

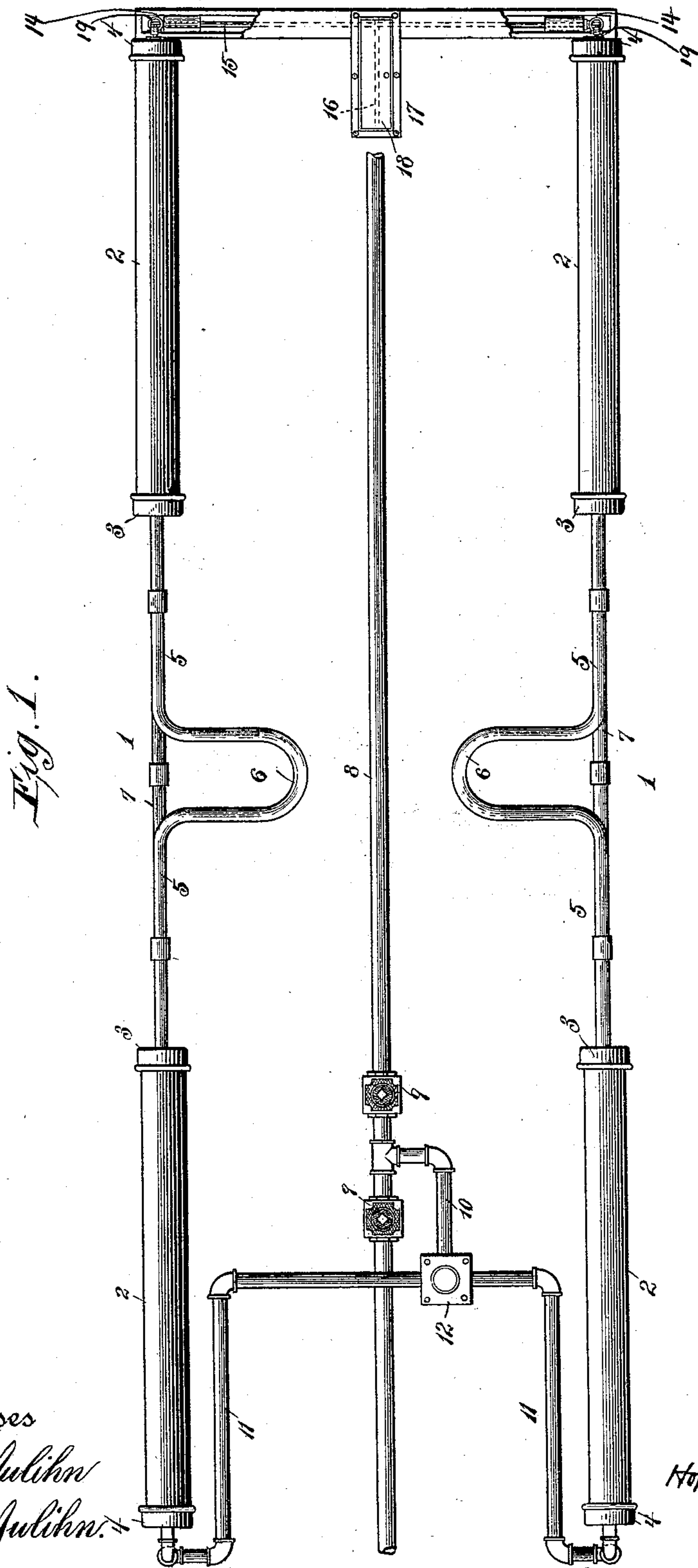
(No Model.)

3 Sheets—Sheet 1.

R. M. DIXON.
CAR HEATER.

No. 528,928.

Patented Nov. 13, 1894.



Witnesses
Louis E. Julihn
Eric E. Julihn.

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(No Model.)

