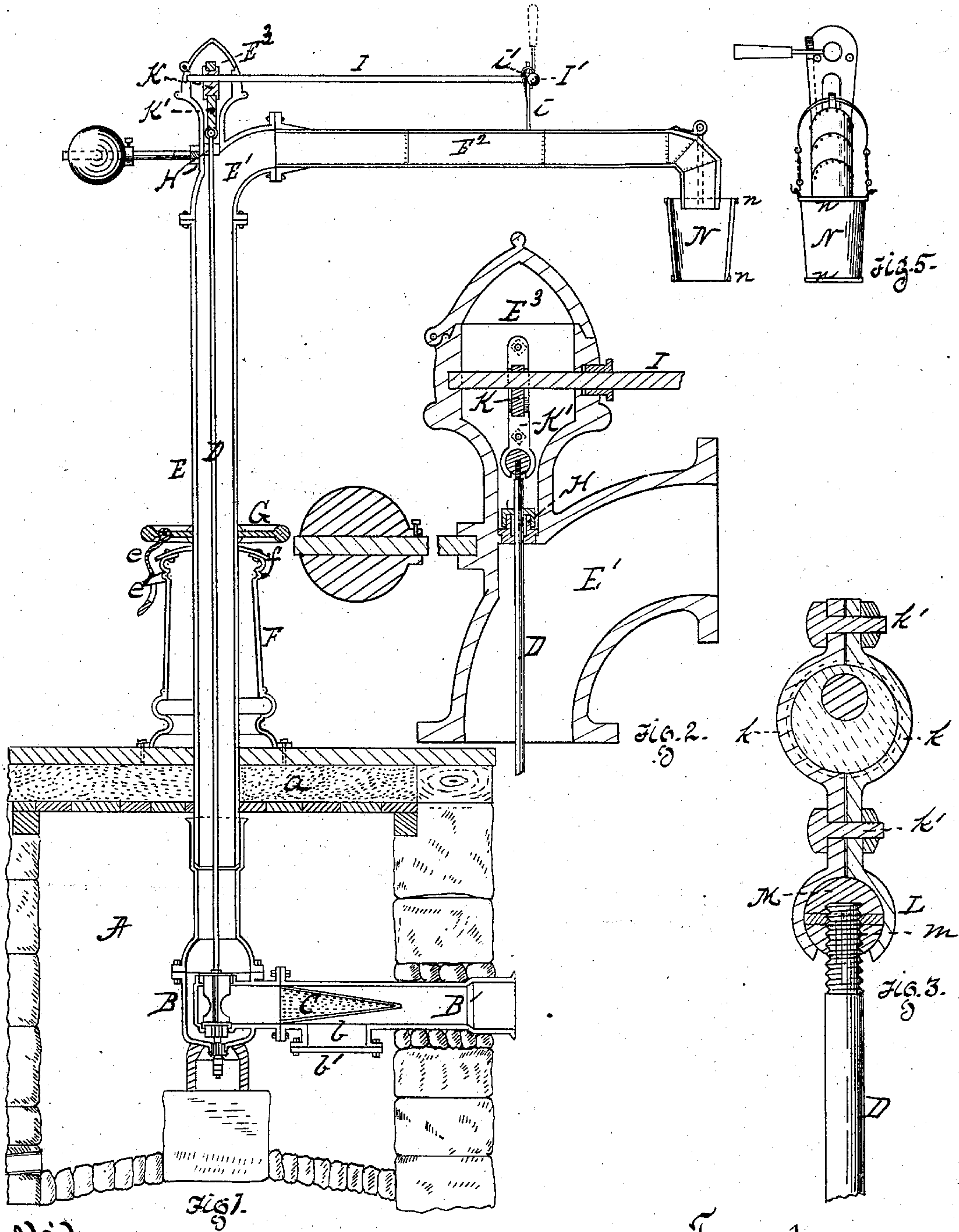


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Stand-Pipes.

No. 217,013.

