

Jan. 2, 1923.

J. F. BROWN.  
WATER TRAP.  
FILED JULY 12, 1921.

1,440,719.

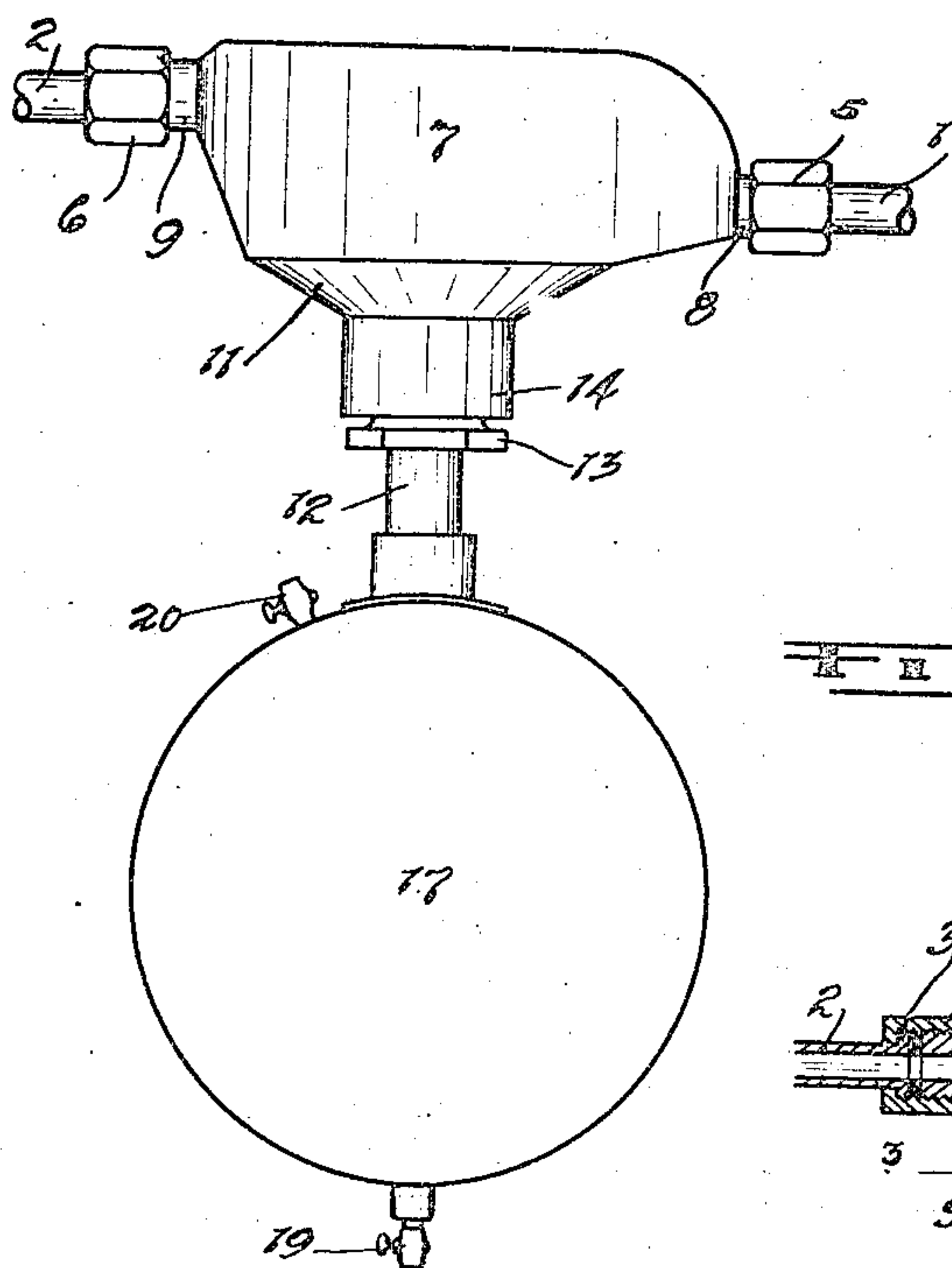


Fig. 1

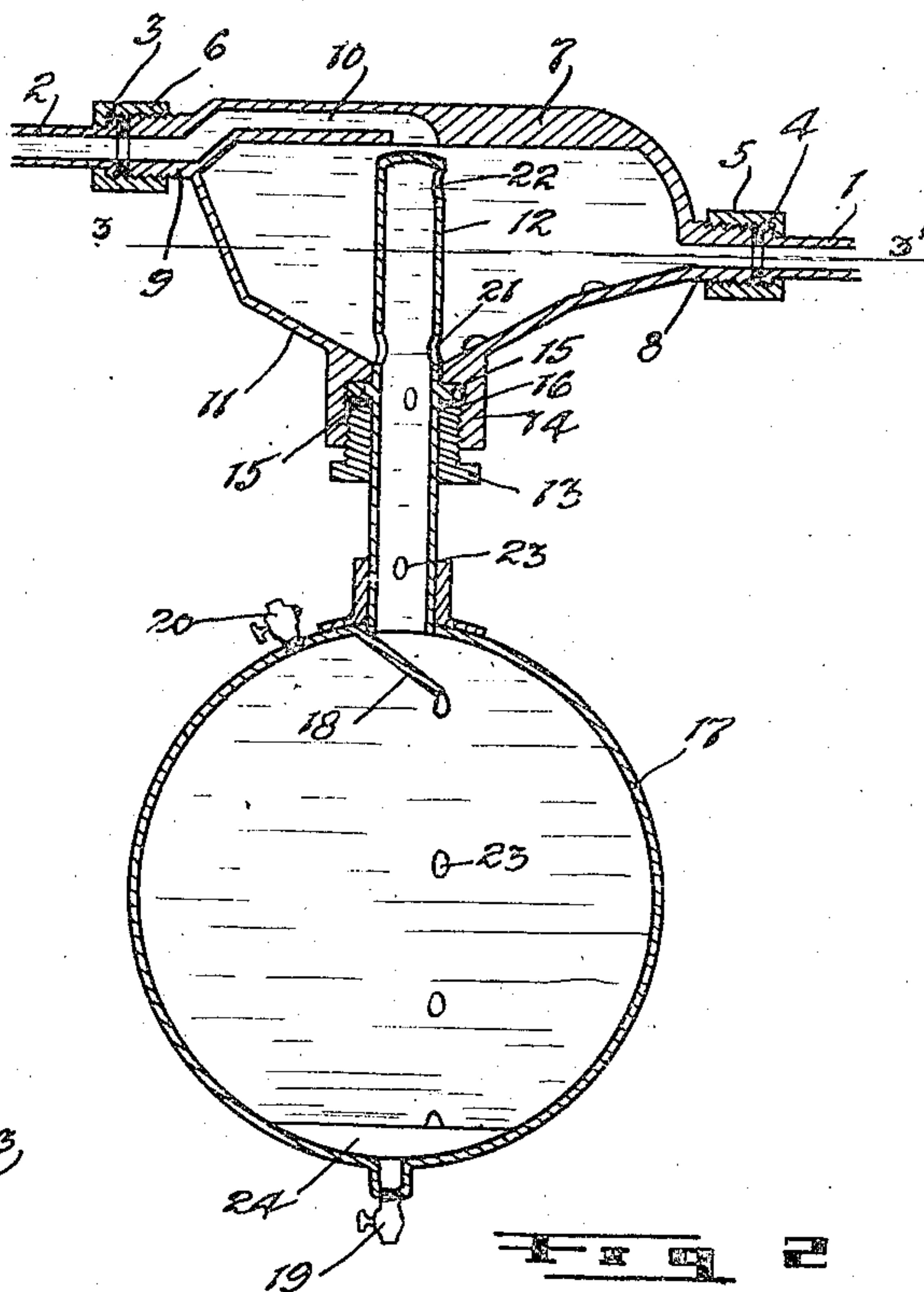


Fig. 2

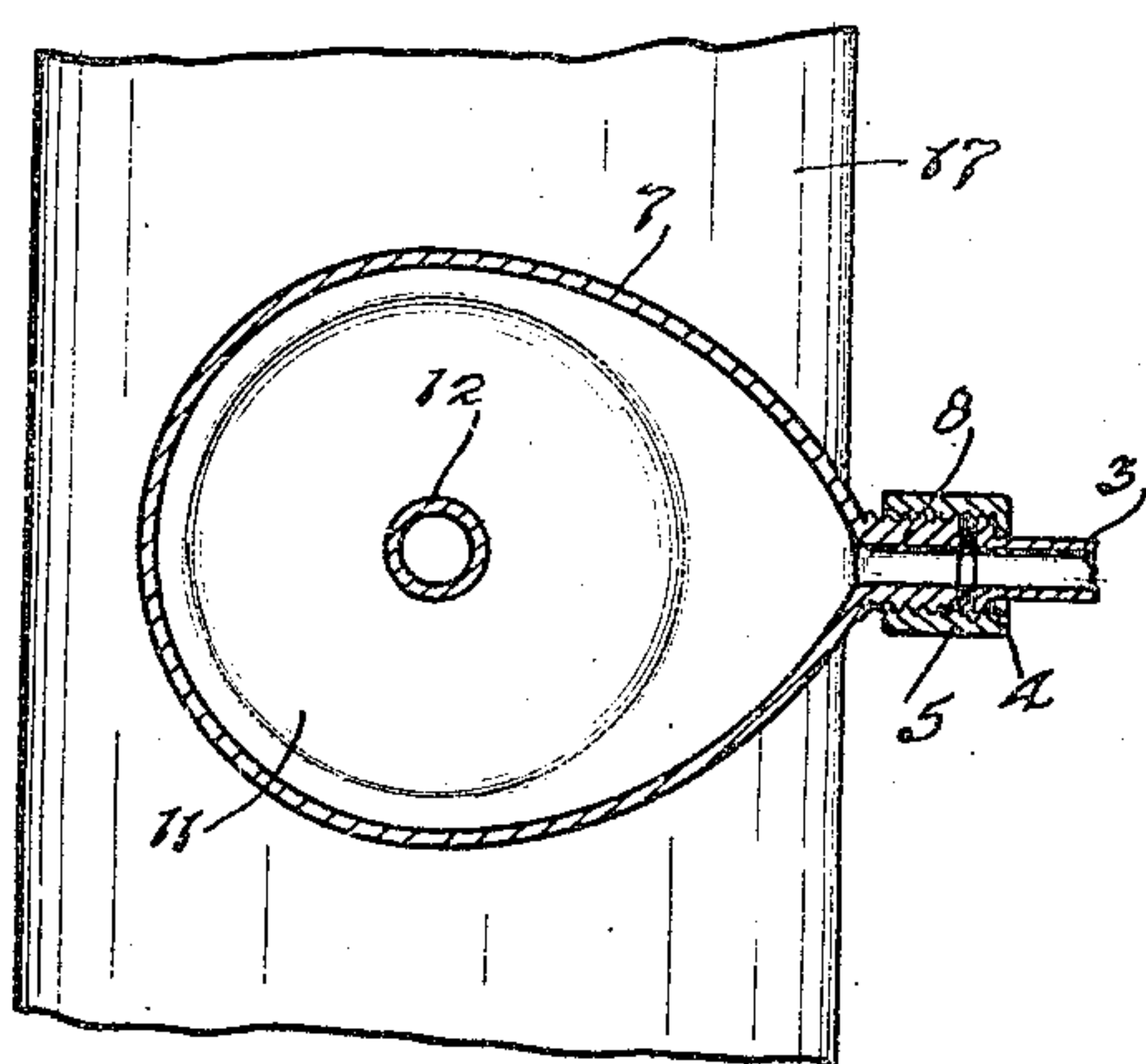


Fig. 3

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## UNITED STATES PATENT OFFICE.

JOHN FORSYTHE BROWN, OF SIDNEY, MANITOBA, CANADA.

## WATER TRAP.

Application filed July 12, 1921. Serial No. 484,227.

*To all whom it may concern:*

Be it known that I, JOHN FORSYTHE BROWN, of the town of Sidney, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Water Traps, of which the following is the specification.

The invention relates to improvements in water traps and particularly to a trap for removing water from gasoline, kerosene and such like liquid fuel and the object of the invention is to provide a simply constructed, inexpensive, durable and easily assembled trap which will effectively separate the water from the liquid fuel and thereby increase the value of the fuel, especially where it is used as the firing mixture for an internal combustion engine.

A further object of the invention is to construct the appliance so that it can be readily inserted in the feed pipe leading from the supply or fuel tank to the carburetor of an engine and such that it will have considerable capacity and accordingly will not require constant attention.

With the above more important objects in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawing in which:—

Fig. 1 is a side view of the complete device.

Fig. 2 is a vertical sectional view centrally through the trap.

Fig. 3 is a horizontal sectional view at 3—3' Fig. 2 and looking downwardly.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The trap is constructed so that it can be inserted in the feed pipe leading from the customary supply tank to the carburetor of an internal combustion engine. The tank and carburetor are not herein shown as they form no part of the invention.

