

(No Model.)

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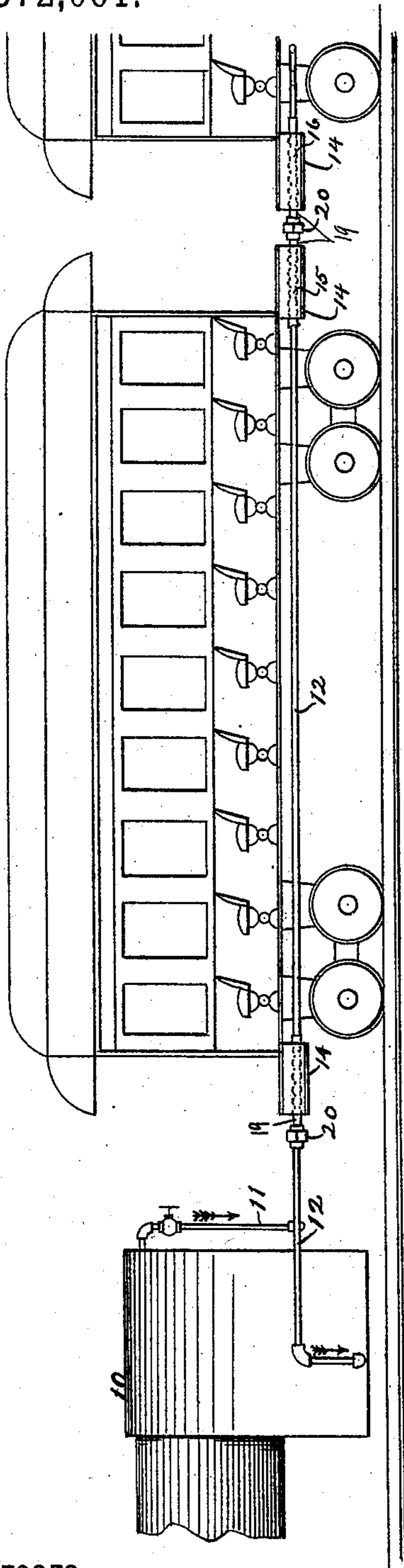
R. CODDINGTON.

STEAM HEATING APPARATUS FOR RAILROAD CARS.

No. 372,061.

Patented Oct. 25, 1887.

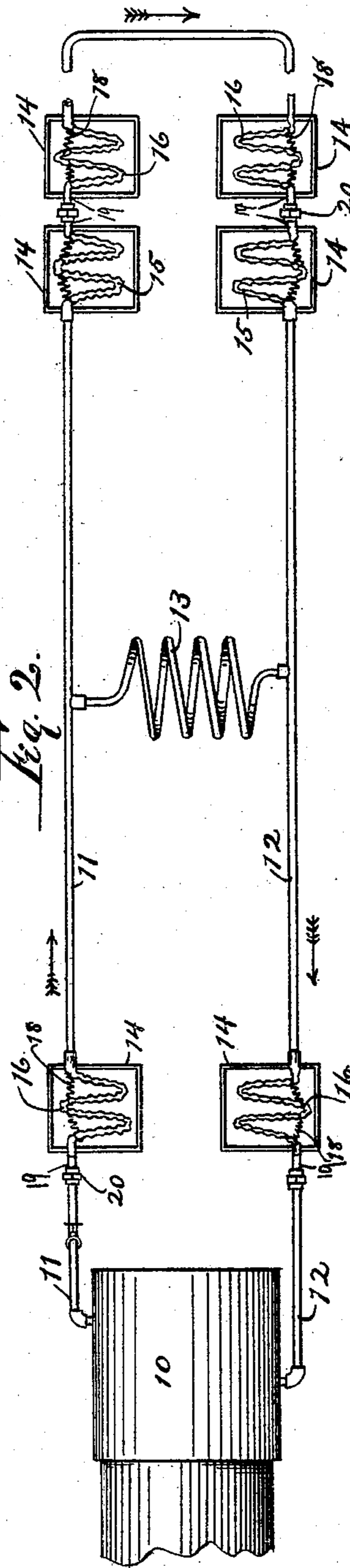
Fig. 1.