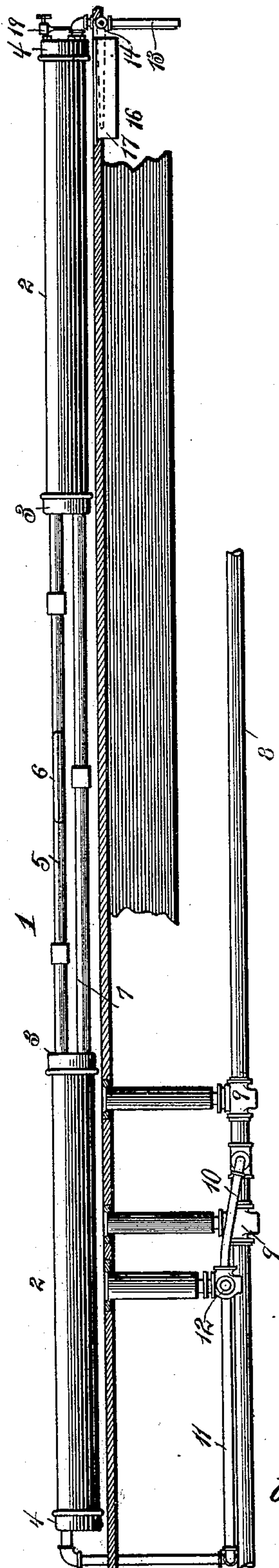
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Fig. 2.



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Fig. 3.

