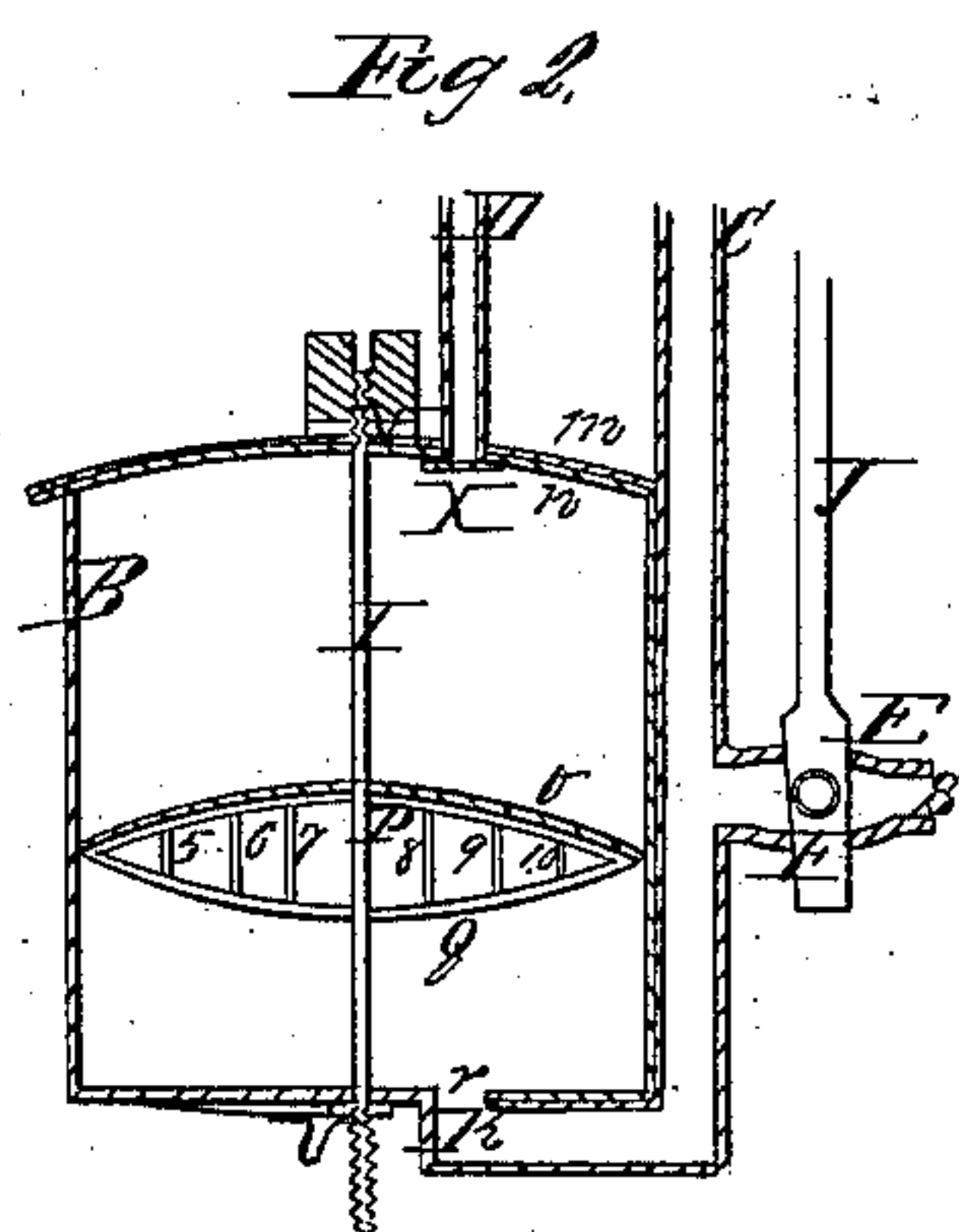
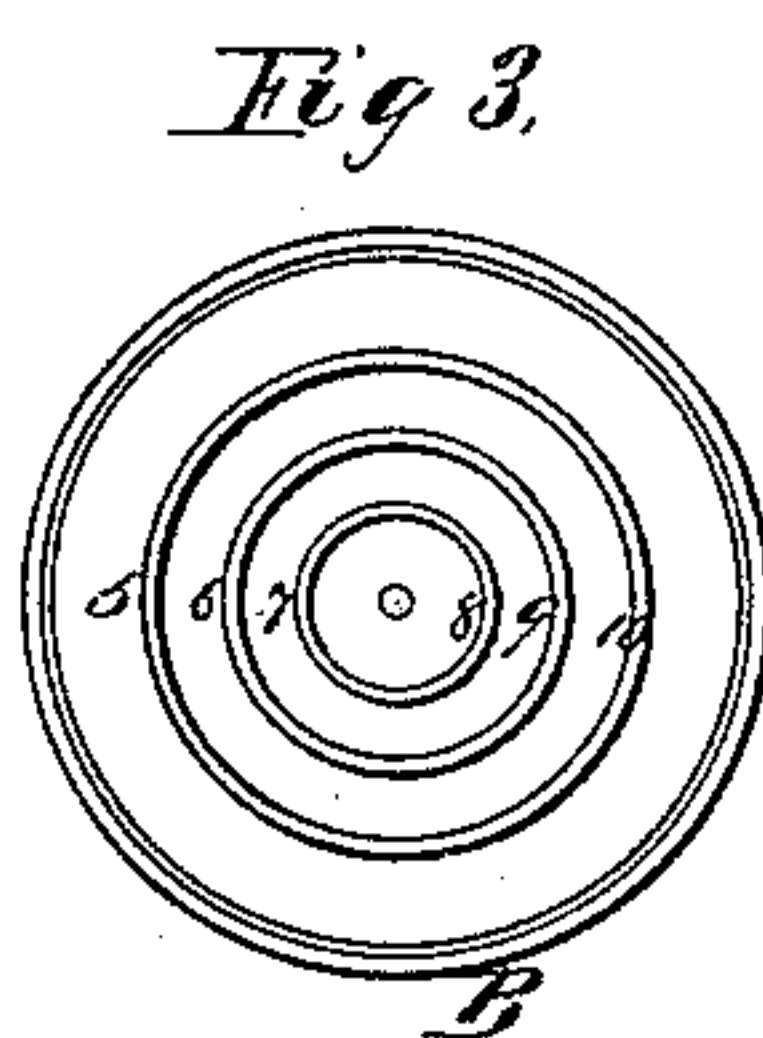