WITNESSES:

John Thomson.
John Potts

Fig. 2.



INVENTOR

R. Coddington

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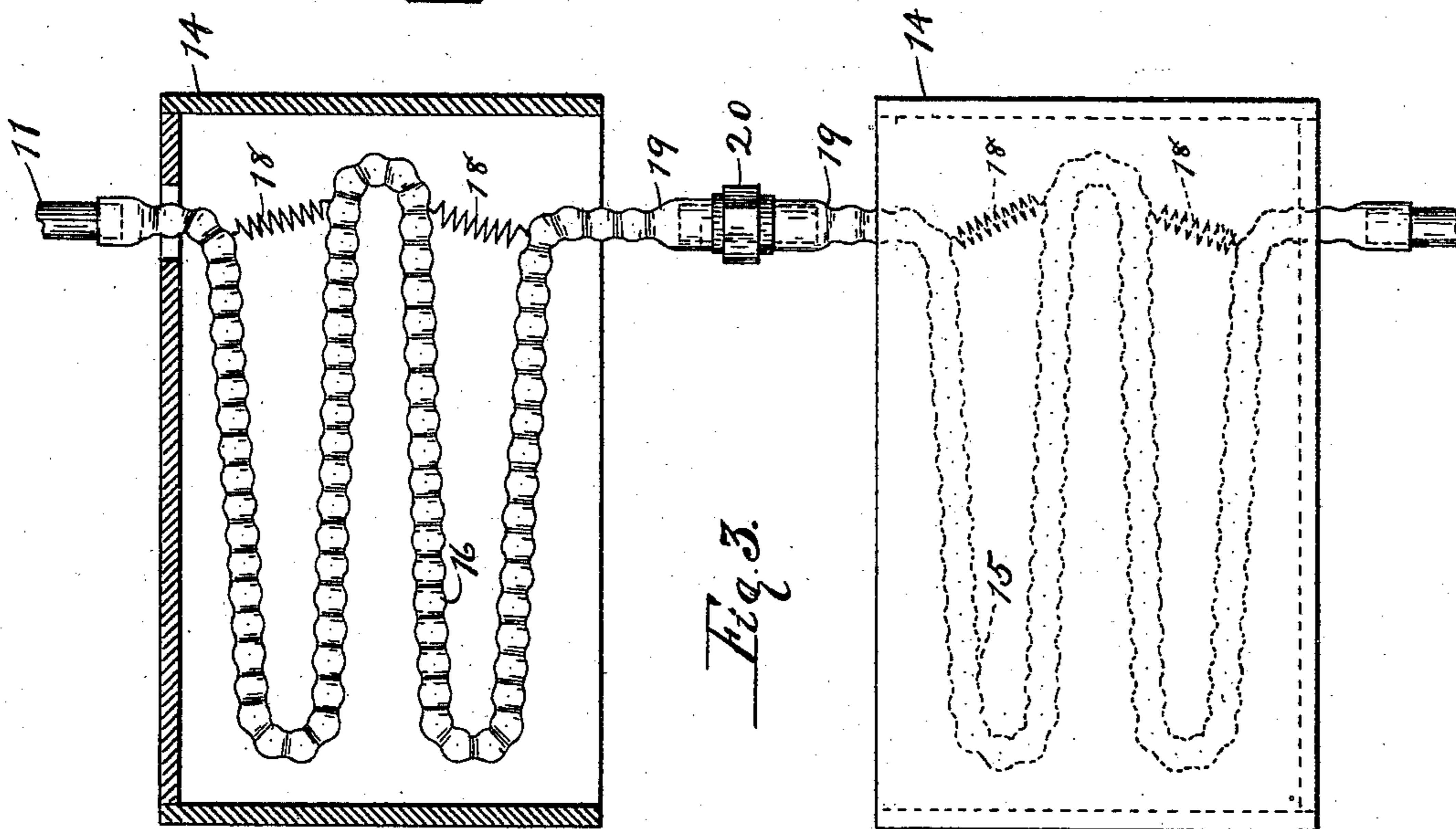
