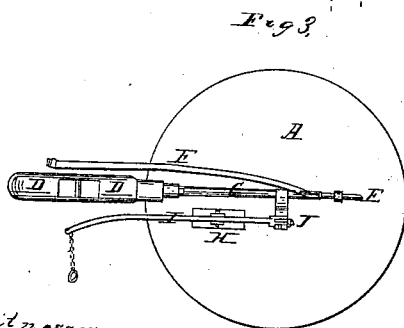
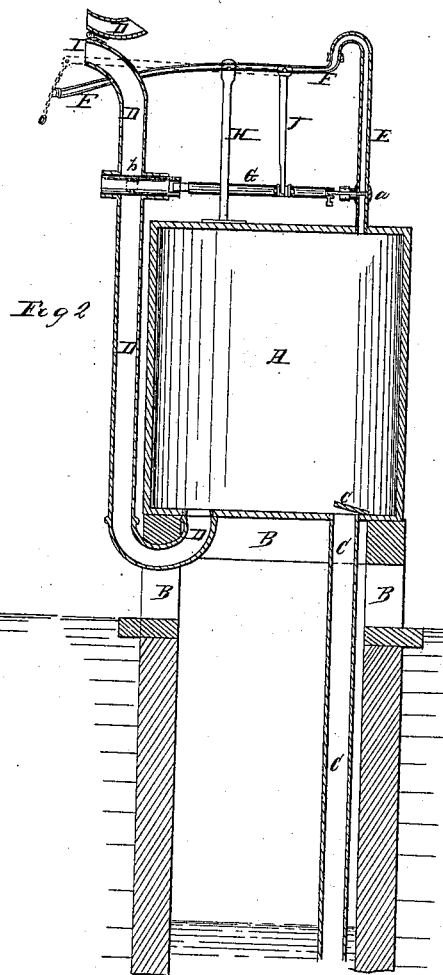
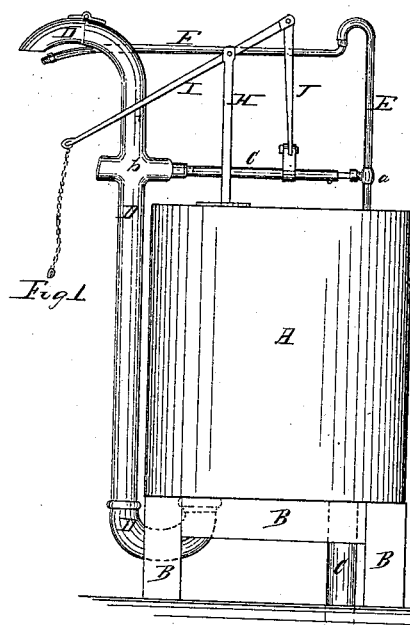


*Myers & Noble,
Steam Pump.*

N^o 53,469.

Patented Mar. 27, 1866.



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UNITED STATES PATENT OFFICE.

DAVID MYERS AND S. H. NOBLE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN STEAM WATER-ELEVATORS.

Specification forming part of Letters Patent No. 53,469, dated March 27, 1866.

To all whom it may concern:

Be it known that we, DAVID MYERS and S. HENRY NOBLE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Steam Water-Elevators; and we do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

The main object of our said invention is to provide a simple, cheap, and convenient mode of elevating water and supplying it to locomotive-engines upon or along the lines of the various railroads, but the same principle may obviously be applied, under like conditions, to supply water to stationary engines or to elevate it for any other purpose.

To the above end our invention consists in so constructing and arranging an apparatus for elevating water by the application of steam that while the water is forced from a reservoir or chamber previously filled to the point, and for the purpose desired, by the direct pressure of the steam thereupon, the water is automatically elevated from the well into said reservoir to refill the same by the effect of the condensation of the steam previously used, as aforesaid, to expel the water therefrom.

To enable those skilled in the art to understand how to construct, arrange, and use our said invention, we will proceed to describe the same with particularity, reference being made in so doing to the aforesaid drawings, in which—

Figure 1 represents a side elevation of our invention. Fig. 2 is a vertical sectional view thereof, and Fig. 3 represents a plan or top view of the same.

