(No Model.) 2 Sheets—Sheet 1.

F. U. ADAMS.

LOCOMOTIVE AND TENDER HOUSING.

No. 490,057. Patented Jan. 17, 1893.

Fig. 1.

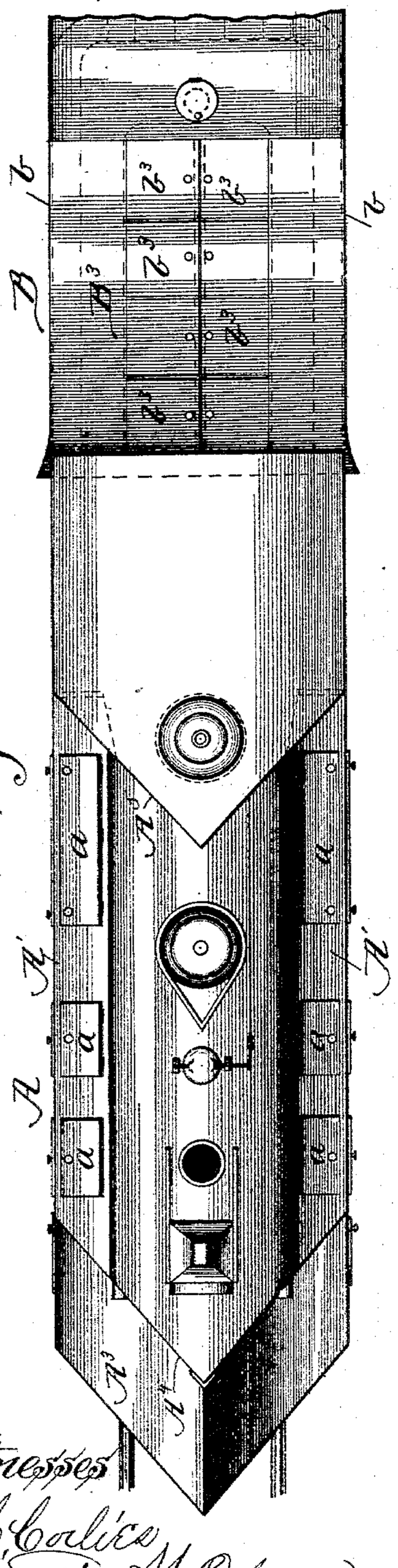
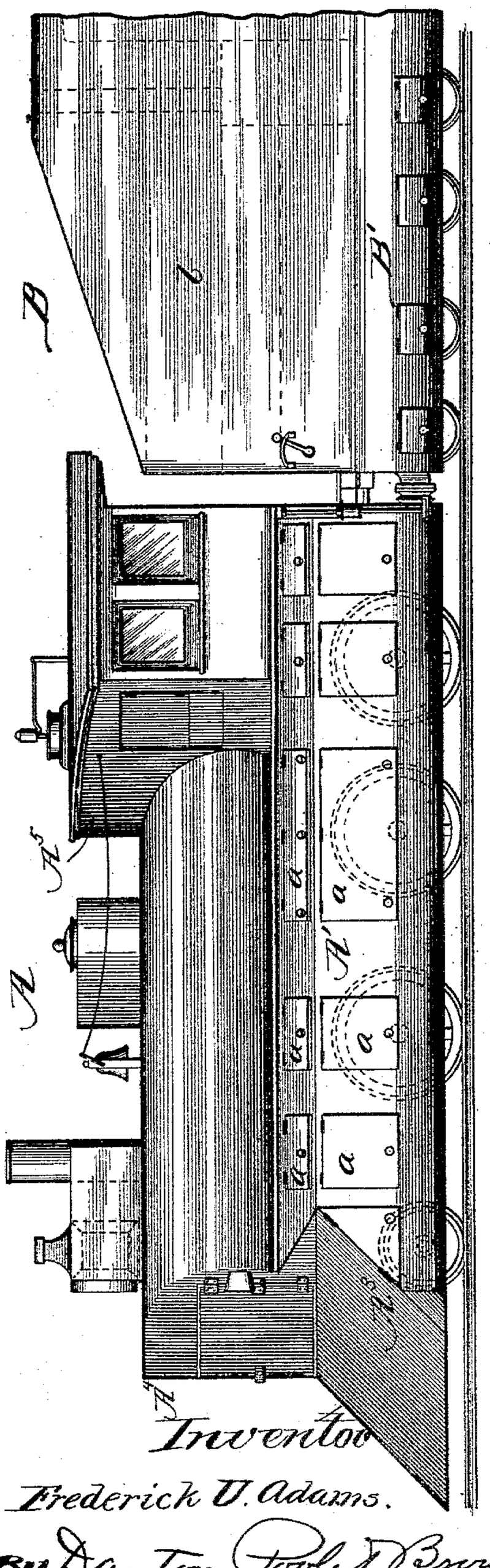


