JOHN W. FOX.

Syphon.

No. 125,559. Patented April 9, 1872.

Fig. 1.

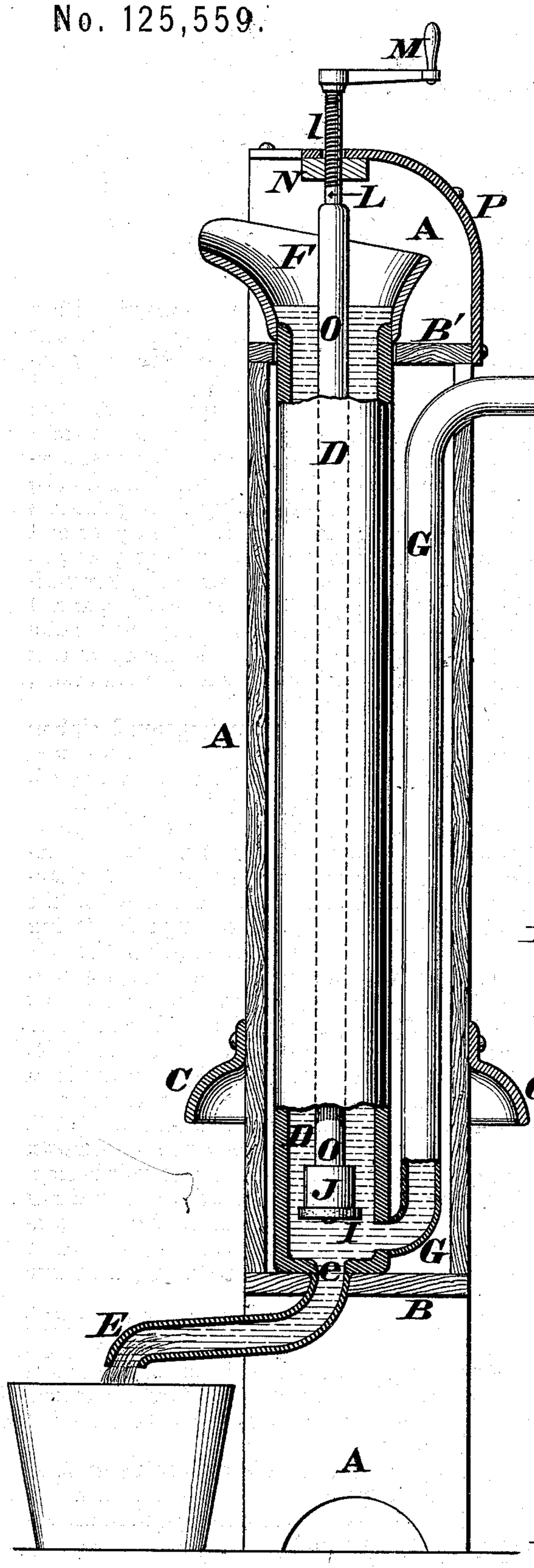
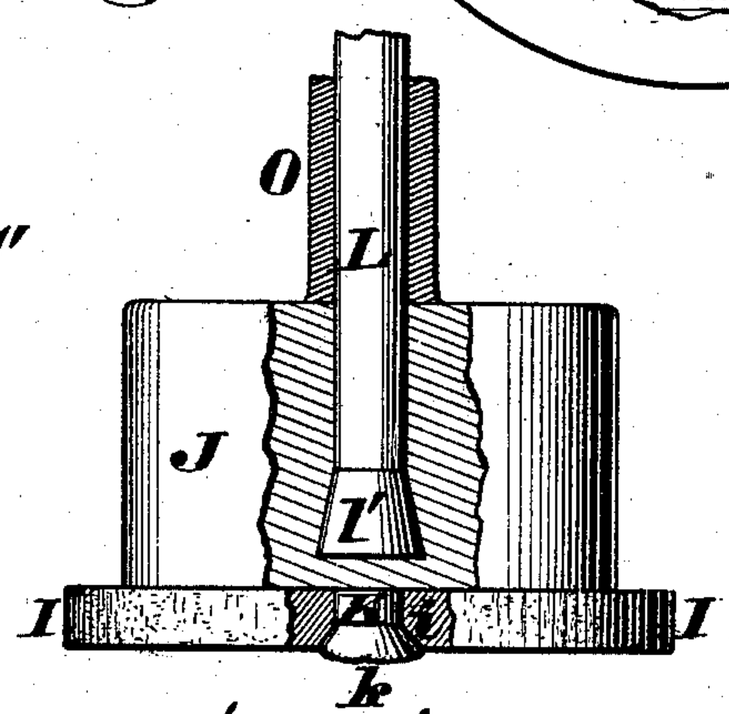


Fig. 2.



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125,559

UNITED STATES PATENT OFFICE.

JOHN W. FOX, OF CINCINNATI, OHIO.

IMPROVEMENT IN SIPHONS.

