

No. 872,277.

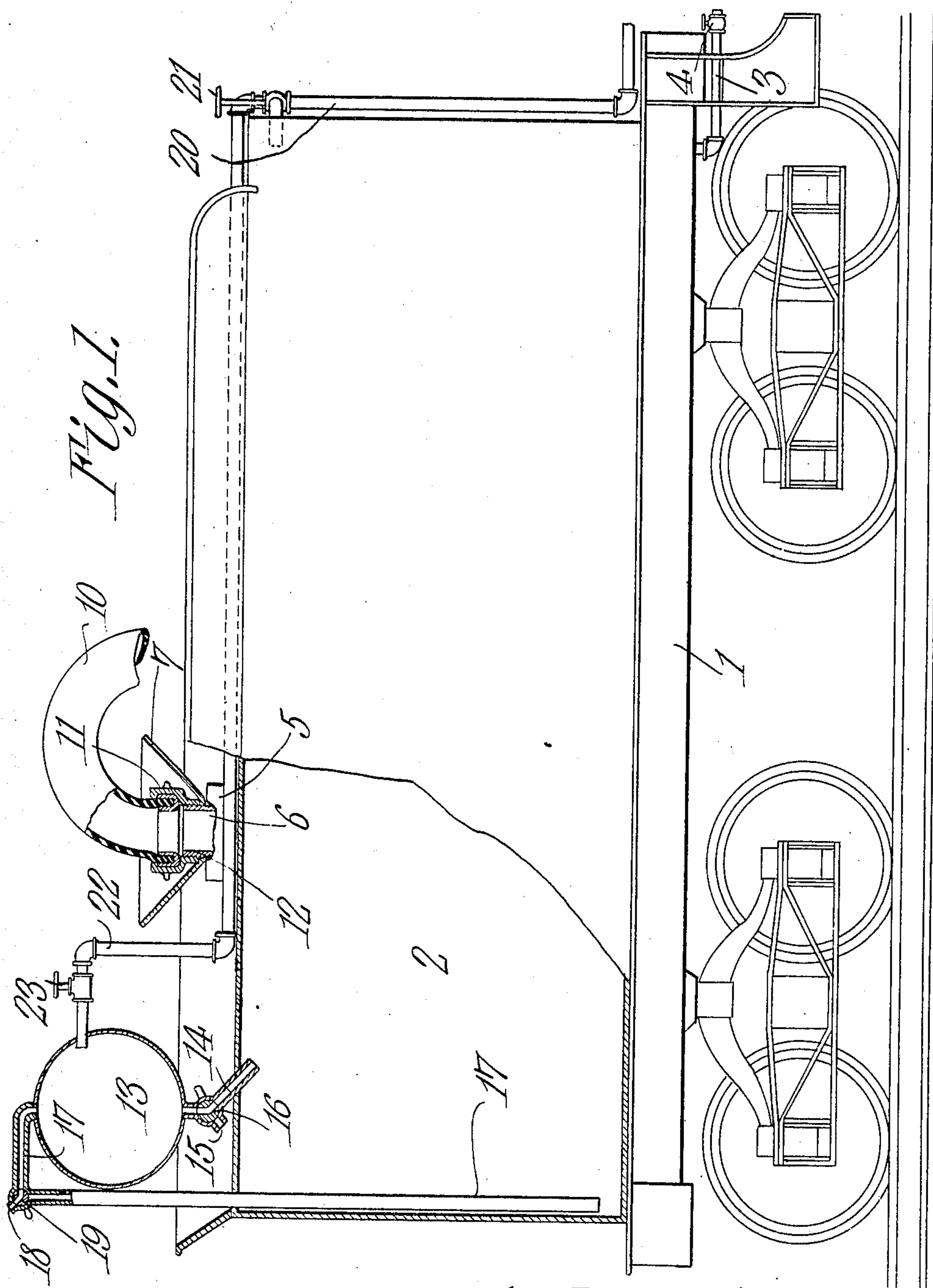
J. H. DAVIS.

PATENTED NOV. 26, 1907.

LOCOMOTIVE TENDER.

APPLICATION FILED APR. 12, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

E. J. Stewart
Herbert D. Lawson

Joseph H. Davis, INVENTOR.