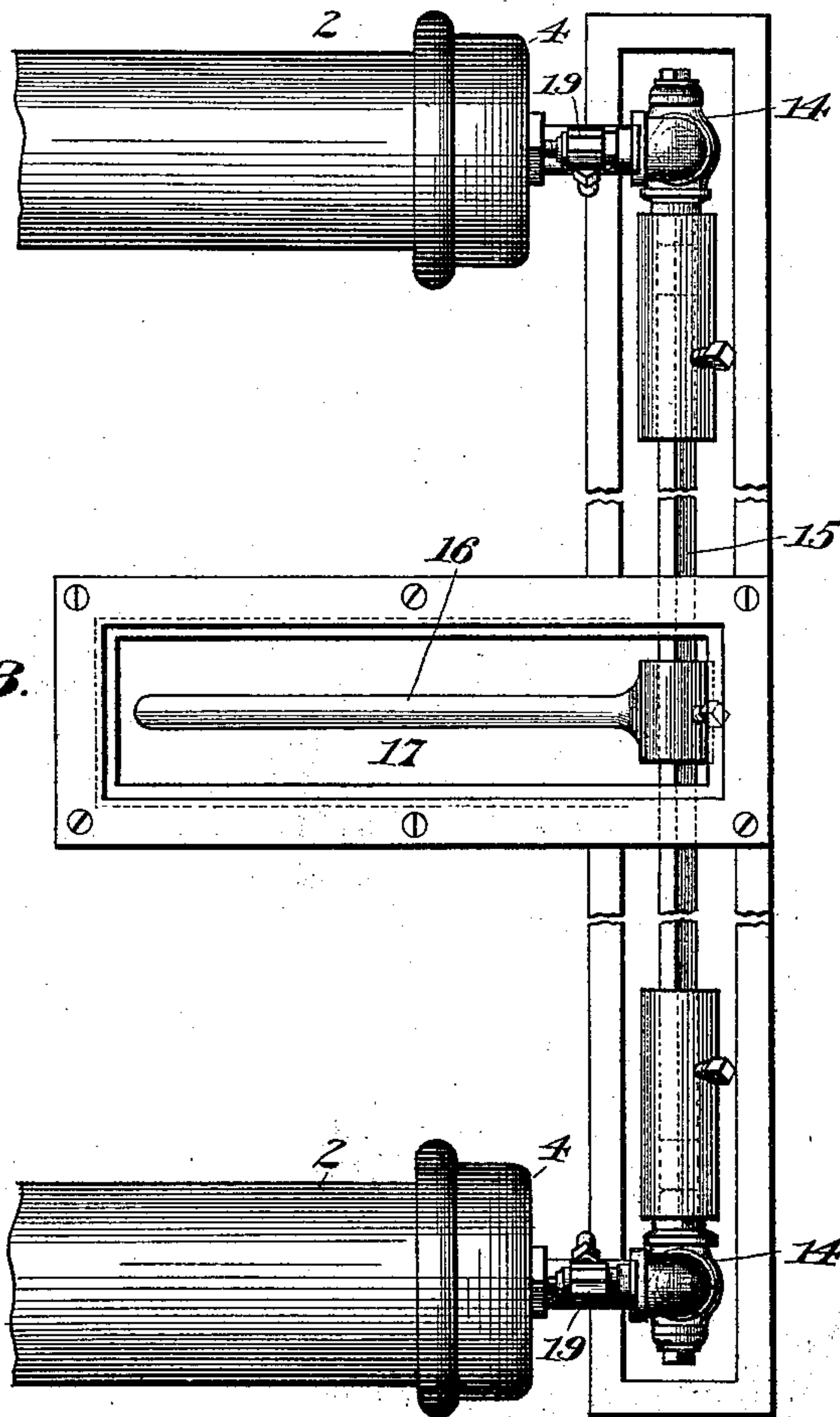
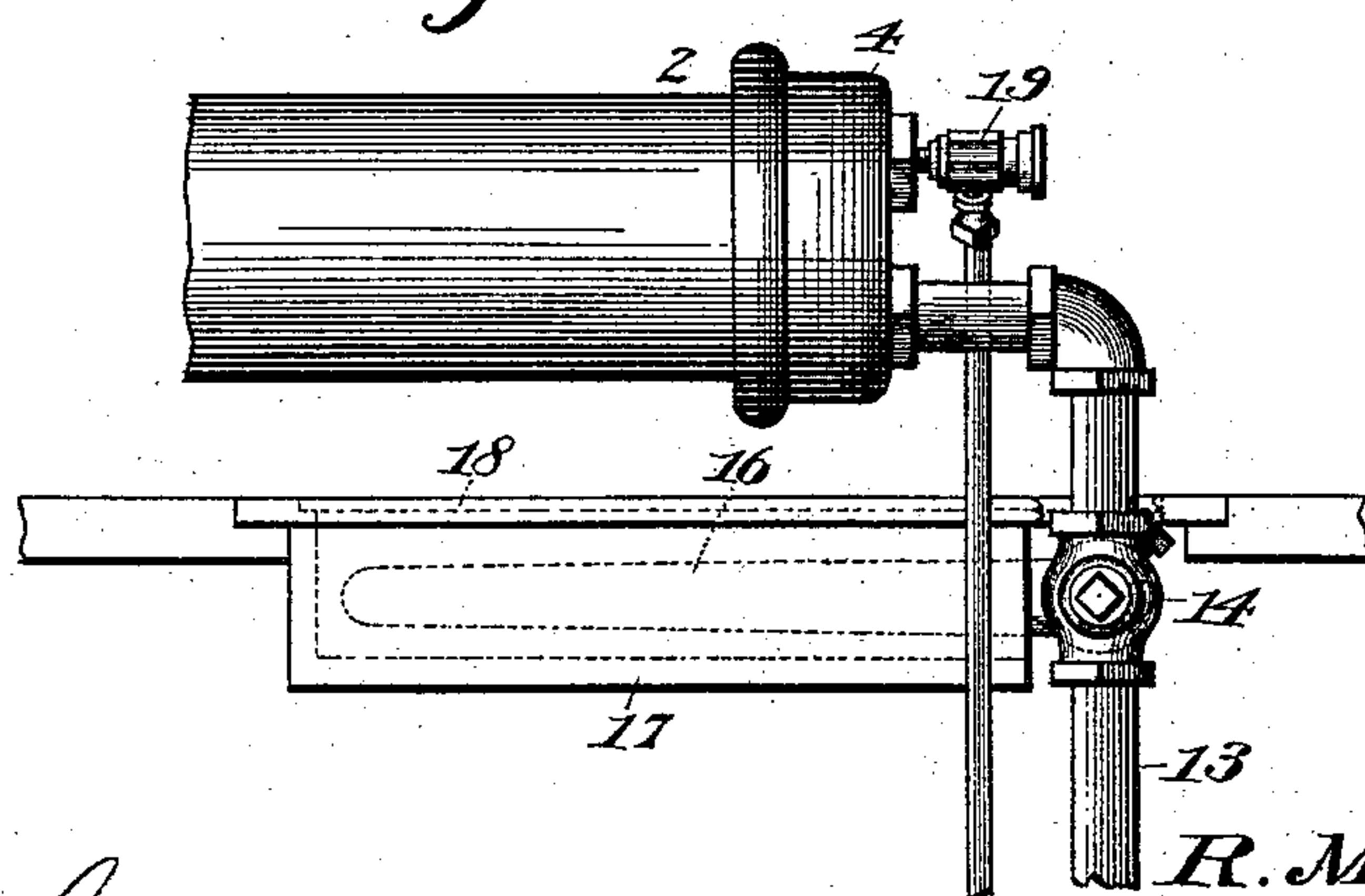


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT MUNN DIXON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE
SAFETY CAR HEATING AND LIGHTING COMPANY, OF NEW YORK, N. Y.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 528,928, dated November 13, 1894.

