

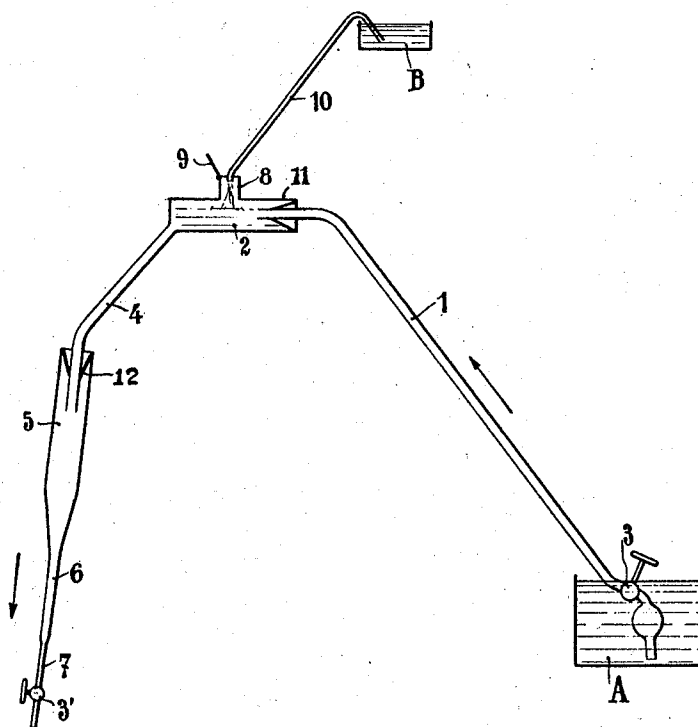
March 6, 1928.

1,661,699

P. MAGNIN

SIPHON

Filed Dec. 11, 1923



Inventor-
Pierre Magnin
By
B. Singer, Atty.

UNITED STATES PATENT OFFICE.

PIERRE MAGNIN, OF PARIS, FRANCE.

SIPHON.

Application filed December 11, 1923, Serial No. 680,000, and in France December 21, 1922.

The invention relates to siphons designed to lift liquids and to direct them in any desired direction and its object is to provide an improved siphon by means of which water
5 may be raised, from a river, lake or the like at a point which is practically inaccessible, and discharged at a lower level at a point where it may be used.

The accompanying drawing is a diagrammatic sectional view of my improved siphon.

The system comprises a main pipe 1 for the ascending column of the liquid mass.

This pipe is of uniform section from its lower extremity up to a container 2 occupying
15 the highest point of the system.

The lower extremity of the column 1 extends into the liquid mass and carries a cock or the like 3.

On the opposite side from the ascending
20 column 1 is placed the descending column which is formed by an assemblage of pipes of different diameter. The section 4 is of a diameter equal to that of the column 1. Its continuation 5 is widened considerably. The
25 continuation 6 has a section equal to that of the section 4, and terminates in a pipe 7 of a reduced section, a fourth or a half of the diameter of the sections 1, 4 and 6. The pipe 7 is provided with a cock or the like 3'.

30 At the upper part of the container 2 is a nipple 8 having a cover 9 which may be closed hermetically.

Into this nipple discharges a tube or ordinary siphon 10 which draws liquid from a
35 mass B situated higher than the container for example a source in a mountain.

This tube or siphon serves to feed the system with the liquid which is needed for filling or priming the apparatus, in order to
40 start it in operation. The cover 9 is then closed and sealed and the flow through the tube 10 is arrested.

In case that no source such as B is at disposal for filling of the siphon, use could be
45 made of a pump for forcing the liquid into the system.

For filling the siphon, it is necessary that the cocks 3 and 3' be closed. When the ascending and the descending columns are filled
50 with the liquid, the cock 3 is opened, and

thereafter cock 3' is opened to cause the liquid to flow, which flow is effected at a great speed.

This novel system of siphons may be installed across an elevation, either on the surface or subterraneously.

If the level in which the pipe 7 is situated is equal to the level of the water to be transported, the siphon will nevertheless work, owing to the presence, in the siphon, of the
55 pipe 5 having a large section and an appropriate form. If the pipe 7 is situated lower than the level of the liquid to be transported from the basin A, it will assure a great force of flow across the pipes, and in such case, this force can be used industrially at the
60 point where the water leaves the tubes.

The column 1 penetrates into the container 2 presenting an inward cone 11, as well as the pipe 5 which is provided with an
70 inwardly conical construction 12 through which the pipe 4 extends. These conical parts 11 and 12 serve to oppose themselves to an eventual backward motion of the liquid through the system.

The abrupt enlargement 5 causes a loss of charge through coincident eddies with an effect equivalent to that which is produced by the elongation of the large branch 3' of the siphon. The descending column thus
75 acquires more weight and this disposition permits the functioning of the siphon with a minimum difference of level between branches 3 and 3', in which case an ordinary siphon would not function. The returning
80 part 12 has for its object to hasten the functioning of the siphon in an inverse sense in case the difference of level should reach a negative value.

In case 3' is situated lower than 3, the
85 disposition 5 assures to the liquid column a greater force of flow—a force which is industrially usable. The loss of charge of the converging cones 5, 6, and 6, 7 is negligible.

The diametrically reduced section 7 is
90 equal to about a third of sections 4 or 6.

What I claim, is:

A siphon comprising an intake leg having a stop cock at its lower end, a container
95 into which said intake leg discharges, a dis-

charge leg leading from said container and including at a point intermediate it ends a portion of much greater diameter having an inverted conical lower end and also including an extreme lower end portion of less diameter than said discharge leg and provided with a stop cock, said intake leg extending into said container and having a cone surrounding said extending end, said discharge leg having a portion extending into the upper end of said diametrically enlarged portion and provided at said extending portion with a cone arranged in the upper end of said diametrically enlarged portion.

In witness whereof I affix my signature.

PIERRE MAGNIN.