

M. L. SENDERLING.
COKE AND COAL WAGON.
APPLICATION FILED OCT. 1, 1910.

1,061,201.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

Fig. 1

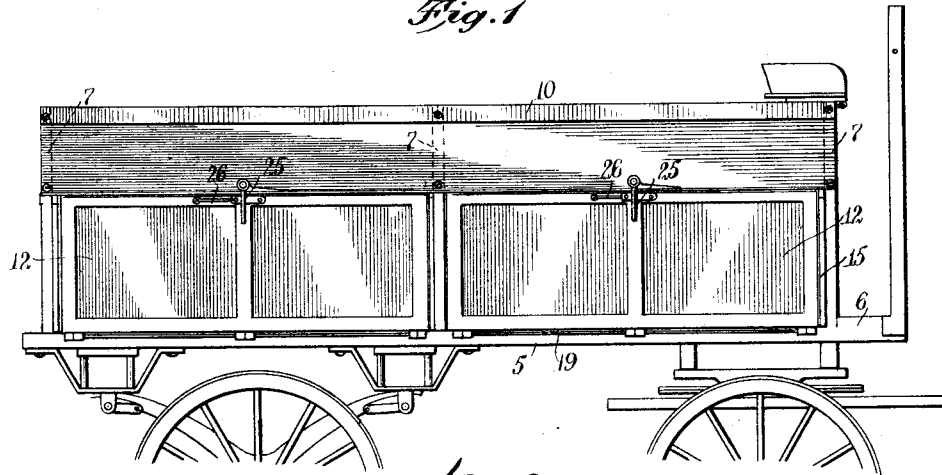
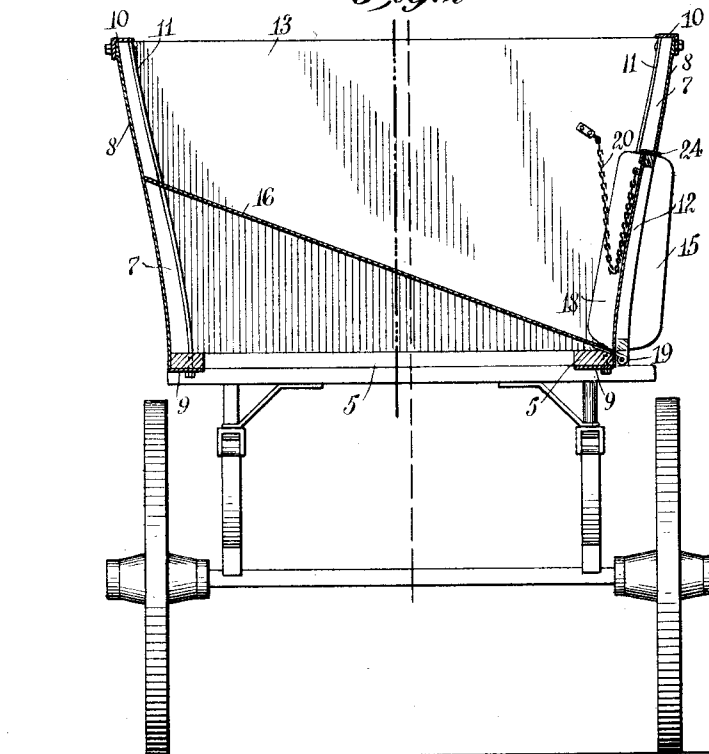


