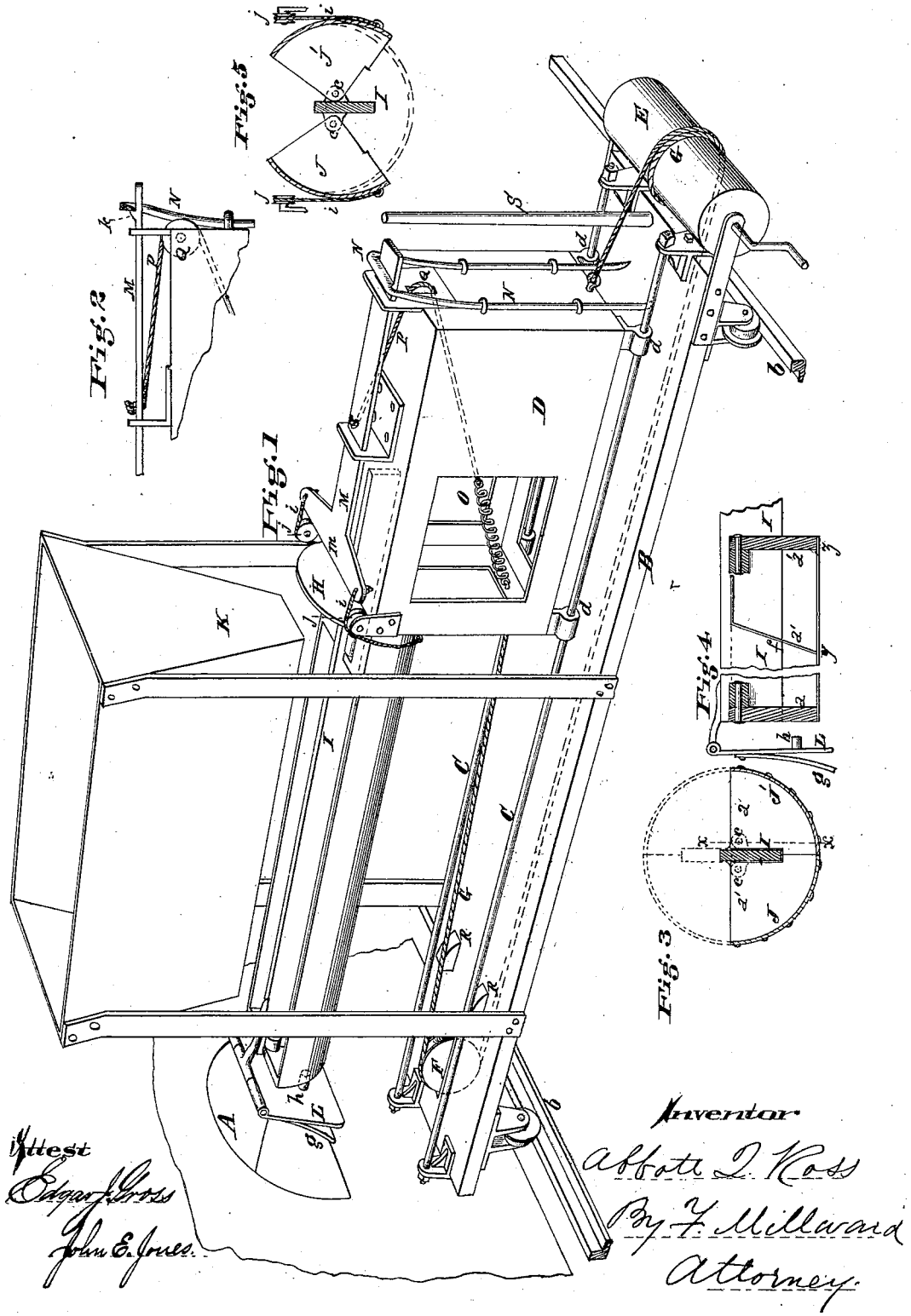
A. Q. ROSS.

Gas-Retort Chargers.

No. 199,316. Patented Jan. 15, 1878.



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ABBOTT Q. ROSS, OF CINCINNATI, OHIO.

IMPROVEMENT IN GAS-RETORT CHARGERS.

Specification forming part of Letters Patent No. **199,316**, dated January 15, 1878; application filed April 21, 1877.

To all whom it may concern:

Be it known that I, ABBOTT Q. ROSS, of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Gas-Retort Chargers, of which the following is a specification:

My invention consists, first, of a retort-charging apparatus embracing, in its construction, a carriage or frame, a bar projecting therefrom and supported thereby, and a divided scoop, pivoted to said bar, and arranged to open at the bottom by the swinging of its parts outward, the whole being designed to carry coal into the retort without depending on the latter for the support of any part of the apparatus, and to permit the withdrawal of the scoop without obstruction from the coal deposited; second, of a certain combination of parts, making up an automatically-operating device for opening and closing the scoop at the ends of its longitudinal movement; third, in attaching a swinging plate to the forward end of the bar to which the two parts of the scoop are pivoted, which plate is used to discharge the fuel from open-backed or "through" retorts, and may be operated to rake the fuel from retorts open at the front only.

