(No Model.)

B. GREVE.

SIPHON.

No. 518,064. Patented Apr. 10, 1894.

Fig. 1

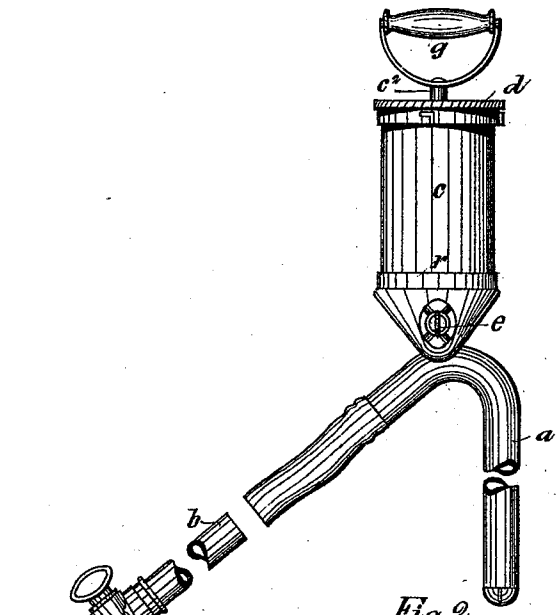


Fig. 2

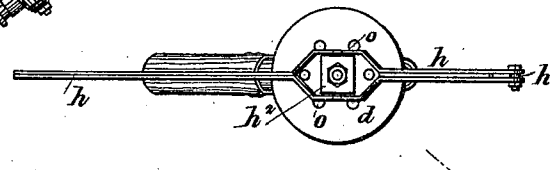
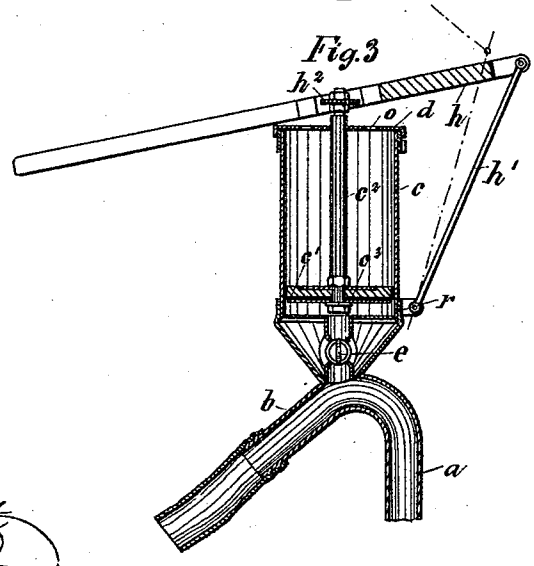


Fig. 3



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BERNHARD GREVE, OF COLOGNE, GERMANY.

SIPHON.

SPECIFICATION forming part of Letters Patent No. 518,064, dated April 10, 1894.

Application filed March 29, 1893. Renewed March 7, 1894. Serial No. 502,781. (No model.) Patented in England March 22, 1892, No. 5,992, and in Austria-Hungary October 28, 1892, No. 24,349 and No. 45,734.

To all whom it may concern:

Be it known that I, BERNHARD GREVE, a subject of the German Emperor, residing at Cologne, Germany, have invented certain new and useful Improvements in Siphons, of which the following is a specification.

The invention has been patented in England, No. 5,992, dated March 22, 1892, and in Austria-Hungary, No. 24,349 and No. 45,734, dated October 28, 1892.

The present invention relates to siphons, in which the sucking action or exhaustion proceeds from the apex, and in which therefore the two legs of the siphon may be plain tubes.

The principal object of the improvements is, to construct the siphon in such a manner, that the liquid sucked up by the piston need not follow the latter in the cylinder, but may pass directly from one leg to the siphon into the other. In consequence of this modification the packing of the piston in the cylinder may be less perfect, and the piston will therefore run more easily.

In the following description reference will be made to the accompanying drawings, Figures 1 to 3, of which—

Fig. 1 is a side elevation of a siphon embodying my invention, while Fig. 2 is a plan and Fig. 3 a vertical section of a slightly modified construction.

The siphon chiefly comprises two branches or legs *a*, *b*, and a cylinder *c* which forms the apex of the siphon. The branches *a*, *b*, may be rigidly fixed to the cylinder or they may be movable. The leg *b* serves for the discharge of the liquid, and is provided with a stop cock *b'*. Between the apex or upper end of the legs *a* and *b*, and the bottom of the cylinder is inserted a short tube *e* provided with a stop cock *e'*, which serves to hermetically close the apex or top of the two legs *a*, *b* after sufficient liquid has been sucked up by the piston *c'* to establish a continuous flow, or to fill the leg *b*. The motion of the piston *c'* and piston rod c^3 may be effected by means of a handle *g* as represented by Fig. 1, or by means of a lever *h* (Figs. 2 and 3) which is connected with the piston rod c^3 by a pivoted cross-bar h^2. The said lever *h* is preferably secured to the cylinder *c* by means of a hinged post *h'* and a ring *r*. The first method of operating the piston is intended for small siphons and the second for larger apparatus.

To prevent the piston from being drawn out of the cylinder *c* the latter is closed with a cover *d* having several perforations *o*.

For drawing off liquids by means of this siphon, the leg or branch *a* is introduced into the liquid and then the piston *c'* slowly drawn up. Previously, the piston must, of course, be in its lowest position, the cock *b'* must be closed and the cock *e'* open. By the slow lifting of the piston *c'* the liquid is caused to rise into the branch *a*, the air is drawn out of the branch *b*, and both branches are filled with liquid. If now the cock *e* be closed, and the cock *b'* opened, the liquid will flow out through *b*. The flow of liquid may be interrupted whenever desired, by simply closing the cock *b'*. For stopping the discharge of liquid altogether, after the two cocks *b'* and *e'* have been opened, it is sufficient to force down the piston *c'*.

One of the two branches *a*, *b* or both of them may be rendered flexible by forming a part of its or their length of india rubber containing a helical coil of wire, to prevent the tube from being crushed.

Fig. 3 shows a piston having only an upper packing disk which is laid upon a cork disk and held in place by two metal plates traversed by the piston rod c^2.

It will be noticed that the cylinder is held and supported by the short section of pipe 5 in which the valve *e* is arranged and also by the funnel shaped casing 6 projecting up from the apex of the legs *a*, *b* to embrace the edge of the cylinder. This casing incloses the pipe and it has an opening for the valve stem to project through.

Having now particularly described and ascertained the nature of my invention and in what manner the same is to be performed, I declare that what I claim is—

In combination in a siphon, the two legs *a*, *b*, the cylinder at the apex of the legs con-

nected therewith by the pipe 5, the valve in said pipe, the piston within the cylinder with means for operating it and the funnel shaped casing projecting up from the apex of the cylinder and having an opening through which the valve stem is rendered accessible, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

BERNHARD GREVE.

Witnesses:
FRIEDRICH SASSY,
H. A. MAXWELL.