Fig. 2



WITNESSES
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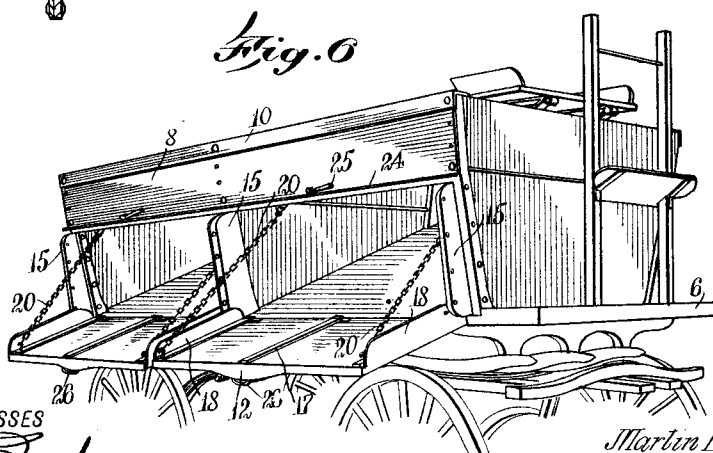
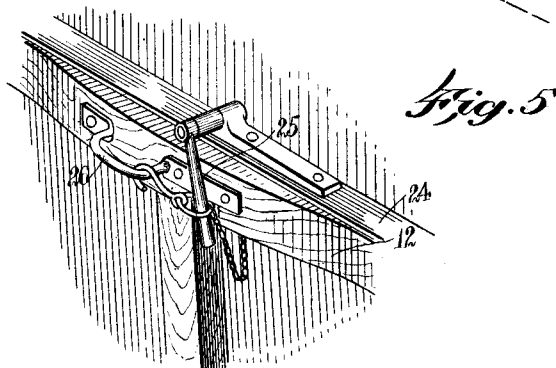
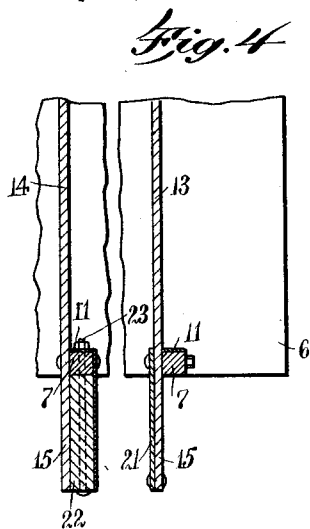
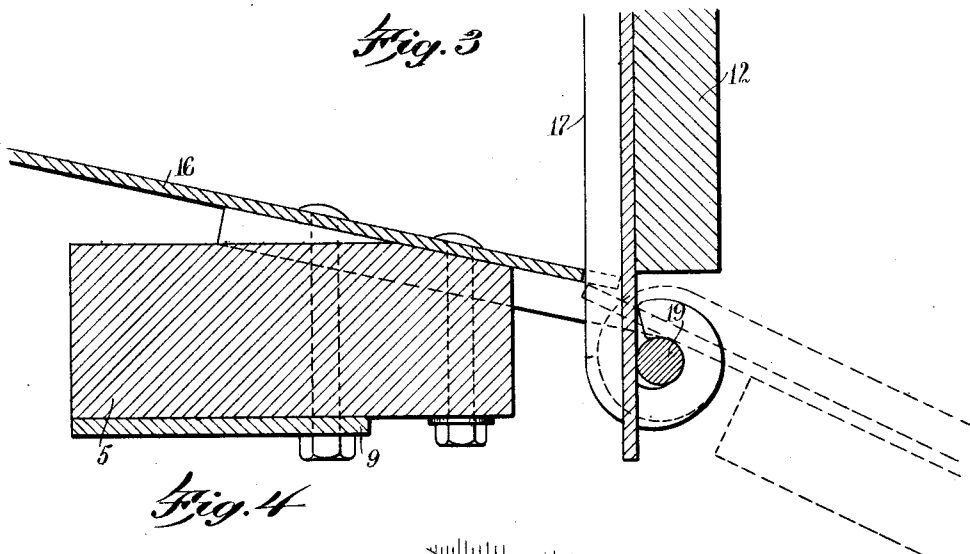
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WITNESSES

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UNITED STATES PATENT OFFICE.

MARTIN L. SENDERLING, OF JERSEY CITY, NEW JERSEY.

COKE AND COAL WAGON.

1,061,201.

Specification of Letters Patent.

Patented May 6, 1913.

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To all whom it may concern:

Be it known that I, MARTIN L. SENDERLING, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Coke and Coal Wagon, of which the following is a full, clear, and exact description.

The invention has reference to improvements in hopper bottom vehicles, more especially such as are designed for carrying coke, coal, crushed stone, and material of like character.

The invention has in view a wagon of the type mentioned of light, durable construction, having one or more compartments, the compartments adapted to be separately discharged, and the load of each compartment being delivered out to the outside of the wheel base and substantially in bulk.

The invention further contemplates the construction of a wagon with a laterally-discharging hopper bottom the body of the wagon being so placed that the vertical projection of the center of gravity of the body of the wagon, when loaded, will be in line with the center of gravity of the running gear, preserving the equilibrium of the vehicle.

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

Figure 1 is a side view of a wagon constructed in accordance with my invention; Fig. 2 is a cross-section of the same; Fig. 3 is a similar section of the lower corner of the body on an enlarged scale, and showing in dotted outline the position taken by the door when opened to perform the function of a chute; Fig. 4 is a horizontal section through one of the end walls and the partition; Fig. 5 is a fragmentary perspective view, showing the joint which the doors make with the body when the doors are closed; and Fig. 6 is a perspective view of the wagon complete, showing the doors lowered, as for discharging the contents.