In the accompanying drawings, Figure 1 is a perspective view of my apparatus. Fig. 2 is a detached view of a portion of the device for opening and closing the parts or sections of the scoop. Fig. 3 is a cross-section of the scoop and its supporting-bar. Fig. 4 is a longitudinal section of the scoop through the pivots. Fig. 5 is a cross-section of the scoop, showing its two parts in a separated position.

A represents the mouth of one of the usual group of retorts of a gas-works, and B is a truck, moving on ways *b*, upon which my apparatus is built, the truck and ways enabling the apparatus to be moved conveniently from one retort to the others by any suitable steam or hand moving appliance. The truck B supports the bars or ways C, upon which the frame of my longitudinally-moving scoop slides. D is the permanent frame of the scoop, attached by eyes *d* or otherwise to the ways C. A drum, E, is journaled at one end of the truck B, and a sheave-wheel, F, at the other. A rope, G, secured to frame D, passes over the sheave F, and has one or more turns on drum E, so that the revolution of drum E by hand or otherwise suffices to carry the scoop, which is secured to frame D, in and out of the retort. At the end of frame D nearest the retorts a plate of metal, H, is secured, against which the rear ends of the sections of the scoop come in contact, this plate serving as a face-plate for the said ends to move on in the opening and closing of the scoop. To the frame D a stout bar, I, is secured, the bar entering a good distance into the frame, as shown by dotted lines, so that it may be capable of withstanding the strain due to the weight of the scoop; the bar rigidly supporting said scoop independent of other means, so that the scoop will not drag on the bottom of the retort, or the coals deposited therein, in its passage into or withdrawal from the retort.

The scoop is composed of two or more parts, J J′, which together form a half-circle or other suitable shape, with one or more dividing-lines, X, at or near the bottom.

Each part of the scoop has quadrant-shaped end pieces *a a′*, so that when the parts are closed together a receptacle suitable for receiving and retaining coal is provided. Each part is pivoted to the bar I, so as to swing outward on pivots *c*, to open and close the scoop. It is shown in full lines in Fig. 3 in the closed position, for the reception of coal, and in dotted lines, same figure, in the open position.

When the scoop is put into the retort the plate H abuts against the face of the retort; and, in order that the coal may not be permitted to fall too close to the mouth of the retort, I fill up this end of the scoop by putting a partition, *f*, in each part, to prevent the coal occupying the space from *y* to *z*. The scoop may be filled with coal from a hopper, K, or otherwise.

At the forward end of bar I, I attach a swinging plate, L, which, when the retorts are opened at both ends, or, in other words, are through-retorts, may be used to force out the old charge as the scoop is moving in to resupply it, the front of the plate being protected by a fire-plate, *g*, and the rear having stops *h*, to rest against the scoop.

In retorts open only at the front end this plate L may be lifted by suitable appliances

when moving in with the scoop open, and forced down into the position of a rake-head when in, so that the movement of the scoop backward may serve to rake out the old charge before the scoop is filled with the new charge.

M is a sliding bar, having a cross-head, *m*, to which are attached ropes or chains *i*, which pass over sheaves *j* on frame D, and are secured each to the bottom of one of the parts J J′, so that the backward movement of the bar M may serve to open the scoop, and the forward movement permit the scoop to close by the gravity of its own parts. A rib, K, is formed on the bar M, which, when the scoop is closed, is in such a position that the gravitating bail N drops behind it, and holds it in place against the action of the spring *o*, which, through its cord P over sheave Q, tends to open the scoop.

When the scoop filled with coal is moved into the retort for charging the same, it being small enough to enter freely, the ends of the bail N, when the scoop is near the end of its inward stroke, strike the inclined planes R on the truck, which causes the bail to rise and release the bar M, so that the spring O is permitted to open the scoop, and the coal then falls through the then bottomless scoop onto the bottom of the retort, the scoop being then in a position to be withdrawn freely over the coals so deposited, the plate L rising on the return. When the scoop is nearing the termination of its backward or outward stroke, the bar M strikes the post S, and is forced again into the position shown in Figs. 1 and 2.

Many of the forms of construction of my apparatus may, of course, be changed without departing from the essential features of my invention.

I claim—

1. The carrying-frame D, having a projecting bar, I, to which the parts J J′ of the scoop are pivoted, substantially in the manner and for the purpose specified.

2. In combination with the parts J J′ the bar M *k*, catch or bail N, spring O, post S, and incline or inclines R, the parts being connected and operating substantially as and for the purpose specified.

3. The combination, substantially as specified, of the frame D, having a projecting bar, I, the parts J J′ of the scoop pivoted to said bar, and the swinging plate L carried on the end of said bar.

In testimony of which invention I hereunto set my hand.

ABBOTT Q. ROSS.

Witnesses:

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