2 Sheets—Sheet 1.

C. F. DIETERICH.

MACHINERY FOR CHARGING GAS RETORTS.

No. 194,998. Patented Sept. 11, 1877.

FIG. III.

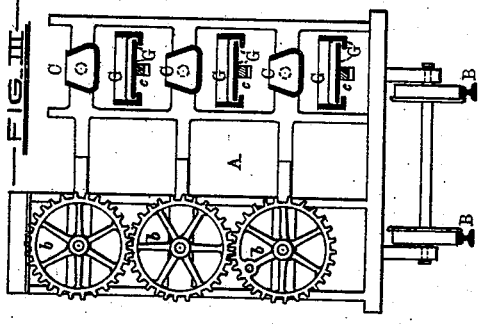


FIG. I.

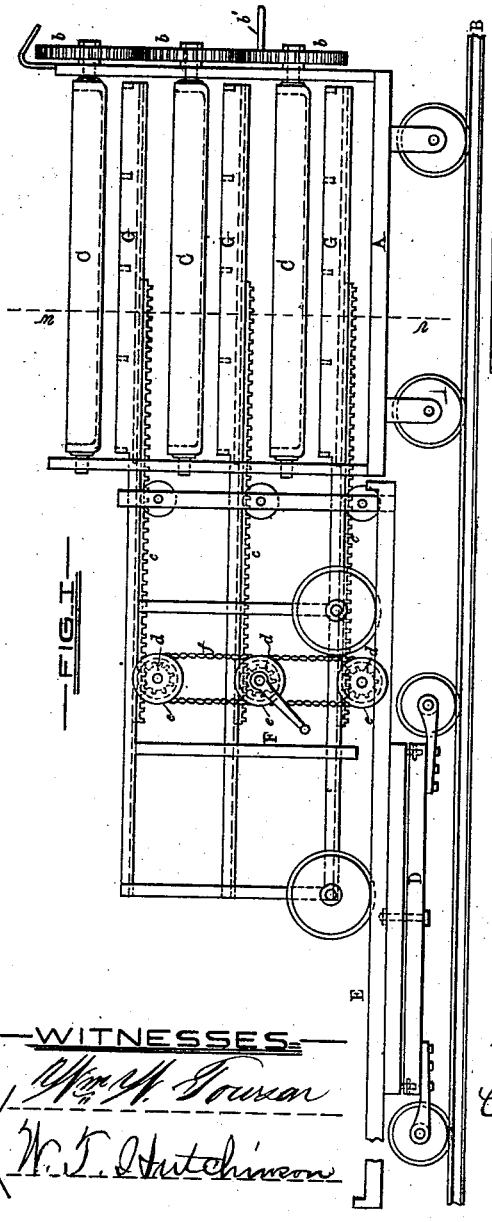
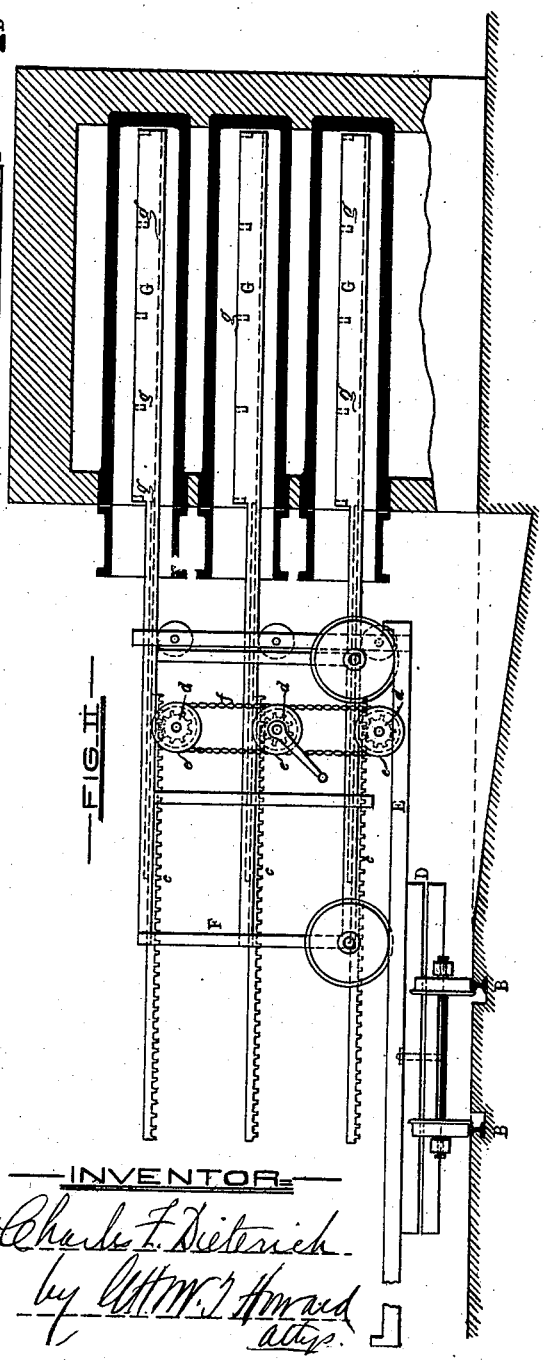


