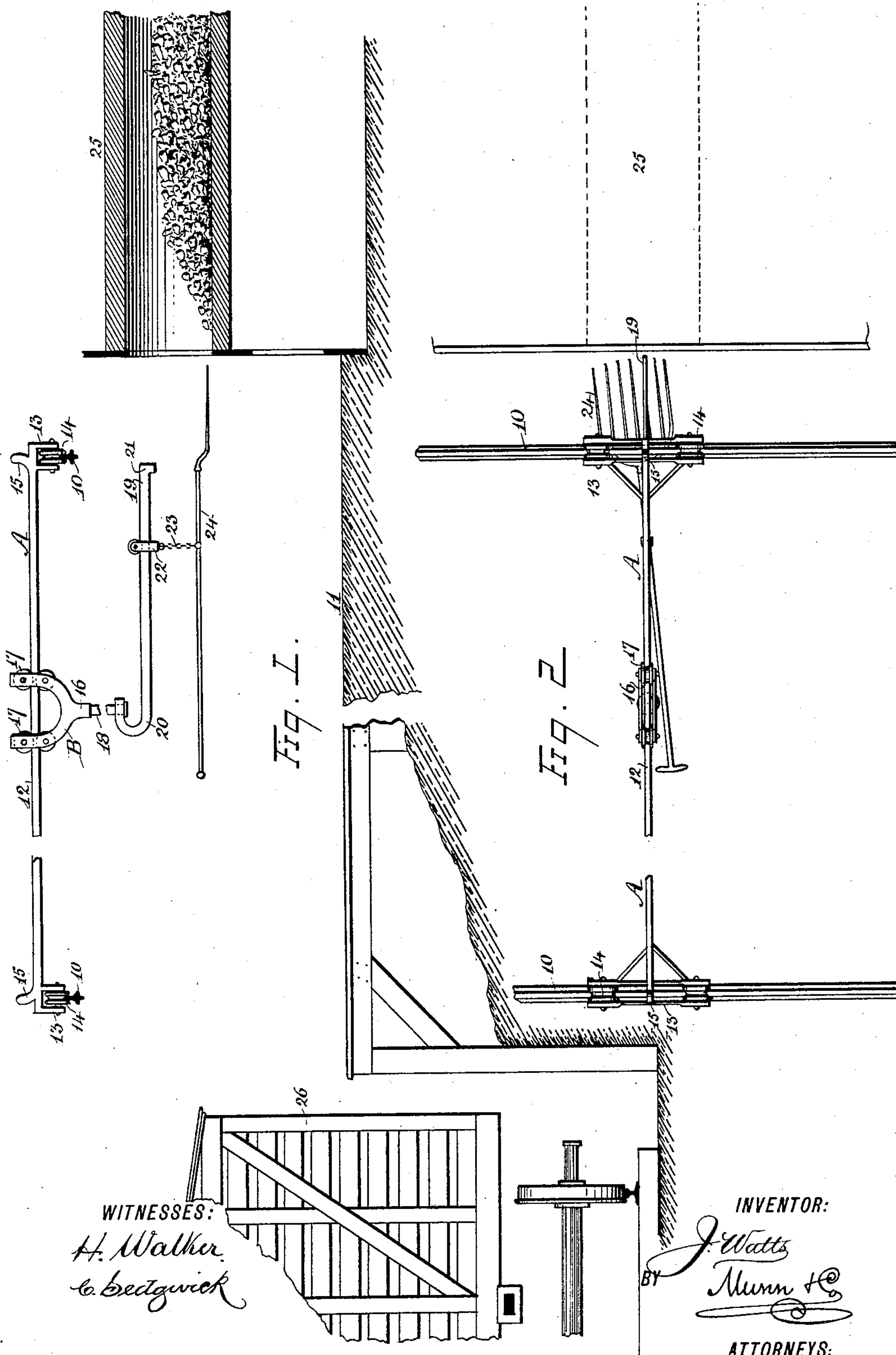


(No Model.)

J. WATTS.  
DEVICE FOR HANDLING COKE.

No. 407,556.

Patented July 23, 1889.





# UNITED STATES PATENT OFFICE.

JOSEPH WATTS, OF MCKEE'S ROCKS, PENNSYLVANIA.

## DEVICE FOR HANDLING COKE.

SPECIFICATION forming part of Letters Patent No. 407,556, dated July 23, 1889.

Application filed April 9, 1889. Serial No. 306,527. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH WATTS, of McKee's Rocks, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Devices for Handling Coke, of which the following is a full, clear, and exact description.

