No. 711,293. Patented Oct. 14, 1902.

R. T. CUMMINGS & W. W. WIKOFF.

ATTACHMENT FOR RAILWAY WATER TANKS.

(Application filed Apr. 2, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

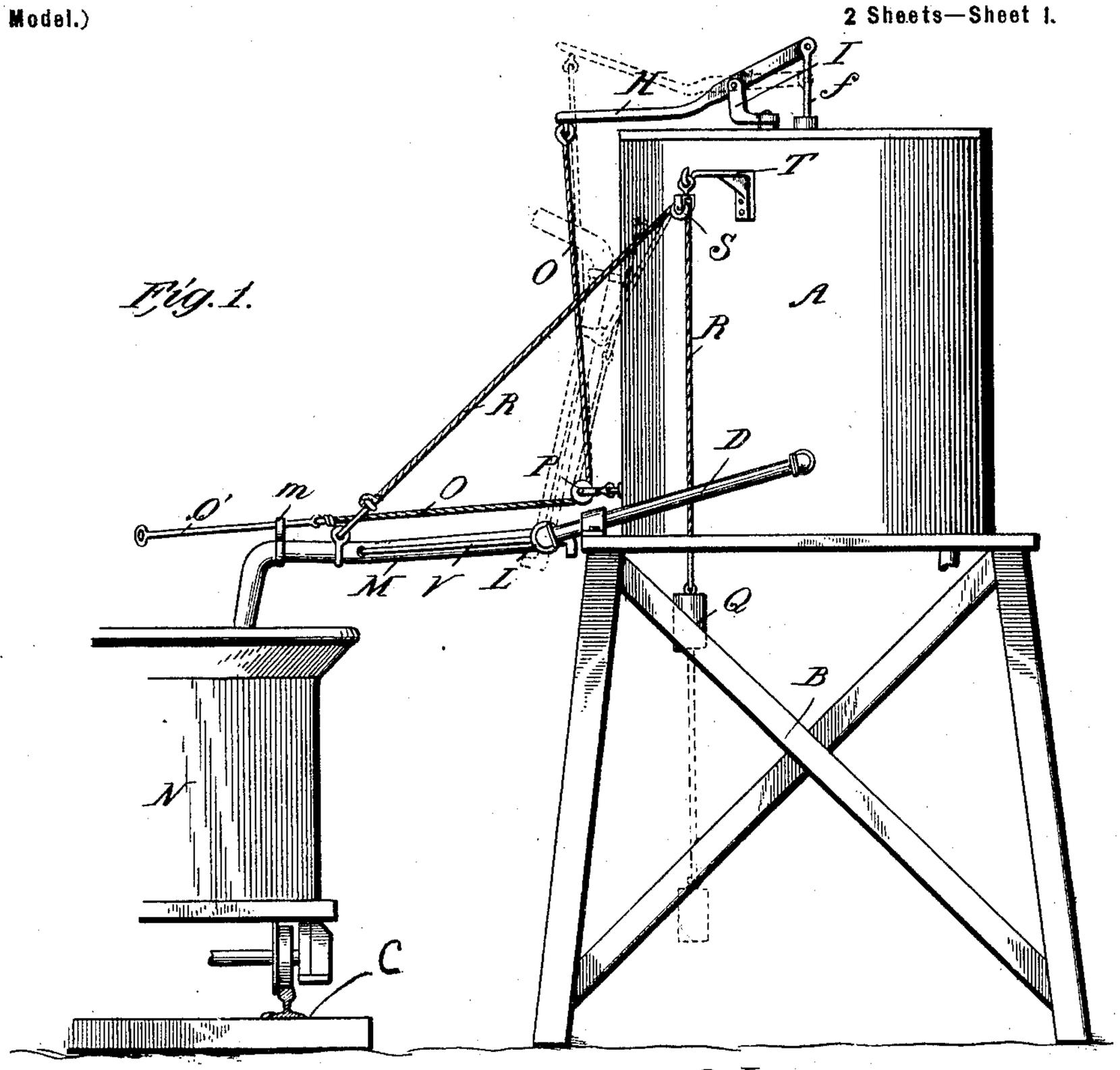
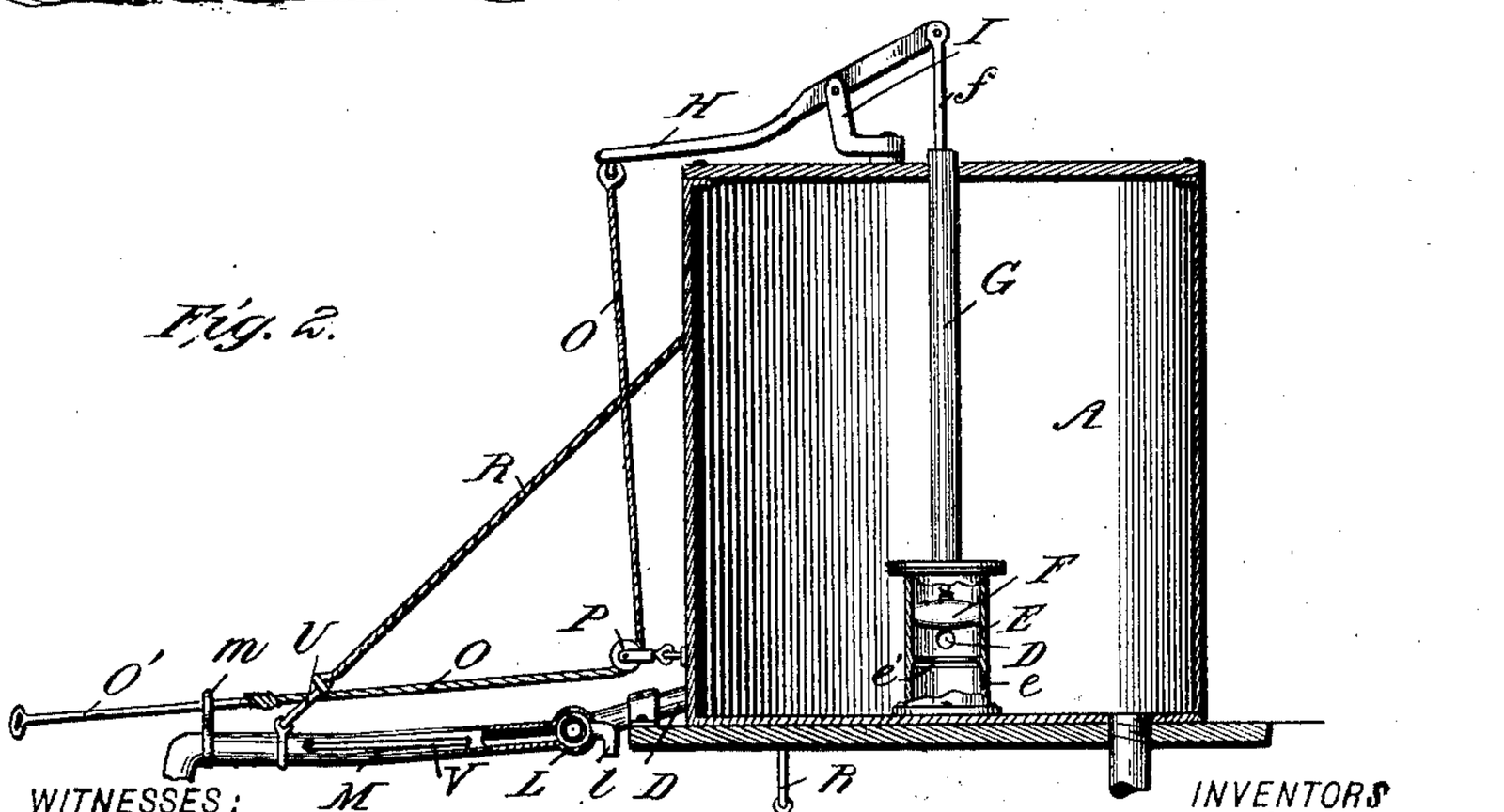


Fig. 2.



