(No Model.) 2 Sheets—Sheet 1

L. S. HOYT.

AIR PUMP.

No. 262,674. Patented Aug. 15, 1882

Fig. 1.

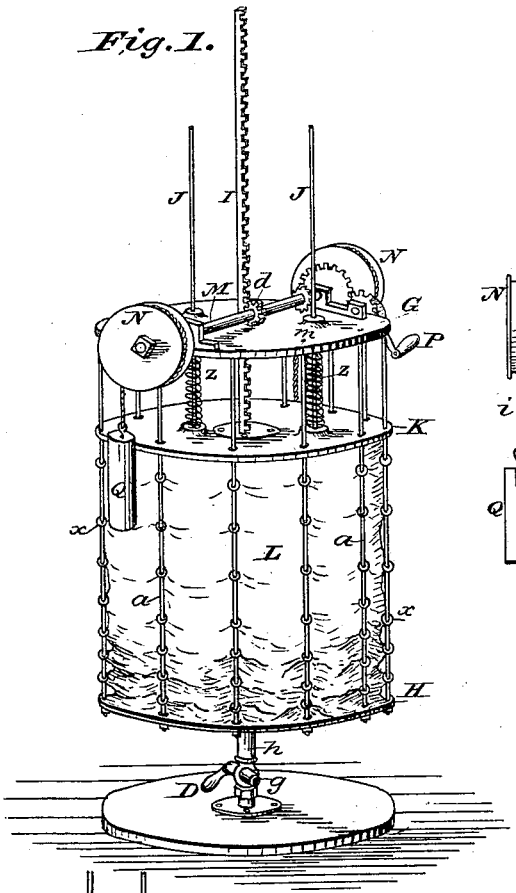
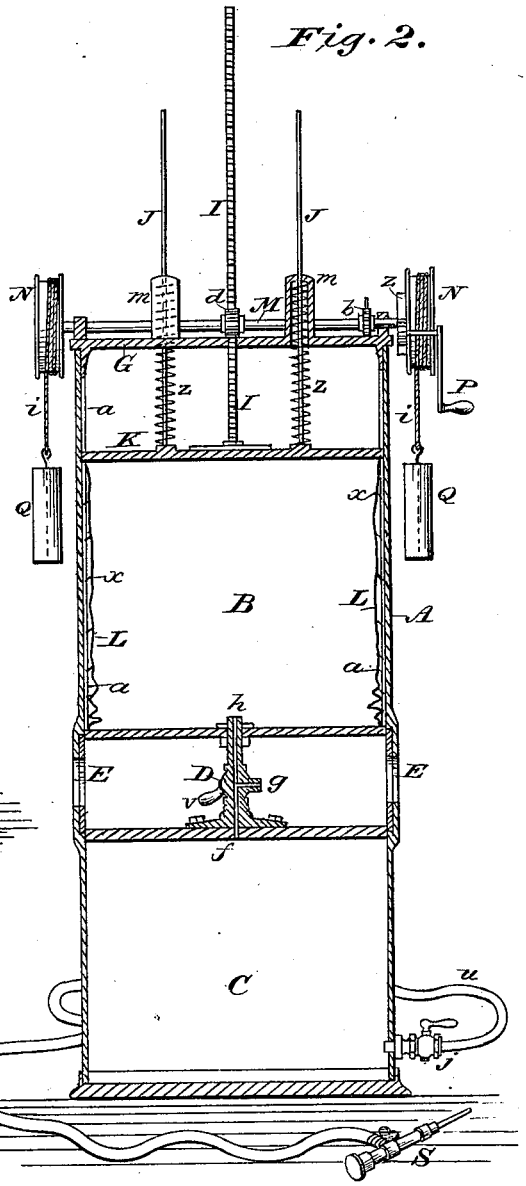


Fig. 2.



