

(No Model.)

4 Sheets—Sheet 1.

T. S. PAGE.

CAR HEATER.

No. 265,336.

Patented Oct. 3, 1882.

FIG. 1.

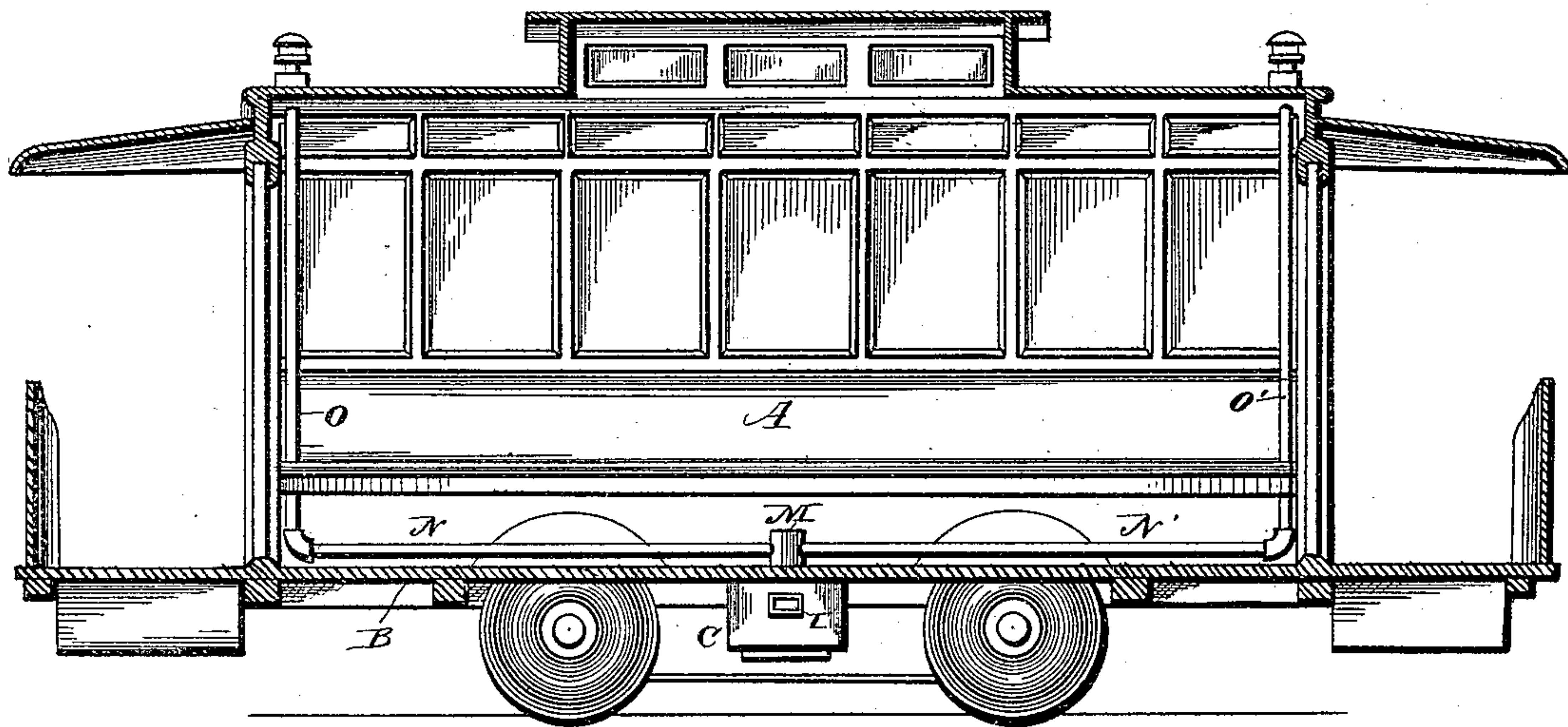
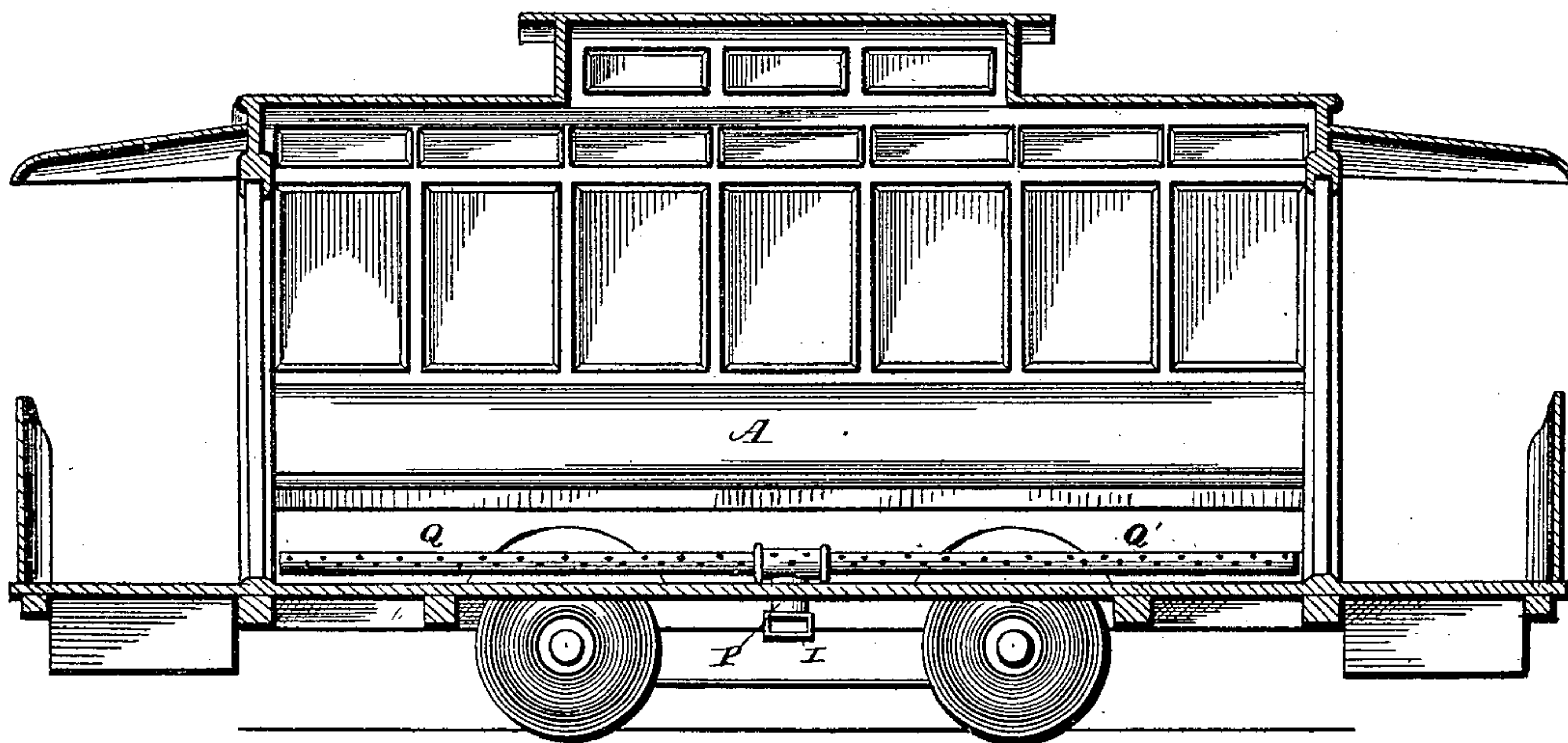