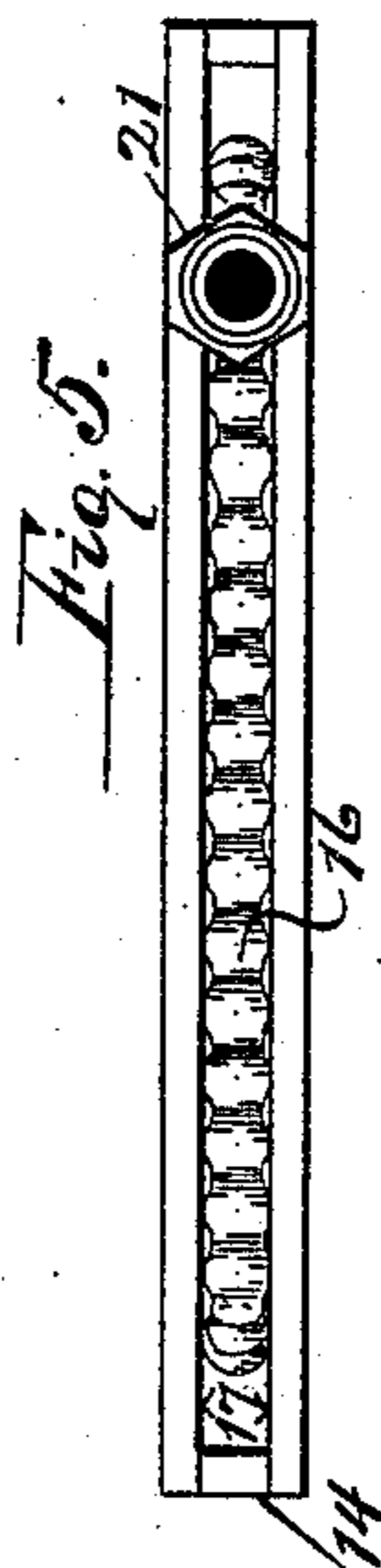
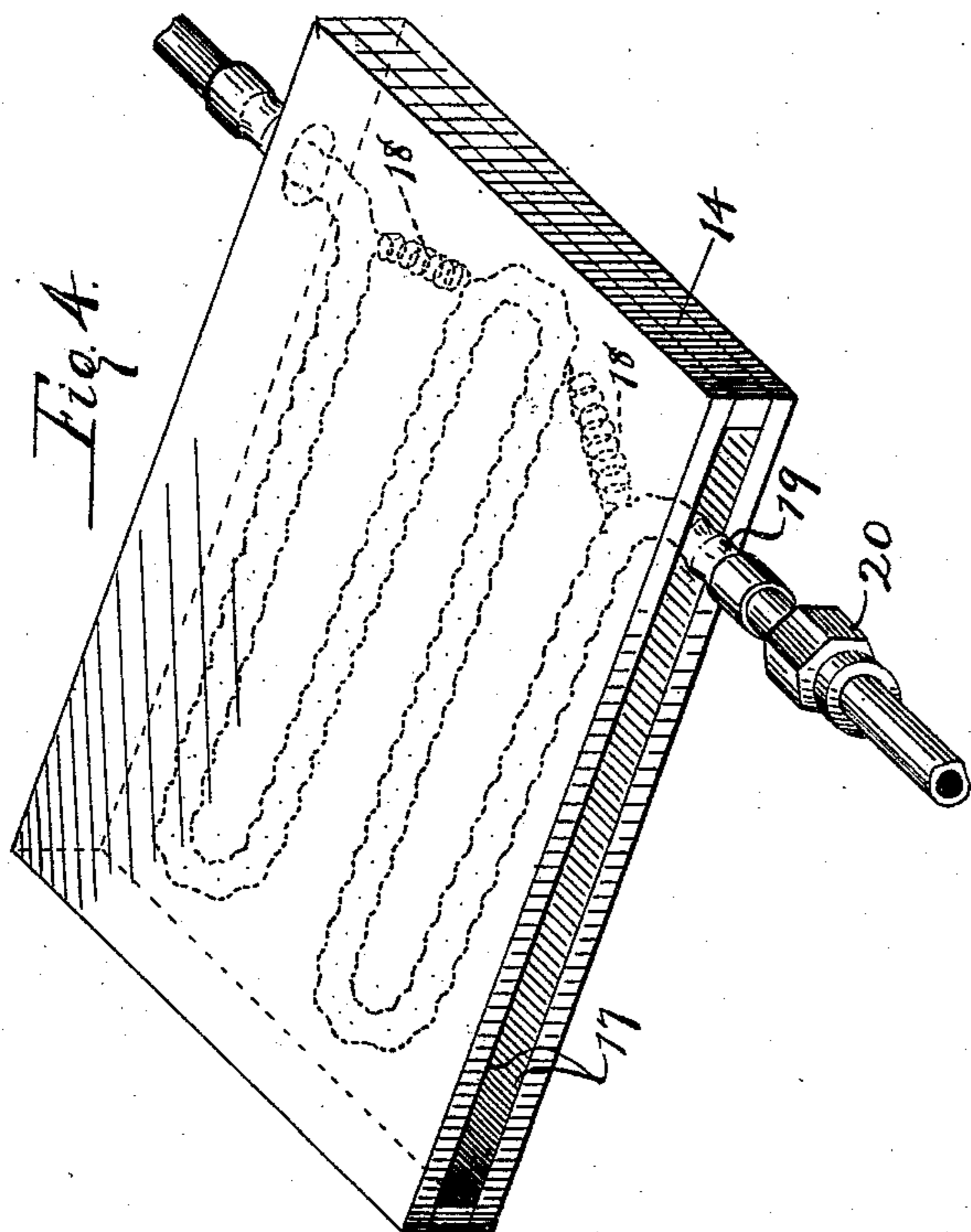
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UNITED STATES PATENT OFFICE.