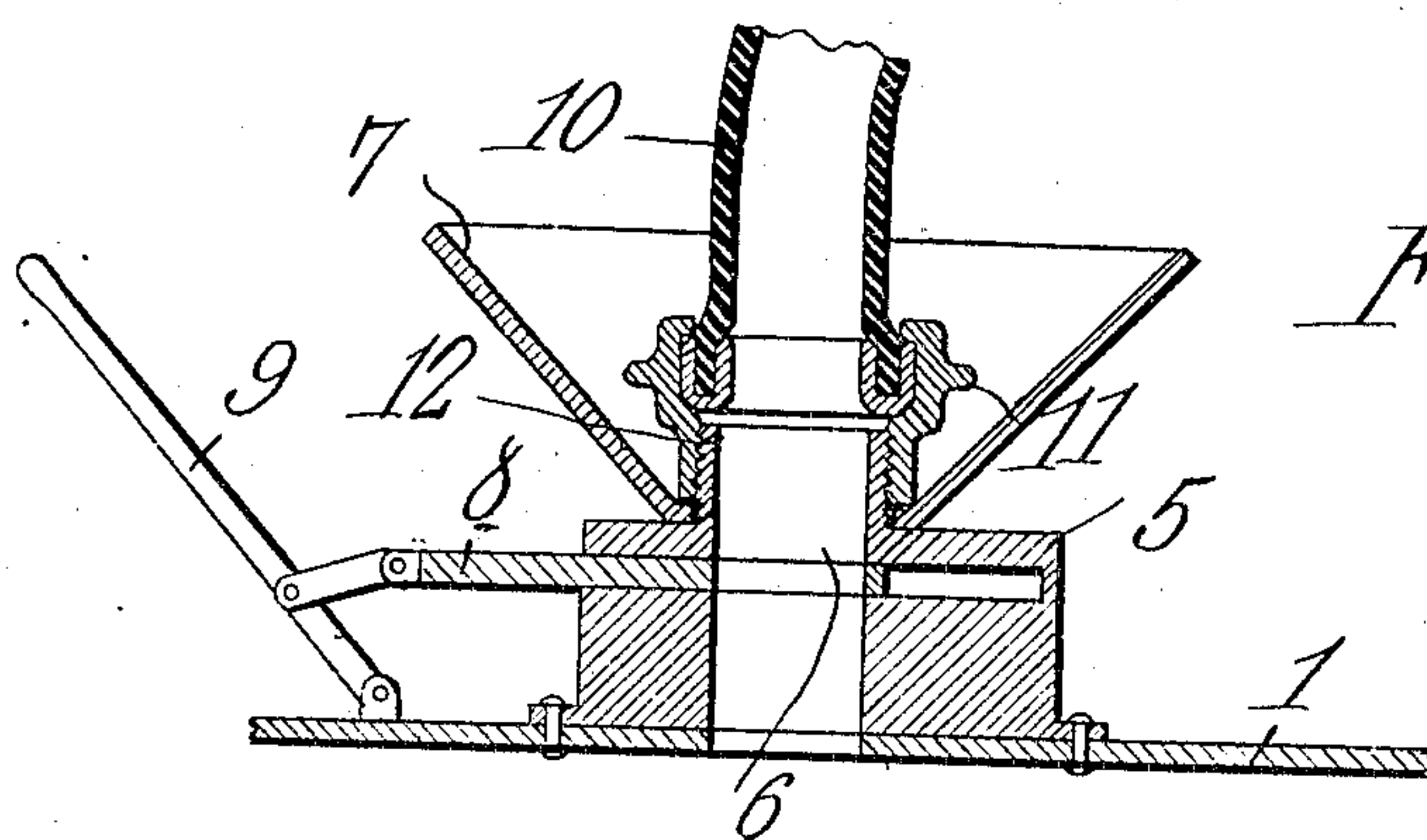
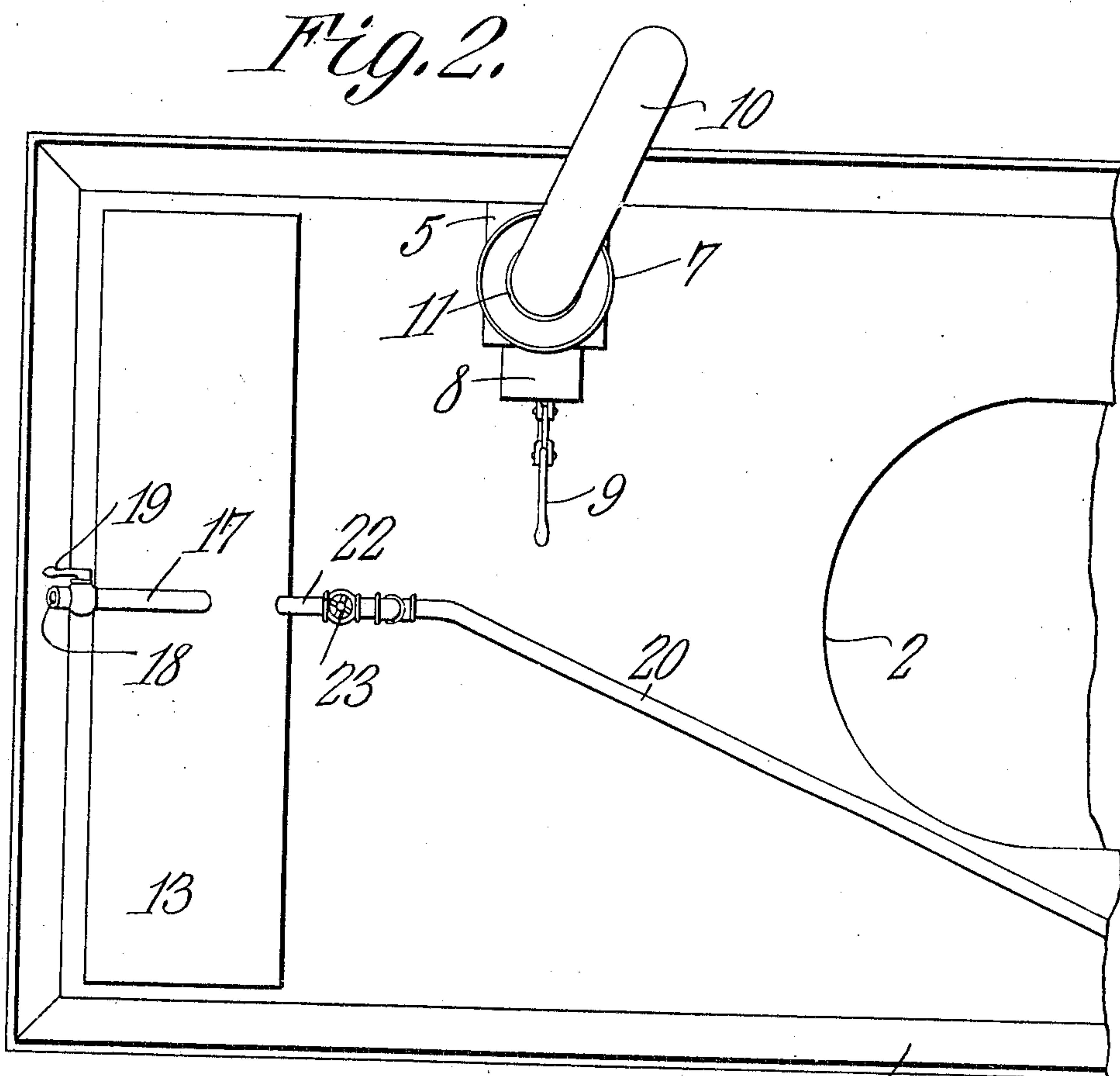
By *C. A. Snow & Co.,*
ATTORNEYS

