No. 734,592. PATENTED JULY 28, 1903.

J. M. McCLELLON.

COKE RECEIVER AND LOADER.

APPLICATION FILED SEPT. 13, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

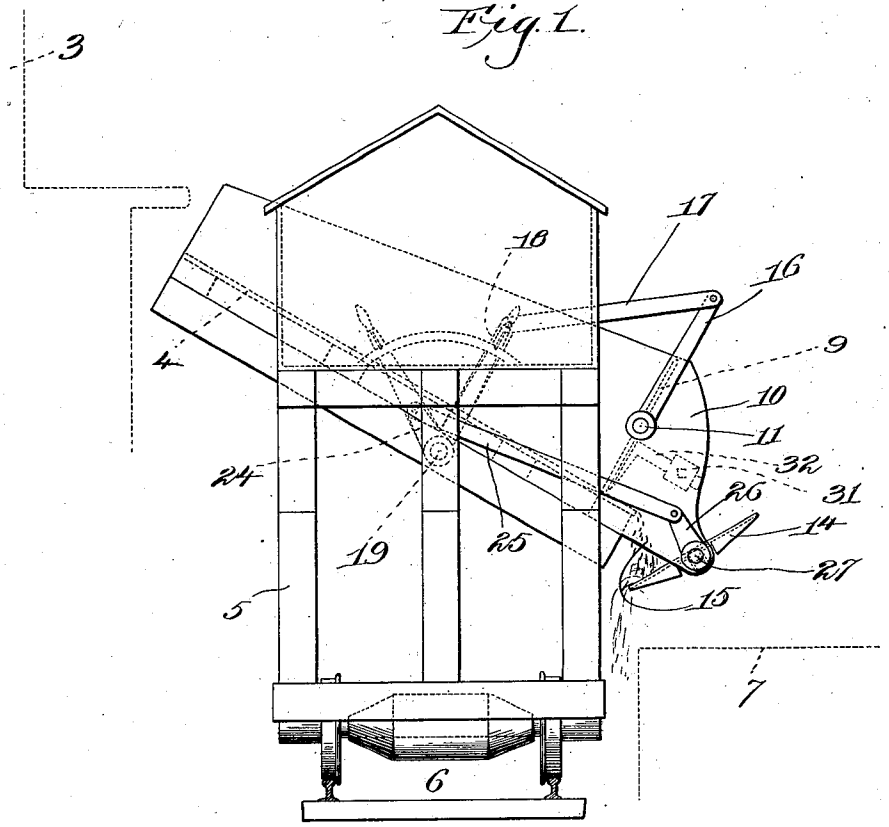
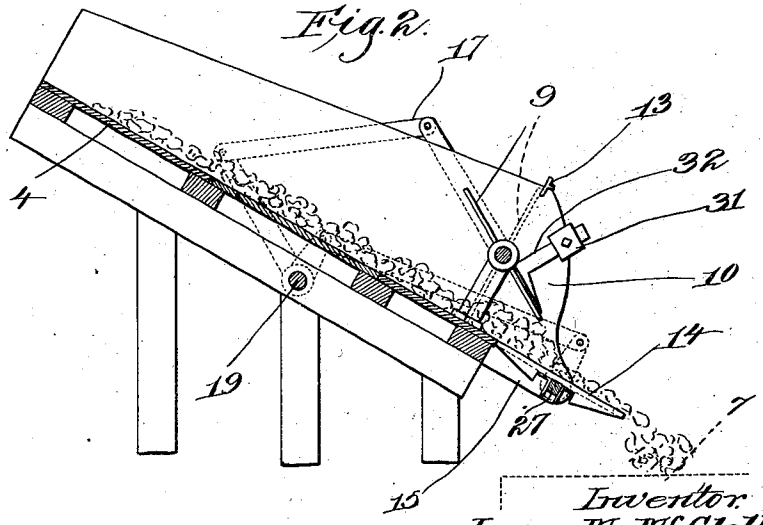


Fig. 2.



Witnesses.
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S. W. Sutton.

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James M. McClellon.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