My trap is inserted in the supply pipe, a portion of which can be cut out to make room for the introduction of the trap. The ends 1 and 2 of the pipe at the cut are then out-flanged as indicated at 3 and 4 and screw threaded to receive screw couplings 5 and 6. The end 1 of the pipe leads to the fuel supply tank and the end 2 thereof to the usual

carburetor. The trap is constructed as now described in detail.

The separating chamber 7 is provided at diametrically opposite sides with inlet and outlet screw threaded extensions 8 and 9 adapted to receive the couplings 5 and 6 whereby the trap is connected in the supply pipe. The extension 8 connects the end 1 of the pipe with the interior of the chamber 7, whilst the extension 9 connects the interior of the duct 10 formed in the top of the chamber with the end 2 of the pipe. The inner end of the duct 10 communicates centrally with the interior of the chamber at the top.

The bottom of the chamber is somewhat cone-shaped as indicated at 11 and receives a vertically extending drip tube 12, the tube being suitably fastened to the chamber by a bushing 13 which screws into a screw threaded extension 14 located at the underside of the chamber and engages the shoulder formed on the tube. Packing material 16 is inserted between the bushing and the shoulder to form a liquid tight joint.

The upper end of the tube which is closed terminates directly opposite the end of the duct 10 and the lower end opens to a depositing tank 17 suitably attached to the end of the tube. A deflecting plate 18 is located adjacent the end of the tube to prevent up-splashing of the liquid in the tank. The tank is supplied with a drain cock 19 and a vent cock 20.

The side of the tube is provided within the chamber 7 with a number of holes or openings 21 through which the water drains from the cone-shaped bottom of the chamber. An opening 22 is also located adjoining the top end of the tube.

When this trap is in use the cock 20 is opened to allow of the escape of air and the appliance becomes filled with liquid fuel such as gasoline and kerosene, this flowing through the pipe 1 from the supply tank. As water is heavier than the liquid fuel it will drain through the openings 21 into the tube 12 and drip down the tube and deposit in the lower part of the tank 17. Drops of water are indicated at 23 and a small quantity of water is shown as collected at 24 in the bottom of the tank.

This draining and collecting of the water continues until one desires to drain the water from the tank at which time he opens the cock 19. The fuel free of water passes



through the duct 10 out the pipe 2 to the carburetor.

Obviously this structure is an extremely simple one and can be readily installed in place and effectively operated to separate the water from the fuel.

What I claim as my invention is:—

1. In a device for separating water from liquid fuel such as kerosene, gasoline and such like, the combination with a fuel supply pipe and a feed pipe, of a water trap inserted between the supply pipe and the feed pipe and comprising a separating chamber having one side connected to the supply pipe and the other side connected to the feed pipe and provided interiorly and at the top with a duct communicating with the feed pipe and opening centrally to the interior of the chamber and provided further with an inclined bottom, a tube passing through the bottom and extending upwardly within the chamber and having the upper end terminating adjacent the duct and provided with a side opening and the body part thereof provided with drain openings immediately within the bottom of the chamber, a depositing tank secured to the lower end of the tube and suitable drain and vent cocks carried by the tank.

2. A device of the character described, comprising a separating chamber having an inlet port at one side and an outlet port extending from the opposite side thereof

through the top wall of the chamber and opening downwardly into the chamber through the central portion of the top wall, a drain tube projecting upwardly into the supporting chamber through the bottom wall thereof, the upper end of said tube being closed and disposed a short distance below the outlet in direct alignment therewith, and the wall of said tube below the closed upper end being provided with a plurality of apertures and a collecting tank into which the lower end of said tube extends.

3. A device of the character described, comprising a separating chamber provided with inlet and outlet passages, said chamber being further provided with an opening in its bottom wall and a depending threaded collar surrounding said opening, a tube projecting upwardly into the chamber through said opening and provided with a stop flange fitted within said collar, said tube being provided, within the separating chamber, with a plurality of drain openings, a retaining nut threaded into the collar adapted to engage the stop flange on the tube to secure the latter in position and a collecting tank connected with the outer end with the tube.

Signed at Carberry, Man., this 22d day of March, 1921.

JOHN FORSYTHE BROWN.

In the presence of—

ROBT. A. GARLAND,  
KATHLEEN HASLAM.