FIG. II.



WITNESSES.

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W. T. Hutchinson

INVENTOR.

Charles F. Dieterich

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2 Sheets—Sheet 2.

C. F. DIETERICH.

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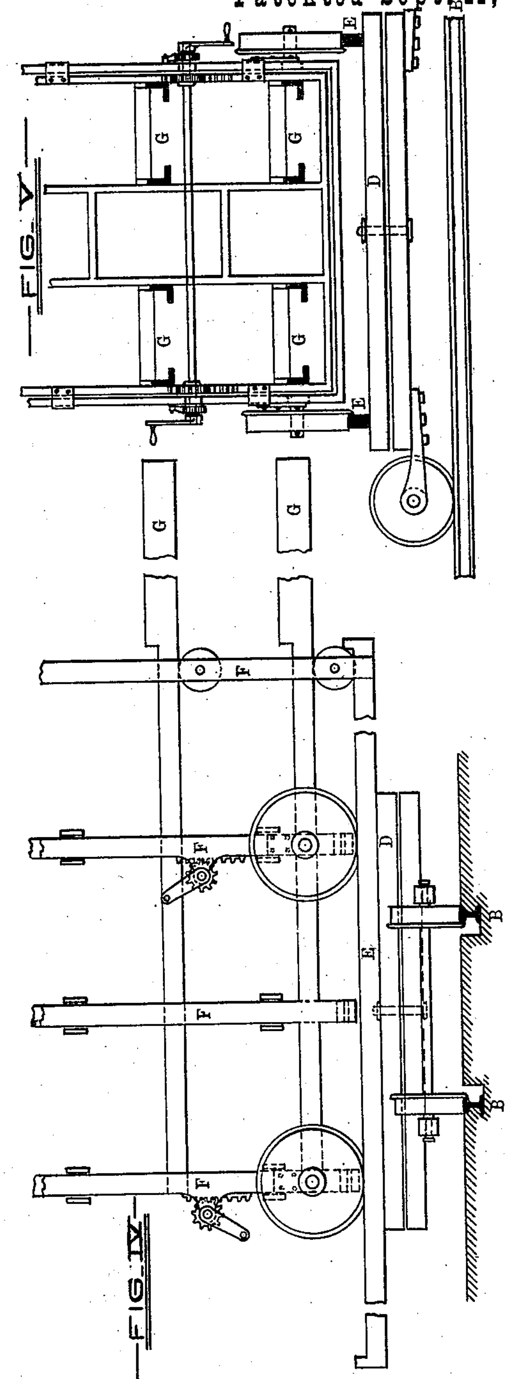

FIG. V

FIG. IV

WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES F. DIETERICH, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN MACHINERY FOR CHARGING GAS-RETORTS.

Specification forming part of Letters Patent No. **194,998**, dated September 11, 1877; application filed November 6, 1876.

To all whom it may concern:

Be it known that I, CHARLES F. DIETERICH, of the city of Baltimore and State of Maryland, have invented certain Improvements in Machinery for Charging Gas-Retorts, of which the following is a specification, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates, first, to a car or wheeled vehicle to be used in transporting coal from the coal-shed or place of storage to the retort-house, in which the retort-charging machine is located.

The invention relates, secondly, to the combination of the said coal-transporting car with the said retort-charging machine, as hereinafter fully set forth.

Thirdly, the invention relates to the combination of the said retort-charging machine with a turn-table having a track and pivoted to a car, as and for purposes fully hereinafter described.