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E. J. [Signature]
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By *C. A. Snow & Co.* ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH H. DAVIS, OF WINFIELD, ALABAMA.

LOCOMOTIVE-TENDER.

No. 872,277.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed April 12, 1907. Serial No. 367,777.

To all whom it may concern:

Be it known that I, JOSEPH H. DAVIS, a citizen of the United States, residing at Winfield, in the county of Marion and State of Alabama, have invented a new and useful Water-Feeding Apparatus for Locomotive-Tenders, of which the following is a specification.

This invention relates to water feeding apparatus for locomotive tenders and its object is to provide simple and efficient means whereby water can be quickly supplied to a tender through cisterns located therebelow.

Heretofore it has been customary to store the water in large tanks supported adjacent the track and above the top of the tender so that the water is free to flow by gravity from the tank and into the tender. The cost of constructing and maintaining these tanks is considerable and it is therefore the object of the present invention to eliminate this expense by providing novel means whereby water can be quickly supplied to the tender from a cistern below the level of the tender.

One of the objects of the invention is to provide means whereby a partial vacuum may be formed within the tank of the tender so that a suction may be established for the purpose of drawing water upward into the tender whenever desired.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a view partly in section and partly in side elevation of a locomotive tender having water feeding apparatus thereon embodying the present improvements; Fig. 2 is a plan view of the rear portion of the tender and of the feeding apparatus thereon; and Fig. 3 is an enlarged transverse section through the water intake and the valve therein.