WITNESSES:
Geo. P. Kingsbury.
Amos W. Hart

INVENTORS
Robert T. Cummings.
William W. Wikoff.
BY Munn & Co.
ATTORNEYS

No. 711,293. Patented Oct. 14, 1902.

R. T. CUMMINGS & W. W. WIKOFF.

ATTACHMENT FOR RAILWAY WATER TANKS.

(Application filed Apr. 2, 1902.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

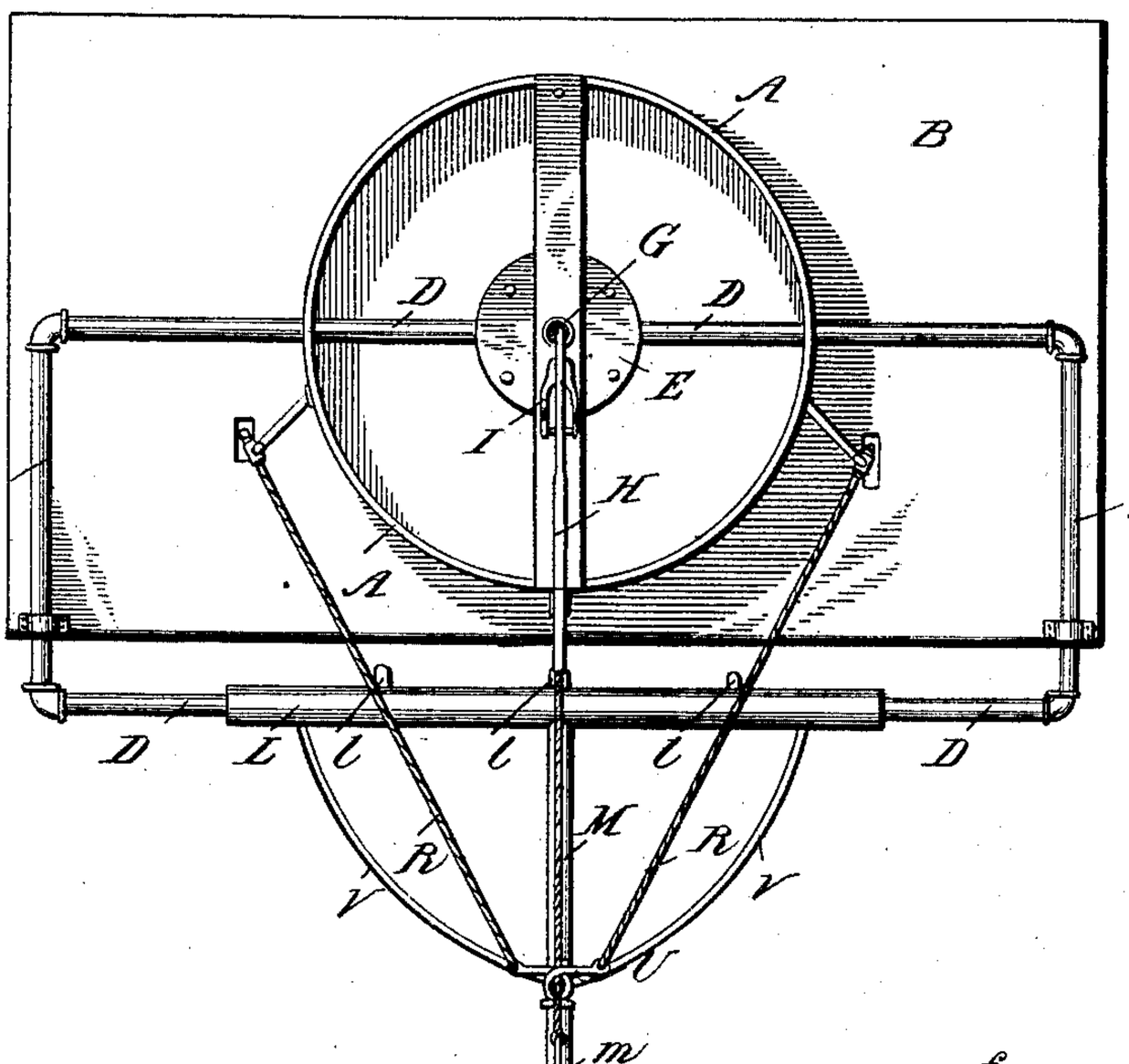


Fig. 4.