In the description of my improved hopper bottom wagon, I will confine myself to the preferred form of construction as illustrated in the accompanying drawings. It will, however, be understood that numerous modi-

fications of the invention as defined in the annexed claims can be devised.

I have shown the wagon mounted on springs at the rear of a construction for which Letters Patent have been granted me. However, the particular character of the running gear is immaterial, as the present invention is concerned primarily with the wagon body construction and its disposition over the wheel base.

The body comprises the bottom frame running longitudinally the entire length of the body proper, and the platform. Upward from this frame at each corner and at each side in a central position projects a stake 7, the stakes having riveted or otherwise securely fastened thereto at the outer side, a sheathing 8, which, as best shown in Fig. 2, is turned under the bottom frame, as indicated at 9, the sheathing in the case of one side of the bottom, ordinarily the right-hand side, being of a width of about one-third the full depth of the body. To the upper edge and at each side of the body is secured a reinforcing angle iron 10, one flange of each iron extending over the top of the stakes, and the other flange extending down against the outer face of the sheathing and bolted or similarly secured to straps 11, passing down the inner edges of the faces of the stakes 7, the straps having screw-threaded ends which project through the bottom frame and the plates 9 or portions of the sheathing, where a nut is applied to each strap, firmly binding this part of the structure together. By this construction the angle-irons act as supports to the under frame, relieving at the closed side of the body the thin metal sheathing from buckling under the weight of the load, and at the opposite side taking the entire buckling strain from doors 12.

In Fig. 4, I have shown a partial section through one of the ends and the central dividing wall of the wagon body. In the case of both the ends 13 and the partition 14 they are extended a substantial distance to the outside of the sheathing at this side of the wagon to form wings 15, these wings serving as supports for the sides of the doors, and also as guides for the material, in discharging the same upon the doors when the latter are lowered, as shown in Fig. 6, to perform the function of chutes to dis-

charge the material to one side of the wheel base. Another function performed by the wings is the neat appearance which they impart to the structure, especially when the wagon is viewed from the end. I also dispose the body over the running gear so that the vertical projection of the center of gravity of the body, when loaded, is over the center of gravity of the running gear. Since each compartment is provided with a hopper bottom 16 inclining downwardly and outwardly from one side of the body to the opposite or discharge side provided with the doors, a considerable empty space extends longitudinally of the body, which gradually increases in depth as the shallow side of the compartments is approached. Under these conditions, should the wagon body when empty be set so that its center of gravity is directly over the center of gravity of the running gear, the wear of the wagon when loaded upon the running gear, as well as the draft, would be greater on the heavier side than on the lighter side of the wagon. To avoid this, I place the body in such a position relatively to the running gear, that the center of gravity thereof when empty will be to one side of the center of gravity of the running gear, as indicated by dot-and-dash line on Fig. 2.

The doors 12 comprise any suitable frame, which is covered on the inner side with a metal sheathing, the door being reinforced in the direction of its height, both at the center and at the ends by reinforcing bars 17, the sheathing being turned inwardly at each end, forming guide flanges 18. These flanges fit close against the inner faces of the wings and cause the load to pass out without falling over the ends of the doors. The waste of the load is further prevented by the particular manner in which the doors are hinged at the bottom. From Fig. 3, it will be noted that the hopper bottom 16 is extended some distance beyond the bottom frame, as also the sheathing of the doors below the lower edges of the door frame. The extended portion of the sheathing of each door and the adjacent extended portion of the hopper 16 are notched to admit of the passage of the members of a strap hinge, one of these members, as best shown in Fig. 3, being extended from and forming a part of one of the reinforcing bars 17 secured to the inner side of the door and passing through the notch of the extended portion of the sheathing to the outer side thereof about a hinge pintle 19, and the other hinge member, which is shown to be secured to the under side of the hopper bottom, passing through the extended portion of the door sheathing and about the hinge pintle 19, the hinge being thus formed for each of the reinforcing side bars 17, which extend through the notches in the ex-

tension of the hopper bottom when the doors are closed. When the doors are opened they are stopped in a position in which the extension of the door sheathing is brought close to the under side of the hopper 16, which prevents the material from wasting at this point when the wagon is unloaded. The doors in their downwardly and outwardly-inclined unloading position are shown to be supported by chains 20, which are suitably secured to the ends of their respective compartments, one of these chains being placed at each side of the door. The inner faces of the wings are lined or backed by wear-plates 21, which, as best shown in Fig. 4, are applied directly to the end wings and to that side only of the central wing having the stake 7, the wear-plate covering the exposed faces of the stake and secured through the stake to a filling piece 22, by bolts 23, the filling piece being of the thickness of the stake and conforming to the shape of the wing.

