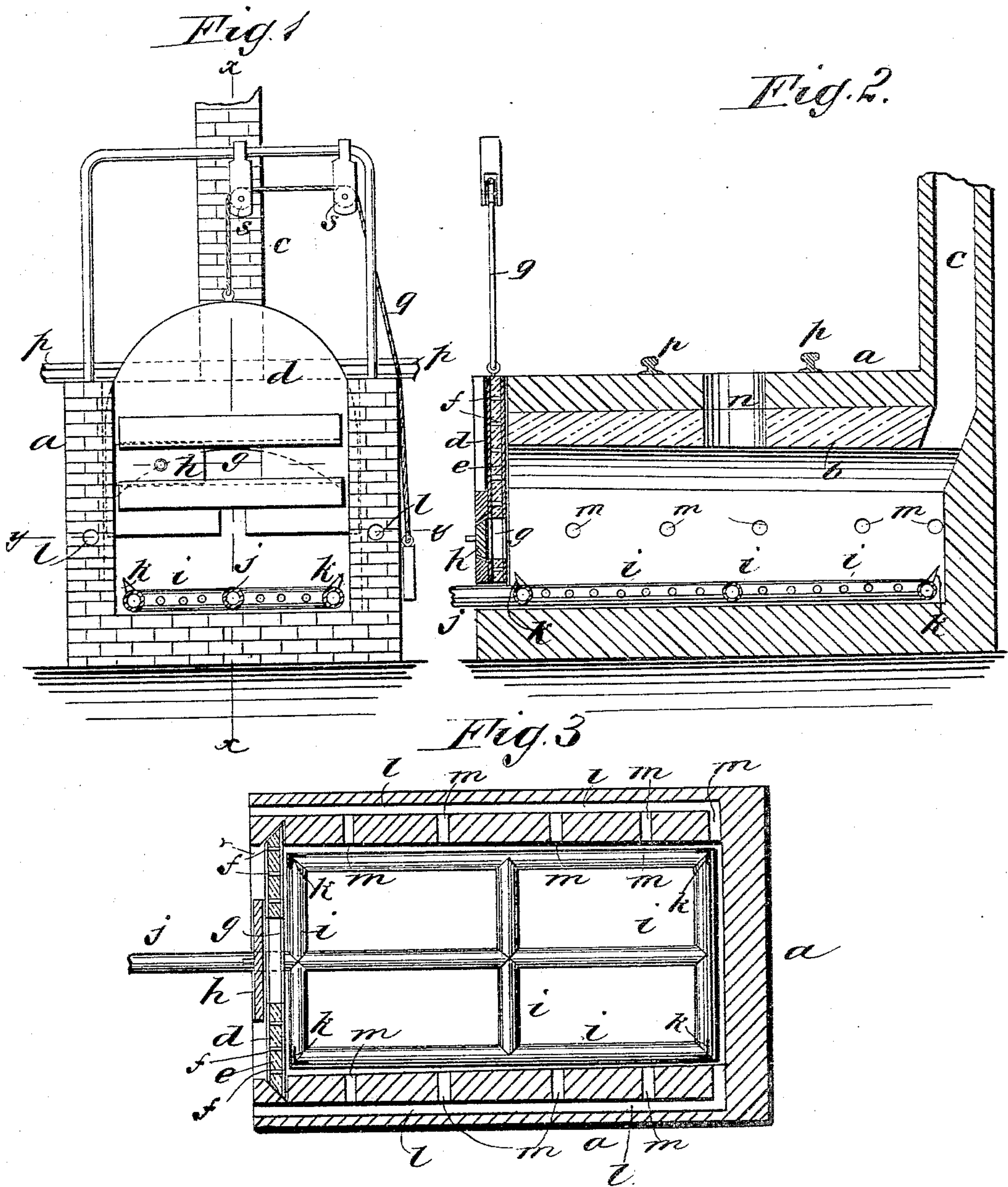
(Model.)

J. GREEN.

COKE OVEN.

No. 300,463.

Patented June 17, 1884.



WITNESSES:

Francis McArdle,
C. Sedgwick

INVENTOR:

J. Green
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JONATHAN GREEN, OF LEISENRING, PENNSYLVANIA.

COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 300,463, dated June 17, 1884.