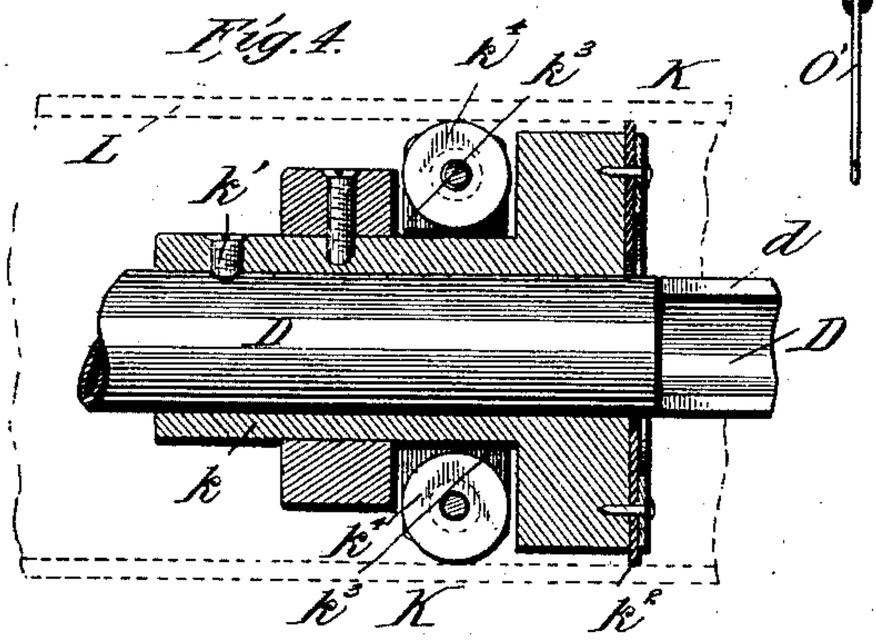


Fig. 5.

