2 Sheets—Sheet 1.

J. F. CALLAWAY.

CAR-HEATING APPARATUS.

No. 195,792. Patented Oct. 2, 1877

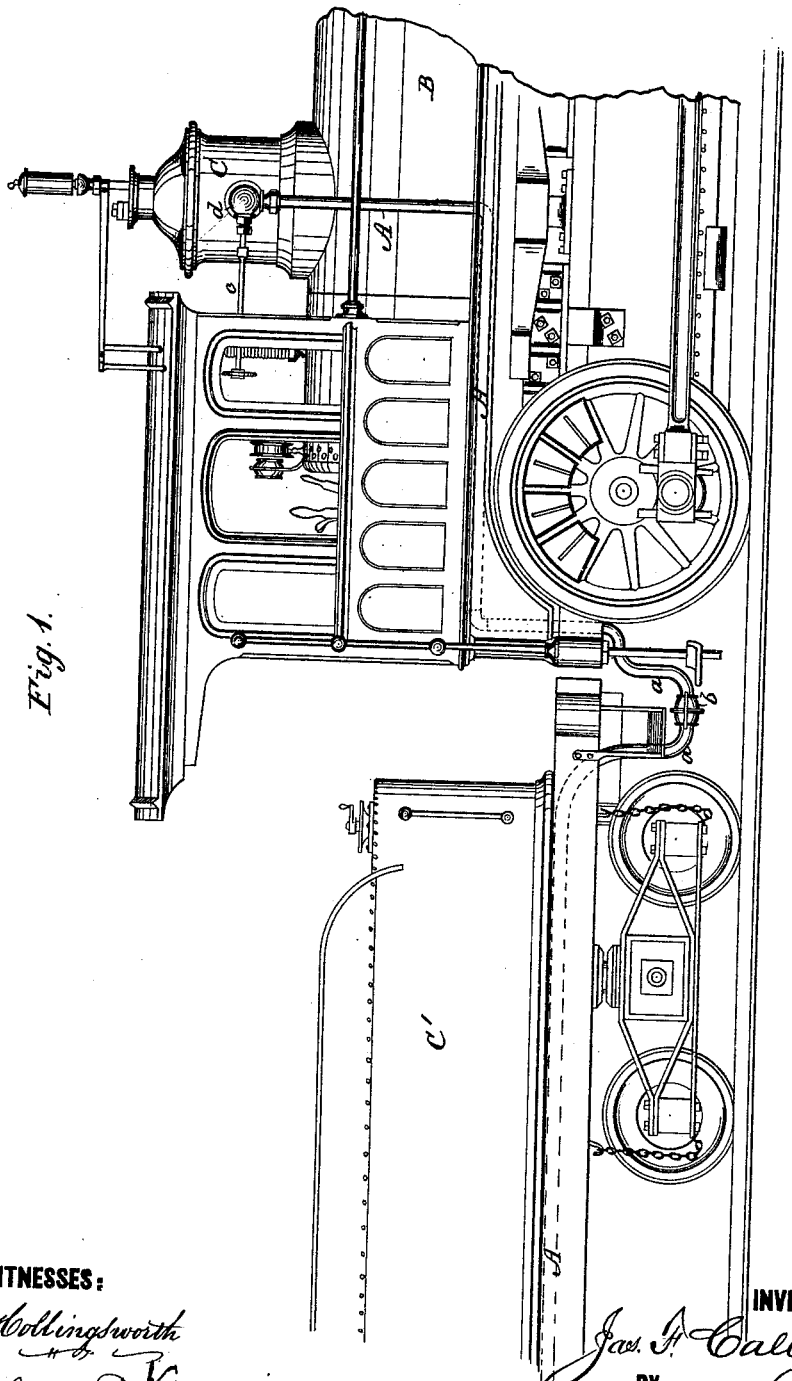

Fig. 1.

WITNESSES:

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Solon C. Kemon

INVENTOR:

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2 Sheets—Sheet 2.

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Fig. 2.