Application filed April 22, 1884. (Model.)

To all whom it may concern:

Be it known that I, JONATHAN GREEN, of Leisenring, in the county of Fayette and State of Pennsylvania, have invented a new and Improved Coke-Oven, of which the following is a full, clear, and exact description.

My invention consists of a cradle of gas-pipe arranged over the oven-bottom, and having fine perforations adapted for distributing steam or hot air for quenching the fire quickly when the coking process has progressed sufficiently, or for the application of hot blasts for obtaining by-products, the said cradle being also contrived for quickly discharging the coke by the application of power capable of hauling it out of the front opening of the oven, and thereby hauling the coke along with it; and the invention also consists of certain improvements in the construction of the oven, which, together with the cradle device, are all designed to provide ovens capable of economizing coal by yielding larger per cent. of products, also of economizing time by more rapid action, also of economizing labor by better facilities of management, and also being better adapted for obtaining by-products, all as hereinafter fully described.

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

Figure 1 is a front elevation of my improved coke-oven. Fig. 2 is a longitudinal sectional elevation on the line *xx* of Fig. 1, and Fig. 3 is a horizontal section on the line *yy* of Fig. 1.

I make the oven *a* of rectangular shape in the ground plan, with a semicircular arch, *b*, a little wider and higher at the front than the back, closing the back end and constructing a chimney *c* thereto, that may serve for one oven singly or for connecting with the flues of a series of ovens, thus giving facilities for securing by-products.

In the open front end of the oven I arrange a vertical sliding door, consisting of an outside of sheet-iron, *d*, and inside of fire-clay *e*, the two being fastened together with pins *f*. The door is constructed with a loop-hole, *g*, through which to level the coal, and is provided with a sliding cover, *h*, to close it.

In the oven I arrange a "cradle," consist-

ing of a suitable net-work of gas-pipes, *i*, which are finely perforated along the sides, and have a connecting-pipe, *j*, for making suitable connection to inject steam for quenching the coke or hot air when that may be required for securing by-products. The cradle is preferably fitted with prongs or inverted legs *k*, to support and retain the coke on the cradle while being drawn. The cradle serves for a pulling-bar besides its use for admitting steam and air, and enables the oven to be discharged quickly. By having only one open end of the oven the quality of the coke is improved and the percentage of ash is lessened.

I make air-passages *l* along the side walls of the oven, with inlets *m* into the sides of the oven at intervals along the same, thereby furnishing hot air, which considerably lessens the cutting away of the coal.

In practice I arrange the oven so that the coke can be drawn out directly into a car to be carried away.

In constructing the arch of the oven I build it over a center and of plastic material, the ingredients of which are white sand, plumbago, bone-dust, whiting, and fire-clay.

It will be seen that the coke can be most readily drawn from the oven by any competent power applied to the stem *j* of the cradle. The oven can be managed by unskilled hands, and will make better and cheaper coke. The by-products can be saved. The quenching by steam drives all impurities in the coke to the surface, besides burning less to ash. There is less ash made in handling consequent upon loading direct into cars.

The ovens are much cheaper to construct, they will burn more coke in the same time than other ovens, and being quenched by steam the ovens will last longer.

The oven has an opening, *n*, through the arch, to be charged from cars passing over the oven on the rails *p*, and the door is to be raised and lowered by the usual contrivance of weighted cord *q* and suitable guide-pulley, *s*.

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

1. The combination, with a coke-oven, of a perforated gas-pipe cradle adapted for the distribution of steam for quenching the fire, and

having a handle for drawing out the cradle for discharging the coke, substantially as described.

2. In coke-oven, the cradle comprising the
5 gas-pipe frame, having series of apertures and prongs upon its upper surface, said prongs being adapted to support and retain the coke upon the cradle while being drawn, substantially as set forth.

10 3. The coke-oven having the side wall air-

passages *l*, connecting by inlets *m* with the oven-chamber, in combination with the cradle having a series of apertures and a pipe-connection, *J*, substantially as shown and described, and for the purpose set forth.

JONATHAN GREEN.

Witnesses:

JOHN K. TAGGART,

JOHN HENRY.