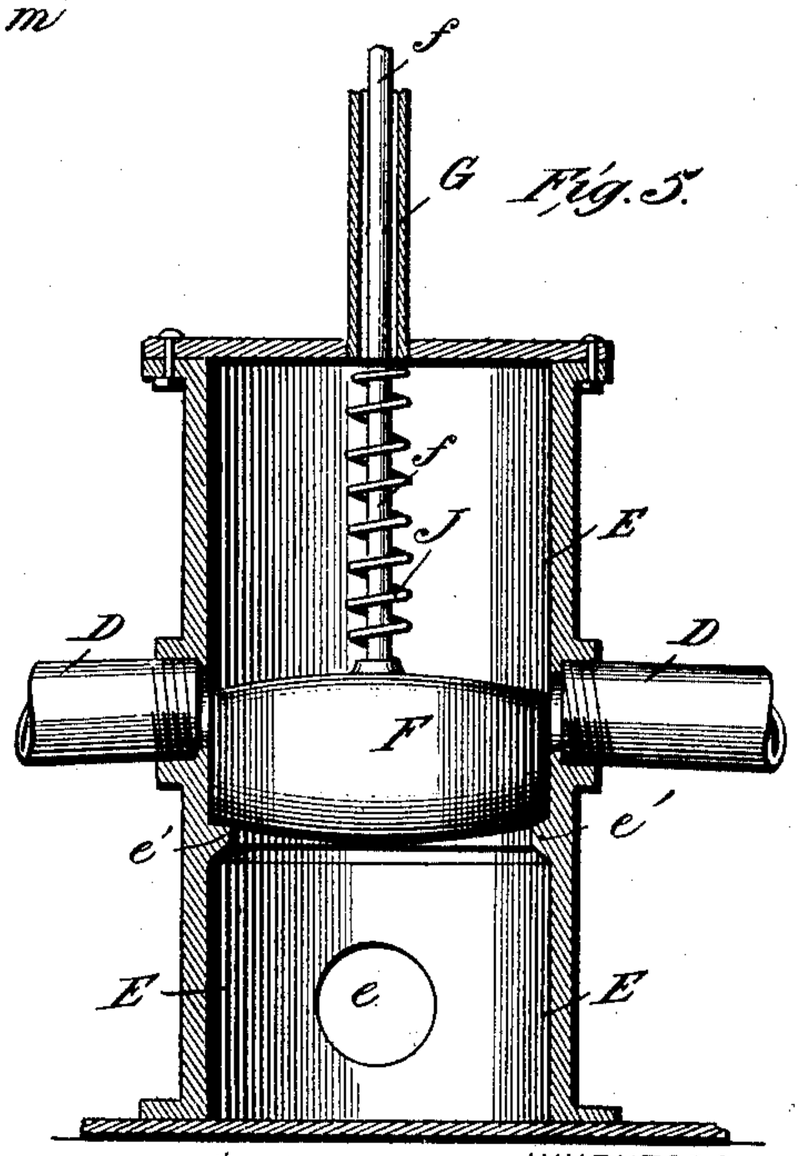
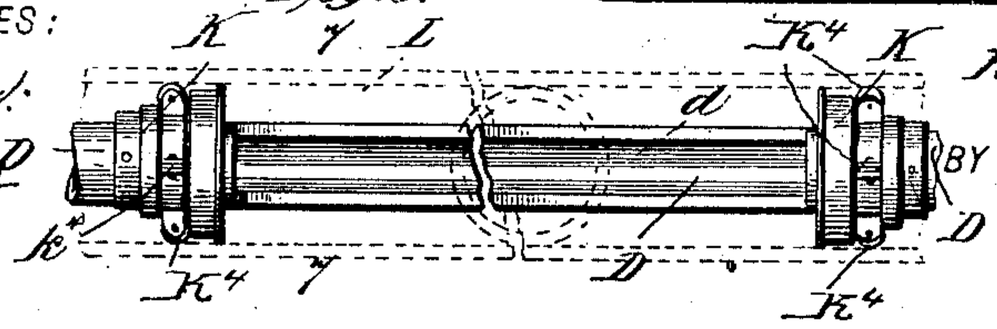


Fig. 7.

Fig. 6.



WITNESSES:

E. P. Kingsbury.

Anna M. Hart.

INVENTORS

Robert T. Cummings.

William W. Wikoff.

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT THOMAS CUMMINGS AND WILLIAM WELLER WIKOFF, OF MAYSVILLE, KENTUCKY.

ATTACHMENT FOR RAILWAY WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 711,293, dated October 14, 1902.

Application filed April 2, 1902. Serial No. 101,079. (No model.)

To all whom it may concern:

Be it known that we, ROBERT THOMAS CUMMINGS and WILLIAM WELLER WIKOFF, citizens of the United States, residing at Maysville, in the county of Mason and State of Kentucky, have made certain new and useful Improvements in Attachments for Railway Water-Tanks, of which the following is a specification.

Water-tanks for supplying water to locomotive-tenders are usually provided with a delivery-pipe which is attached and hinged in such manner as to be adapted to swing in a vertical plane, but not for movement parallel to the track. Consequently the locomotive must be stopped on the track in such position that the inlet-opening of the tender will be exactly opposite said delivery-pipe. This is often a matter of considerable difficulty and involves the starting and stopping of the locomotive several times before the desired adjustment can be attained with corresponding damage to train, loss of time, and waste of fuel in the locomotive.

It is the object of our invention to avoid these results and to provide a water-delivery apparatus so constructed as to allow a considerable range of movement of the delivery-pipe parallel to the track.

Another object of our invention is to provide an apparatus which may be more easily and quickly operated and will possess other advantages over those in ordinary use.

