

(No Model.)

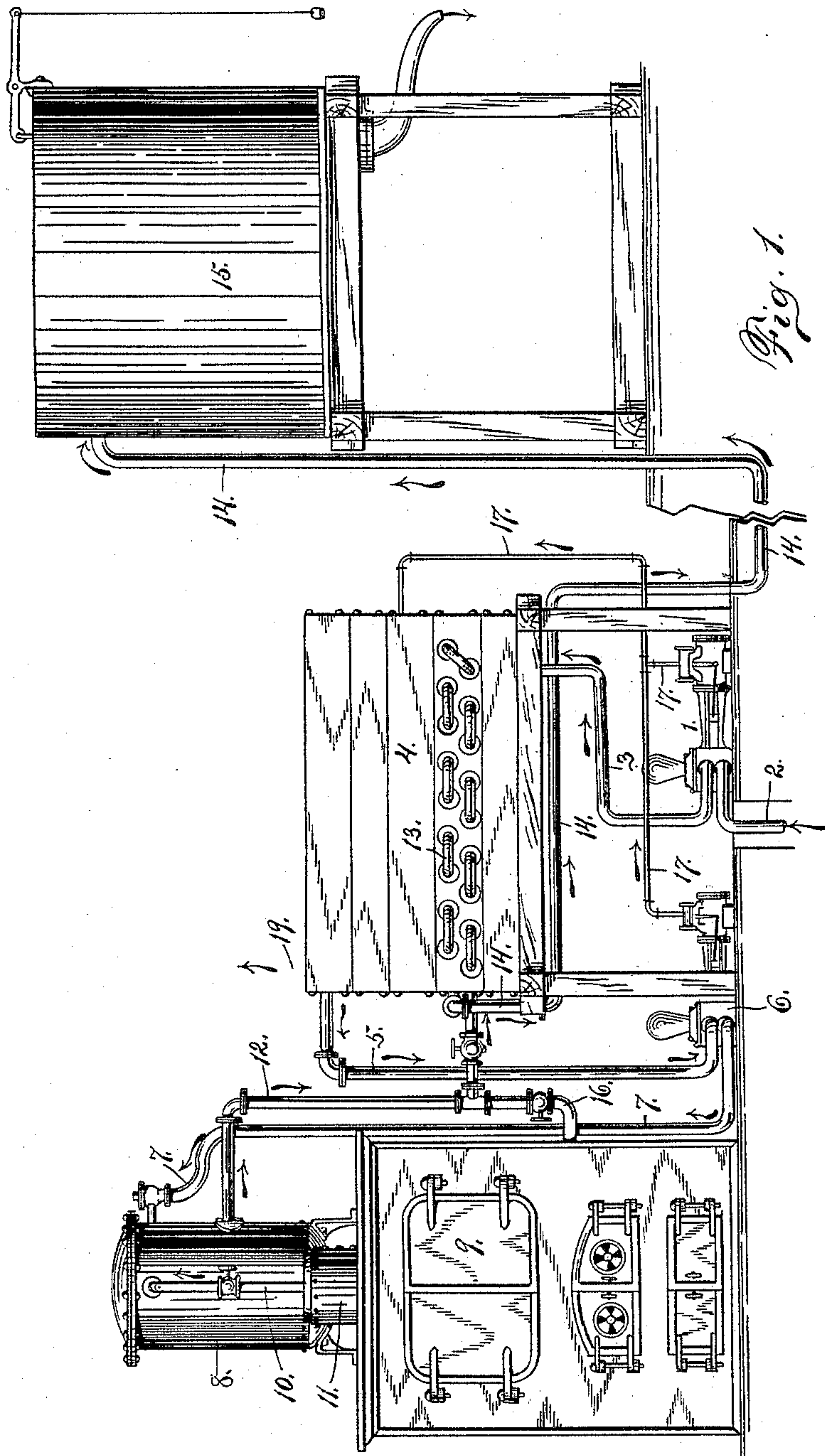
2 Sheets—Sheet 1.

R. LEARMONTH.

APPARATUS FOR SUPPLYING PURIFIED WATER TO LOCOMOTIVES.