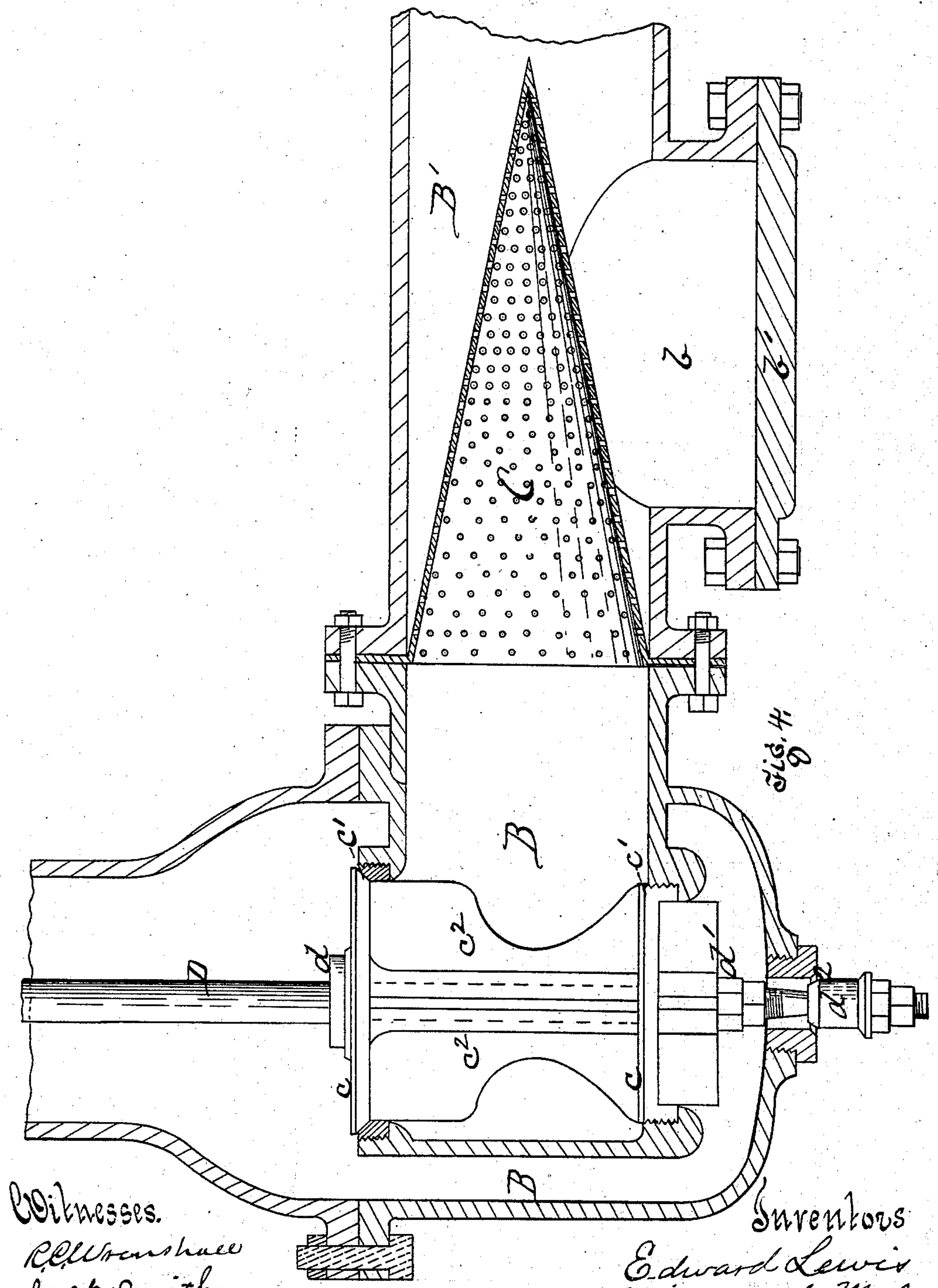
Patented July 1, 1879.



Witnesses.
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 J. M. Smith

Inventors
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UNITED STATES PATENT OFFICE.

EDWARD LEWIS AND WILLIAM A. MALONEY, OF OIL CITY, AND THOMAS M. KING, OF VERONA, PENNSYLVANIA.

IMPROVEMENT IN STAND-PIPES.

Specification forming part of Letters Patent No. **217,013**, dated July 1, 1879; application filed May 8, 1879.

To all whom it may concern:

Be it known that we, EDWARD LEWIS and WM. A. MALONEY, of Oil City, Venango county, Pennsylvania, and THOMAS M. KING, of Verona, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Stand-Pipes; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation, partly in section, of a stand-pipe embodying our invention. Fig. 2 is an enlarged sectional view of the elbow of the stand-pipe and the eccentric-chamber. Fig. 3 is an enlarged detail view of the valve-rod and eccentric for operating the same. Fig. 4 is an enlarged sectional view of the valve-chambers and inlet-pipe, showing the valves and strainer. Fig. 5 is a detail view of the end of the jib or feed-pipe and the bottomless bucket or funnel.