Specification forming part of Letters Patent No. 125,559, dated April 9, 1872.

Specification of an Improved Siphon, invented by JOHN W. FOX, of Cincinnati, in the county of Hamilton and State of Ohio.

The invention relates to a siphon apparatus, which is arranged in such a manner as to insure the certain and safe transferring of acids and other dangerous liquids from one vessel or receptacle to another without danger of spilling the contents upon the floor or upon the hands or person of the operator, as is liable to occur with the common siphon and other means now employed for such purposes.

Figure 1 is a vertical section of a siphon embodying my improvements, the apparatus being shown as though the discharging-valve or plunger had just been elevated. Fig. 2 is an enlarged sectional view of said valve or plunger.

The principal members of the siphon are confined within or attached to a box or stock, A, having end pieces B B′ and handles C C′, which latter facilitate the carrying of the apparatus from place to place. Fitted within the box A is a priming-chamber, D, to whose lower end is attached the discharge-pipe E, while its top is provided with a flaring mouth, F, which serves to conduct into said chamber any liquid wherewith it is to be filled. Connected to the lower part of the charging-chamber D is the long leg G of a siphon, G G′ G″, whose horizontal portion G′ is provided with a vertical pipe, H, having an air-discharge or "pet cock," *h*, while the short leg G″ of said siphon is adapted to be inserted in the carboy, tank, or other vessel or reservoir from which the liquid is to be drawn. Adapted to close the inner end *e* of discharge-pipe E is a disk-valve, I, which is composed of India-rubber or some other suitable material that will resist the action of acids. This valve I is attached to the plunger J in the following manner: Projecting from the lower side of said plunger is a stump or stud, K, which, after having been inserted through a central orifice, *i*, of the valve, has a head, *k*, formed upon it, so as to effectually unite said members I and J. The plunger J is cast upon, soldered to, or otherwise attached to a rod or valve-stem, L, whose upper portion is screw-threaded at *l*, and is surmounted with a crank or hand-wheel, M, wherewith said rod is rotated, as occasion requires. The screw-threaded portion *l* of this rod engages with a nut, N, that is secured at the upper end of box A. For the purpose of more effectually anchoring the rod L within the plunger J, said rod may have a head or enlargement, *l′*. The greater portion of the rod L is incased within a leaden pipe or tubular jacket, O, whose lower end is securely soldered to the plunger J, so as to prevent the acid passing through at this joint and corroding said rod. The upper end of the box A is inclosed by a bent plate, P. When designed especially for acids, the various parts E, D, F, G, G′, G″, H, J, K, *k*, and O should all be composed of lead; but for oils and other non-corrosive liquids, the apparatus may be constructed of any suitable materials, such as tin, copper, &c.

The manner of using my improved siphon apparatus is as follows: The valve I is screwed down upon its seat *e*, the air-cock *h* opened, and the short leg G″ of the siphon inserted in the receptacle from which the fluid is to be drawn, the vessel to be filled being placed under the delivery end of the pipe E. A quantity of liquid similar to that contained in the reservoir is now poured in through the flaring mouth-piece F until the priming-chamber D is filled to a point higher than the horizontal portion G′ of the siphon; after which the air-cock *h* is closed, and the valve I raised from off its seat by the simple rotation of the handle M. The valve I, being then opened, the liquid in chamber D begins to escape, and thereby induces a flow through the members G G′ G″, which continues to act upon the well-known principle of a siphon until the reservoir is emptied, or until a sufficient quantity of liquid has been drawn therefrom. When a sufficient quantity of liquid has been drawn off, the further discharge can be stopped by screwing the valve I down upon its seat.

When designed especially for discharging acids, care should be taken to have the pipe H long enough to elevate the air-cock *h* above the highest level to which the liquid can rise, in order that said cock may not be corroded by contact with the acid.

It will be seen that this apparatus enables acids to be transferred from any kind of a vessel with perfect ease and safety, and in the exact quantity desired.

I claim as my invention—

1. An improved siphon apparatus, consisting of the box or stock A, priming-chamber D, discharge-pipe E *e*, bent pipe G G′ G″, air-cock *h*, and valve I having the actuating-rod L, the whole being arranged to operate substantially as herein described.

2. I claim the improved siphon apparatus for conveying or transferring acids and other corrosive liquids, consisting of the leaden or other non-corrosive members D, E, F, G G′ G″, H, J, and K *k*, together with the valve I, incased valve-rod L O, and elevated air-cock *h*, as and for the purpose set forth.

3. The priming-chamber D, when applied to the long leg of a siphon, in the manner herein described, and for the purpose set forth.

4. In combination with the aforesaid priming-chamber D and siphon G G′ G″, I also claim the valve I or its mechanical equivalent, for the object stated.

In testimony of which invention I hereunto set my hand.

JOHN W. FOX.

Attest:
GEO. H. KNIGHT,
JAMES H. LAYMAN.