No. 495,496.

Patented Apr. 18, 1893.



Witnesses:
F. P. Kersten.
W. C. Miner

Inventor.
Robert Learmonth
By Miller & Hoddick.
Attorneys.

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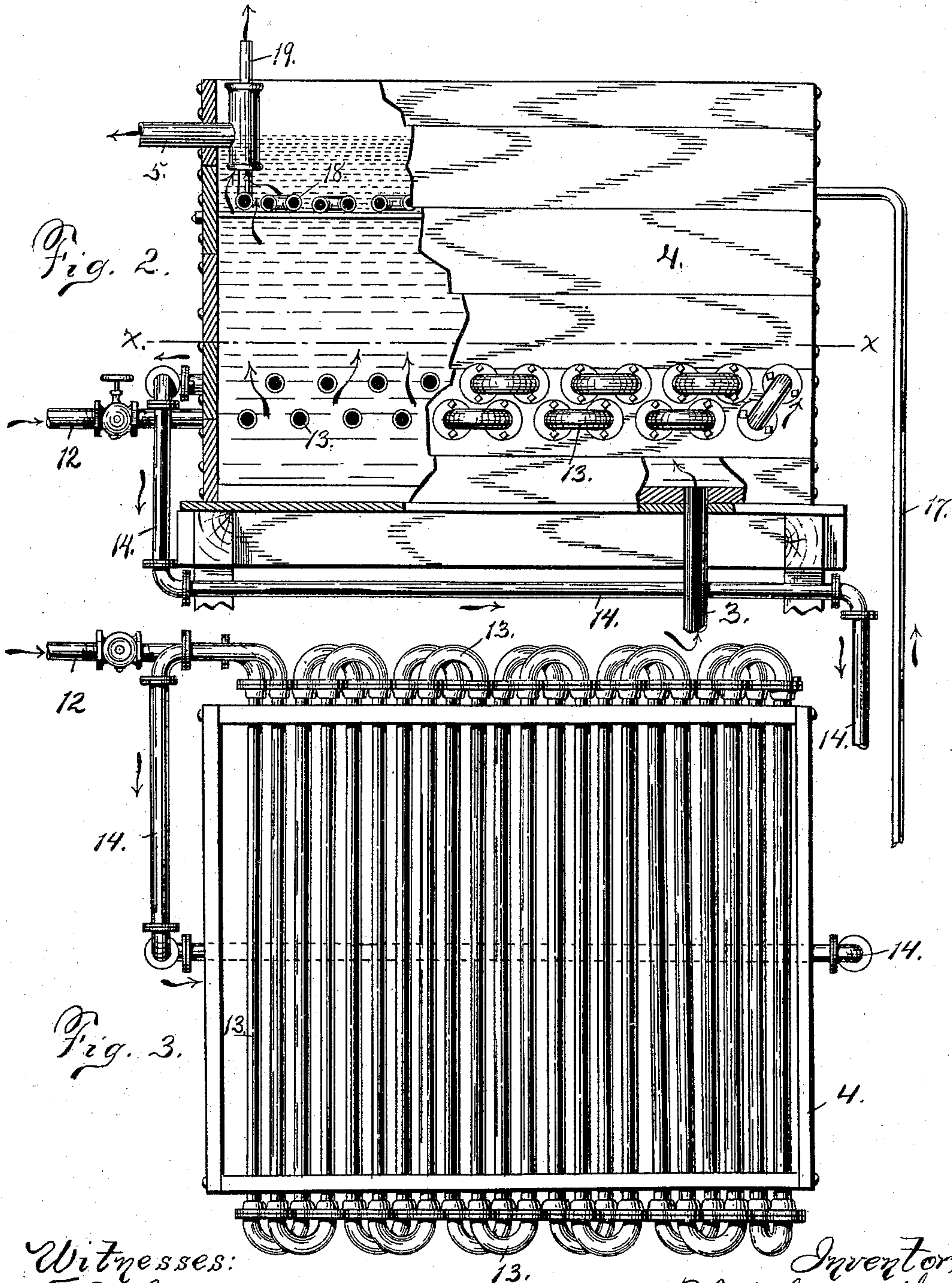
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UNITED STATES PATENT OFFICE.

