

No. 652,375.

Patented June 26, 1900.

L. C. SNELL.

APPARATUS FOR STORING AND FEEDING OIL.

(Application filed July 31, 1899.)

(No Model.)

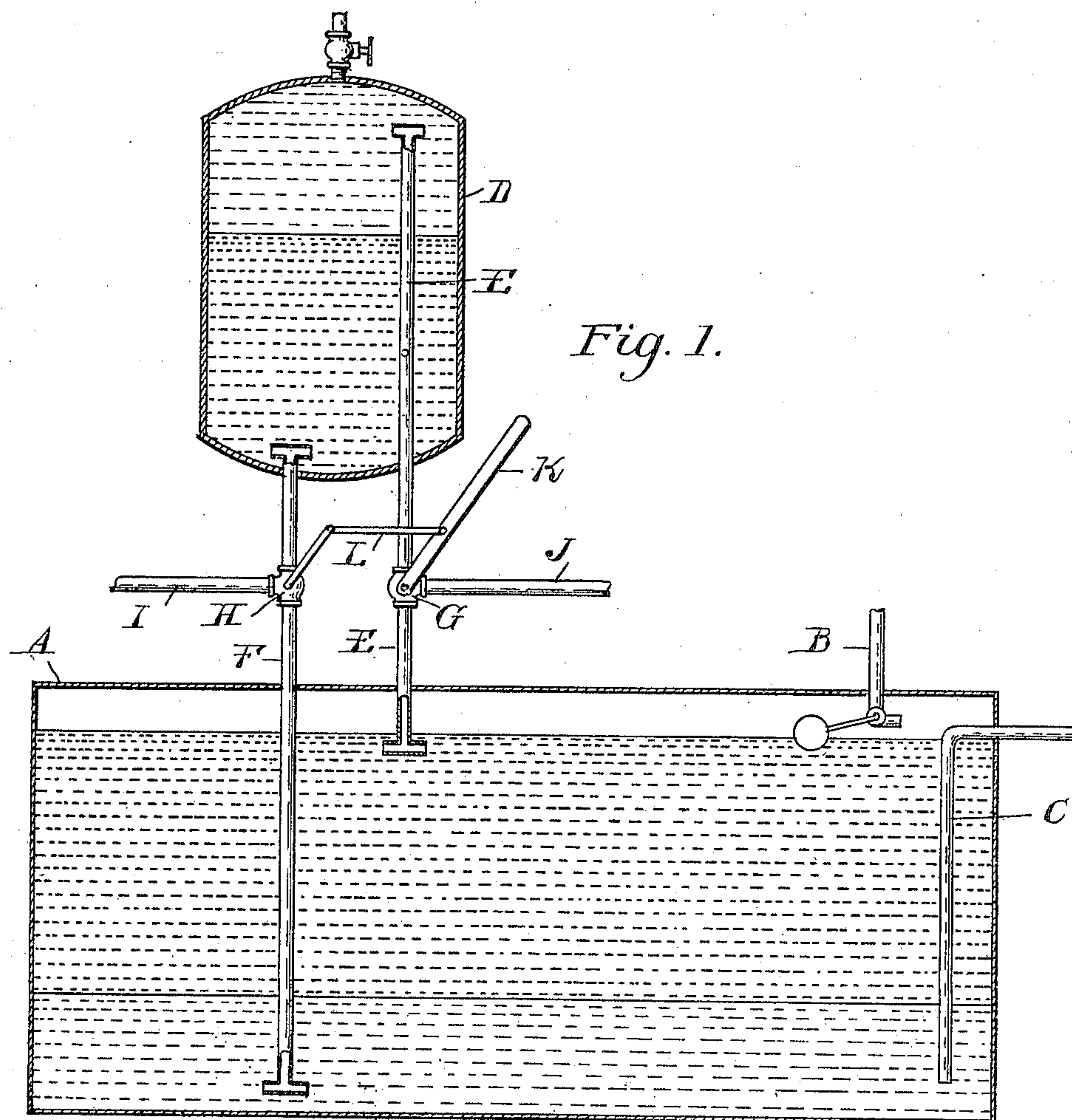


Fig. 1.

