2 Sheets--Sheet 1.

J. WEST.

Charger for Gas-Retorts.

No. 160,490. Patented March 2, 1875.

Fig.1

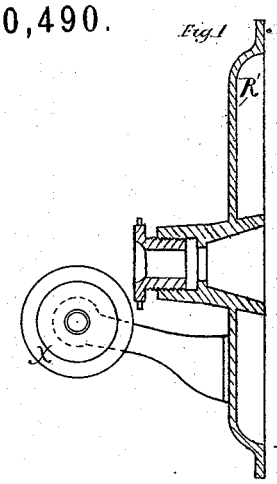


Fig.2

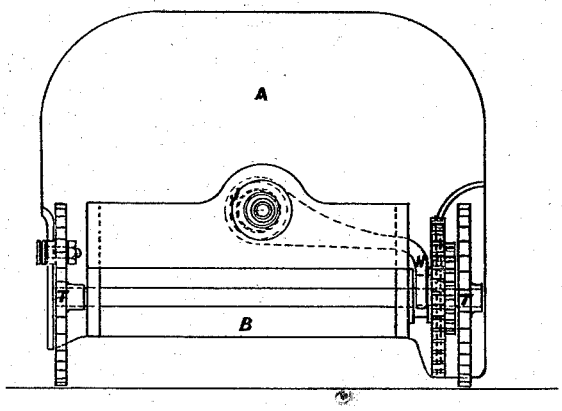


Fig.3

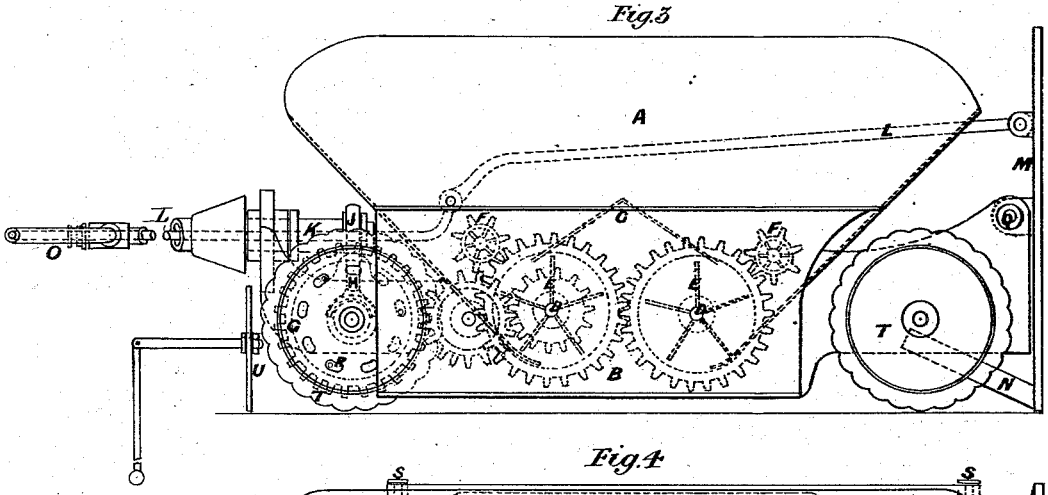
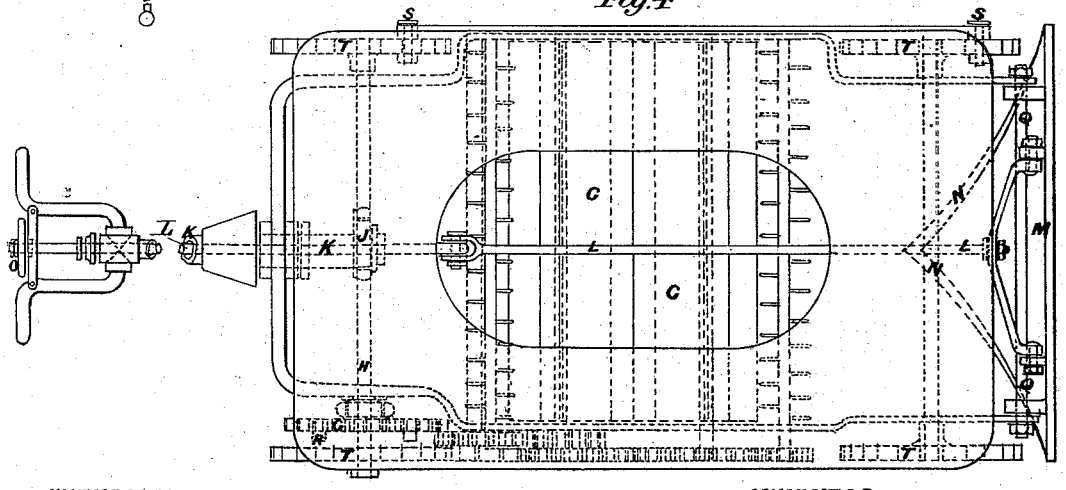


Fig.4



WITNESSES

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2 Sheets--Sheet 2.