ROBERT CODDINGTON, OF NEW YORK, N. Y.

STEAM-HEATING APPARATUS FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 372,061, dated October 25, 1887.

Application filed February 24, 1887. Serial No. 222,747. (No model.)

To all whom it may concern:

Be it known that I, ROBERT CODDINGTON, of the city, county, and State of New York, have invented certain new and useful Improvements in Steam-Heating Apparatus for Railroad-Cars, of which the following is a specification.

This invention relates in general to steam-heating apparatus for railroad-cars; but it consists in particular of an improved mode of connecting the heating-circuit of one car with the heating-circuit of another car, and of apparatus for effecting the same.

In the drawings, Figure 1 is a side elevation of a sectional railroad-train representing the application of my invention. Fig. 2 is a plan view thereof. Fig. 3 is a detached detail plan view of coupling-box. Fig. 4 is a perspective view of coupling-box detached. Fig. 5 is a front edge view of said box.

The object of this invention is to dispose the outgoing and the returning pipes of the circuit, which act to feed and drip the heating coils or radiators within the cars, in a horizontal plane which shall be complete and continuous irrespective of the number of cars which constitute a train.

Prior to my invention the usual practice has been, in the application of steam-heating apparatus to a railroad-train, when heated by one source of steam-supply, to connect the pipes of the several cars either by steam-hose or by telescopic metal couplings, the usual arrangement and construction being such as to form vertical loops between and at the platforms of each pair of cars, the said loops lying below the plane of the pipes. Therefore at each pair of platforms "pockets" are formed. The consequence of this is that, so to speak, a premium is offered for collecting condensed water, and each pocket thus acts as a valve to prevent the free and proper circulation of steam. Of course this objection becomes much greater in severe cold weather, and in view of the necessarily exposed location of the pipes, necessitating appliances for discharging the water of condensation. I avoid these objections by carrying the pipes in a horizontal plane, as aforesaid. Thus no pockets are formed from one end of the train to the other. The arrangement and construction

whereby to effect this result will now be described.