My invention relates to an improvement in devices for handling coke, and has for its object to provide a means for loading coke from the oven directly to the car or vehicle whereby it is to be removed at a minimum expense and expenditure of labor and free from dirt or ashes.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the fork and carriage for the same, the coke-oven being in section. The said figure also represents a portion of the coke-yard and the car in the said yard adapted to receive the coke; and Fig. 2 is a plan view of the fork and the carriage of the same.

In carrying out the invention two parallel tracks 10 are supported above the coke-yard 11 in any suitable or approved manner, upon which tracks a carriage 12 is made to travel, consisting of a transverse rail A, provided at each end with an attached truck 13, carrying grooved wheels 14 capable of traveling upon the said tracks 10. The rail A of the carriage is further provided over each truck with an upwardly-extending lug 15, as best shown in Fig. 1.

A crane 16 is held to travel upon the rail A of the carriage, the said crane comprising a body portion B, essentially U-shaped, and provided with two spaced wheels 17 in each member, capable of contact, respectively, with the top and the bottom surfaces of the rail.

From the U-body of the crane a post 18 is downwardly projected, upon which post a horizontal arm 19 is swiveled at one end, the said arm at the swiveled end being upwardly curved, as illustrated at 20 in Fig. 1. The

outer or free end of the crane-arm 19 is provided with a downwardly-extending lug 21, and upon the said crane-arm a sleeve 22, carrying a pulley, is held to slide, from which sleeve, by means of a chain 23, or equivalent device, a fork 24, of any approved construction, is suspended. The lug 21 and the bow or curved portion of the crane-arm limit the travel of the sleeve 22, and the travel of the body of the crane upon the rail A of the carriage is limited by the lugs 15. The crane-arm 19 is of such height above the body of the coke-yard 11 that it may be conveniently made to enter the coke-oven 25, and the fork is so suspended beneath the said crane that it may likewise be introduced into the said oven. The handle of the fork is long enough to reach to the back of the oven, and the fork being held to travel upon the crane and the crane upon the carriage, the fork may be readily run into the oven, and the crane may be made to follow the fork far enough to permit the taking up of coke at the extreme back of the oven.

When the fork is loaded, it is drawn back along the crane until the pulley of the sleeve 22, carrying the fork, contacts with the bent or curved portion of the crane-arm, whereupon, by drawing upon the handle of the fork, the crane may be carried back far enough from the oven to permit the entire withdrawal of the fork from the latter. The fork is now turned around and the crane and carriage manipulated as required to successfully bring the fork into position to properly drop the load in the car 26, or other vehicle within the yard waiting to receive said coke.

It is evident from the foregoing description that the coke is thus delivered to the conveyance essentially free from ashes and certainly free from dirt, as the fork takes the coke directly from the oven and the fine ashes drop down through the tines of the fork, and the load of the said fork is delivered from the oven directly to the vehicle in waiting without being brought in contact with the yard 11, as has heretofore been the practice.

In practice heretofore the coke and ashes have been raked from the oven upon the yard and shoveled from thence into wheelbarrows, and thereby carted to a conveyance,



by which method it is evident that a vast amount of both ashes and dirt was delivered to the vehicle together with the coke.

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

1. The combination, with a carriage, of a crane mounted to travel on the carriage and a fork having a sliding and flexible connection with the crane, substantially as described.  
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2. The combination, with a carriage, of a crane comprising a body portion provided with wheels adapted for contact with the carriage, and a horizontal arm, a wheeled frame  
15 held to travel upon the arm of the crane, and a fork pivotally suspended from the said frame, substantially as shown and described.

3. The combination, with a carriage comprising a rail and wheeled trucks, of a crane  
20 comprising a body provided with wheels capable of contact with the upper and lower surfaces of the carriage-rail and a horizontal

arm swiveled to the body, a wheeled frame held to travel upon the crane-arm, a fork, and a connection between said frame and fork, all  
25 combined for operation substantially as and for the purpose specified.

4. The combination, with a carriage comprising a rail, a wheeled truck at each extremity of the rail, and stop-lugs projected  
30 from said extremities, of a crane comprising a body provided with wheels capable of contact with the upper and lower surfaces of the carriage-rail, and a horizontal arm curved at one end, swiveled at said curved end to the  
35 body, and provided at its free end with a downwardly-extending stop-lug, a wheel-carrying sleeve traveling upon the crane-arm, and a fork suspended from said sleeve by a chain, substantially as shown and described.  
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JOSEPH WATTS.

Witnesses:

JOHN GODSON,

JAMES H. WATTS.