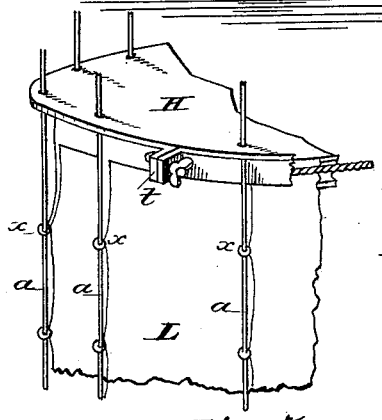


Fig. 3.

WITNESSES

J. C. Brecht

L. F. Kelcher.

INVENTOR

Lewis S. Hoyt,

By C. A. Shaw.

Attorney

(No Model.) 2 Sheets—Sheet 2.

L. S. HOYT.

AIR PUMP.

No. 262,674. Patented Aug. 15, 1882.

Fig. 4.

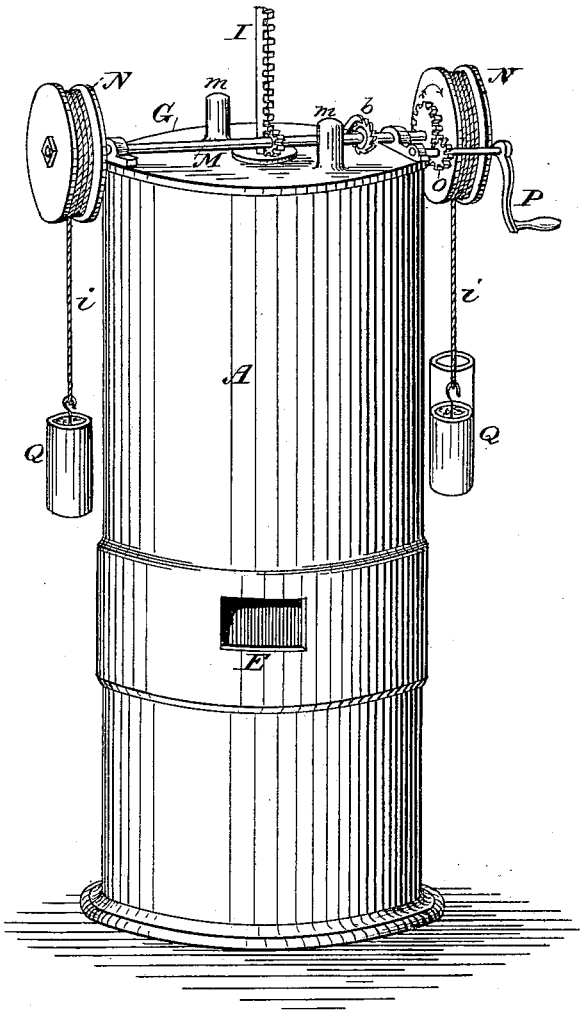


Fig. 5.

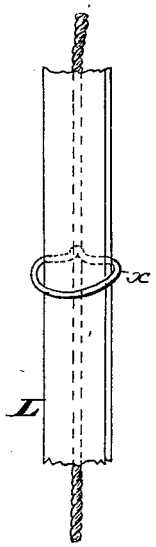
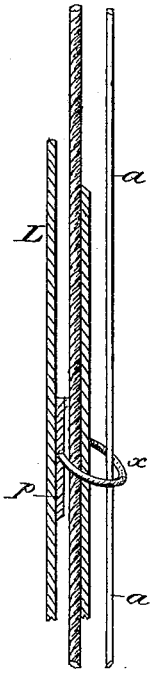


Fig. 6.



WITNESSES

T. G. Brecht

S. F. Kelleher.

INVENTOR

Lewis S. Hoyt,

Per C. A. Shaw

Attorney

UNITED STATES PATENT OFFICE.

LEWIS S. HOYT, OF STAMFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND JOHN M. CULVER, OF NORTH ABINGTON, MASSACHUSETTS.

AIR-PUMP.

SPECIFICATION forming part of Letters Patent No. 262,674, dated August 15, 1882.