The jamb for the doors at the top of the door opening is formed by an angle-iron 24, which extends just over the top of the wings for the full length of the body, and, as best shown in Fig. 2, has one flange arranged at approximately right-angles to the sheet metal wall above and projecting outwardly a slight distance therebeyond, and the other flange depending to overlap the upper edge of the door so that it will be impossible for the load to sift out in transit at this point. The door frames, as shown in Fig. 5, are each preferably made slightly protuberant at the upper central portion and are each locked in place by the vertically-swinging hand lever 25, which engages the extended end of a handle 26, as a wear-plate, the hand lever forcing the door firmly to the jamb afforded by the flange of the angle-iron 24, by the cam action.

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

1. A wagon body having a hopper bottom extended beyond the bottom frame at its lower end, and a door closing the body at the lower side of the bottom and hinged to swing downwardly and outwardly and form a chute co-extensive with the bottom, the door being extended to pass under the bottom when in open position, the hinge having two members, one of which is secured to the door and passes through a notch formed in the extended portion of the bottom; and the other secured to the bottom, passing through the extended portion of the door.

2. A wagon body having a bottom frame, a hopper bottom, corner stakes, a sheathing covering the corner stakes, angle-irons arranged at the opposite sides of the body, with one flange of each iron passing to the

outer side of the sheathing, and the other flange seating at the top of the corner stakes, and straps passing down the inner faces of the corner stakes and secured to the stakes through the outer flanges of the angle-irons and passing through the bottom frame of the body and each provided with a tightening nut.

3. A wagon body having a transverse partition dividing it into a number of compartments, each compartment having a laterally-inclined bottom discharging through one side of the body, doors to close the open side of the body, each end of the body and the partition being extended beyond the body to provide wings, each door having inwardly-turned flanges at each end and hinged to swing downwardly and outwardly to receive and discharge the load from its respective compartments, with the flanges arranged close to the wings, and the wings serving to direct the material onto the doors.

4. A wagon body having a hopper bottom, a door closing the body at the lower side of the bottom and hinged to swing downwardly and outwardly to form a chute co-extensive with the bottom, and an angle-iron arranged at the top of the door opening, with one flange disposed at substantially right-angles to the wall above, of the body, and the other flange depending to lap the top of the door and prevent the load from sifting out.

5. A wagon body having a bottom frame, corner stakes, a sheathing covering the corner stakes, angle-irons arranged at the opposite sides of the body, with one flange of each iron passing to the outer side of the sheathing, and the other flange seating at the top of the corner stakes, and straps passing down the inner faces of the corner stakes and secured to the stakes through the outer flanges of the angle-irons and passing through the bottom frame of the body and each provided with a tightening nut.

6. A wagon having a bottom frame, corner stakes, sheathing covering the corner stakes and forming the sides of the wagon, said sheathing being bent under the bottom frame along the sides thereof, and straps passing down the inner faces of the corner stakes and secured thereto and to the sheathing adjacent the top of said wagon body and passing down through the bottom frame

and bent over portions of the sheathing and provided with tightening means on their lower ends.

7. A wagon body comprising a bottom frame, corner stakes supported thereby, sheathing secured to the said bottom and said stakes and forming the sides of the wagon, said sheathing having an opening in one side, and an angle-iron secured to the body along the upper edge of said opening, one flange of said angle-iron being disposed at substantially right-angles to the side, and the other flange depending and lying in substantially a parallel plane with the side of the wagon body.

8. A wagon body having a bottom frame, corner posts carried thereby, sheathing secured to the corner posts and forming the sides of said wagon, the sheathing on one side of said wagon having an opening, an angle-iron secured to said side along the upper edge of said opening, said angle-iron having one flange substantially at right-angles to the said side, and the other flange depending and lying in a plane substantially parallel to the said side, and an inclined bottom for said wagon having its lower edge coinciding with the lower edge of said opening.

9. A wagon body having a bottom frame, corner posts carried thereby, sheathing secured to said corner posts and to said bottom frame and forming the sides of said wagon, straps extending down the inner sides of said posts and secured thereto and to the said sheathing adjacent their upper ends and to said bottom frame and said sheathing adjacent their lower ends, said sheathing having an opening therethrough on one side of said wagon, doors for closing said opening, and running gear on which said wagon body is carried, the vertical plane passing through the longitudinal central axis of said wagon body being shifted to one side of the vertical plane passing through the longitudinal central axis of the running gear.

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

MARTIN L. SENDERLING.

Witnesses:

W. W. HOLT,

PHILIP D. ROLLHAUS.