The details of construction, arrangement, and operation of parts are as hereinafter described, reference being had to accompanying drawings, in which—

Figure 1 is a side view of a water-tank provided with our improved attachment, the delivery-pipe being shown lowered to a horizontal position for discharge into a locomotive-tender. Fig. 2 is a vertical section of the tank and a portion of the water-delivery apparatus attached thereto. Fig. 3 is a plan view of the tank and our improved attachment. Fig. 4 is an enlarged detail section of one of the two stuffing-boxes employed in connection with the sliding delivery-pipe and fixed tank discharge-pipe. Fig. 5 is an enlarged vertical section of the valve-chamber and valve attachment arranged within the water-tank. Fig. 6 is a side view of the central portion of the tank discharge-pipe with its stuffing-boxes. Fig. 7 is a cross-section on the line 7 7 of Fig. 6.

As shown in Figs. 1 and 2, a water-tank A of any suitable construction is supported upon the platform of the trestle or frame work B, which is arranged, as usual, alongside a railway-track C. The said tank A is provided with a discharge-pipe D, which taken as a whole has the form of an oblong rectangle, as shown in Fig. 2. The said pipe D is introduced through the sides of the tank A at a point near its bottom and connected with a valve-chamber E, located in the center of the tank. This chamber has an inlet *e*, (see Fig. 5,) and above the same is arranged a circular valve F, whose stem *f* extends through a guide-tube G (see Fig. 2) beyond the top of the tank A, where it is pivoted to a lever H. A spiral spring J (see Fig. 5) is arranged between the valve F and the top of the valve-chamber or casing E and surrounds the valve-stem *f*, whereby it is adapted to hold the valve normally seated upon shoulders or lugs *e'*. In such position it may be seen that the valve F cuts off discharge of water from the tank into the pipe D; but when the valve is raised, as shown in Fig. 2, it permits discharge, as will be readily understood. The discharge from pipe D is effected by means of a longitudinal slot *d*, (see Figs. 4 and 6,) which is formed in the front central portion of said pipe. At each end of this slot *d* is arranged a stuffing-box K, (see Figs. 4 and 6,) which is constructed and secured in place as follows: The body *k* of the stuffing-box has a sleeve provided with an enlarged head. It is fixed upon the pipe D by means of a clamp-screw *k'*. (See Fig. 4.) To the face of the enlarged head is secured a flexible washer k^2. On the opposite or inner side of said head is arranged a collar or ring k^3, in which are journaled a series of antifriction-rollers k^4, that run in contact with the pipe L, into which the pipe D discharges. The said pipe L is adapted to slide lengthwise and also to rotate upon the slotted section of the discharge-pipe D and is provided centrally with the goose-neck or delivery-pipe M. It will be seen that the water admitted to the pipe D from the

tank A when the valve F is raised is discharged through the slot *d* into the larger slidable pipe L—that is to say, into the space between the stuffing-boxes K, and from this space or chamber it is delivered by the gooseneck M into a tender N. (See Fig. 1.) It is to be understood that such delivery is permitted and practicable only when the gooseneck M is drawn down to the horizontal position indicated by full lines, Figs. 1, 2, 3. When adjusted in that position, the valve F is raised by pulling the rope O, which is connected with the outer end of the valve-lever H and provided with a slidable handle-rod O′, held in a guide or keeper *m*, attached to the gooseneck M. The rope O passes over a pulley P, which is swiveled to the tank A, as shown. Since the pipe L, with its attached delivery-pipe M, is adapted to slide the entire length of the slot-section of pipe D, it is apparent that a corresponding range is allowed within which the locomotive may be stopped upon the track C, and consequently the engineer is able to bring the locomotive to the right point without difficulty. Thus time is saved and fuel economized.

The delivery-pipe or gooseneck M is counterbalanced by weights Q, (see Figs. 1 and 2,) which are attached to ropes R, that pass through slots (see Fig. 3) in the trestle-platform and over pulleys S, suspended from brackets T, forming attachments of the tank A. The said ropes O are connected mediately to the pipe M by means of a swiveled yoke U. It will be apparent that the weights Q support the gooseneck M in the vertical or raised position shown by dotted lines, Fig. 1, as well as in the horizontal position shown by full lines in the Figs. 1, 2, 3. Brace-rods V are applied between the gooseneck M and the slidable pipe L, and they serve also as convenient handholds for use in pulling down the gooseneck and sliding it laterally, as may be required, to adjust its nozzle in the required coincidence with the inlet-opening of the tender.