FIG. 2.



WITNESSES

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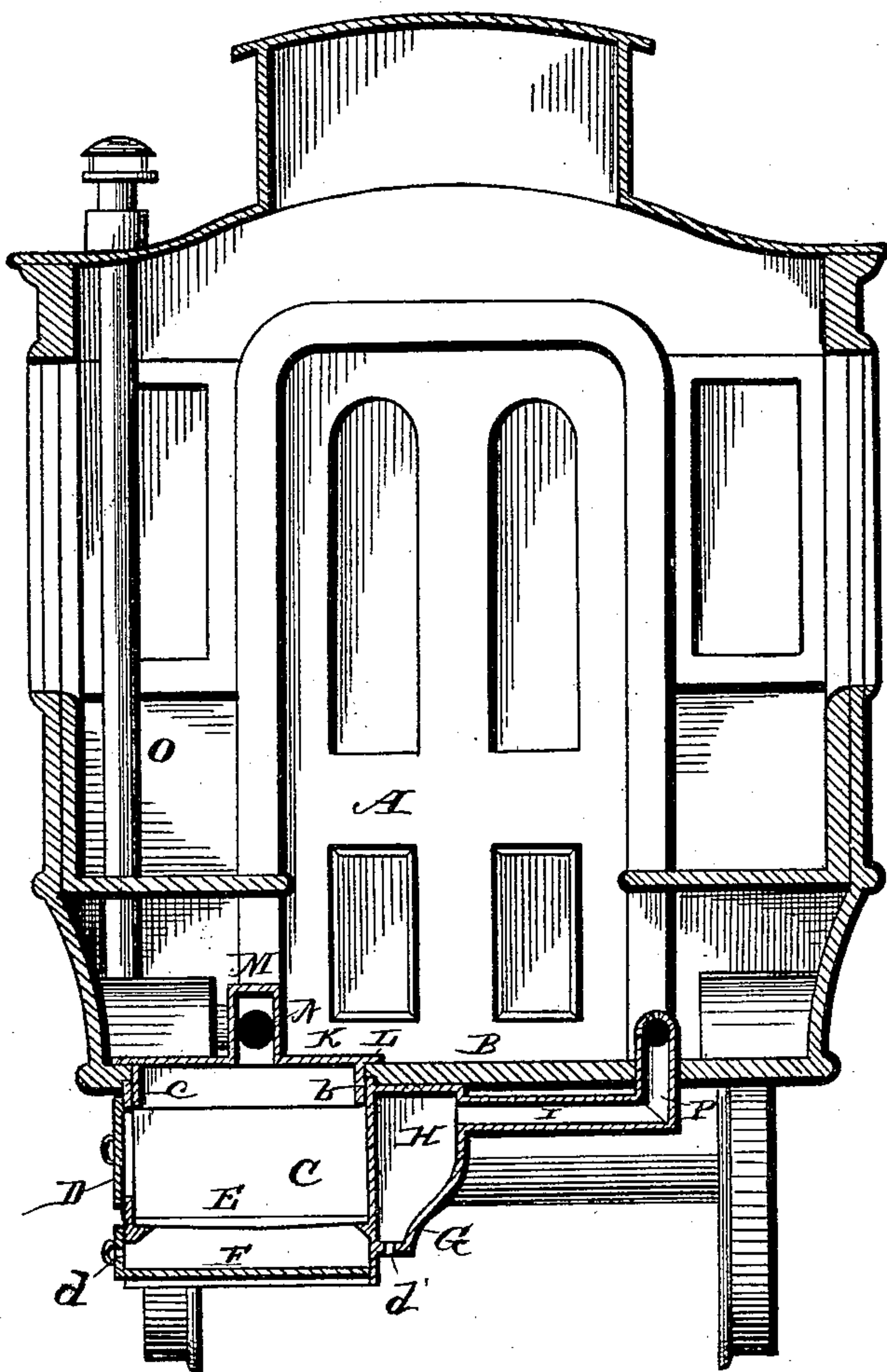
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Fig. 3.