J. WEST.

Charger for Gas-Retorts.

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Fig 5

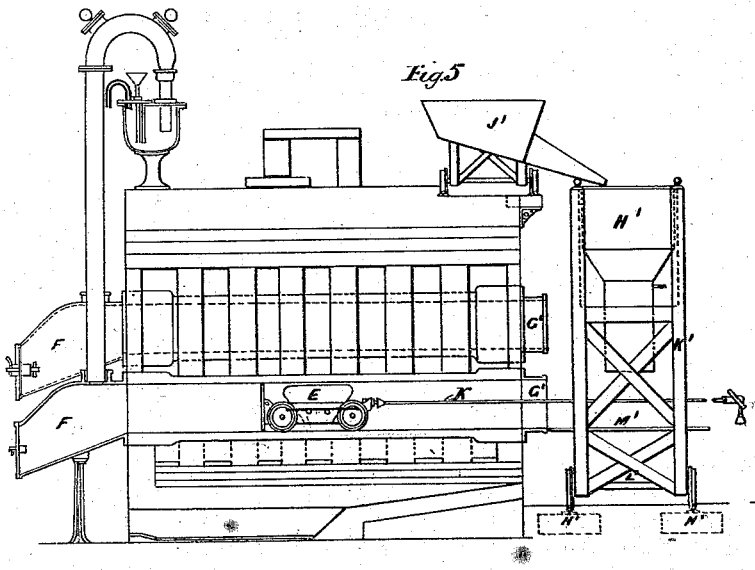


Fig 6

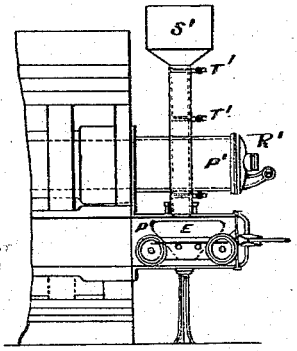
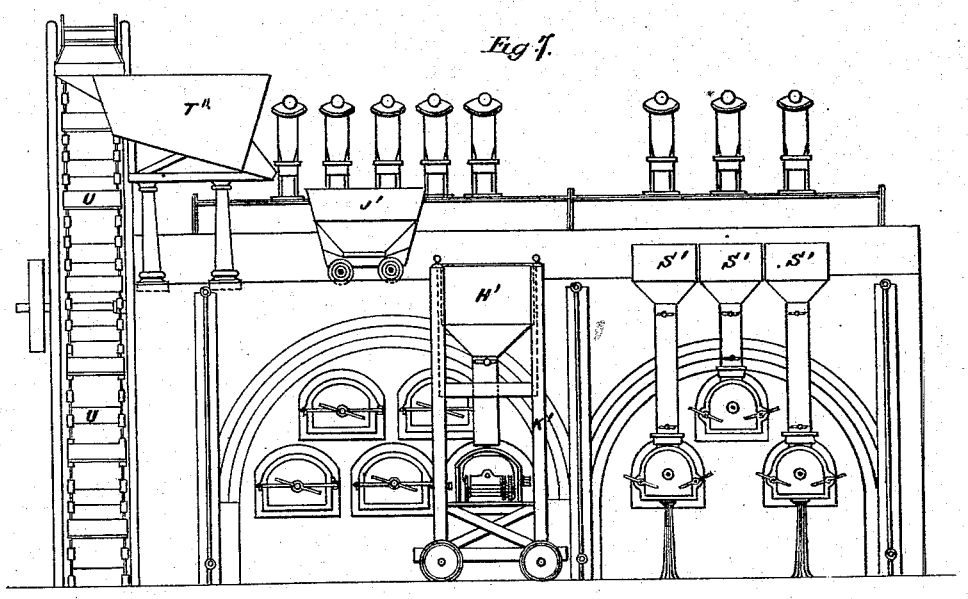


Fig 7.



WITNESSES

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INVENTOR

John West

UNITED STATES PATENT OFFICE.

JOHN WEST, OF MAIDSTONE, GREAT BRITAIN.

IMPROVEMENT IN CHARGERS FOR GAS-RETORTS.

Specification forming part of Letters Patent No. **160,490**, dated March 2, 1875; application filed November 17, 1873.

To all whom it may concern:

Be it known that I, JOHN WEST, of Maidstone, in the county of Kent, in the Kingdom of Great Britain, have invented an Improved Charger for Gas-Retort, of which the following is a specification:

This invention consists, mainly, in the peculiar construction of a charger or carriage adapted to convey coal into the retort, and distribute the same in an even layer throughout its entire length. It consists, further, in the combination of the charger with the retort, and a hopper for supplying it with coal without rendering necessary the opening of the retort, as will be fully described hereinafter.