In the accompanying drawing, Figure 1 is an exterior side view of the coal-transportation car and the retort-charging machine in the relative positions which they occupy when coal is to be transferred from the said car to the said charging-machine. Fig. 2 is a side view of the retort-charging machine and retorts, the said retorts being shown partly in section. Fig. 3 is an end elevation of Fig. 1, shown in half-section on the line *v w*. Figs. 4 and 5 are, respectively, a side and an end view of parts of the retort-charging machine on an enlarged scale, showing the devices whereby the same is vertically adjusted to suit the retorts.

Similar letters of reference indicate similar parts of the invention in all the views.

Referring to Figs. 1, 2, and 3, A is the frame of the coal-transportation car, provided with wheels to run upon the main track B, leading from the coal-shed to the retort-house, and thence back to the said shed. C C are the coal-troughs, supported by the frame A, and adapted to be discharged of their contents by being inverted. Three of the troughs are connected by gear-wheels *b*, and revolved through the agency of a crank, *b'*, the other three troughs (shown in section in Fig. 3) being either operated by means of a similar system of gearing and a crank, or by the gearing and crank first alluded to. The number of troughs in the frame A preferably corresponds with the number of retorts in a bench.

In filling the car, the troughs C are placed as shown in the drawing, and coal is introduced thereto from a chute, or by means of shovels. The car is then drawn along the track B to the retort-house, where the troughs are inverted and their contents discharged to the scoops of the charging-machine, the troughs and scoops occupying the relative positions indicated in Fig. 1.

The retort-charging machine consists of the following-described mechanism: A wheeled frame, D, resting on the main track B, is adapted to support a turn-table pivoted to the said frame, the turn-table being provided with a track, E, as shown. The track E carries a wheeled frame, F, having the overhanging scoops G projecting therefrom. The scoops G, which are located in the frame F to correspond with the arrangement of the retorts in the bench, are each provided with a removable sliding bottom, G', constructed to be moved longitudinally of the scoop, to which it is connected by means of a toothed rack, *c*, and a pinion, *d*. A conjoined movement of the scoop-bottom is effected by the chain-heads *e* and endless chains *f*; but I do not restrict myself to this mode of combining the scoop-bottoms and their motions, as gears or other movement-transmitting devices may be employed to effect the same result.

In charging the scoops G of the retort-charging machine, the said machine is brought in connection with the filled transportation-car, as shown in Fig. 1. The troughs are then discharged, as before described, the coal being evenly distributed over the scoops, after which the empty transportation-car is withdrawn. The scoops are then turned at a right angle with the main track B, and introduced into the retorts, as shown in Fig. 2. The sliding bottoms G' are now moved out, and the coal is allowed to pass to the bottoms of the retorts, the cross semi-partitions *g* retaining the coal as the sliding bottoms are withdrawn. The relative positions of the retort-charging

machine and the retorts at this stage of the operation are illustrated in Fig. 2, the retorts being shown in section.

As in many retort-houses the retorts are not of a uniform height from the floor, I make the scoops of the retort-charging machine vertically adjustable. This adjustability of the said parts may be obtained in many ways. A very satisfactory arrangement of the frames is, however, shown in Figs. 4 and 5.

It will be observed that the stationary framework F is provided with pinions, which engage with racks on the vertically-moving supports of the scoops, and that the turning of the crank-handles shown will cause the scoops to be elevated or depressed.

I claim as my invention, and wish to secure by Letters Patent of the United States—

1. A coal-transporting car having one or more series of invertible troughs placed one above the other, each trough having capacity for a charge for a single retort, and being constructed to empty its contents into a retort-charger when placed thereunder, substantially as specified.

2. A coal-transporting car having one or more series of invertible troughs placed one above the other, each trough having capacity for a charge for a single retort, combined with a gas-retort-charging machine, consisting of a wheeled frame having one or more series of overhanging scoops placed one above the other, each scoop being provided with a sliding bottom, substantially as and for the purposes herein specified.

3. A coal-transporting car having one or more series of invertible troughs placed one above the other, and provided with mechanism whereby the whole number of troughs in either or all the series may be simultaneously inverted, substantially as and for the purposes set forth.

4. A wheeled gas-retort-charging machine having one or more series of overhanging scoops, constructed and operating substantially as described, combined with a turn-table pivoted to a car and provided with a track, substantially as and for the purposes specified.

In testimony whereof I have hereunto subscribed my name this 2d day of November, in the year of our Lord 1876.

CHARLES F. DIETERICH.

Witnesses:
W. W. WHARTON,
J. M. MYERS.