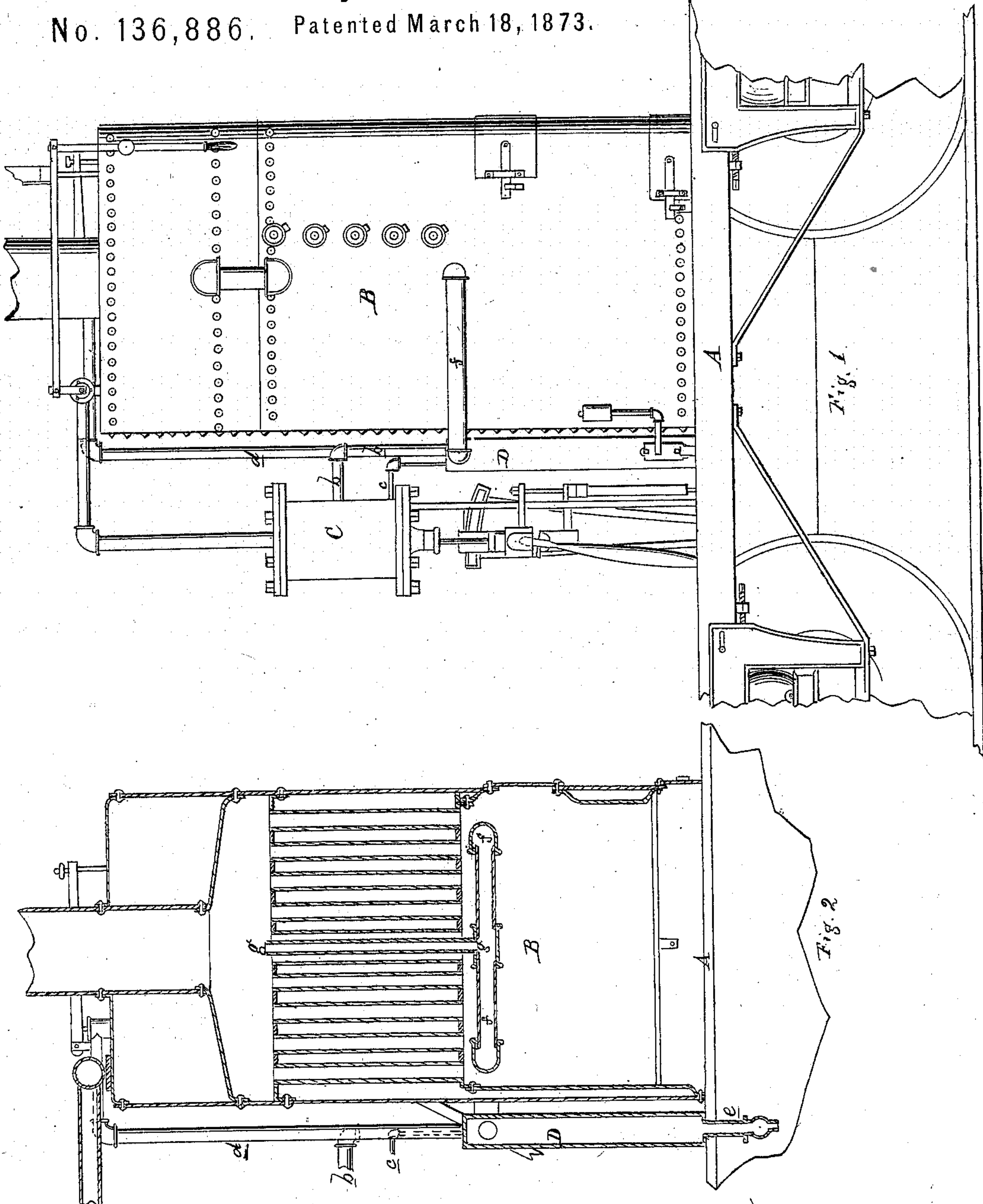


A. A. WILDER.
Dummy or Traction-Engines.

No. 136,886. Patented March 18, 1873.



