

(No Model.)

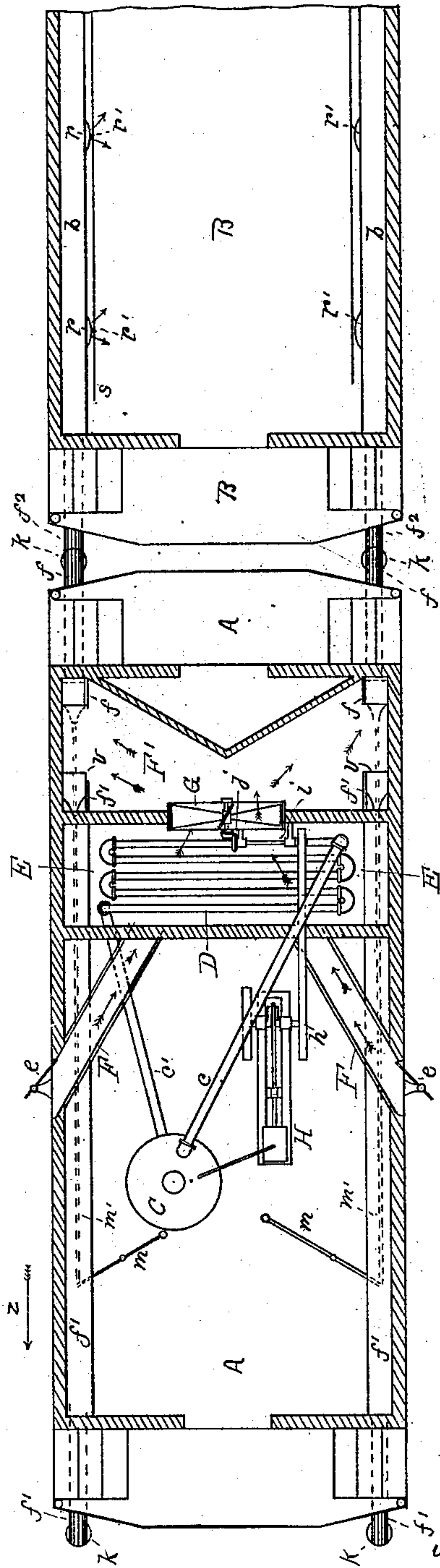
M. CASSELMAN & T. F. MCGANN.

APPARATUS FOR HEATING CARS WITH HOT AIR.

No. 376,138.

Patented Jan. 10, 1888.

Fig. 1



WITNESSES:

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APPARATUS FOR HEATING CARS WITH HOT AIR.

SPECIFICATION forming part of Letters Patent No. 376,138, dated January 10, 1888

Application filed March 15, 1887. Serial No. 230,978. (No model.)

To all whom it may concern:

Be it known that we, MONTGOMERY CASSELMAN and THOMAS F. MCGANN, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Apparatus for Heating Cars with Hot Air, of which the following is a specification.

Our invention relates to apparatus for warming cars by hot air supplied from a separate car.

The object of the invention is to separate the heater from the cars to be warmed to avoid danger from fire in case of accident to the cars; and the invention consists, generally, in introducing fresh air to a chamber heated by steam-coils and forcing the warmed air thence by means of a blower and pipes to the cars.

The invention is illustrated in the accompanying drawing, in which the figure shows a plan of the car containing the heating apparatus and a portion of one of the cars to be warmed.

In the drawing, A represents the car containing the heating apparatus, and B one of the passenger-coaches coupled to the car A.

C is a steam-boiler, with which is connected a steam-pipe, *c*, leading to a coil or coils, D, in a tight compartment, E, of the car. *c'* is the return-pipe from the coils.

F F are pipes extending from the sides of the car A to the compartment E for the induction of fresh air. Wings *e*, pivoted centrally to the mouths of the ducts F, with their longer sides inwardly, adjust themselves according to the direction of the car's movement to create a draft into the pipes when the car is in motion. The air introduced through these pipes to the compartment E becomes warmed by the coils, and a suitable fan, G, at the opposite side of the compartment, draws the air from the compartment and expels it into a second compartment, F'.

When the cars are moving in the direction

indicated by the arrow *z*, the air in the compartment F' is forced into the pipes *f* at the rear side of the compartment. To these pipes are connected, by ordinary couplings, *k*, the pipes *f*², which extend into the cars B. The pipes *f*² extend along the floors of the cars, preferably into boxes *b*, which are provided with registers *r* at proper intervals, and dampers *r'* are provided for the registers. A rod, *s*, may be used to connect the dampers at each side of the car, so that all of them can be operated simultaneously. When the movement of the cars is in the opposite direction, or when the cars are attached to the opposite end of the heating-car, the pipes *f*² are coupled to the pipes *f'*, which communicate with the compartment F' at the side opposite the pipes *f*. Valves *v v'* are provided at the entrances of the pipes *f f'* for shutting off the inlet to the pipes which are not connected to the pipes *f*². Levers *m* in the engine-room are connected by rods *m'* with these valves for closing the inlets to the respective pipes, as may be required by the location of the heating-car relatively to the cars to be heated.

H is an engine for operating the fan by means of a crank-rod and crank *h*, shaft *i*, and gearing *j*, or other well-known devices.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with the car A, of the compartment E, the steam coils D therein, the boiler C, and steam-pipe connections *c c'* to said coils, the air-ducts F, provided with the wings *e*, the secondary compartment F', having the warm-air exits *f f'*, and the valves *v v'*, and the levers *m* and rods *m'* for operating the same, all constructed and arranged substantially as set forth.

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Witnesses:

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