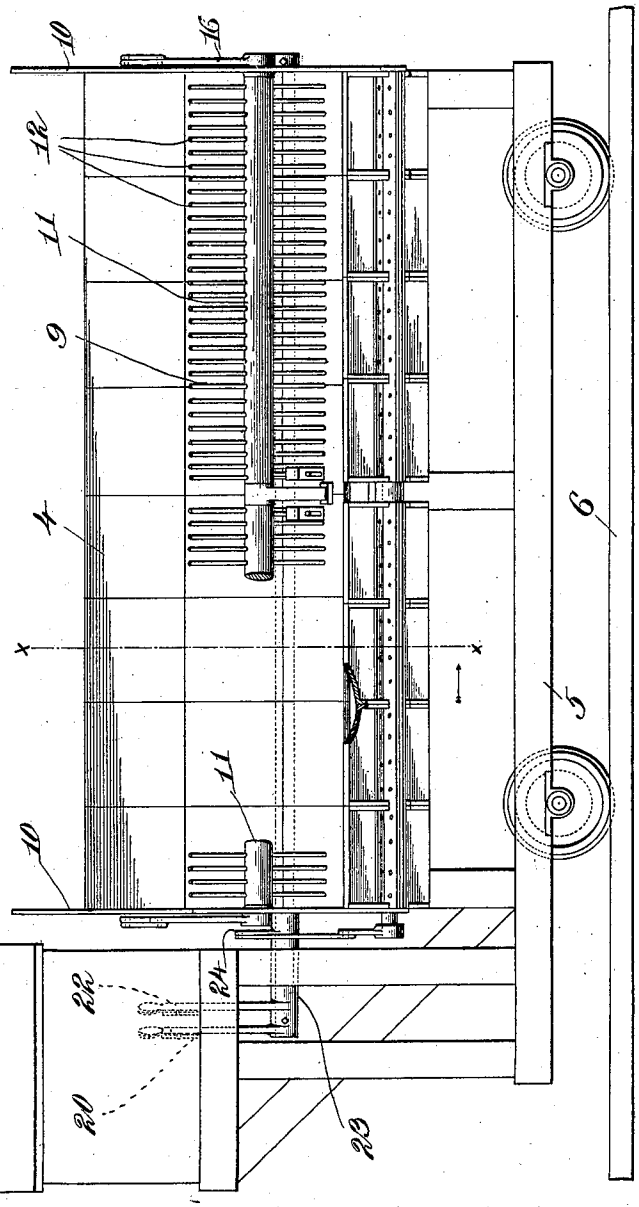


Fig. 3.

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No. 734,592. Patented July 28, 1903.

UNITED STATES PATENT OFFICE.

JAMES M. McCLELLON, OF EVERETT, MASSACHUSETTS.

COKE RECEIVER AND LOADER.

SPECIFICATION forming part of Letters Patent No. 734,592, dated July 28, 1903.

Application filed September 13, 1902. Serial No. 123,287. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. McCLELLON, a citizen of the United States, and a resident of Everett, county of Middlesex, State of Massachusetts, have invented an Improvement in Coke Receivers and Loaders, of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

During the process of making coke it is discharged from the coking-oven after having been roasted at almost a white heat, and before it can be handled or transported in cars it is necessary to cool it in some way. This is usually done by deluging the hot coke with water, a process commonly known as "quenching." This quenching is usually done just before the coke is loaded into cars, and it is essential that none of the water which is thus used in quenching the coke should drain into or accumulate in the cars, for otherwise part of the load of the cars is composed of water, and not only is it impossible to determine the correct weight of the coke by weighing the cars, but in cold weather the whole mass freezes solidly together and becomes very difficult to handle.

It is the object of my invention to provide a novel form of apparatus for receiving and holding the coke while it is being quenched and for subsequently loading it into the car, which apparatus is simple and inexpensive to manufacture and easy to manipulate and which effectively drains the coke before discharging it into the car and which also acts as a trimmer during the process of loading the car.

The invention comprises a gravity-pan which is adapted to be situated between the coking-oven and the car into which the quenched coke is to be deposited and which has such an inclination as to form a sort of chute to carry the coke from the oven to the car, suitable means to retain the coke in the pan while it is being quenched, and other means in the nature of a deflector to deflect the water which drains from the lower edge of the pan to one side of the car while the quenching process is in operation. After the coke has been thoroughly quenched the deflector is turned into a position to form an extension to the bottom of the gravity-pan and the device which holds the coke in the pan is removed, when the coke will gravitate into the car.

In the drawings, Figure 1 is an end elevation of my improved apparatus. Fig. 2 is a section on the line $x\,x$, Fig. 3; and Fig. 3 is a side elevation of Fig. 1.

Since my invention relates solely to the device for handling and quenching the coke, I have only indicated a portion of the coke-oven herein in dotted lines, said oven being designated generally by 3.

As usual in the manufacture of coke, after the charge in the oven has become thoroughly coked it is pushed therefrom onto some suitable receiver, on which it is quenched.

My improved apparatus includes a gravity-pan 4, into which the coke from the oven 3 is discharged, and I have herein chosen to illustrate said pan as mounted upon a suitable car or truck 5, running upon a track 6 in front of the coking-ovens, whereby the car may be brought into position to receive the coke from any one of a series of ovens. The pan 4 is fixedly mounted upon the car, and its bottom is inclined, as shown in Figs. 1 and 2, whereby the pan may act as a sort of chute to convey the coke into the car, the position of which is shown by dotted lines at 7. When the coke is discharged from the oven into the pan, it is extremely hot, and it must be retained in the pan while water is being poured over it to cool it. To thus retain the coke in the pan, I have provided a suitable gate 9, which is pivotally carried by the cheek-pieces or sides 10 of the pan. The particular form of gate herein shown comprises a rod or shaft 11, which extends clear across the pan at its lower end and is journaled in the cheek-pieces or sides 10 thereof, and a plurality of bars or arms 12, secured thereto and projecting from each side thereof. When the gate is closed, the lower ends of the fingers or bars 12 contact with the bottom of the pan, and thus serve to retain the charge of coke in the pan while it is being quenched. During the quenching operation the water will drain from the lower end of