ATTEST:

H. F. Everts.
W. L. Sprague

INVENTOR:

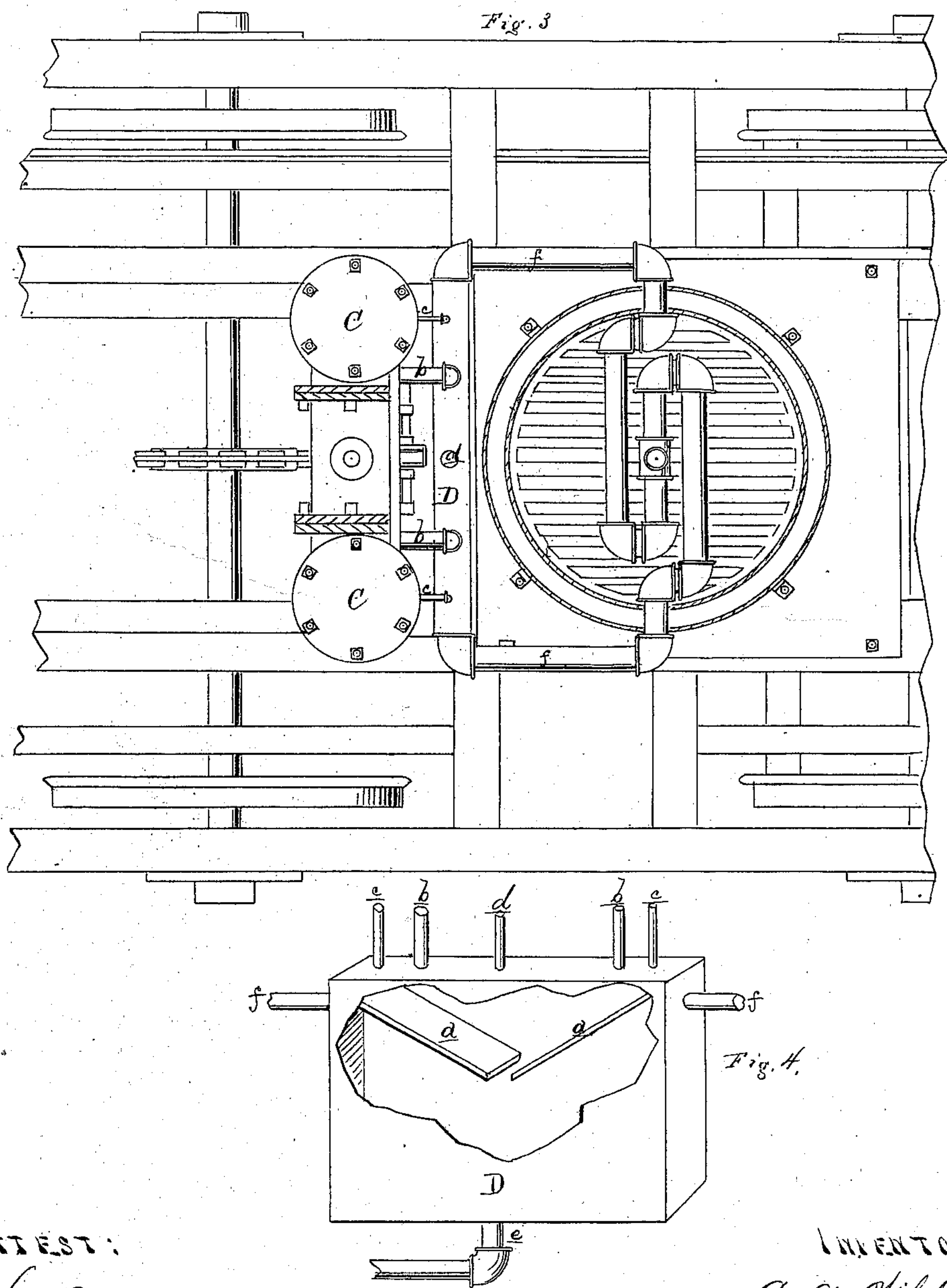
A. A. Wilder,
per attorney.
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W. F. Eberts.
W. A. Sprague

INVENTOR:

A. A. Wilder.
per attorney,
Thos. S. Sprague

UNITED STATES PATENT OFFICE.

ARETUS A. WILDER, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO ARTHUR RANKIN, OF WINDSOR, ONTARIO.