Similar letters of reference in the different figures denote the same parts of our invention.

A represents a chamber or reservoir, constructed of boiler-iron and substantially in the style of ordinary steam-boilers, so as to resist the pressure of the steam admitted into the same, as and for the purposes hereinafter described.

The said reservoir is arranged above the ground, and upon suitable supports, B, as shown in the drawings, but in practice care must be taken not to place said reservoir more than about thirty feet above the surface of the

water, or the height to which the pressure of one atmosphere will raise a column of water.

C represents a pipe leading from said reservoir down into the well to the water, being provided with a valve at its upper end, as shown.

D represents a pipe, leading out from the bottom of said reservoir, through which the water is supplied to the engine *b*, representing a valve or stop-cock in said pipe, which may be opened or closed by the rotation of the shaft G, which is effected by means of the downward or upward movement of the lever I, which is attached to or connected with said shaft G by a jointed arm. (Marked J.)

E represents a pipe, through which steam is introduced or admitted into the reservoir from the engine, communication being effected by means of the flexible pipe F, which may be attached in any suitable manner to the steam-boiler so as to receive steam therefrom. At *a* there is a valve or stop-cock in the pipe E, connected with the shaft G, so as to be opened or closed simultaneously with the aforesaid valve in D, and by the same operation. The said valves *a b* are open when the lever is drawn down, as shown in Fig. 1, and are closed when said lever is up, as shown in Fig. 2.

Having described the construction and arrangement of our invention, we will proceed to describe its operation.

As the engine stops the flexible tube F is attached to the engine and the valves *a b* are opened, when the steam rushes into the chamber A, filled with air, and expels the said air therefrom through the pipe D. When the air is thoroughly expelled from said chamber and the same is wholly filled and occupied by steam, the said valves *a b* are closed, the pressure of the steam, in the meantime, having kept the valve *c* in the bottom of said reservoir closed. The steam, being thus hermetically closed and confined in said chamber A, then condenses, and thereby produces a vacuum in said reservoir, into which the water in the well rises from the effect of the atmospheric pressure, thus raising the water into the reservoir and filling the same automatically when the apparatus is ready for operation. The valves *a b* are then opened, and the steam, rushing into the chamber A, by its pressure closes the valve *c* and forces the water in the said chamber out through the pipe D into the tank of

the locomotive. When the engine has taken its supply of water the valves *a b* are closed, and the flexible pipe *F* is detached from the engine, which passes on to its destination. In the meantime the steam used in expelling the water from the reservoir and elevating it to the desired point, being confined in said reservoir, condenses, and a vacuum being thereby produced the water in the well is raised into said reservoir and refills the same without any expense whatever, the result being obtained by utilizing the steam previously used in expelling or raising the water from the reservoir to the point desired, in the manner aforesaid.

We are aware that water has been elevated heretofore by the direct pressure of steam; and also that it has been elevated by the effect of the condensation of steam in producing a vacuum; but no apparatus has heretofore been constructed or used in which both of these features have been united, whereby, as in our invention, the same steam that is used in forcing the water up from the reservoir is utilized by its properties of condensation, so as to cause the elevation of the water into the said reservoir and refill the same automatically.

The obvious advantage of our apparatus

over those in which the water is forced up the entire distance required by the direct action or pressure of steam is the saving of all that steam used in elevating the water for the first thirty feet, or thereabout, as hereinbefore specified. Besides this it is much more simple and economical in its construction.

Having described the nature and construction of our invention, we will now specify what we claim and desire to secure by Letters Patent—

1. The combination of the reservoir *A*, the induction and eduction pipes *C* and *D*, and steam-pipe *E*, provided with the valves *c b a*, respectively, arranged and operating substantially as and for the purposes specified.

2. In combination with said reservoir *A* and pipes *C D E*, the shaft *G*, arm *J*, and lever *I*, for the purpose of opening and closing the valves *a b* simultaneously, for the purposes described.

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Witnesses:

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