No. 647,575. Patented Apr. 17, 1900.

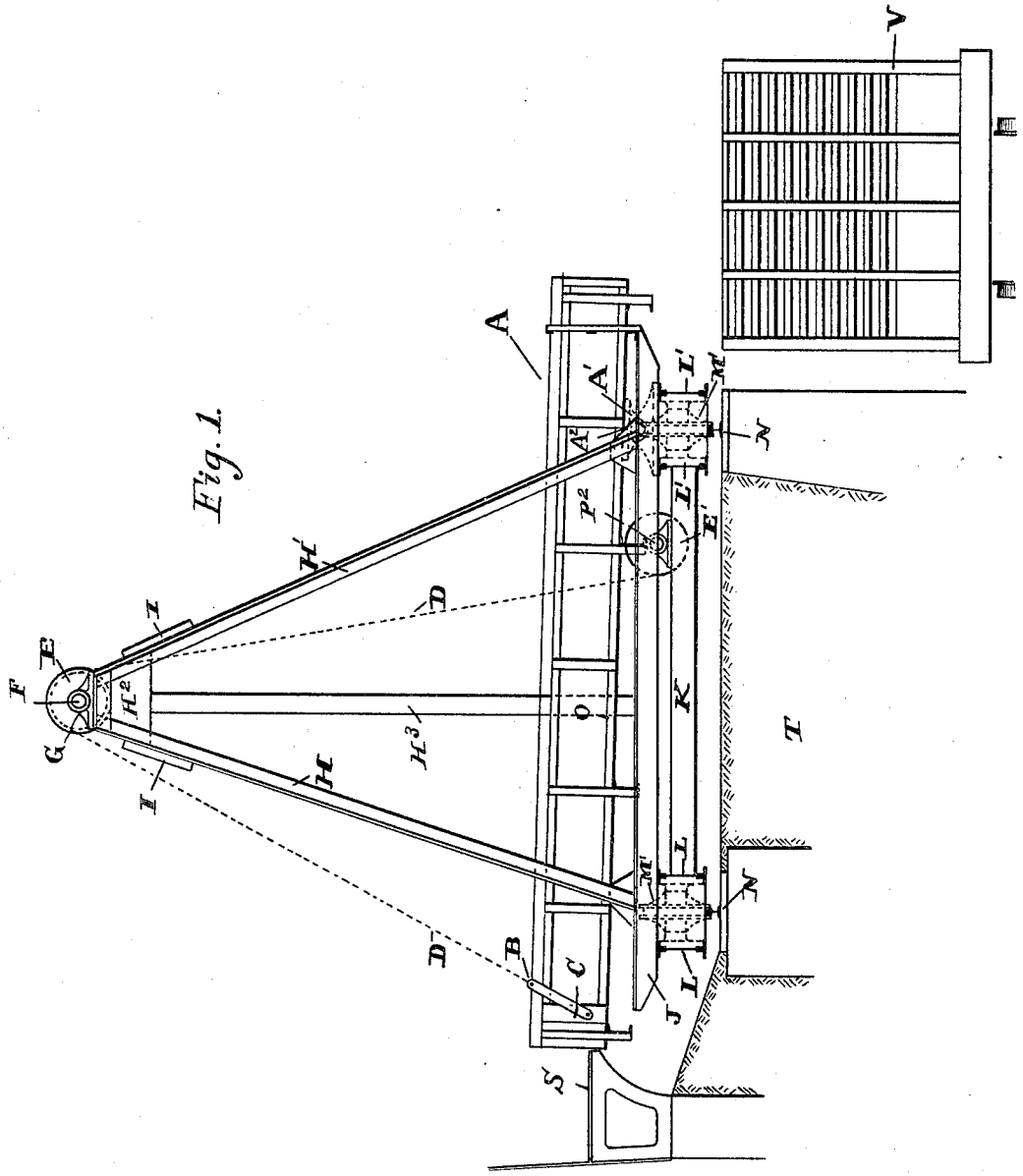
F. McCLAIN.

