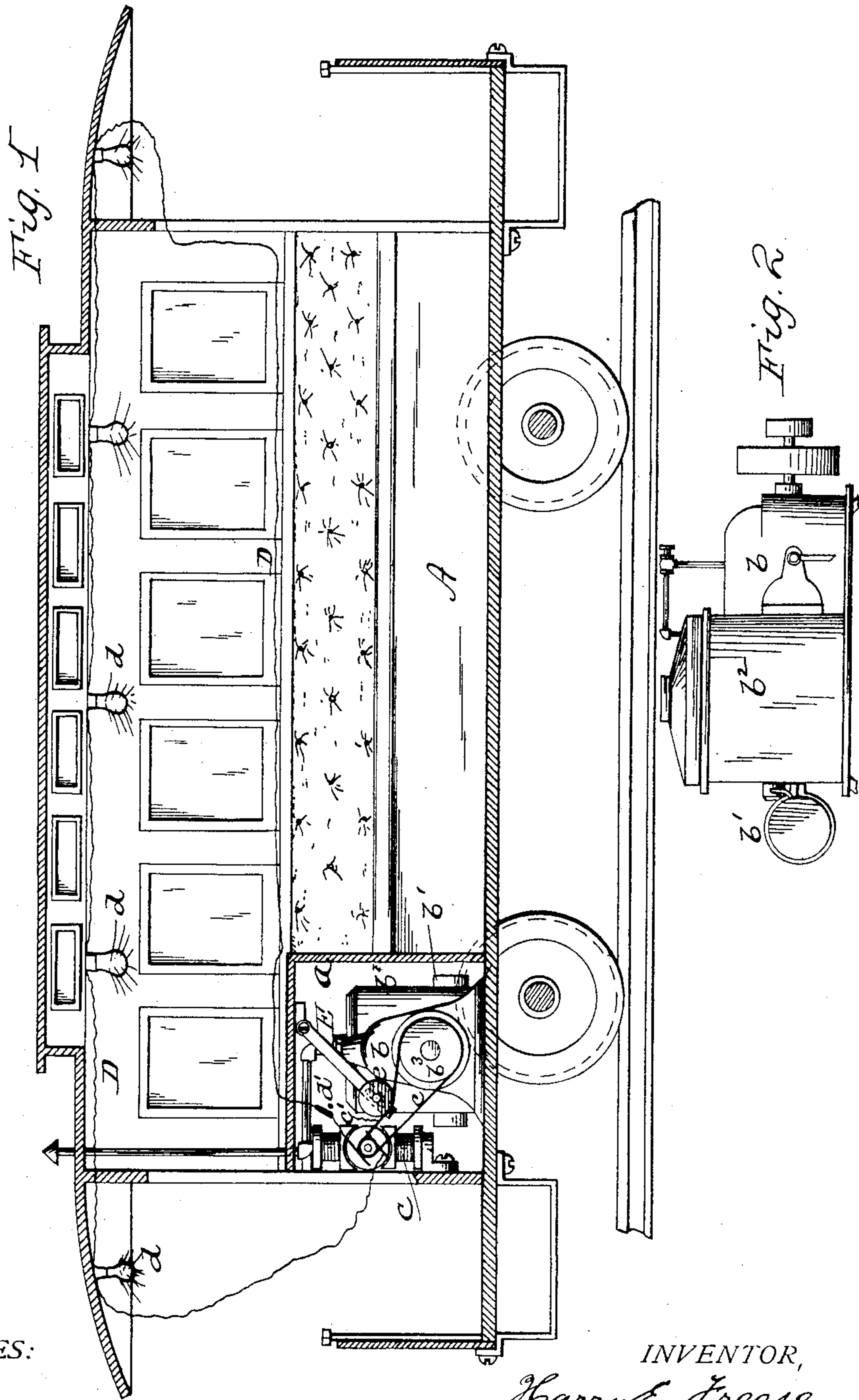


(No Model.)

H. E. FREESE.
LIGHTING RAILWAY CARS.

No. 325,795.

Patented Sept. 8, 1885.



WITNESSES:

Wm. K. Baughman
E. N. Williams

INVENTOR,

Harry E. Freese

By S. J. Van Stavern
ATTORNEY

UNITED STATES PATENT OFFICE.

HARRY E. FREESE, OF PHILADELPHIA, PENNSYLVANIA.

LIGHTING RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 325,795, dated September 8, 1885.

Application filed March 14, 1885. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. FREESE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Lighting Railway-Cars, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is a longitudinal vertical section of a car, illustrating my improvements, and Fig. 2 is a side elevation of engine, showing its oil-supply tank.

My invention has relation to lighting railway-cars by electricity; and it has for its object to provide an inexpensive and compact form of engine or power appliances for driving the generator, which engine has a furnace supplied with an oil-vapor fuel, whereby coal or like bulky fuel is dispensed with and the space required for and the expense of its carriage or transportation avoided; also, to provide means for preventing radiation from the boiler and furnace for the engine.

My invention has for its further object to apply pressure devices to the driving-belt of the generator for preventing the vertical and lateral vibration of the car, causing a flapping, slipping, or other movement of the loose parts of the belt, or those between the wheels it connects, and thereby avoid any irregularity in the rotation of the generator armature, and, consequently, flickering of the lamps.

My invention accordingly consists of the combination, construction, and arrangement of parts as hereinafter described and claimed.

In the drawings, A represents a street or other railway car having at one end a room or apartment casing, *a*, in which is placed a steam-engine, *b*, having an oil-tank, *b'*, for supplying oil-vapor to its furnace *b²* in any of the well-known ways, and which therefore takes up but little space. This casing *a* prevents radiation from the engine boiler and furnace, and is arranged transversely to the length of the car, and preferably at one end of the same, as shown, so as to utilize the

front door of the car for access to the interior and permit the heat to escape when opened. The dynamo is preferably secured to the adjacent end wall of the car on the side opposite the engine-furnace. C represents a dynamo-electric generator having any suitable belt-connection, *c*, with the usual engine-driving-shaft fast and loose pulley, *b³*, as desired.

D represents an electric circuit having, preferably, incandescent lamps *d* and a switch, *d'*, for connecting the circuit D to and disconnecting it from the generator-circuit.

E represents a hinged or gravity bar, preferably pivoted to the top of the casing *a*, and having an idle roller or wheel, *e*, adapted to impinge upon, preferably, its upper loose part or side, *c'*, of belt *c* to prevent it from flapping, slipping, or otherwise moving as the car vibrates vertically or sways from side to side, thereby avoiding any irregularity in the rotation of the generator-armature and flickering of the lamps.

What I claim is—

1. In a car, the combination of a boiler-furnace, a fuel-reservoir connected with said furnace, a steam-engine, an electric circuit including a dynamo-electric generator which is geared to the engine, and a case which incloses the furnace, engine, fuel-reservoir, and the generator and prevents the heat from radiating in the car, substantially as described.

2. In a car, the combination of a boiler-furnace, a fuel-reservoir connected with said furnace, a steam-engine, an electric circuit including a dynamo-electric generator which is geared to the engine, a case which incloses the generator, the furnace, and the fuel-reservoir, and a gravity belt-tightener pivoted to the case to prevent the jarring of the car from vibrating the belt connecting said engine and generator, substantially as described.

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

HARRY E. FREESE.

Witnesses:

S. J. VAN STAVOREN,
CHAS. F. VAN HORN.