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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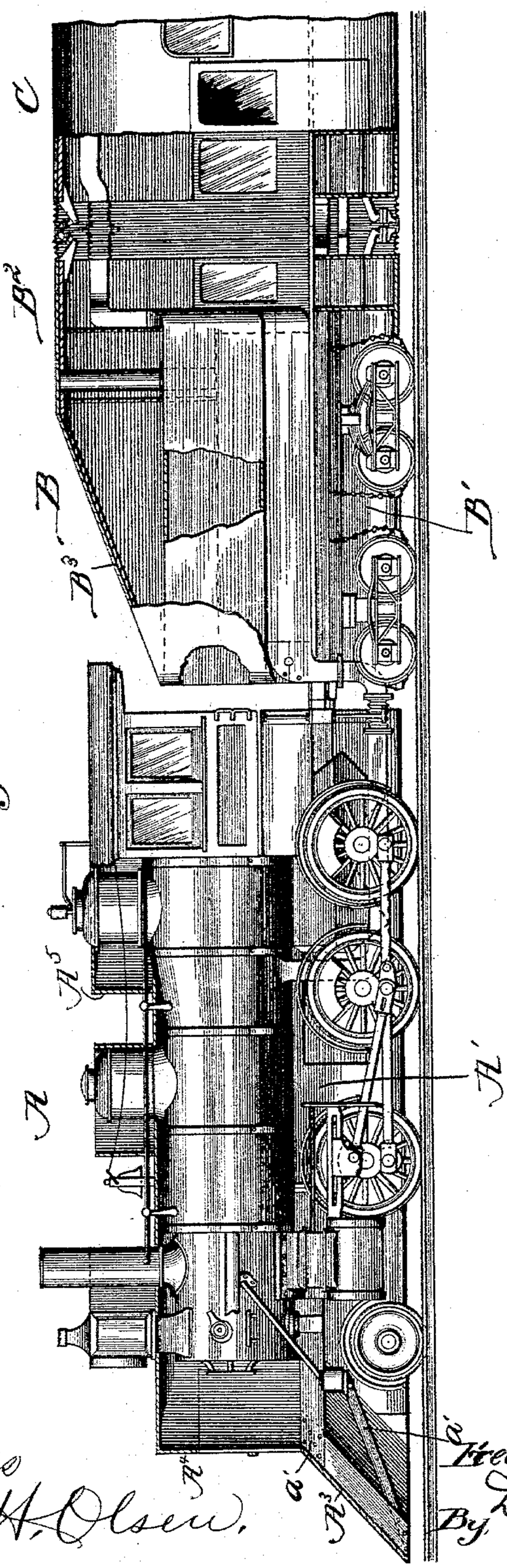

Fig. 3.

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UNITED STATES PATENT OFFICE.

FREDERICK U. ADAMS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ROBERT S. McCORMICK, OF SAME PLACE.

LOCOMOTIVE AND TENDER HOUSING.

SPECIFICATION forming part of Letters Patent No. 490,057, dated January 17, 1893.

Application filed February 8, 1892. Serial No. 420,748. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK U. ADAMS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locomotive and Tender Housings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention is made in pursuance of a purpose of providing a construction in railway trains by which they may meet less resistance from the atmosphere and therefore may be given the higher speed now desired without the enormous increase in weight and power of the engine required with the present construction of such trains. In prior applications for patents filed by me, and notably in applications Serial No. 410,141, filed October 27, 1891, and Serial No. 414,187, filed December 5, 1891, I have pointed out as a general means to this end the housing of the running gear of the cars and hoods which are flush with the outer surfaces of the cars for the inclosure of the spaces between the latter. In the present application is set forth a practical construction in housings for locomotives and tenders to accompany trains in which the cars are so connected and provided.

In the accompanying drawings which illustrate my invention: Figure 1 is a top or plan view of an engine and tender severally provided with housings by which they are adapted to move at high speed with less resistance from the atmosphere. Fig. 2 is a side view of the engine and tender constructed as shown in Fig. 1. Fig. 3 is a side view of an engine, its tender and a portion of the adjacent portion of a car, the casing for the engine and the covering of the tender together with the hoods connecting the tender and the adjacent car being shown in vertical section.

In the drawings A indicates a locomotive engine, B its tender, and C a car connected to the tender, which car, for compactness of illustration, may be taken to represent either a passenger coach or a baggage or service car, since, if the baggage or service car be present between the tender and the first passenger car of a train it will be provided with hoods that will register with the corresponding hoods on the tender and passenger coach between which it is placed. The engine or locomotive A has its running gear laterally inclosed by housings A′, and is provided with front housings for its cab and boiler and a close surfaced guard which are wedge-shaped and present a central, salient angle forwardly, substantially as shown. The tender is shown as having lateral housings B′ for its running gear; side walls practically flush with the sides of the car and with the lateral gear-housings; a high back substantially corresponding in dimensions with those of the end of a car of the train, and an upwardly and rearwardly inclined top or cover reaching to the top of the back and provided with lidded openings for the introduction of fuel and water. The cars have housings for their running gear, as set forth in my prior applications, and the spaces between the cars and tender are inclosed by hoods which are flush with the external surfaces of the cars.