We provide the slidable pipe L with drip-pipes *l*, (see Figs. 1 and 2,) which serve to let out of the pipes D, L, and M the water which may remain therein after a locomotive-tender has been filled.

It will be perceived that the swiveled connection of the pulley with the tank and of the yoke U with the gooseneck M permit ease of movement of the latter, which would not be otherwise practicable—that is to say, the pulley and the yoke accommodate themselves in position or angle to the position to which the gooseneck M may be adjusted laterally. Thus if the gooseneck be adjusted as far in one direction as possible the pulley P still preserves its operative relation to the rope O, so that the valve-lever may be operated with the usual facility. As before stated, the fulcrum I of lever H is adapted to swing laterally, and it having an obtuse angle it will be seen that the lever swings with the lateral adjustment of the gooseneck M.

To briefly restate the operation, the gooseneck M is pulled down to the horizontal position and adjusted by pushing it laterally, as may be required, to bring it into registration with the inlet-opening of the tender N, and the valve-rope O is then pulled to depress the outer end of the lever H, and thereby raise the valve F, as shown in Fig. 2, whereby water is allowed to enter the pipe D and discharge through its slot *d* into the slidable pipe L and between the fixed stuffing-boxes K, whence it is delivered through the gooseneck. In sliding the pipe L and the attached gooseneck the rollers k^4 relieve friction to a great degree, so that the operation is easily effected. The yoke U also enables the counterbalance to adjust itself easily to the lateral shift of the gooseneck.

It is apparent that our invention not only avoids loss of time and waste of fuel, as before stated, but also the strain of the locomotive and damage to train equipment, drawbars, and connecting parts, likewise the unpleasant and more or less dangerous results to passengers due to sudden stops and starts incident to employment of the ordinary stationary gooseneck.

What we claim is—

1. A railway water-supply apparatus comprising an elevated tank, valve mechanism therein, a discharge-pipe having a portion extended horizontally in front of the tank, and a delivery-pipe which is slidable laterally and bodily on such horizontal portion of the discharge-pipe, whereby the delivery-pipe is adapted to be moved bodily along the track according to the position of the locomotive-tender relative to the track substantially as specified.

2. The combination, with an elevated water-tank and a horizontal discharge-pipe connected therewith and having a central outlet, of a delivery-pipe which is mounted upon such discharge-pipe and adapted to slide bodily laterally, and stuffing-boxes arranged within the delivery-pipe contiguous to the outlet of the discharge-pipe, substantially as shown and described.

3. The combination, with a water-tank and its horizontal discharge-pipe, of a delivery-pipe which is slidable bodily laterally upon said discharge-pipe, so that it may be adjusted along the track in either direction, the said discharge-pipe being also adapted to rotate on the delivery-pipe in a vertical plane and provided with a gooseneck, as shown and described.

4. The combination, with a water-tank, and a horizontal discharge-pipe having a central opening and fixed stuffing-boxes arranged on opposite sides of such opening, and antifriction-rollers arranged on the outer sides of such stuffing-boxes, of a slidable delivery-pipe made of such size that it is adapted to inclose

and slide upon the stuffing-boxes and the said rollers, as shown and described.

5. The combination with the water-tank and a discharge-pipe having a horizontal outer section which is slotted as described and provided with stuffing-boxes at the ends of the slot of a slidable delivery-pipe arranged on the outer pipe-section and inclosing the stuffing-boxes, a gooseneck leading laterally from such delivery-pipe, a valve arranged in the tank and controlling admission of water to the discharge-pipe, a valve-lever having a swinging fulcrum and rope connected with said lever and passing over a pulley which is swiveled to allow lateral movement and a counterbalance for the gooseneck, substantially as shown and described.

ROBERT THOMAS CUMMINGS.
WILLIAM WELLER WIKOFF.

Witnesses:
S. M. HUMPHREYS,
E. F. D. MOSS.