

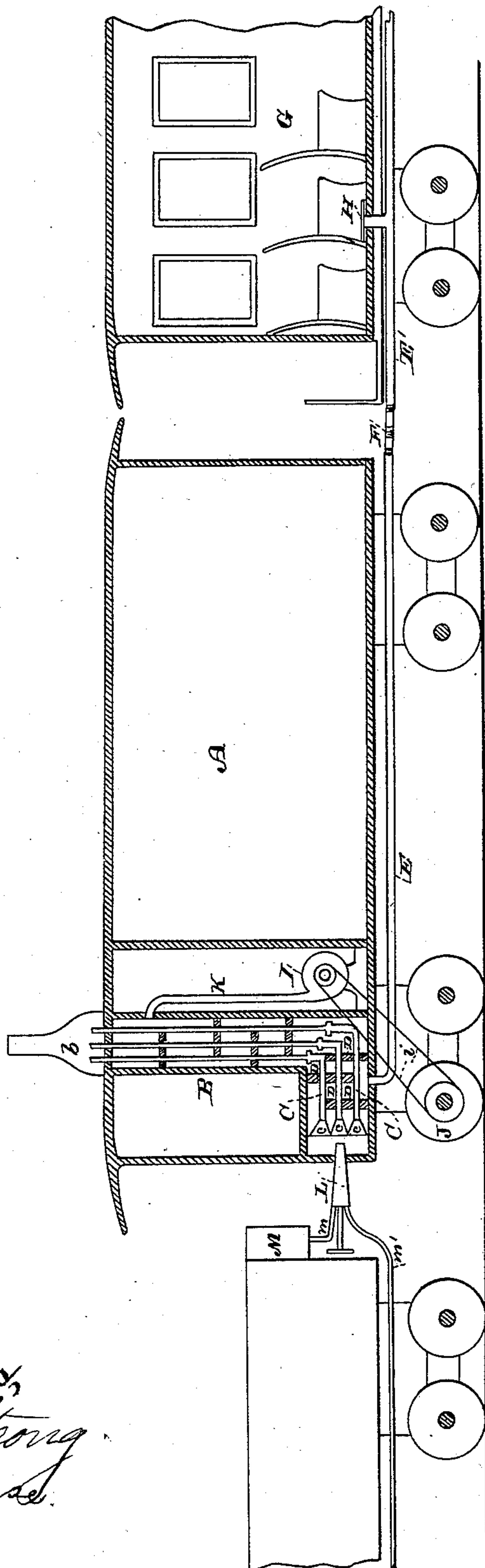
(No Model.)

I. SHIRPSER.

HEATING APPARATUS FOR CARS.

No. 281,801.

Patented July 24, 1883.



Witnesses,
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UNITED STATES PATENT OFFICE.

ISIDOR SHIRPSER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO
PAUL STECK, OF SAME PLACE.

HEATING APPARATUS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 281,801, dated July 24, 1883.

Application filed March 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, ISIDOR SHIRPSER, of the city and county of San Francisco, State of California, have invented an Improved Heating Apparatus for Cars; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful apparatus specially adapted for heating railway-cars; and it consists in the construction of devices and arrangement of parts, as hereinafter fully described and claimed.

The object of my invention is to heat a train of cars by the introduction, through suitable registers in each, of air heated at and delivered from a single place in the train by simple and efficient means, whereby the danger from fire in case of a wreck is avoided.

Referring to the accompanying drawing, the figure is a longitudinal section of a portion of a train and of my device as applied thereto.

A is the baggage-car, in one end of which I propose to wall in my heating device.

B is the heater. It consists of a cylinder constructed of boiler-iron and lined with fire-brick. It may be made in several parts and suitably bolted together. It extends horizontally on the floor of the car, and then vertically to the top, where it is inclosed. Within this cylinder are a number of flues, C, made of fire-clay. They are spaced and held in position by the partitions D. These are also made of fire-clay or similar substance, and are so arranged with relation to each other that every alternate one shall extend from the bottom or from one side and stop short of the top or of the other side, and the others shall extend oppositely or in a reverse manner, whereby a sinuous passage is left throughout the extent of the cylinder, in order to deflect the air in its passage and cause it to permeate the entire space between the flues C. The flues C, at their entrance, are provided with funnel-shaped mouths *c*, which occupy the entire inner area of the cylinder, in order that the products of combustion or gases may be directed wholly into the flues, and not within the intermediate spaces, which are reserved for the air. These flues communicate with a vent or

escape, *b*, extending through the roof of the car.

E is a pipe opening out of the cylinder near the entrance of the flues and communicating with the air-spaces within. This pipe extends under the baggage-car, and is coupled by any suitable device (indicated by F) with a pipe, E', extending under the car G following, and of which but a portion is here represented.

A register, H, admits air from pipe E' into the car. Pipes may be continued with suitable couplings under all the cars, and may have as many communicating registers as desirable.

Within the inclosure in the end of the baggage-car is a blower or fan, I, receiving power through a belt, *i*, from the wheel J. From this blower a pipe, K, extends up to the top of and enters the heating-cylinder communicating with the the spaces therein. The revolution of the blower forces cold air up through pipe K into the cylinder. It flows around the flues C therein, following the sinuous passage made by the partitions D, and down through the pipes E E' into the car G. The means I adopt for heating this air are as follows:

L is any suitable well-known form of liquid-hydrocarbon burner. It extends into the entrance of the cylinder, and its flame is directed into the open mouths of the flues C, whereby they are heated, and the temperature of the air surrounding them is raised to the required degree. The burner is supplied with oil from a tank, M, preferably located on the tender, and connected with the burner by a pipe, *m*. It is supplied with air or steam from the locomotive through a pipe, *m'*. By these means the air is heated and forced through the pipes into the cars. It is pure, as all gases pass out through the flues, and do not mingle with the air.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for heating cars, and in combination with the cylinder B, having spaced flues C within it communicating with the outside, a means for heating said flues and a means for forcing air into the cylinder around the

flues, the partitions D within the cylinder B, supporting the flues C, and so arranged by adjacent extensions from opposite sides to form a sinuous or tortuous passage around said flues, 5 substantially as herein described.

2. In an apparatus for heating cars, the cylinder B, lined with fire-brick, the spaced fire-clay flues C, opening through the car, and partitions D, of fire-clay, supporting said flues, in 10 combination with a fan-blower, I, and means for driving it, the pipe K, connecting said blower with the top of the cylinder, the air-

pipes E E', connecting the entrance of said cylinder with the cars, and the liquid-hydrocarbon burner L, directed within the entrance 15 of the flues C, and means for supplying said burner with fuel, all arranged and operating substantially as and for the purpose herein described.

In witness whereof I hereunto set my hand. 20
ISIDOR SHIRPSER.

Witnesses:

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J. H. BLOOD.