Referring to the figures by characters of reference, 1 designates a locomotive tender which may be of any preferred construction and which is provided with the usual water tank 2 from which extends a pipe 3 designed to convey water to the boiler. This pipe is of course provided with a valve 4 whereby the flow of water to the boiler can be cut off. Arranged upon the tank 2 at any desired point is a valve casing 5 through which ex-

tends an inlet opening 6 the outer end of which is surrounded by a detachable funnel-shaped receiver 7. Within the casing 5 is mounted a slide valve 8 which may be actuated by means of a lever 9 so as to open or close the passage 6. This valve is preferably constructed so as to prevent the admission of both air and water to the tank through the opening 6 when the valve is closed. A supply hose 10 is designed to be placed within the receiver 7 and has a revoluble coupling 11 designed to detachably engage a threaded tube surrounding the opening 6 and within the receiver 7. The hose is designed to be of sufficient length to extend from the top of the tender to a cistern which may be located beside the tank and below the tender.

Supported in any suitable manner above the tank 2 is a reservoir 13 which communicates with the interior of the tank 2 through a pipe 14. This pipe has an air vent 15 and a valve 16 is arranged within the pipe and is disposed to place the interior of the reservoir in communication with the air vent 15 or with the interior of the tank 2. Another pipe 17 extends from the upper portion of the reservoir 13 and is provided with an air vent 18. The pipe 17 extends downward into the tank 2 to a point adjacent the bottom thereof. A valve 19 is disposed within the pipe 17 and is designed to be turned to place the interior of the reservoir 13 either in communication with the air vent 18 or into communication with the interior of the tank 2. A pipe 20 is arranged upon the tender and is designed to convey steam to the tank 2 from the boiler of the locomotive and this pipe has a valve 21 whereby the supply of steam to the tank may be readily cut off. A branch pipe 22 extends from the pipe 20 and reservoir 13 and is also provided with a valve 23 whereby the supply of steam to the reservoir can be cut off.

In use the reservoir 13 is normally filled with water and the valve 16 is closed while the valve 19 is positioned so as to establish communication between the tank 2 and the reservoir 13. When all of the water has been withdrawn from the tank 2 and it is desired to refill the same the valve 8 is shifted so as to close the intake opening 6 and valve 16 is turned so as to place the interior of the tank 2 in communication with the air vent 15. Steam is then admitted to the interior of the tank 2 by opening the valve 21 it being of course understood that valve 4 is closed.

This steam completely fills the tank 2 and drives the air therein outward through pipe 14 and vent 15. After all of the air has been removed from the tank in this manner the
 5 valve 16 is turned so as to place the reservoir 13 in communication with tank 2 whereupon the water contained within the reservoir will flow downward into the tank and cause the steam therein to become condensed. A partial vacuum will thus be produced within the
 10 tank. The hose 10 is then placed with one end in a cistern beside the track and with its nozzle 11 within the receiver 7. Valve 8 is then opened and a suction will be promptly
 15 established through the hose 10 and drawn therethrough and into the tank. As soon as the tank has been filled the hose 10 can be removed. The valve 19 is then turned so as to place the reservoir 13 in communication
 20 with the vent 18 and valve 16 is turned so as to close communication between the reservoir and the tank 2. Steam is then directed into the reservoir from pipe 22 and will drive all of the air within the reservoir outward
 25 through the vent 18. Valve 19 is then turned so as to place reservoir 13 in communication with tank 2 and the steam is cut off from the reservoir. The steam contained within the reservoir will gradually condense
 30 and create a partial vacuum which will cause the water to be sucked into the reservoir through pipe 17. Said reservoir will thus be recharged so that the water contained therein can be used for condensing the steam
 35 in tank 2 during the next refilling operation.

It will be seen that this apparatus constitutes a very simple and efficient means for feeding water to the tank of the container

and positively dispenses with the use of tanks and the like which are objectionable 40 because of the cost involved in constructing and maintaining them.

It is to be understood that the funnel is not an essential part of this invention but is merely to be used to facilitate taking water 45 from an ordinary gravity tank should it be necessary to do so. It should be removed when not in use.

What is claimed is:

The combination with a tank having a 50 valved water inlet, a detachable funnel surrounding the inlet, and a coupling within the funnel; of a reservoir, means for establishing communication between the top of the reservoir and the bottom of the tank, said means 55 having an air vent, a valve within said means for closing the same or for placing the reservoir in communication with either the tank or the vent, means for establishing communication between the bottom of the reservoir 60 and the top of the tank, said means projecting into the tank and constituting a nozzle, said means having an air vent, a valve within said means for closing the same or for establishing communication between the reservoir 65 and either the vent or the tank, and separate valved means for directing steam into the tank and reservoir respectively.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature 70 in the presence of two witnesses.

JOSEPH H. DAVIS.

Witnesses:

P. F. LUCAS,
H. W. CLEM.