the pan 4, and in order to prevent the same from dripping into the car 7 I have provided a suitable deflector, which catches the drip-water and deflects the same from the car. This deflector is herein illustrated as in the form of an apron 14, which is pivotally carried by the extension 15 of the sides of the pan and which may be thrown into position, Fig. 2, in which it forms in effect an extension to the bottom of the pan, or may be turned into the position shown in Fig. 1, in which position it acts as a deflector. During the quenching of the coke the gate 9 will be closed and the deflector thrown into its deflecting position, as seen in Fig. 1, and any water which drains from the lower end of the pan 4 will strike the deflector and be deflected from the car 7. When the charge of coke has been properly quenched, the gate is opened and the deflector turned into the position shown in Fig. 2, when the coke is discharged by gravity from the pan and is carried by the deflector into the central portion of the car 7. The deflector therefore has a twofold purpose—first, to deflect the water from the car and, second, to act as a trimmer to trim the load as it is delivered to the car. It will be obvious that without this deflector the load when discharged into the car would accumulate at one side of the car-body and would necessitate, therefore, further handling to properly load the car; but with my structure the load is deposited centrally of the car-body.

Any suitable mechanism for operating the gate and the deflector at the proper times may be employed, and as one convenient device for this purpose I have shown the rod or shaft 11 of the gate as having secured thereto, at each side thereof outside of the sides 10 of the pan, an arm 16, which is connected by a suitable link 17 to an arm 18, fast upon a shaft 19, carried by the truck, said shaft having a hand-lever 20 secured thereto, which is situated within convenient reach of the operator in the cab 21 and by which the shaft 19 may be rocked. The rocking of the said shaft, as will be obvious, swings the gate 9 into either its open or closed position. The deflector is herein shown as being operated by a lever 22, also situated in the cab, the said lever being connected to a sleeve 23, carried by the shaft 19 and from which an arm 24 projects. The arm 24 is connected by a link 25 with an arm 26, fast on a shaft 27, to which the deflector is secured. With this construction it will be apparent that by rocking the lever 22 the deflector may be thrown into either of its two positions. I would state, however, that any other suitable form of gate-operating mechanism or deflector-operating mechanism may be employed without departing from my invention, and while I have herein shown the gate-operating mechanism as being independent from the deflector-operating mechanism, yet the two could be so combined that the gate and deflector would be simultaneously operated without departing from my invention.

In order that the gate may be easily operated, I have provided the same with counterweights 31, adjustably mounted on arms 32, which counterweights preserve the balance of the parts and reduce the amount of energy required to operate the gate to a minimum.

The particular form of gate herein illustrated is not essential to the invention, nor the particular way in which the deflector is mounted, it only being essential that a fixed gravity-pan be employed and some form of means for retaining the coke in the pan while it is being quenched and other means which is adapted to deflect the drain-water from the car, but to allow the coke to be discharged into the car after it is quenched.

In constructing my device I will preferably make the pan of cast-iron and mount it on a wooden supporting structure, although my invention will not be departed from if the pan were made of any suitable material.

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

1. In an apparatus of the class described, a gravity-pan adapted, without a change of position, to receive coke from an oven and discharge it into a car, means to retain the coke in the pan while it is being quenched, and means to deflect from the car the water which drains from the pan.

2. In an apparatus of the class described, a gravity-pan adapted to receive the coke from the oven and discharge it into a car, means to retain the coke in the pan while it is being quenched, and a movable deflector, said deflector in one position operating to deflect from the car the water which drains from the pan and in another position operating as a trimmer.

3. In a device of the kind described, a gravity-pan having an inclined bottom and adapted to receive coke from the oven and discharge it into a car, a gate to retain the coke in the pan while it is being quenched, and a deflector to deflect the water from the car.

4. In a device of the class described, a gravity-pan having an inclined bottom adapted to receive the coke from the oven and discharge it into the car, a gate to retain the coke in the pan while being quenched, means to open or close the gate, and a movable deflector situated at the lower end of the pan, said deflector when in one position serving to deflect the water from the car and when in another position forming an extension to the bottom of the pan.

5. In an apparatus of the class described, a gravity-pan having an inclined bottom and adapted to receive the coke from the oven and discharge it into a car, means to retain the coke in the pan while it is being quenched, a deflector at the base of the pan, and means to place the deflector either at an angle to the bottom of the pan, and in position to de-

flect the water from the car, or in line with the bottom of the pan and in position to act as a trimmer.

6. In a device of the class described, a movable gravity-pan having its bottom arranged at a fixed inclination, and adapted to be placed in front of any one of a number of ovens to receive coke therefrom and to discharge the coke into a car, means to retain the coke in the pan while being quenched, and means to deflect from the car the water which drains from the pan.

7. In a device of the class described, a gravity-pan fixedly mounted upon a movable support and adapted to receive coke from an oven and discharge the said coke into a car, means to retain the coke in the pan while it is being quenched, and means to deflect from the car the water which drains from the pan.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES M. McCLELLON.

Witnesses:
JOHN C. EDWARDS,
LOUIS C. SMITH.