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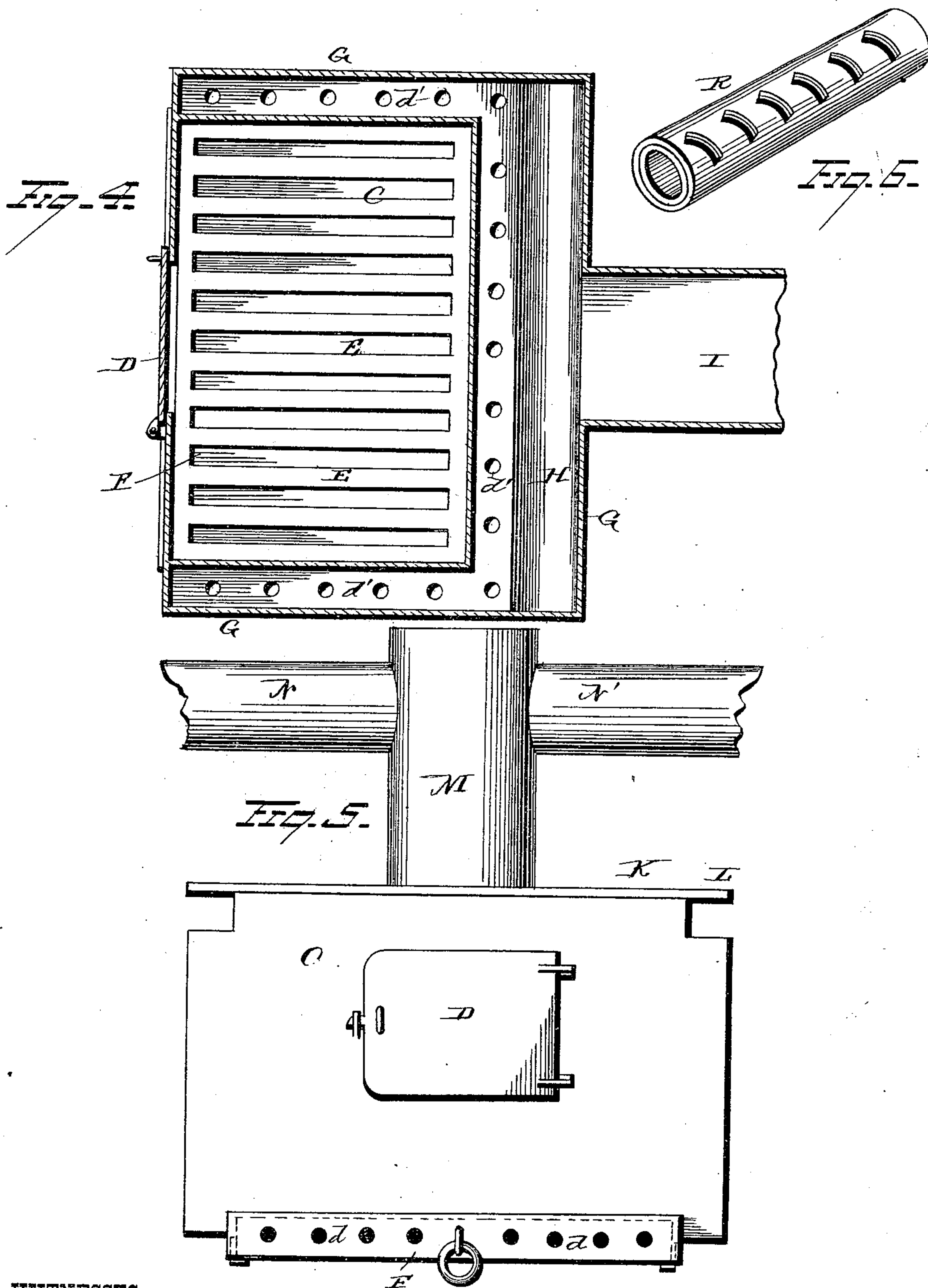
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4 Sheets—Sheet 4.