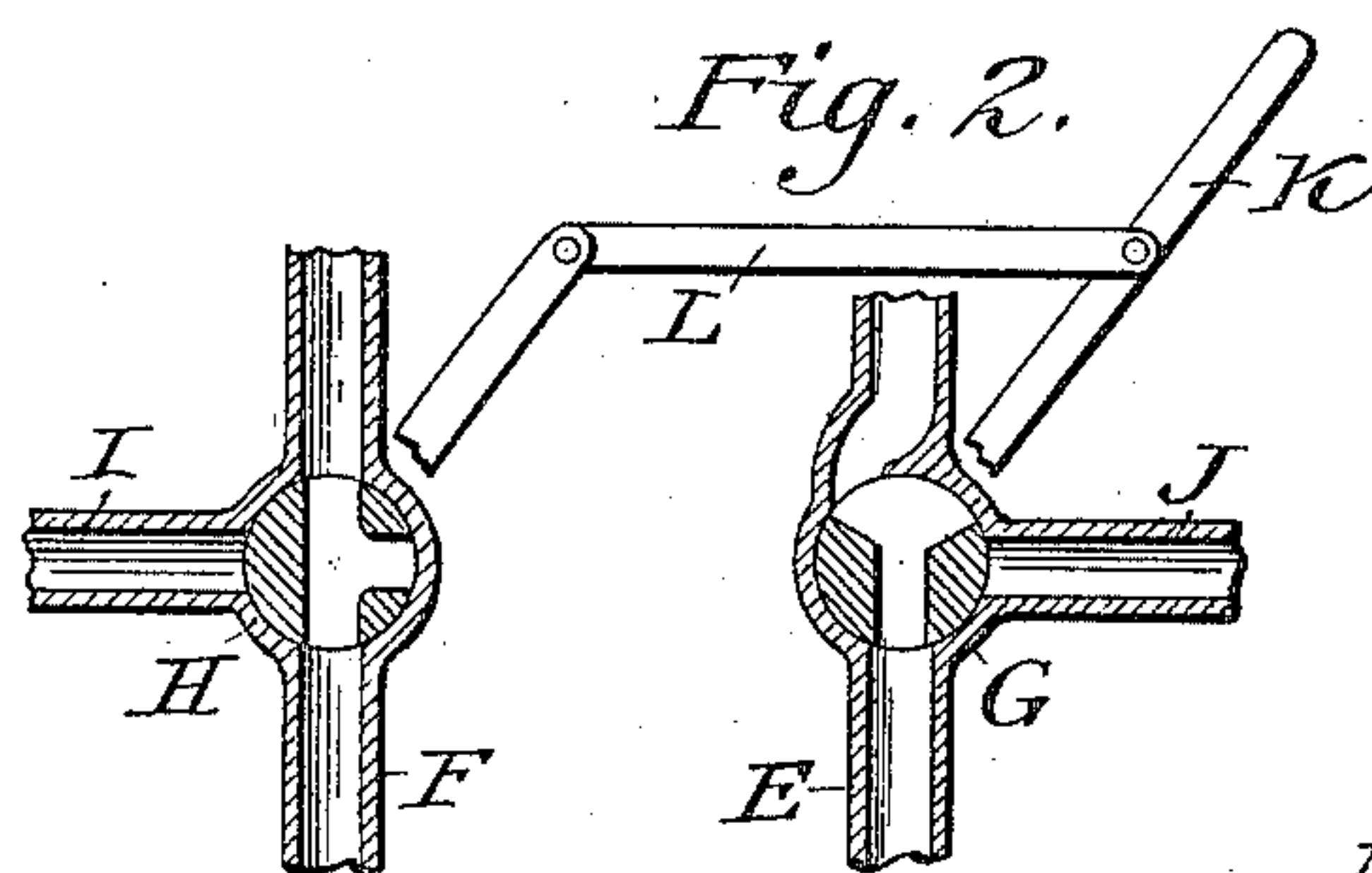


Fig. 2.

Witnesses

M. A. O'Connell
P. M. Hull

Inventor
Luther C. Snell
By Thos. Sprague
Attys.

UNITED STATES PATENT OFFICE.

LUTHER C. SNELL, OF DETROIT, MICHIGAN, ASSIGNOR TO THE HYDRAULIC OIL DISTRIBUTION COMPANY, OF SAME PLACE.

APPARATUS FOR STORING AND FEEDING OIL.

SPECIFICATION forming part of Letters Patent No. 652,375, dated June 26, 1900.

Application filed July 31, 1899. Serial No. 725,630. (No model.)