Application filed May 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEWIS S. HOYT, of Stamford, in the county of Fairfield, State of Connecticut, have invented a certain new and useful Improvement in Air-Pumps, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an isometrical perspective view of the pump proper with its casing removed; Fig. 2, a vertical longitudinal section of the pump and tank; Fig. 3, a sectional view showing the method of attaching the rubber to the heads; Fig. 4, an isometrical perspective view of the machine complete; Fig. 5, a sectional view showing the method of connecting the rods and rubber, and Fig. 6 a sectional view showing the re-enforce ring and rod.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates principally to that class of air-pumps which is designed for maintaining an aerostatic pressure in beer-barrels, running dental engines and drills, supplying air to carburetors, &c.; and it consists in a novel construction and arrangement of parts, as hereinafter more fully set forth and claimed, by which a simpler, cheaper, and more effective device of this character is produced than is now in ordinary use.

In the drawings, A represents the body or case of the pump; B, the pump proper, and C the reservoir or tank. The reservoir is disposed in the lower part of the case, and is connected to the pump by the pipes or ducts *f g h*, provided with the three-way cock D and lever *v*, to which access is had through the doors or apertures E. A series of rods, *a a*, arranged in a circle near the walls of the casing A, connect the head G and bottom H of the pump B; and fitted to work vertically on these rods there is a head or piston, K, provided with the upright rack I and rods J, extending through the head G. The piston K and bottom H are connected by the rubber cloth or sheet-rubber L, forming an air-tight accordion-bellows, the cloth being secured to the rods *a* by a series of rings, *x*, which slide up and down on the same as the bellows is worked. The rods J are provided with coiled springs *z*, which act expansively to assist in forcing down the piston G, the lower ends of the springs resting on the top of the piston and the upper ends abutting against the under side of the top G within the recesses *m m*, formed therein for their reception. Mounted horizontally on the top G and journaled in proper bearings there is a shaft, M, carrying the pinion *d*, grooved pulleys N, cords *i*, weights Q, ratchet-wheel *b*, and gear *z*, the pinion *d* intermeshing with the rack I and the gear *z* with the pinion *o* on a crank-shaft, P, disposed on the casing A. The piston K and bottom H are respectively provided around their peripheries with a groove, *y*, to enable the rubber L to be properly secured to the same, which is accomplished by means of the wire or cord *k* and clamp *t*, the rubber being also strengthened at the rings *x* by the re-enforce *p*.

In the use of my improvement, the piston or follower K being depressed, the ducts *g h* are opened by the cock D and the duct *f* closed. The crank P is then turned to wind up the machine or elevate the weights Q and follower K, causing the air to enter through the ducts *g h* and fill the bellows or pump B. The duct *g* is next closed and the duct *f* opened, after which the pawl of the ratchet *b* is thrown back, permitting the weights Q to depress the follower K and force the air through the ducts *h f* into the reservoir or receiver C, after which the duct *f* is again closed and the ducts *h g* opened, and the process repeated until the required quantity of air has been forced into the receiver.

A pipe, U, provided with the stop-cock *j*, connects the reservoir or receiver C with the dentist's drill S. When the drill is detached the pipe may also be used for conveying the air from the receiver to a carburetor for the purpose of being carbureted, or to a beer-bar-

rel in which it is desired to increase the pressure on the beer, or to a blow-pipe for jewelers' or coppersmiths' use, &c.

Having thus explained my invention, what I claim is—

The improved air-pump described, the same consisting of the case A, having the receiver C and pump B, connected by the ducts or pipes *f h*, and provided with the stop-cock D and duct *g*, in combination with the rack I, shaft M, pinion *d*, pulley N, weight Q, ratchet *b*, gear *z*, pinion *o*, crank P, and pipe U, constructed, combined, and arranged to operate substantially as and for the purpose set forth and specified.

LEWIS S. HOYT.

Witnesses:
C. A. SHAW,
JAMES M. PALMER.