COKE LOADER.

(Application filed May 26, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



Witnesses

Geo. E. Thackray

C. M. Newman

Inventor

Frederick McClain

By his Attorney

Cyrus Elder

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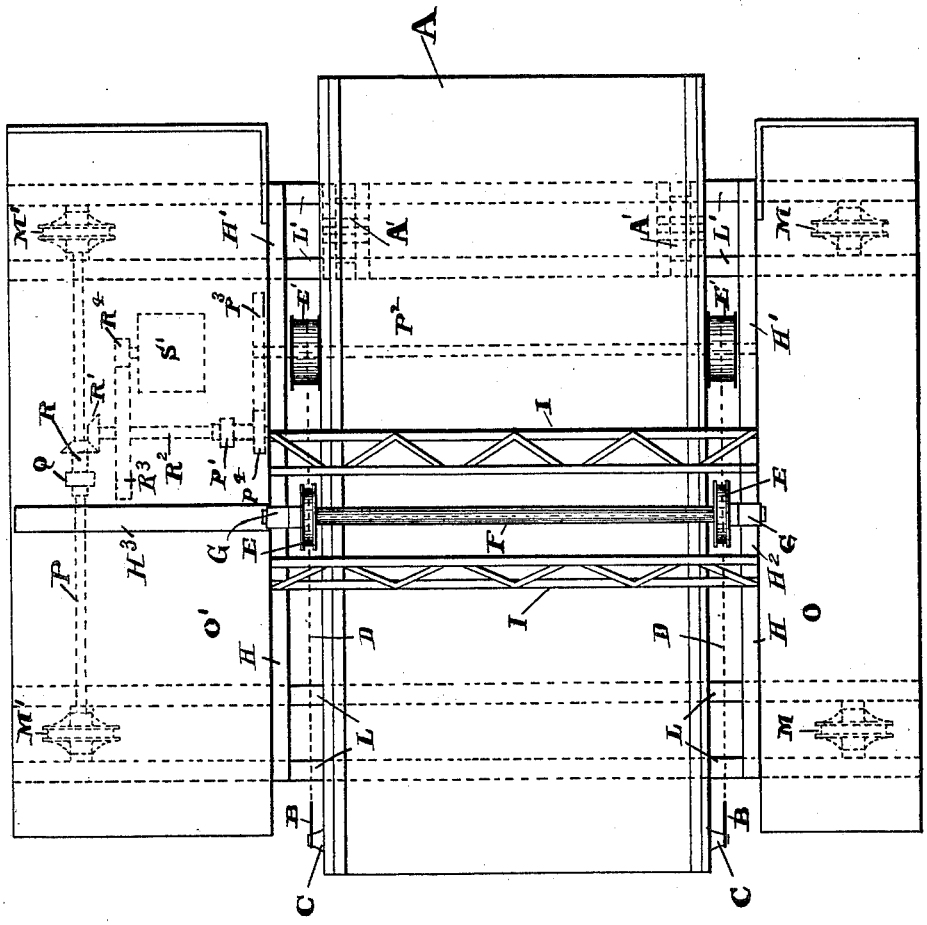

Fig. 2.