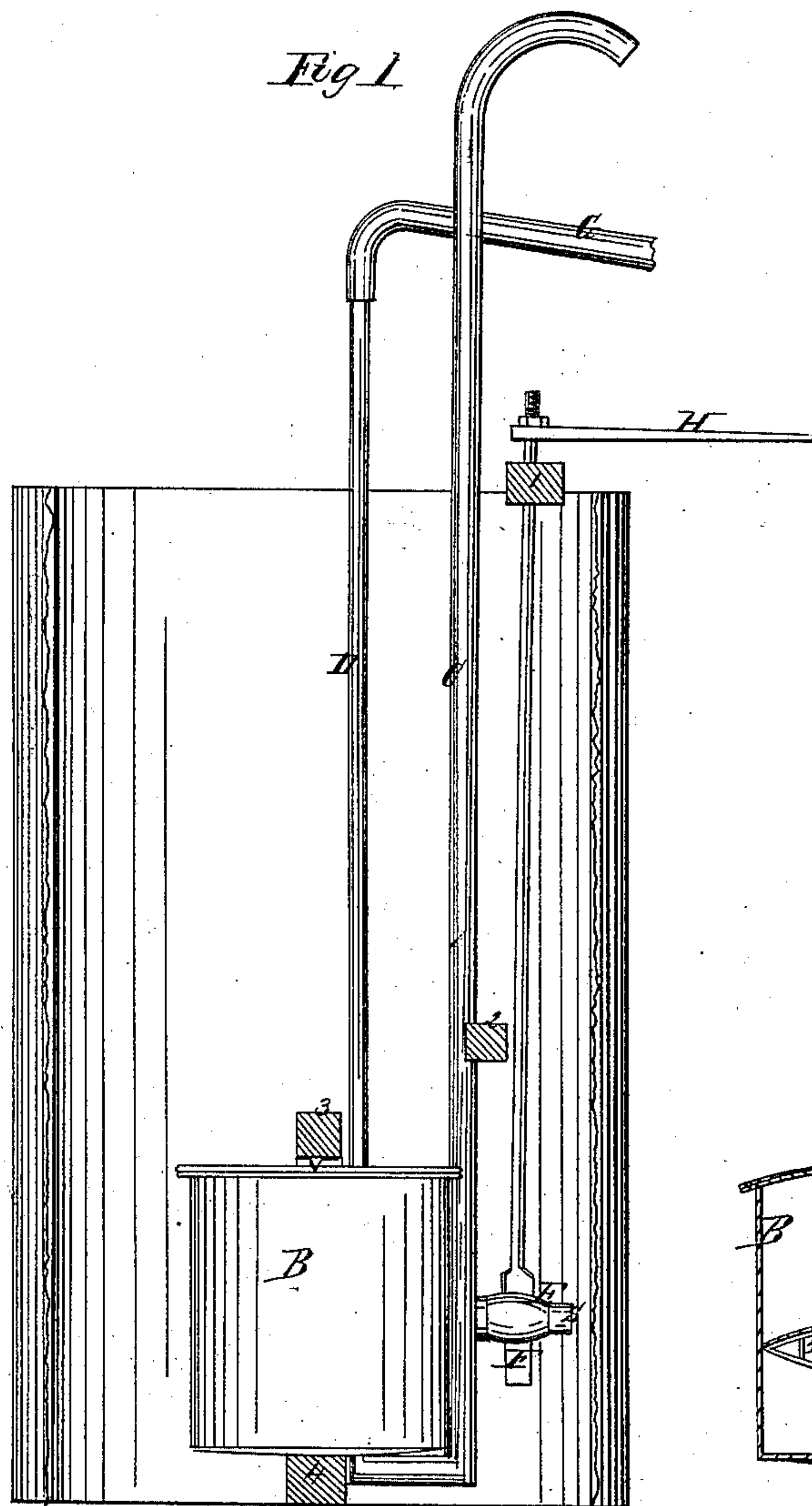


