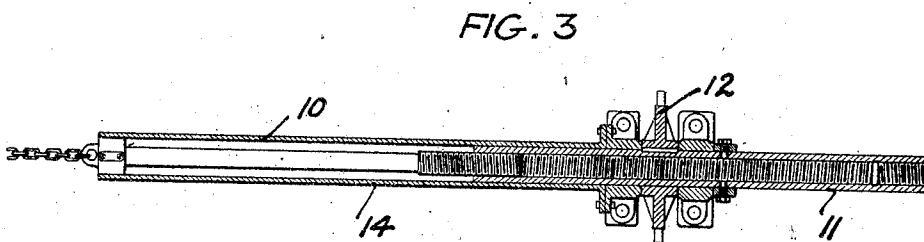
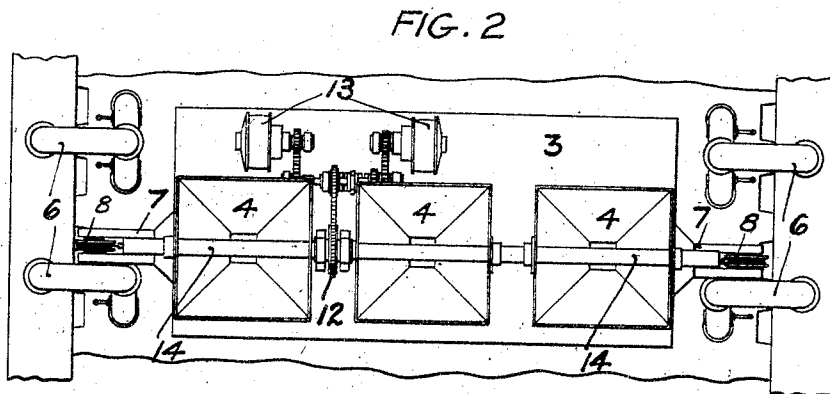
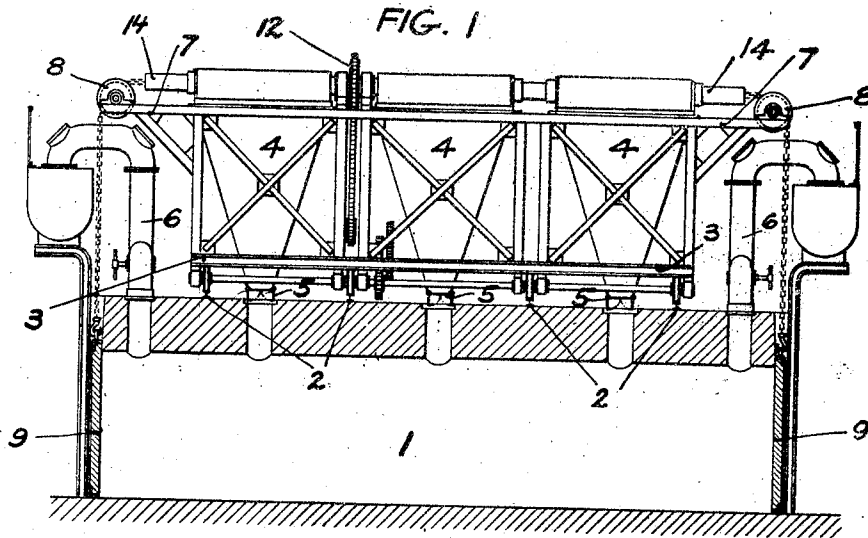


W. FEICKS.
CHARGING MACHINE FOR COKE OVENS OR GAS FURNACES.
APPLICATION FILED MAR. 9, 1911.

1,034,094.

Patented July 30, 1912.



WITNESSES:

E. M. Lockwood Jr.
Miles C. Benner.

INVENTOR:

William Feicks

UNITED STATES PATENT OFFICE.

WILLIAM FEICKS, OF BETHLEHEM, PENNSYLVANIA.

CHARGING-MACHINE FOR COKE-OVENS OR GAS-FURNACES.

1,034,094.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed March 9, 1911. Serial No. 613,464.

To all whom it may concern:

Be it known that I, WILLIAM FEICKS, a subject of the German Emperor, residing in the city of Bethlehem, in the county of Northampton and State of Pennsylvania, have invented new and useful Improvements in Charging-Machines for Coke-Ovens or Gas-Furnaces, of which the following is a specification.

The present invention relates to charging machines for coke ovens or gas furnaces capable of operating above the battery and equipped with mechanism for raising and lowering the oven doors.