Describing the above mentioned features more in detail with reference to the drawings, and beginning with the housing for the locomotive, I first point out that the lateral housing A′ for the running gear should be of heavy plate metal having a vertical portion substantially in line with the sides of the cab and cars, and having its lower edges curved or inclined inward, as indicated in Fig. 2, to conform with the gear housings of the tender and cars. The upper part of the housing A′ is shown directed inwardly into junction with the boiler casing and other surfaces located in line therewith. In these housings are provided hinged or sliding doors *a* by which access may be conveniently had to the gear for the purpose of oiling or inspection, as indicated. The supports for the housing A′ will consist where necessary of suitable arms as for example, seen at *a′* said arms being secured to and projecting from the engine frame at proper points and attached at their extremities to the housing. The number, form and position of these arms will of course vary with the model of the locomotive the frame

of which may be of any desired construction. At the front of the engine the usual guard, composed of bars, is supplanted by a guard A^3 of the same general inclined and wedge-shape of the old guard, varied as may be desirable, but having a continuous surface or covering so as to deflect the air to either side when the train is in motion. Above the guard rises the front housing A^4 of the boiler which is also wedge-shaped, as seen in Figs. 1 and 2 inclusive. A similar wedged form is given to the front A^5 of the cab, the forward extension thus provided taking in the steam dome, as shown in all the figures.

The body of the tender B has vertical side walls *b* of plate metal, here shown as being exterior to and separated by a space from the tank walls and substantially in line with the sides of the cars of the train and with the side housings of the engine. The sides of the gear housings B′ are in the same, or substantially the same, vertical plane with these outer side walls of the body and are shaped to conform with the gear housings of the cars and locomotive. As here indicated, said gear housing is attached to the body of the tender and supported therefrom. If provided with a bottom, as is preferable, said bottom may be sustained from the trucks independently of the body, as shown and described of the housings for the running gear of cars in my aforesaid prior application.

The tender has in its preferable form a high back B^2 of substantially the transverse form and dimensions of the cars of the train, and a top or cover B^3 rising from front to rear into connection with this back. This top B^3 has an opening for the admission of fuel, and said opening is provided with a lid or lids b^3 which, when closed, form part of the upper inclined surface of the tender by which the air is deflected in the movement of the train.

The tender, having a hood for junction with the hood of a contiguous car, is also desirably provided with a narrow rear platform, as most plainly indicated in Fig. 3.

I claim as my invention:

1. In combination with a locomotive engine, a housing for the running gear supported from the engine frame and having its upper portion directed inwardly over the wheels to the boiler casing.

2. In combination with a locomotive engine, lateral housings for the running gear having their upper portions directed inwardly over the wheels to the boilor casing, and a wedge-shaped, rearwardly and upwardly inclined, close surfaced guard in front of said lateral housings and of the engine.

3. In combination with a locomotive engine, lateral housings for the running gear having their upper portions directed inwardly to the boiler casing, a wedge-shaped guard inclined upwardly and rearwardly and having a close or continuous surface, and a wedge-shaped front for the boiler above said guard.

4. In combination with a locomotive engine having lateral housings for the running gear, and a close, wedge-shaped and upwardly and rearwardly inclined guard, a cab having its front wedge-shaped and its angle directed forwardly in the central line of the boiler.

5. In combination with a locomotive engine, lateral housings for the running gear having their upper portions directed inwardly to the boiler casing, both the vertical and inwardly directed portions of said housings being provided with doors by which access may be had to the running gear through the side and the top of said housing.

6. A locomotive tender having an upwardly and rearwardly inclined top housing provided with a door or doors through which the fuel may be introduced.

7. A locomotive tender having outer walls substantially in the vertical planes of the cars with which it is to be connected, lateral housings for the running gear, and an upwardly and rearwardly inclined top housing provided with a door or doors for the admission of fuel.

8. A locomotive tender having a back rising substantially to the height of the cars to be connected therewith, lateral walls substantially in the plane of the side surfaces of said cars, lateral housings for the running gear, and a section of flexible housing applied to the rear end of the tender and adapted to meet and abut a similar section upon an adjacent car, for the inclosure of the space between the back of the tender and said adjacent car.

9. A locomotive tender having a back of substantially the vertical and lateral dimensions of a car with which it is to be connected, a rear platform on said tender, a fixed housing inclosing said platform laterally and overhead, and a flexible section of housing attached to said fixed housing and adapted to meet a similar housing on an adjacent car for the inclosure of the space between the back of the tender and the said adjacent car.

10. A locomotive tender having lateral housings exterior to the outer walls of its water tank and in substantially the plane of the side surfaces of a car with which it is to be connected, a back on said tender of substantially the lateral and vertical dimensions of the said car, and a section of flush housing adapted to meet and abut a similar section on the said car whereby the space between the back of the tender and said adjacent car will be inclosed by a housing substantially flush with the side and top surfaces of said car.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

FREDERICK U. ADAMS.

Witnesses:

M. E. DAYTON,

TAYLOR E. BROWN.