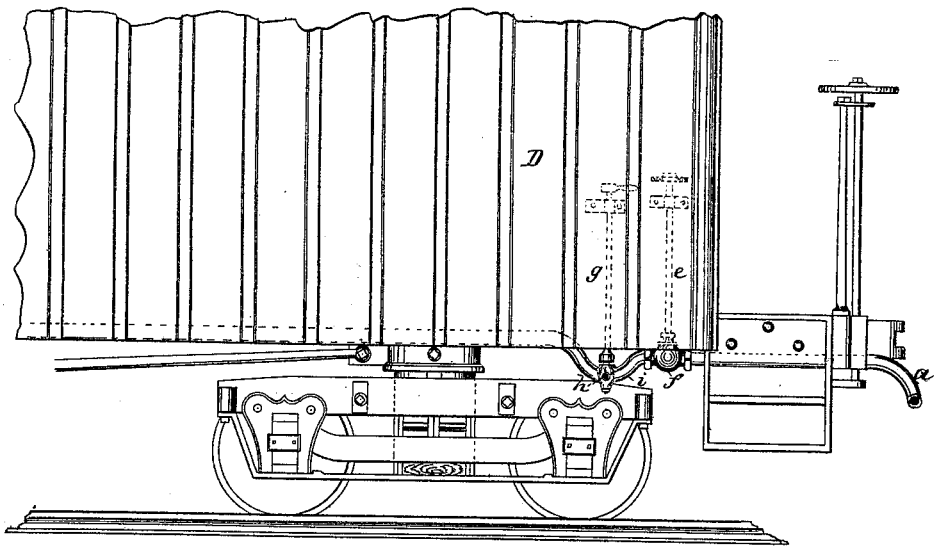
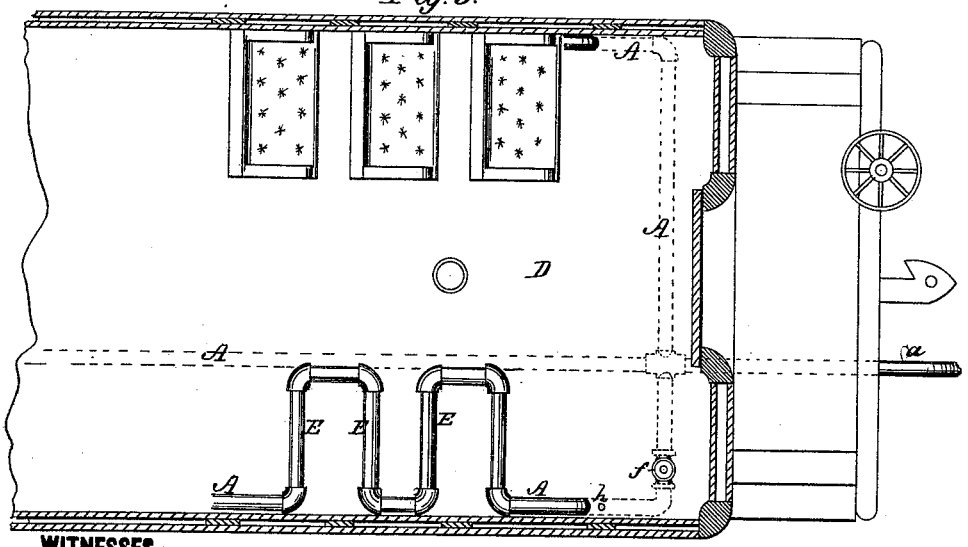


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES F. CALLAWAY, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN CAR-HEATING APPARATUS.

Specification forming part of Letters Patent No. **195,792**, dated October 2, 1877; application filed September 1, 1877.

To all whom it may concern:

Be it known that I, JAMES F. CALLAWAY, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and Improved Railway-Car-Heating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to provide an improved apparatus for heating all classes of railway passenger-cars by steam derived from the locomotive-boiler. The mode of applying the apparatus is shown in the accompanying drawing, in which—

Figure 1 is a side elevation of a fragment of a locomotive and tender with my apparatus attached. Fig. 2 is a side elevation, and Fig. 3 a horizontal section, of a fragment of a passenger coach or car.

The pipe A, for conducting steam from the locomotive-boiler B to the several passenger cars or coaches of a train, is suitably connected with the steam-dome C, passes thence underneath the tender C′, and extends along the bottom of each coach D, Figs. 2 and 3.

Between the locomotive and tender, and between each two coaches, I employ a flexible connection, consisting of a rubber pipe, *a*, provided with suitable couplings, *b*, which admit of convenient attachment and detachment, for the purpose of coupling and uncoupling the cars, as occasion may require.

The admission of steam to pipe A is controlled by the engineer, through the medium of the rod or lever *c*, which extends into the cab and operates a valve or cock, *d*. The steam may be shut off from each coach, when required, by a rod, *e*, and valve *f*, located in one corner of the latter, as shown. Another rod and valve, *g h*, control the escape of the water condensed from steam, the said valve being located at a downward curve or bend, *i*, of the pipe A, extending below the floor or bed, at or near each of two diagonally-opposite corners of a car. The main pipe A extends along the sides or middle of the cars, and short branches or convolutions E extend laterally therefrom beneath each seat, or wherever else it may be desired to apply a special degree of heat.

I do not claim a steam-heating pipe traversing the floors of cars, and having a flexible connection between the cars; but

What I claim is—

In a railway-car-heating apparatus, the steam-pipe A, leading from the dome of the locomotive, and traversing the floor of the cars, and having a downward curve, *i*, below the floor, a valve, *h*, located in the curve, its rod *g* extending up into the car, and the valve and rod *f e*, the respective valves allowing escape of water of condensation, and controlling admission of steam, all combined, constructed, and arranged as shown and described.

JAMES FLEMING CALLAWAY.

Witnesses:
GEO. S. ALLISON,
JAS. P. SPELMAN.