In the drawings, 10 represents the source of steam-supply, which may be the boiler of the locomotive or a supplemental heater carried on any one of the cars of the train. The supply-pipe 11 is connected to the upper portion of the boiler, while the return-pipe 12 is connected with the lower portion thereof. The radiating-coil 13 within the cars is connected in circuit, as in common practice.

The pipes 11 12 are carried along the under side of the cars whenever most convenient so to do provided the car-coupling and bumper appliances be sufficiently cleared. The terminals of these pipes are brought to the shallow hose-boxes 14, of which, in the arrangement here shown, there are four on each car, two for the outgoing and two for the returning pipe. To the ends of said pipes short sections of steam-hose 15 16 are secured, which latter are disposed within the shallow box in looped or zigzag form. The hose-boxes are secured either fixedly to the bottom of the car or are permitted to have a slight vibrating motion in a horizontal plane. The depth of the boxes is equal, or nearly so, to the diameter of the steam-hose. The edge of the box fronting outward is entirely open, as at 17.

The object of forming the depth of the boxes equal, or nearly so, to the diameter of the steam-hose is to prevent the action of the spring from causing the coils of hose to assume other than a horizontal plane, which they would be, in a measure, free to do were the hose-boxes of a depth greater than that of the diameter of the said hose.

Between the loops of the steam-hose within the box and attached to the coils are helical springs 18, acting by contraction to maintain the coils closely together within the box. The outer or extreme end of the hose, as 19, is attached to any desired form of coupling, as the union 20, and when so connected it is clear that the action of the springs will maintain that portion of the hose outside of the box taut and in a horizontal plane. From this it will be apparent that as the cars pass around curves or over undulations in the track the springs and hose will yield and accommodate themselves to any position that may be assumed, while yet

under all normal conditions and in the mean-
thereof positively maintaining the desired hori-
zontal position of the hose, and therefore of
the main pipes. When the coupling is discon-
5 nected, the springs will then carry the hose
back within the box until the couplings im-
pinge against the edges thereof, as at 21, Fig.
5. When connected up by the trainman, the
two contiguous ends of the hose are simply
10 brought together against the tension of the
springs.

While this improvement is of advantage in
any system of steam-heating, it is particularly
valuable in connection with so-called "low-
15 pressure" and "exhaust" systems, for the
reason that the minimum of force is expended
in establishing circulation.

What I claim is—

1. The combination, with a railway car or
20 cars, of the steam hose-boxes, as 14, the looped
flexible hose-sections, as 15 16, disposed within
the boxes, and the springs 18, acting to draw
the loops together, substantially as set forth.

2. The combination, with the hose box or
25 boxes secured to a railway car or cars, of flexi-
ble sections of steam-hose disposed within said

boxes in loop form, and spiral springs connect-
ing said loops and acting to draw said loops
together within the box or boxes, one end of
each said hose-sections being fixedly attached 30
to the steam-pipe and the other end thereof
being arranged for detachable connection with
a corresponding hose section or pipe, as by
the union 20, substantially as described.

3. In a system of steam-heating for rail- 35
road-cars having a source of steam-supply
common to all cars, as the boiler 10, the com-
bination, with said cars and boiler, of the out-
going and returning pipes 11 12, having flexi-
ble hose-sections between the cars, and the 40
fixed shallow boxes within which the said
flexible hose-sections are disposed, the said
sections and pipes being maintained in a hori-
zontal plane, or nearly so, substantially as and
for the purpose described. 45

In testimony whereof I have signed my name
to this specification in the presence of two sub-
scribing witnesses.

ROBT. CODDINGTON.

Witnesses:

JOHN THOMSON,
JOHN POTTS.