In the drawings, Figure 1 represents a sectional elevation of the front end of the retort; Fig. 2, an end elevation of the charger; Fig. 3, a side elevation, and Fig. 4 a plan view, of the same; Fig. 5, a longitudinal section of the bench of retorts; Fig. 6, a similar view with a modified form of mouth-piece; Fig. 7, a front elevation of a bench of retorts.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

The charger will first be described. A represents an iron hopper, suitably supported by frame-work resting upon the serrated wheels T T, which has its ends inclined, for the purpose of giving the coal the proper direction in its movement. C, Figs. 3 and 4, represents a guide-plate, centrally located in the hopper, which is also adapted, by means of its inclined sides, as shown in Fig. 3, to give the coal proper direction in its movement. D D, Fig. 3, represent a pair of transverse shafts, having radial blades E E, adapted, when the shafts are revolved, to take up and deliver, through the discharge-opening of the charger, a definite quantity of coal in a given time, which shafts are provided at one end with intermeshing gear-wheels, as shown. G represents a gear-wheel, located near one end of the rear axle of the machine, which is adapted, when properly operated, to give movement to an intermediate idle-wheel engaging with a pinion upon one of the shafts D, as shown in Fig. 3. The wheel G is free to move longitudinally upon the rear axle, for the purpose of engaging with the wheel T, from which it receives motion, in consequence of its pins R engaging with proper slots in wheel T, as shown in Figs. 3 and 4, and also for engaging with the intermediate idle-wheel, to which it communicates motion. H, Figs. 2 and 3, represents a forked arm, by means of which the wheel G is moved longitudinally upon the shaft, when desired, the arm being itself moved by an eccentric wrist, J, secured to a hollow rod, K, as shown. F F, Fig. 3, represent pinions engaging with the gear-wheels of shafts D D, which operate transverse rake-shafts, as shown in Fig. 4, employed for the purpose of driving down the coal to the feeding-blades. K, Figs. 3, 4, and 5, represents a long hollow rod, by means of which the charger is moved to and fro in the retort, the same being suitably supported in front of the receiver by a friction-wheel, X, Fig. 1. M represents a plate or disk, of proper form, secured to the front end of the charger by the pivot Q. L represents a jointed rod, which extends through and beyond the hollow rod K, and is provided with a suitable handle or knob, as shown. By the longitudinal movement of this rod the disk M may either be tilted upon its pivot, in a downward direction, for the purpose of scraping the bottom of the retort, or be raised out of the way, as may be desired. N, Figs. 3 and 4, represents a plow, so attached to the bottom of the disk M that when the disk is in its raised position it is adapted, on the return movement of the charger, to scrape and level the top surface of the coal which was deposited by the forward movement of the charger.

From the foregoing description it will be readily understood that if coal is deposited in the hopper A, and the charger be caused to travel along the bottom of the retort by means of its operating-rod K, the coal may be evenly distributed in a thin layer by throwing into gear the wheel G, this operation being performed by revolving slightly the rod K, the wheel G receiving motion from the adjacent wheel T, and communicating motion by means of the intermediate connections to the feeding blades and rakes. The disk may be operated to scrape the bottom, if desired, by moving properly the inner rod, as described.

The construction of the retorts will now be

described. They are made preferably in D form, and are provided in front with the usual mouth G′ G′, Fig. 5, or with a projecting mouth, P P′, adapted to hold the charger, as shown in Fig. 6, as may be desired, and in rear with the enlarged coke-chamber F, having a proper discharge-opening, as shown. K′, Fig. 5, represents a carriage, adapted to run on suitable ways before the bench of retorts, which is provided with a shelf or platform, M′, adapted to permit the charger to be thrust into and removed from the retort, and also with a hopper, H′, adapted to receive coal from the car J′, to which latter it is supplied by the chute T″, receiving its supply from the elevator U, as shown in Fig. 7. S′ represents stationary hoppers having rotating or other valves, which are adapted to deliver coal through a suitable opening in the long mouth of the retort directly into the charger, as shown in Fig. 6. R′, Figs. 1 and 6, represents the covers of the extended mouths P P′, each of which is provided with a stuffing-box, through which the rod for operating the charger passes, and also with a bracket supporting the friction-wheel X, upon which the rod runs.

From the foregoing description it will be understood that the charger may be filled with coal and the same be delivered properly to the retort without opening the latter, the charger in its movement being adapted also to push before it, by means of its disk M, the coke into the coke-chamber F.

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

1. The charger described, provided with the revolving distributing-blades E, receiving motion from the movement of the carriage in the retort, as set forth.

2. The combination of the disk M and the plow N, substantially as described.

3. The combination of the wheel T, the wheel G, the forked arm H, the eccentric wrist J, and the hollow rod K, substantially as described.

4. The combination of the revolving blades E, the pinions F F, and the transverse rake-shafts for feeding down the coal.

5. The charger described, having the hopper A, inclined guiding-board C, rake-shafts F, and feeding-blades E, combined and arranged as and for the purpose described.

JOHN WEST.

Witnesses:

W. H. BENNETT,

EDWARD S. NOTTINGHAM.