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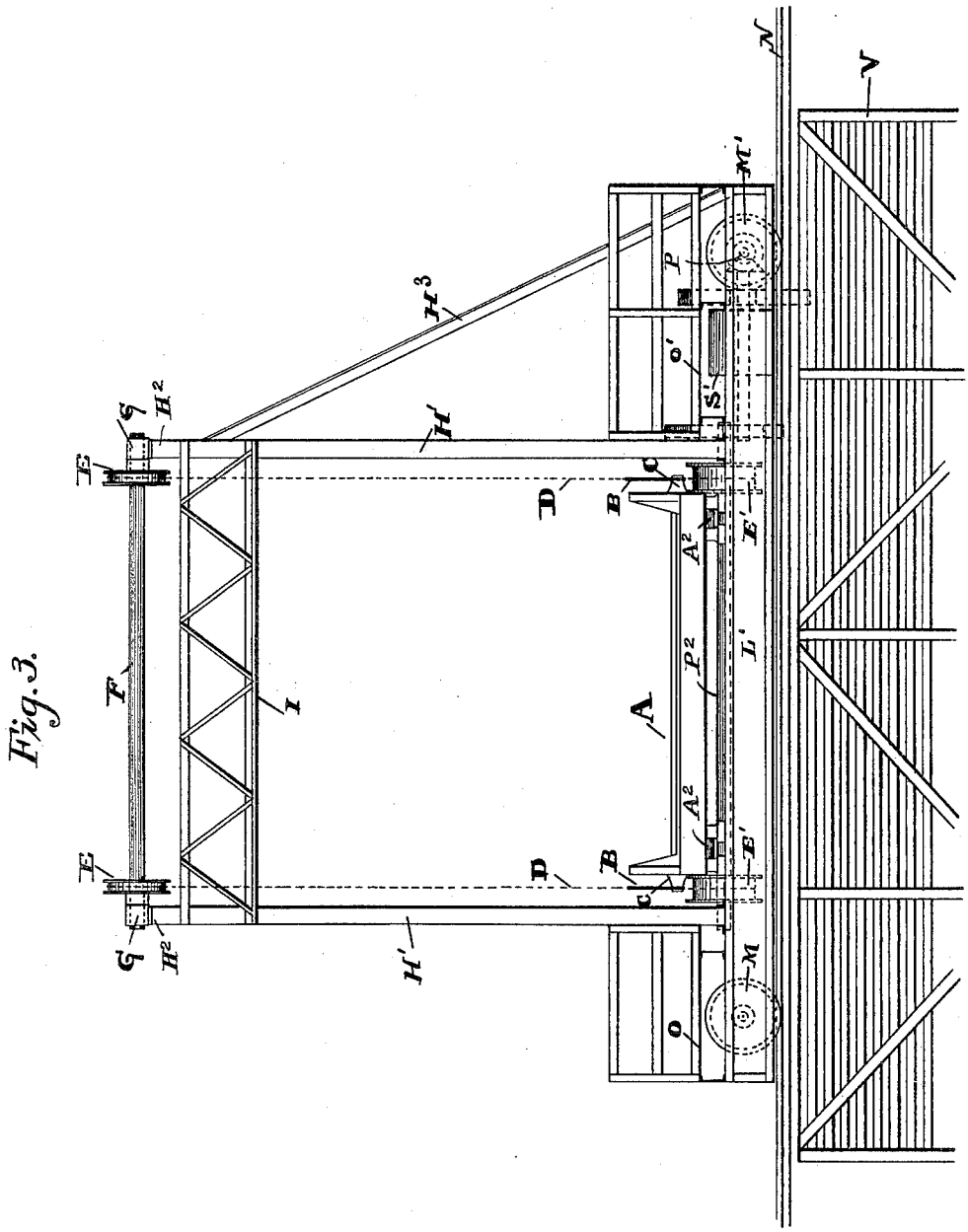

Fig. 3.

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UNITED STATES PATENT OFFICE.

FREDERICK McCLAIN, OF JOHNSTOWN, PENNSYLVANIA.

COKE-LOADER.

SPECIFICATION forming part of Letters Patent No. 647,575, dated April 17, 1900.

Application filed May 26, 1898. Serial No. 681,814. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK McCLAIN, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Coke-Loaders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in coke-loaders for transferring coke or other material from ovens or similar receptacles to railroad-cars, canal-boats, or other vessels for transportation.

It is the object of my invention to generally improve mechanism of the above class, and particularly to simplify its construction by reducing the number of working parts to as few as possible with due regard to the work to be performed.