Like letters refer to like parts wherever they occur.

Our invention relates to the construction of stand-pipes for supplying the tank-water to locomotive-tenders and for like purposes; and consists, mainly, in so constructing, combining, and proportioning the valve-chamber, stand-pipe, and valve-rod that when the valve is closed it shall be weighted by the stand-pipe so as to insure against leakage; and, secondarily, in details of construction, whereby the turning and manipulation of the stand-pipe are facilitated.

We will now proceed to describe our invention, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates a pit, closed above by a platform or double flooring, between which is a packing of sawdust, *a*, or similar non-conducting material, which converts the pit into a protective chamber for the valves of the stand-pipe. B indicates the valve-chamber, and B' the water-supply pipe. This water-supply pipe we form with an offset or pool, *b*, and close the same by a cap-plate, *b'*, bolted or otherwise removably secured to the pipe, and over the pool and at the point of entrance

of the water into the valve-chamber we provide a strainer, C, preferably of conical form, and made of perforated sheet metal. By these devices the sediment or other foreign matter which would otherwise be carried by the water into the stand-pipe and tend to clog the valves will be arrested and deposited in the pool, whence it can be withdrawn from time to time by removing the cap-plate *b'*.

Within the valve-chamber B is the valve, which may be of any suitable or desired construction, but is preferably formed of two plates, *c c*, (usually brass disks,) beveled on the edges, and to fit seats *c' c'*, the plates being joined centrally by a tube, through which the valve-rod D passes, and stiffened by ribs or wings *c² c²*.

D indicates the valve rod or stem, having a flange or shoulder, *d*, above the upper valve-plate, and a nut, *d'*, below the lower valve-plate, so as to secure the rod to said valves.

The valve-rod terminates in a waste-water valve, *d²*, which closes waste-water port in the bottom of the valve-chamber when the valves *c c* are open, and uncloses the same when the valves *c c* are closed.

E represents a vertical pipe, usually of cast-iron, one-half inch thick and about eight inches interior diameter, either formed to seat in or over the upper end of the valve-chamber, upon which it turns freely. Upon the upper end of pipe E is bolted or otherwise secured an elbow, *E¹*, to which is secured a horizontal pipe or jib, *E²*, usually of zinc sheet-iron, and of such length that its outer end will, when swung into position, hang over the track with relation to which the stand-pipe is placed. Upon the platform which closes pit A is a pedestal, F, inclosing the vertical pipe E, the base of said pedestal being firmly bolted to the platform and its top closed by a suitable cap or cover, *f*, having an aperture turned to fit pipe E, which is steadied and guarded against lateral motion by said cap-plate.

G represents a hand-wheel, which may be cast in two pieces and bolted together in a grooved flange around the pipe E, above the pedestal. By means of this hand-wheel the pipe E may be turned so as to bring the jib or

feed-pipe E^2 in any required position. e indicates a hasp upon the hand-wheel or upon pipe E ; and e' , a staple upon the pedestal, of which two or more sets may be used and serve to lock the stand-pipe, to prevent it from being turned toward the track or otherwise displaced by unauthorized persons.

The valves are operated by a valve-rod, D , whose upper end passes through a stuffing-box, H , in the space or neck between the elbow E^1 of the main pipe and the eccentric-chamber E^3 , said stuffing-box serving, first, to exclude the water from the devices which operate the valve-rod, so that no grit or sediment can be deposited thereon to impede their operation or cut and wear away the parts, neither can the water freeze upon and around the eccentric in winter; and thus render the devices inoperative; secondly, the stuffing-box serves to guide and steady the valve-rod, so that it must rise and fall vertically, thus preserving the valves $c c$ and insuring their proper seating. The eccentric-chamber E^3 is closed by a hinged cap or cover, which can be readily turned back to expose the eccentric K and its connections.

