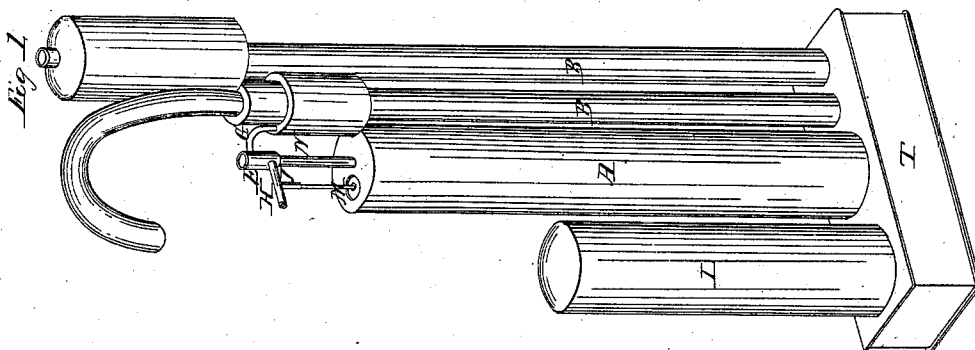
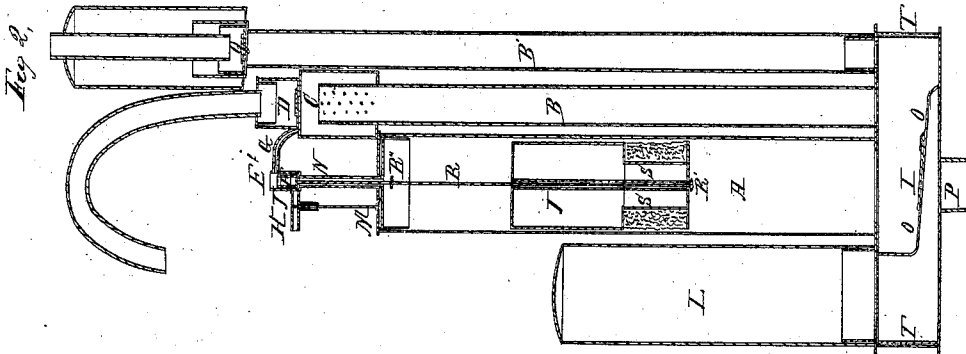


M. Wilcox,

Steam Pump.

N^o 31,923.

Patented Apr. 2, 1861.



Witnesses,
A. McCallum
Henry Roth

Inventor,
Martin Wilcox

UNITED STATES PATENT OFFICE.

MARTIN WILCOX, OF MIDDLEBURY, OHIO.

IMPROVED STEAM-PUMP.

Specification forming part of Letters Patent No. 31,923, dated April 2, 1861.

To all whom it may concern:

Be it known that I, MARTIN WILCOX, of Middlebury, in the county of Summit and State of Ohio, have invented new and useful Improvements in Steam-Pumps; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view, and Fig. 2 is a vertical section.

Like letters refer to like parts in the different views.

A, Figs. 1 and 2, is the receiver. This consists of a straight hollow cylinder of dimensions corresponding to the amount of water to be raised.

F is a float which fits loosely into this cylinder A, and is intended to rise and fall with the water contained in, or received into, or discharged from the cylinder A. A rod, R, passes through the center of the float F, having a stop or button, R, at the bottom, and another stop or button, R', near the top. This rod R is connected to the valve E, which is situated in the upper end of the steam-pipe N, which enters the upper end of the receiver A.

H is a steam-pipe which admits steam from the boiler into the pipe N. This pipe H has a governor-valve, J, which is worked by a flexible valve, M, in the upper head of the receiver, whereby the pressure of steam in the receiver is kept uniform. This elastic valve M consists of a circular piece of thin metal or other elastic material carrying an opening through the upper head of the receiver, the circular plate being upon the inner surface of the head. It follows, therefore, that an increase or diminution of steam in the receiver will tend to close or open the valve J in the pipe H, and thus secure a uniform pressure independent of the pressure in the boiler. Around the float, above or below, I pack sponge or some other porous substance, as seen at S, for the purpose of preventing a free mixing of the water in the receiver that has become heated with the stratum below that is cold.

B is a discharge-pipe. Both this and the receiver A stand upon the chamber T. At the upper end of this discharge-pipe B is the

condensing-chamber C, above which is the valve D, opening upward to prevent the downward flow of water. A pipe, G, connects the steam-chest E' with the condenser C, so that when the valve E is down the steam can have a free passage from the upper part of the receiver A through the pipe N to the condenser C. B' is a second discharge-pipe which is also connected with the water-chamber T. This pipe is provided with a valve, Q, for preventing the return of the water, and is designed to be used for the discharge of water unmixed with that in the condensing-pipe and chamber C.

O O represent a partition that separates the receiver A and discharge-pipes from the ingress-pipe P and air-chamber L. This partition is provided with a valve, I, opening upward, which prevents all the water that passes above the partition O O from returning. The air-chamber L is to prevent the sudden arrest of the flow of water upward through the ingress-pipe P when the valve I closed.

This pump is very simple and cheap in construction and is easily repaired, working both the expansive and the exhaust powers of steam. It is applicable to very light as well as heavy work, and can be applied when other methods could not be economically used, as raising water on plantations in irrigation, and for watering cattle; also for supplying hotels and private dwellings with water, and it does not require the skill of an engineer to run it. When the receiver A is filled with water, steam is admitted through H and N into A, expelling the water from it through B until F drops upon the button R', which brings down the steam-gate E, closing H and opening G. The valve D then closes, and the water standing higher in B than in A, it seeks a level by passing down B and up A, transferring steam from A into C, when the steam is immediately condensed, drawing water through pipe P until it raises F against the upper button, R'', when H is again opened and G' closed. The uncondensed steam and gas being now collected in C, it is next forced through valve D and discharged with the water.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The arrangement of the chamber A, float

F, pipe N, and valve E, in combination with the valves M and J, with the pipes H, constructed and operating in the manner and for the purpose substantially as described.

2. The chamber T, with the partitions O O and valve I, in combination with the pipes B B', valve D, condenser C, and pipe G, constructed

in the manner and for the purposes substantially as set forth.

MARTIN WILCOX.

Witnesses:

HIRAM WESTON,
MANSFIELD SUMNER.