ROBERT LEARMONTH, OF BUFFALO, NEW YORK.

APPARATUS FOR SUPPLYING PURIFIED WATER TO LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 495,496, dated April 18, 1893.

Application filed February 8, 1893. Serial No. 461,430. (No model.)

To all whom it may concern:

Be it known that I, ROBERT LEARMONTH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Apparatus for Supplying Purified Water to Locomotives; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates more particularly to the purification of water intended for use upon locomotives, its object being to afford a continual supply of water previously purified, to the tanks along the line of railroad from which the locomotives receive their supply.

To that end my invention consists essentially of a tank which receives the water to be purified, a pump for forcing this water into a purifier, a boiler with which the purifier is connected and which furnishes the purifier with steam under high pressure both for purifying purposes and for forcing the purified water to and through a manifold of piping located in the tank into which the water is first pumped and from thence to the supply tank where it is ready for consumption.

I will now proceed to minutely describe the manner in which I have carried out my invention and then claim what I believe to be novel.

In the drawings, Figure 1 is an elevation showing the general arrangement of my improved apparatus. Fig. 2 is an enlarged elevation of the tank with its system of piping and connections and Fig. 3 is a top plan view of the same.

Referring to the drawings, 1 is the pump which receives the water through pipe 2 from its source of supply and forces it through pipe 3 into the tank 4. A pipe 5 connected to the upper part of the tank conducts the water therefrom to the pump 6 which forces it through pipe 7 into the purifier 8. This purifier 8 is herein shown as located on the top of the boiler 9 which supplies the purifier with dry steam through the pipe 10 which extends from

the dome 11 of the boiler to the upper part of the purifier 8. This purifier may be of any well known construction which will free, separate and collect the impurities from the water. The water thus purified if forced by the steam pressure, from the purifier into the discharge pipe 12 communicating with the manifold of piping 13 located within the lower part of the tank 4 and continuing under pressure through the manifold of piping is conducted through outlet pipe 14 into the supply tank 15 from whence it is taken in the purified condition by locomotives as required. The purified water is admitted to the boiler 9 through pipe 16.

It will be seen that by the improved construction just described the temperature of the impure water in the tank 4 is raised considerably by the extreme heat of the purified water in its passage through the manifold of piping on its way from the purifier 8 to the supply tank 15 so that when it reaches and is forced into the purifier the separation of its impurities is greatly accelerated thereby requiring less steam for its purification. The temperature of the impure water may be further raised by utilizing the waste steam from the pumps 1 and 6 which is conducted through piping 17 into a smaller manifold of piping 18 located in the tank 4 above the other manifold 13 and provided with escape pipe 19.

The connecting piping is supplied at the proper points with stop-cocks for regulating the supply and passage of the water through my improved apparatus with which as will be seen, I am enabled to supply purified water to the locomotives direct from the supply tanks in an economical manner thereby avoiding the necessity of supplying the locomotives with individual purifiers.

I claim—

1. An apparatus for purifying water consisting essentially of a tank for the reception of the impure water a purifier into which the impure water is forced from the tank, a boiler with which the purifier is connected and which furnishes the purifier with steam to effect the separation of the impurities and a manifold of piping in the tank containing the impure water through which the heated and purified water is forced to the point desired all com-

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bined and operating substantially as and for the purpose stated.

2. An apparatus for purifying water consisting essentially of a tank for the reception
5 of the impure water a purifier into which the impure water is forced from the tank, a boiler with which the purifier is connected and which furnishes the purifier with steam to effect the the separation of the impurities, a manifold
10 of piping in the tank containing the impure water through which the heated and purified water is forced to the point desired and a manifold of piping in the same tank through

which the waste steam passes from the pumps, which force the impure water into the tank 15 and from the tank to the purifier all combined and operating substantially as and for the purpose stated.

In testimony whereof I have hereto set my hand in the presence of two subscribing wit- 20 nesses.

ROBERT LEARMONTH.

Attest:

W. T. MILLER,
O. E. HODDICK.