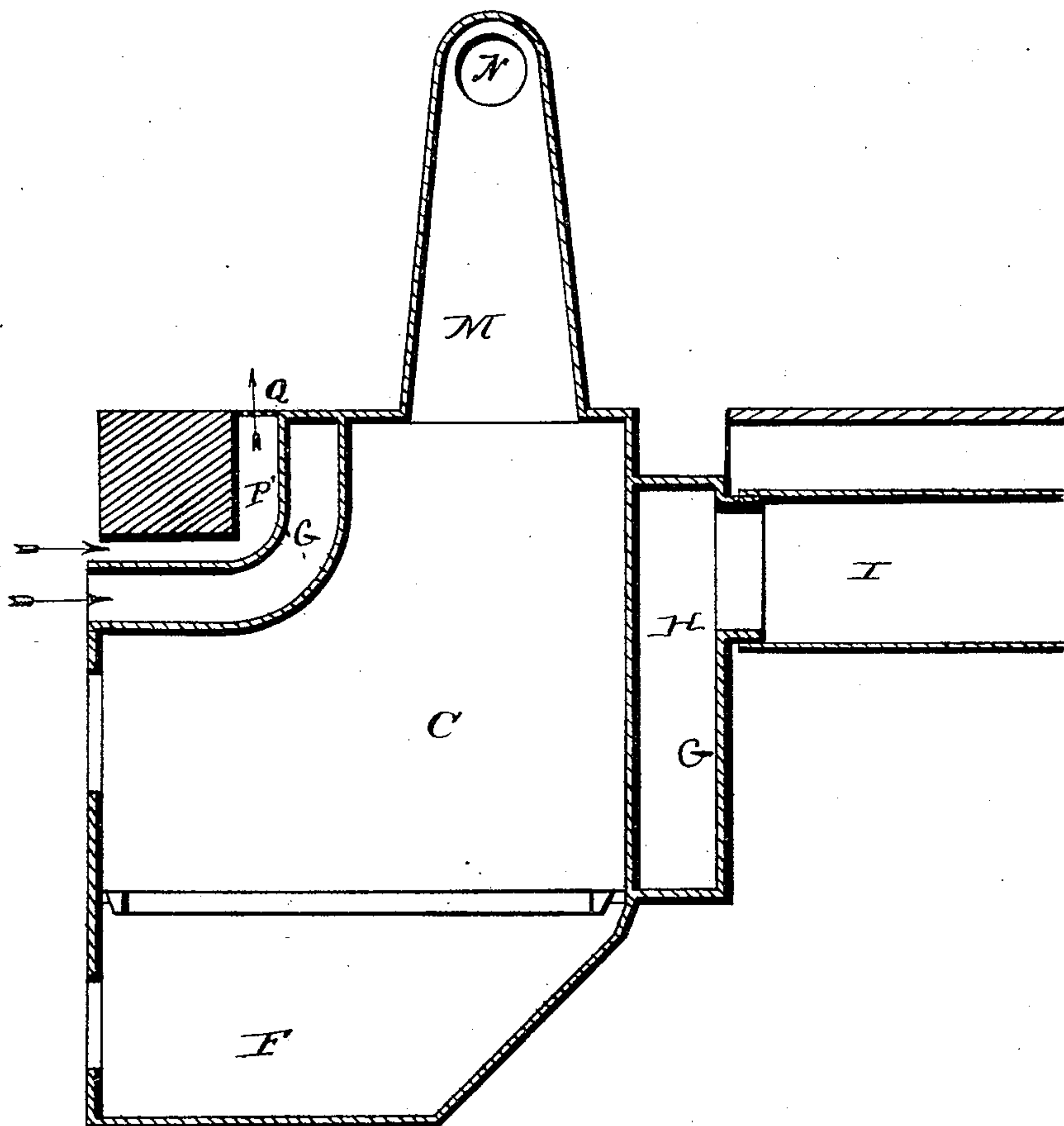
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FIG. 7.



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# UNITED STATES PATENT OFFICE.

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## CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 265,336, dated October 3, 1882.

Application filed December 6, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS S. PAGE, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in car-heaters, the object being to provide a car-heater which shall be simple and durable in its construction, and adapted to be applied to new or old cars at a small expense, and arranged and adapted to heat one side of the car by the smoke and products of combustion and heat the opposite side of the car by heated air.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will hereinafter be described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal section of a car provided with my improvement, showing the pipe for conveying away the products of combustion. Fig. 2 is a similar view, showing the arrangement of the hot-air pipe. Fig. 3 is a transverse section through the heater. Fig. 4 is a horizontal section of the heater. Fig. 5 is a view in front elevation. Fig. 6 is a detached view of the perforated hot-air pipes; and Fig. 7 illustrates a cold-air space formed between the heater and car-sill.