*A. W. Todd,*  
*Steam Pump.*

*N<sup>o</sup> 56,467.*

*Patented July 17, 1866.*



*Witnesses*  
*J. S. Moore*  
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# UNITED STATES PATENT OFFICE.

A. W. TODD, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN RAILROAD-STATION PUMPS.

Specification forming part of Letters Patent No. 56,467, dated July 17, 1866.

*To all whom it may concern:*

Be it known that I, A. W. TODD, of the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Pumps for Supplying Locomotive-Tenders and other Reservoirs with Water; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a sectional elevation of my pump. Fig. 2 is an open section and side view of the same, and Fig. 3 a top view thereof.

Similar letters and figures of reference indicate like parts.

This invention consists in the combination and arrangement of the steam-cylinder B, as set in the well A, secured in any suitable manner, its stay-rod I, Fig. 2, disk or diaphragm-float P, steam-pipe D, exit-pipe C, faucet or cock E, its stop J and P, &c., whereby the tender of a locomotive-engine or other reservoirs may be filled with water or other liquid by one stroke or depression of the diaphragm of the said steam-cylinder or any suitable cylinder.

Referring to Fig. 1, A may represent a well or any place partly filled with water or other liquid, so as to about cover the cylinder B. The cock being opened, as represented, by the handle H, it is evident the cylinder will be filled, the air making its escape through pipe D. When filled, the handle H is turned by hand on either side, which cuts off the ingress S, (see Fig. 2,) the steam being applied through the flexible pipe G, pipe D, &c. The liquid is raised and forced out through pipe C, and caught by the tender or any reservoir, the fluid escaping from the cylinder at r K, Fig. 2.

The stay-rod I answers the double purpose of strengthening the heads of the cylinder (made steam-tight) by means of gaskets and nuts V and U, Fig. 2, and as a guide-rod for the floating diaphragm P, which is free at its edges, so as to always float, and is made of sheet-copper or other metal of suitable thickness, or any substance that will float and stand the requisite pressure to force the fluid

out through the pipe G. The metal one, however, should be made impervious to liquids or fluids, and strengthened by means of hoops made of proper widths, the sectional ends of which are represented by figures 5 6 7 8 9 10, Fig. 2, and by the rings 5 6 7 8 9 10, Fig. 3, so as not to collapse when the steam is applied. This floating diaphragm P is covered with cork or other suitable material or substance at O, Fig. 2; also the under side of the cylinder-head m, at n, the object of which is to present as dry and warm surface as possible to the steam, so as to prevent condensation.

The pipe D is closed at X, Fig. 2, and a convexed collar slipped a little way over it, secured by a pin or otherwise. Just beneath the collar there is a series of very small holes, (represented by dots,) through which the steam enters laterally in every direction, so as to prevent the burning or rupturing of the cork or its substitute. The cork is secured by gum-shellac or otherwise.

The cylinder-heads are convexed, as represented at m and at K by dotted lines, Fig. 2, and secured in the usual way, the inner surfaces of which, presenting a concavity, correspond to the convex sides of the diaphragm P. The ingress of the fluid being at S secures it from mud or dregs, and by the pipe C being entered at r K insures all the fluid to be driven out, also to come up under the self-adjusting float-diaphragm P, thus giving it a rising impetus.

The figures 1 2 3 4, Fig. 1, are mere representations of the ends of timbers to secure the pump in a proper position, which can be varied according to fancy or necessity.

The flexible pipe G is to be attached in any suitable way to a locomotive or other steam-power which will, on the admission of steam, start the fluid instantaneously up the pipe C, and as soon as it reaches the top will flow to its full capacity if sufficient steam is applied, at the same time having the thing under full control by means of the handle H, above ground. It also enables the operator to keep the fluid out of the cylinder, so as to enter and repair it, if necessary, which is not likely to be, as there is not a valve about it, the cock E answering all the purposes required.



Having thus described my pump in its simplicity and cheapness of construction, cheapness of steam, quickness of operation, and durability, guarantee against freezing, &c., what I claim, and desire to secure by Letters Patent, is—

The arrangement of the cylinder B with the stay-rod I, cork *n* and *o*, cock E, spigot J F,

handle H, being secured to the cylinder B at K, and pipe C, substantially upon the principles and in the manner herein set forth.

A. W. TODD.

Witnesses:

E. G. PHILLIPS,

B. W. BATES.