Application filed October 18, 1892. Serial No. 449,268. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MUNN DIXON, of East Orange, county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Heaters, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce an improved apparatus for heating a railway coach, or the like, by steam, by which the greatest amount of heat from a heating medium may be utilized; and by which the water of condensation in steam heating pipes is retained while the car is in transit, and may be discharged at will, thereby preventing danger of closure of the drip-cock by freezing, or other causes to which continuously-draining systems are more or less subject.

In the accompanying drawings, Figure 1 is a top plan view of my apparatus as applied to a car, the car floor being omitted for the sake of clearness. Fig. 2 is a side elevation of the same, showing a section of the car floor. Fig. 3, is a top plan view of the mechanism by which the water of condensation is discharged from the apparatus; and Fig. 4, is an elevation of the same.

Referring to the figures on the drawings, 1 indicates the local radiators of a steam car-heater. They preferably extend endwise of the car, one radiator being provided upon the opposite sides of the car, as illustrated. The radiators are composed of conduits or reservoirs 2, which are preferably two in number for each heater, and located at opposite ends of the car. They preferably consist of sections of large pipe provided with heads or caps 3 and 4 at their opposite ends. The caps may be secured in any suitable manner, as for example by screw-threads.

5 indicates a connecting steam pipe, preferably provided with an expansion loop 6 to accommodate it to expansion and contraction under varying temperatures. The connecting pipe is united preferably by screw-threads at opposite ends to the opposite caps 3 on the heads of the conduits.

7 indicates an equalizing pipe entered into the opposite heads of the adjacent conduits, so as to bring the interior of the equalizing pipes substantially on a level with the bottom

of the conduits. The conduits are supplied with steam from any suitable source, as for example a train pipe 8 communicating, as usual, with a boiler of a locomotive. Not illustrated.

9 indicates train pipe cocks, and 10 an intermediate supply pipe.

11 indicates branch pipes communicating with the intermediate supply pipe, and introduced into the heads of the radiators on the opposite sides of the car, near the top of the conduit.

12 indicates a cock for controlling the supply of steam through the branch pipes into the conduits.

13 indicates a drain pipe communicating with the lower part of each of the conduits on opposite sides of the car. They are controlled by cocks 14 which are operatively united, as for example by a shaft 15 extending across the car, preferably underneath the floor space.

16 indicates a lever connected with the shaft and adapted, when raised toward the perpendicular, to open the cocks in the drain pipes. It is adapted to lie flat in the floor of the car when the cocks are closed, and is preferably incased in a lever box 17 let into the car floor. The box in practice is provided with a cover 18, as illustrated, by reason of which access may be had to the lever, which may form a flush continuation of the floor when the lever is not in use.

19 indicates air cocks of ordinary kind for automatically permitting the exit of air from the steam pipes when the steam is first admitted.

The radiators are preferably set at a slight incline to drain toward the drain pipes.

The operation of my apparatus is as follows: Steam being admitted from the train pipe through the branch pipes into the conduits, fills the conduits and the connecting pipes and radiates its heat into the car, the air cocks acting in the ordinary manner, as above suggested. As the steam condenses it fills the lower parts of the conduits, maintaining an equal level in each through the equalizing pipe connecting the conduits in each of the radiators. The conduits receive their supply of steam in the upper part, and are united by

connecting pipes, also communicating with them near their top. Consequently there is provided free steam space within the heaters until the large conduits are more than half
5 filled with water. When that condition has been reached the attendant, by simply lifting the lever, can operate the drain cocks and empty the radiators of all water of condensation, after which, by depressing the lever and
10 closing the cocks, the radiators are ready for operation as before.

I do not limit myself to the exact details of construction herein illustrated and described, but reserve to myself the right to vary them
15 at will within the scope of my invention.

What I claim is—

1. In a car heating apparatus, the combination with a steam supply pipe, and a heater

provided with conduits of larger diameter than the steam supply pipe, a connecting 20 pipe and an equalizing pipe uniting the conduits, said pipes communicating with the conduits on different levels, substantially as and for the purposes specified.

2. As a part of a car heating apparatus, the 25 combination with a plurality of reservoirs, of two connecting pipes united to each of the reservoirs and on different levels, substantially as set forth.

In testimony of all which I have hereunto 30 subscribed my name.

ROBERT MUNN DIXON.

Witnesses:

ROBT. P. BROWN,

OSCAR C. WHITNEY.