By means of my invention I provide a movable platform upon which the coke is deposited and cooled, which platform is directly connectible with the floor of the several ovens and serves to receive the coke direct therefrom, thus avoiding a second handling after cooling. My movable platform therefore takes the place of the usual "loading-dock," as it is called, and by reason of its lateral adjustability it may serve a whole line of ovens, and, further, by reason of its vertical movements it dispenses with the labor of hand-loading. I finally utilize but one motive power for all the necessary operations, and accordingly require the services of but one attendant to manage the transferring of a load of coke.

In order to enable others skilled in the art to which my invention appertains to understand and use it, I will proceed to describe the same in detail, reference being had to the accompanying drawings, forming a part of this specification, on which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 is a side elevation of my improved loader complete. Fig. 2 is a plan view. Fig. 3 is a front elevation.

The coke is deposited upon my loader in any suitable manner either by shoveling or by improved methods, such as a steam-pusher or other apparatus. This is preferably done direct as the coke is discharged from the oven when hot, so as to save further handling. After the coke is on the loader cold water is applied while the hot material is upon the platform thereof, and when properly quenched the load is transferred into cars or other receptacles for further transportation or storage, as may be desired, by tilting the platform or car-body.

Referring to the letters of reference marked upon the drawings, S indicates the ledge of a floor in front of a coke-oven, from which the load is taken. In practice this floor is usually level with and forms a continuation of the oven-floors, of which there may be any desired number.

T indicates a bed upon which a suitable railroad-track B is laid. This track is designed to extend along the ovens, between them and the main railroad-track or other place where conveyances are kept to receive the coke.

Upon the track above mentioned I provide a car of novel construction, which is provided with motive power and is adapted to be moved back and forth upon the track at the pleasure of the operator. This car consists in part of a frame comprising braces K, beams L L and L′ L′, and platforms O and O′, both of which latter run crosswise of the car, serving to cover the driving mechanism and to provide a floor upon which the operator may stand. These cross floors or platforms, together with the braces K, insure rigidity to the frame and prevent the same from being distorted. Between the beams L L and L′ L′ are journaled supporting-wheels M and M′, the latter being drivers, through which the car is operated upon its track, as will next be described. The wheels M′ are secured upon a shaft P, journaled in the frame and provided with a clutch Q, by means of which said shaft is brought into operative engagement with a driving-sleeve R, bearing a bevel-pinion meshing with a similar pinion R′, secured upon a shaft R^2. The shaft R^2 is an intermediate medium through which power is conveyed to both the driving and lifting mechanisms from an electric motor S′ by means of gears R^3 and R^4. It will thus be obvious that the car can be

operated upon its track at the will of the attendant by the manipulation of the clutch Q, which throws the driving mechanism into communication with the power derived from motor S'.

Upon the car-frame is hinged a movable platform A, which is open at both ends and serves to receive and deposit the load, as will now be described.

To the beam L' are attached brackets A', containing pins engaging similar brackets A^2, secured to the under side of the outer end of the body, (see Fig. 1,) thus hinging said body to the frame by extra heavy and durable means. To the beams L and L' are secured posts H and H', which lean inward and are tied together at their tops by means of plates H^2, (see Fig. 1,) thus forming a support or upright frame at each side of the platform for a shaft journaled in bearings G upon their upper ends. These supports are provided with a brace I upon both front and rear sides in a manner to bind the two supports together and form a truss, as shown. This truss or upright frame is further provided with a brace H^3, which is attached to its upper end and is supported upon the frame of the car. At both sides of the lifting end of the car-platform I provide lugs C, to which are attached a link B', to which latter are connected the chains D. These chains are carried upward over idle-pulleys E, secured to shaft F, before mentioned, and are then brought downward to connect with winding-drums E' upon a shaft P^2. Said shaft P^2 is mounted in the car-frame and bears a gear P^3, which meshes with a smaller gear P^4 of a sleeve on the clutch P', attached to the intermediate shaft R^2. From the foregoing construction it will be apparent that when the clutch P' is thrown into engagement power will be communicated to the winding-drums E', which will wind the chains thereon, thereby raising the free end of the platform and turning it upon its pivot, which movement will necessarily cause the load to gradually slide down the incline and eventually be discharged therefrom.