To all whom it may concern:

Be it known that I, LUTHER C. SNELL, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Apparatus for Storing Oil and the Feeding of Same Under Pressure, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to apparatus designed for the storing and feeding of oil by the hydraulic method; and it is the object of the invention to provide means for feeding the oil under pressure without the necessity of correspondingly increasing the strength of the storage-tank.

To this end the invention consists in an apparatus comprising a storage-tank, a supply-tank having a water-pressure connection therewith, and means for quickly replacing the water in the supply-tank by oil from the storage-tank.

The invention further consists in the peculiar combination and construction of parts, as more fully hereinafter described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section through my apparatus, and Fig. 2 is a diagrammatic view illustrating the positions of the valves when the supply is being filled from the storage-tank.

A is the storage-tank, of any suitable construction. This tank is provided with an inlet connection B, preferably provided with a float-controlled valve, and an outlet connection C, communicating with the bottom of the tank. Above the level of the tank A is arranged the pressure-supply tank D. This also may be of any suitable construction; but it must be of sufficient strength to safely bear the pressure to which the oil is subjected, while the tank A need be only sufficiently strong to safely hold the oil under atmospheric pressure. The tanks A and D are connected to each other by a valve-controlled replacement connection, which I have shown as comprising two pipes E and F. The pipe E extends from the upper portion of the tank A to the upper portion of the tank D, and the pipe F correspondingly extends from the

lower portion of the tank A to the lower portion of the tank D. Each pipe is provided with a valve, preferably a three-way valve, (indicated at G and H,) by means of which communication may be established between the tanks.

I and J are respectively water-pressure inlet and oil-outlet pipes connecting with the pipes F and E and also controlled by the three-way valves H and G, the arrangement being such that in one position of said valves communication is cut off between the two tanks and established between the tank D and pipes I and J. The valves H and G are preferably provided with a common actuating connection, such as the lever K and link L, by means of which said valves may be simultaneously operated.

The apparatus being constructed as shown and described, in operation the tank A is filled by oil entering through the inlet-pipe B and displaces the water in the tank which escapes through the pipe C. The tank D is normally connected with a water-pressure pipe I and is filled with water. When it is desired to charge the tank D with oil, the lever K is thrown into a position where the pipes E and F are opened. This will permit water in the tank D to descend by gravity through the pipe F into the tank A, and at the same time the oil in the tank A will be siphoned out through the pipe E and will fill the tank D. As soon as the tank D is filled with oil the lever K is thrown back into its other position, which cuts off communication with the tank A and connects the water-pressure with the tank D. Thus the oil may be fed under the requisite pressure to the desired point until the tank D is again emptied. Then by again throwing the lever J into its opposite position the tank D may be again filled and the process continued as before described.

It will be understood that the oil in the tank A will be entirely replaced by water from the tank D, after which the supply may be renewed through the inlet connection B. Such an apparatus will be especially useful in places where large tanks have been placed for the storage of oil and where subsequently the necessity arises for delivering the oil at

a higher pressure than said tanks will stand. Thus by the addition of the tank D and its connections the cost of replacing the storage-tanks by stronger ones is avoided.

5 What I claim as my invention is—

1. The combination with a storage-tank of a supply-tank having a water-pressure connection and a replacement connection between said supply and storage tanks.
- 10 2. The combination with a storage-tank of a supply-tank thereabove and having a water-pressure connection therewith and a valve-controlled replacement connection between said tanks.
- 15 3. The combination with a storage-tank, of a supply-tank arranged thereabove and having a water-pressure connection therewith, a normally-closed replacement connection between said tanks and means for opening said
20 replacement connection and closing the water-supply connection.
4. The combination with a storage-tank, of a supply-tank arranged thereabove, valve-controlled replacement connections respec-

tively between the upper portions and the 25 lower portions of said tanks, a valve-controlled water-supply connection for the upper tank, and means for alternatively opening said replacement and water-supply connections.

5. The combination with a storage-tank of a supply-tank arranged thereabove, replacement-pipes respectively connecting the upper 30 portions and the lower portions of said tanks; outlet and inlet pipes for the upper tank respectively connected with said replacement-pipes, three-way valves for alternatively opening said replacement-pipes and said outlet and inlet pipes and connections for simultaneously and correspondingly operating said 35 valves substantially as and for the purpose described. 40

In testimony whereof I affix my signature in presence of two witnesses.

LUTHER C. SNELL.

Witnesses:

JAMES WHITTEMORE,
P. M. HALBERT.