IMPROVEMENT IN DUMMY OR TRACTION ENGINES.

Specification forming part of Letters Patent No. 136,886, dated March 18, 1873.

To all whom it may concern:

Be it known that I, ARETUS A. WILDER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Dummy or Traction Engines; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1, Sheet 1, shows in elevation the boiler and engines and a portion of the car-bed or platform of the "dummy car" on which they rest. Fig. 2 is a longitudinal vertical section of the same. Fig. 3, Sheet 2, is a horizontal section, showing, in plan, all below the plane *x x* in Fig. 2; and Fig. 4 is a perspective view of the expansion-chamber with a portion of one wall broken away to show the interior thereof.

Like letters refer to like parts in the several figures.

The nature of my invention relates to the application of steam as a motor to traction-engines and that class of railway carriages which are operated on tram-ways, are self-propelling, and which are also used to draw other carriages on said tram-ways, which carriages are not provided with motive power, the said self-propelling carriages being known as dummy-cars and steam-dummies. Heretofore great objections have been made to the introduction of this class of vehicles on the tram-ways of towns and cities, and also to the employment of traction-engines or road-steamers on account of the smoke thrown off by them and the sight and noise of the exhaust steam, which would frighten draft-animals, causing danger to life and limb, and were otherwise objectionable, which I obviate in the application of my invention; which consists in superheating the exhaust steam to convert it into hydrogen gas, which issues from the car unseen and noiselessly. / To this end I employ a chamber in which the exhaust steam is expanded, a part of it naturally condensing therein while the remainder passes through a superheating-coil in the fire-box of the boiler, for the purpose hereinbefore stated.

In the drawing, A represents a portion of the floor, bed, or platform of one of the afore-

said dummy-cars with the housing or inclosure removed, on which is erected a boiler, B, of the vertical multitubular variety, which supplies steam to the engines C C, by means of which the car is propelled through any suitable system or train of gearing. Between the engines and the boiler is placed a steam-tight chamber, D, transversely across the car, which chamber may be quadrangular in form, or otherwise. In the upper part of this chamber are two deflectors, *a a*, inclined from the upper ends toward the center of the chamber. Into this chamber the exhaust steam from the cylinders enters through the pipes *b b*. The steam blown from the cylinders through the cylinder-cocks enters through the tubes *c c*, and that blown from the boiler through the safety-valve enters through a pipe, *d*, and any water of condensation is conducted to the lower part of the said chamber, where it is drawn off through a drip-pipe, *e*, which should be trapped to prevent the escape of steam. The exhaust steam expands in the said chamber from which it issues through the pipes *f f* at the upper part of the ends under the deflectors, which pipes enter the fire-box of the boiler just below the crown-sheet, where they form a flat coil of three members, the center of the middle one having a T inserted, from which a branch, *g*, is carried up through a central tube of the boiler, specially made longer than the others for that purpose, and terminates in the smoke-box above the upper tube-sheet, whence the hydrogen gas (for such the exhaust steam has now become) flows quietly and invisibly in a continuous stream into the atmosphere, at the same time acting in a manner similar to a steam-jet to urge the draft and the progress of the combustion of the fuel in the fire-box.

If the exhaust steam flowing through the highly-heated coil have an atom of its oxygen abstracted from it by the heated metal, as it necessarily must, then the remaining volume of watery vapor is converted into hydrogen gas, which is invisible, and is absorbed by the external atmosphere.

In time the coil will be oxidized to such an extent that it will require removal, which can be done at a small outlay; but, if care be taken to not raise the temperature too high by

the use of a coil of unnecessary length, using only enough to accomplish the conversion of the exhaust steam into hydrogen gas, the oxidation will proceed but slowly in the metal of the coil.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of chamber D, arranged to receive exhaust steam, as described, with the coil F located within the fire-box, as described.

2. The construction and arrangement, with relation to the boiler and engine of a dummy car, of the chamber D, deflectors *a a*, exhaust-pipes *b b*, drip-pipe *e*, the coils *f f*, and escape-pipe *g*, as and for the purpose set forth.

ARETUS A. WILDER.

Witnesses:

H. S. SPRAGUE,

H. F. EBERTS.