I is a rod, supported in bearings or standards i on the jib or feed-pipe, and furnished at its outer end with a hand-lever, I' , by means of which the rod can be turned, a latch, i' , being provided to lock down the lever when required. Upon or near the opposite end of the rod I , and inclosed by the eccentric-chamber E^3 , is an eccentric, K , for changing the circular motion of the eccentric-rod into a perpendicular or reciprocating motion for the valve-rod D . This eccentric K is a grooved disk of one piece, and is encircled by the eccentric-band K' , which is composed of two pieces or straps, k , connected by bolts k' and nuts, the upper portions forming the inclosing-band for the eccentric K , and the lower portion a cup, L , almost spherical in form, which cup L embraces a ball, M , pinned to the top of the valve-rod D just above the packing-box. In other words, this lower part forms a ball-and-socket joint, thus giving, for sake of strength, a large supporting-area, and yet allowing all the lateral movements necessary for the correct working of the eccentric and its connections. The inclosing straps or bands K' of the eccentric are formed with a groove and overlapping edges, as indicated by dotted line, Fig. 3.

In order to permit of the adjustment or lengthening and shortening of valve-rod D its upper end is threaded, and screws into the thread-hole in ball M , as shown at m .

Instead of the ball-and-socket joint above specified, a link-joint, or any similar joint which will allow of lateral play, may be substituted, and the means of adjustment modified at will; but the ball-and-socket joint is preferable for the following reason, viz: By making the valve-rod D of such length that the distance between the eccentric-rod and valves when the eccen-

tric is operated to close the valve is slightly greater—say, one-eighth to one-fourth of an inch—than the length of the vertical pipe E and valve-chamber down to the valve-seat, the valve-rod in forcing the valves on their seats will lift the vertical pipe E off its bearings, and the weight of the stand-pipe will be brought on the ball-and-socket joint, so that little power will be required to turn the stand-pipe. The weight of the stand-pipe will also serve to keep the valves down on their seats.

N indicates a funnel or bottomless bucket, suspended from the end of the discharge-pipe or jib E^1 by means of a bail and short section of chain, which permit it to swing freely and turn out of the way upon striking any obstruction. It is usually formed of sheet metal or galvanized iron, banded by two or more wrought-iron hoops, as at $n n$. This funnel or bottomless bucket will conduct the water quietly into the tank without splash or wash, serving the same purpose as the more expensive hose, only in a better manner, as it is more durable and will better stand the battering and rough usage to which this part of the device is subject, and by its use the flow of water is readily adapted to different heights of locomotive-tanks.

The operation of our devices is as follows: The vertical pipe E being rotated by means of the hand-wheel so as to bring the extremity of the feed-pipe or jib into the desired position over the man-hole of a locomotive-tank, the funnel or bottomless bucket N is introduced into the man-hole of the tank, and the rod I is rotated by lever I' to actuate the valve-rod D through the eccentric K and its connections. The rise of valve-rod D lifts the valves $c c$ from their seats and permits the inflow of the water.

Any sediment or foreign substances likely to clog the valves $c c$ will be arrested by the strainer O and deposited in the pool b , from which they can be removed. The water will flow through pipe E and feed-pipe or jib E^1 , being excluded from eccentric-chamber E^3 by the stuffing-box H , which thus prevents the flooding of the eccentric and all loss by leakage.

Having thus fully set forth the nature, object, and advantages of our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the stand-pipe and valve-chamber, of a valve-rod and mechanism for operating the same, the stand-pipe and valve-rod proportioned with relation to each other, substantially as specified, so that the seating of the valve shall lift the stand-pipe off its seat and throw its weight upon the valve, substantially as and for the purpose specified.

2. The combination, with the valve-chamber, of a stand-pipe and valve-rod proportioned with relation to each other, substantially as

specified, and a stuffing-box located as specified, whereby the stuffing-box serves to brace and steady the valve-rod when the stand-pipe is supported thereby, and to protect the mechanism for operating the valve-rod when the valves are open, substantially as specified.

3. The combination, in a stand-pipe, of the valve and valve-rods, the eccentric, and ball-and-socket joint with the valve-chamber and vertical pipe of the stand-pipe, the whole constructed and arranged with relation to each other, substantially as specified, so that the

seating of the valves shall lift the vertical pipe off its bearings, substantially as specified.

In testimony whereof we, the said EDWARD LEWIS, WILLIAM A. MALONEY, and THOMAS M. KING, have hereunto set our hands.

EDWARD LEWIS.

WILLIAM A. MALONEY.

THOS. M. KING.

Witnesses:

F. W. RITTER, Jr.,

JAMES H. PORTE.