From the foregoing it will be apparent that great saving of labor and time is effected by constructing the loader in a manner to utilize the car-body both as a platform on which to cool the coke and means to retain it during transportation, and particularly in permitting the direct transfer of coke from the ovens to said car without intermediate handling.

It will be obvious that my invention is adapted for various other uses than that described—as, for instance, in railroad-work, where it is desirable to transfer material for filling or other purposes—and I therefore do not wish to limit myself to the particular purpose described or, in fact, to the exact details of construction shown on the drawings.

on suitable tracks and provided with driving mechanism, a platform hinged to said car at right angles to said tracks, a truss-frame mounted on the side portions of said car and provided with guiding-pulleys, winding mechanism on said car having flexible connections passing over the said pulleys to the free end of the platform for tilting the same.

2. In a coke-loader, the combination of a car mounted on suitable tracks and provided with driving mechanism, a tilting platform hinged to the framework of said car at right angles to the tracks aforesaid, a truss-frame rigidly secured to said car and provided with guide-pulleys at its top, flexible connections secured to the free end of said platform and passing over the guide-pulleys aforesaid, and mechanism mounted upon said car for winding said flexible connections.

3. A coke-loader comprising a car mounted on a suitable track and provided with driving mechanism, a platform hinged to said car at right angles to said track, a truss-frame mounted on the side portions of said car and provided with guide-pulleys at its top, flexible connections attached to the free end of said platform passing over the pulleys aforesaid and attached to a winch mounted on said car, said winch being provided with driving mechanism for manipulating the flexible connections to tilt said platform.

4. A coke-loader comprising a car mounted upon suitable tracks and provided with driving mechanism, a platform provided with a bottom, two sides and open ends, said platform being arranged at right angles to the tracks aforesaid, means for supporting guide-pulleys above the car, a winding-drum provided with flexible connections passing over said pulleys to the free end of the platform for the purpose of tilting the same, and means for operating said drum.

5. A coke-loader comprising a car mounted upon suitable tracks and provided with driving mechanism, a truss-frame supported upon the side portions of said car, a tilting platform mounted on said car at right angles to the tracks aforesaid, guide-pulleys mounted upon the truss-frame, flexible connections passing over said guide-pulleys and secured to one end of the platform, the other end of said flexible connections being attached to a winch mounted on said car and provided with driving mechanism for tilting the platform aforesaid.

6. In a coke-loader the combination of a car adapted to run on suitable tracks, a driving-motor mounted on said car, an intermediate shaft connected with said motor, a driving shaft or axle provided with wheels mounted on said tracks and bearing clutch connections with the intermediate shaft, a platform hinged to said car at right angles to the

erating said lines whereby the platform is tilted.

7. In a coke-loader the combination of a car adapted to run on suitable tracks, a driving-motor mounted on said car, an intermediate shaft connected with said motor, a driving shaft or axle provided with wheels mounted on said tracks and bearing clutch connections with the intermediate shaft, a platform hinged to said car at right angles to the tracks aforesaid, trusses secured to said car and provided with guide-pulleys at their tops, lines passing over said pulleys and secured to one end of said platform, the other ends of said lines being attached to a winch secured to the car-body, said winch being provided with clutch connections to said intermediate shaft for the purpose of tilting said platform.

8. A coke-loader comprising a car mounted on suitable tracks and provided with driving mechanism, a platform hinged near its discharging end to said car, said platform being arranged at an angle to the tracks aforesaid, a truss-frame mounted on said car, and provided with guiding-pulleys, winding mechanism provided with flexible connections passing over the pulleys aforesaid to the free end of the platform for the purpose of tilting the same.

In testimony whereof I affix my signature in the presence of two witnesses.

FREDERICK McCLAIN.

Witnesses:
JNO. S. TITTLE,
C. M. NEWMAN.