According to this invention the charging car is so constructed that the car frame or body leaves a free space at either end of the ovens, which enables the ascension pipes for the gases of distillation issuing from the coking chambers to be placed there. To this end brackets or arms are extended from the upper part of the car at either side, on which are mounted rollers or drums to receive the chains or ropes connecting the oven doors with the operating device provided on the car. The novel operating device carried on the car consists mainly of a system of hand or power driven longitudinally movable rods or bars arranged longitudinally to the coking chambers and preferably vertically above the discharge openings of the coal compartments of the car. The rods or bars may be operated in different ways, either as illustrated by way of an example in the drawing or, they may be provided with a piston at one end and inclosed in cylinders to which steam, air or a liquid under pressure is admitted, or they may be provided with teeth in which engages a driving wheel.

In the drawing, Figure 1 shows a cross section through a battery of ovens with the charging car in longitudinal elevation, Fig. 2 is a plan view of Fig. 1, and Fig. 3 is a part section through the device for operating the oven doors.

Above the battery of ovens 1 are rails 2 on which the charging car 3 is propelled. The car may be hand or power driven. The coal for charging the ovens is contained in compartments 4, at the bottom of which are folding doors or slides 5 for discharge. The car frame or body as will be seen leaves a free space at both ends of the oven, where the ascension pipes 6 are placed, which draw off the gases evolved in the ovens. At

the upper part of the car frame on both sides are brackets 7 carrying rollers 8 to receive the chains, ropes or lifting means connecting the oven doors 9 with the operating device on the car. The device for raising and lowering the oven doors consists of two longitudinally movable rods 10, arranged at the upper part of the car and on an axis parallel to the coking chambers. (Shown on an enlarged scale in Fig. 3, the right-hand rod 10, being broken away.) The rods are operated by a sleeve 11 which is provided with right and left hand thread engaging with similar thread cut on the rods. The rods are capable of a lateral movement only, while the sleeve is prevented against any lateral movement and can only be revolved. The sleeve is revolved by means of a chain drive 12 connected to either one of the motors 13. Suitably arranged clutches allow either one of the motors 13 to be used for driving the car or the device for raising and lowering the oven doors. To prevent the admittance of dust the rods 10 are inclosed in a housing 14.

The action of the apparatus is as follows: The coal compartments 4 of the car, having been filled with coal, the car is run directly over one of the ovens 1, the chains lowered and hooked to the oven doors 9. The operating device of the doors is now started in the reversed direction and the oven doors raised. The coke in the oven may now be discharged in any desired manner. The doors are then lowered, the chains disconnected and raised again. The covers of the charging holes are now removed and the coal charge dumped into the oven by the folding doors 5. After charging the oven, the covers for the charging holes are put back in place.

All operations of the apparatus can be started by simple actuating of levers or equivalent means so that it can be handled by a single man.

I claim:—

1. In combination with a battery of coke ovens or gas furnaces a charging car capable of operating above the battery, the car frame or body leaving a free space at either end of the ovens, brackets or arms extending from the upper part of the car at either side to which are secured rollers or drums to receive chains or ropes for connecting the oven doors with an operating device for the latter carried on the car, said operating de-

vice comprising a pair of longitudinally movable rods arranged to simultaneously raise and lower the oven doors, substantially as set forth.

5 2. In combination with a battery of coke ovens or gas furnaces a charging car capable of operating above the battery, the car frame leaving spaces on top of the ovens at the door ends thereof for accommodation
10 of ascension pipes, and mechanism near the top of said car for raising and lowering the oven doors, comprising a system of hand or power operated laterally movable rods or bars, substantially as set forth.

15 3. The combination with a car for operating oven doors and arranged to leave spaces on top of the ovens at the door ends thereof for accommodation of ascension pipes, of a hoisting mechanism on top of said car comprising longitudinally movable rods, means
20 attached thereto for lifting the doors, guiding means for said lifting means, and means for operating said rods.

25 4. The combination with a battery of coke ovens or gas retorts, of an apparatus for charging the ovens and operating the oven doors comprising a car capable of traversing above the battery, the lower part of said car leaving a free space at either end of the
30 ovens and the top of the car provided with an extension the ends of which terminate in substantially the same vertical planes as

the oven doors lie in, a hoisting device carried on said car, means for connecting said hoisting device with the doors of an oven, 35 and means carried by said extension for supporting said connecting means between the hoisting device and the oven doors.

5. The combination with a battery of coke ovens or gas retorts, of an apparatus for
40 operating the oven doors, comprising a car capable of traversing above the battery of ovens and leaving a space at either end thereof, a pair of longitudinally movable oppositely threaded rods carried by said 45 car, a correspondingly threaded sleeve in engagement therewith, means for holding said sleeve against lateral movement in respect to said rods, means carried by the car for rotating said sleeve, a housing for said rods, 50 means for connecting said rods with the doors of an oven, and guide means to change the direction of travel of aforesaid connecting means between the rods and oven doors, whereby upon rotation of said sleeve the 55 said rods will separate or approach each other in said housing and cause said connecting means to raise or lower the oven doors.

WILLIAM FEICKS.

Witnesses:

E. M. LOCKWOOD, Jr.,
MILES C. BENNER.