A represents a street-car, and B its floor. C is a heater, provided with a door, D, for feeding fuel thereto. E is the grate, which may be stationary or arranged to dump, as desired. F is a sliding ash-pan provided with draft-openings *d*; or it may be provided with any construction of damper. Around the ends and rear side of the heater is placed a jacket, G, forming a hot-air chamber, H, with which connects a flue, I. Heater C is constructed with an upwardly-projecting flange, *b*, to which is riveted or otherwise secured the downwardly-projecting flange *c*, attached to or formed as a part of the top plate, K, the latter being constructed and arranged to cover the top of the heater, and also provided with an outwardly-projecting flange, L, which rests upon the car-floor and serves as a support for the heater.

The heater top plate, K, is provided with a vertical drum or pipe, M, from which lead to opposite directions the two pipes N N', extending to the opposite ends of the car, and then attached to the vertical pipes O O', which extend upwardly and through the car-roof, so as to discharge the smoke into the open air. Air is admitted to the hot-air chamber H through the perforations *d'* in the bottom walls thereof, and after having been heated is conducted through the horizontal flue I, that extends beneath the car-floor to the opposite side of the car, when it is conducted upwardly through the vertical pipe P and discharged into the branch pipes Q Q, that are arranged beneath the car-seats. The pipes Q Q are perforated, and preferably provided with a damper, R, as illustrated in Fig. 6.

From the foregoing it will be observed that one side of the car is heated by the pipe located under the car-seats, and serving to carry off the smoke and products of combustion, while the other side of the car is heated by the hot-air pipes located under the car-seat. By this construction and arrangement of parts the heater-pipe is located beneath the car-floor, and thus no extra space is required for its employment, while the heat is utilized so as to secure its best effects in a single type of apparatus for the purpose in view, and is properly distributed within the car.

In the construction shown in Fig. 7 I have provided means for allowing both hot and cold air to circulate freely between the stove and the frame-work of the car, so as to prevent accident by fire. To accomplish this end I have lowered the stove slightly and extended the jacket G around on the front, so as to cover that portion of the top which lies adjacent to the car-sill and directly under the car-frame.

Between the car-frame and the jacket G, I have left a space or passage, P', for the admission of cold air, which is free to circulate between the jacket G and the car-frame and prevent the latter from being charred. The upper end of the space P' is covered with perforated zinc Q to prevent dirt from being swept into said opening and lodgment in the air-passage P'. The air-space around the stove can be provided with any suitable damper or means for regulating the supply of cold air to



the interior of the car. When it is necessary to provide the stove with the air-space around it any suitable means can be provided for holding the stove securely in position.

5 It is evident that slight changes in the construction and relative arrangement of parts might be resorted to without involving a departure from the spirit of my invention, and hence I do not limit myself to the particular  
10 arrangement and construction of parts described; but,

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

15 1. In a car-heater, the combination, with a heater secured to the under side of the car-floor, and provided with a branch smoke-flue located within the car and beneath the seat, and connected with vertical smoke-discharge flues  
20 at opposite ends of the car, of a hot-air chamber connected with the heater, a hot-air pipe

extending transversely beneath the car-floor, and perforated hot-air pipes located within the car and extending in opposite directions beneath the car-seat, substantially as set forth. 25

2. In a car-heater, the combination, with the heater located on the under side of the car-floor, of a smoke-flue that leads beneath the car-seats on one side of the car, a hot-air pipe that leads beneath the seats on the other side  
30 of the car, and a cold-air space between the heater and car-frame, the internal opening of the said cold-air space being covered with perforated zinc, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 35

THOMAS S. PAGE.

Witnesses:

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A. W. BRIGHT.