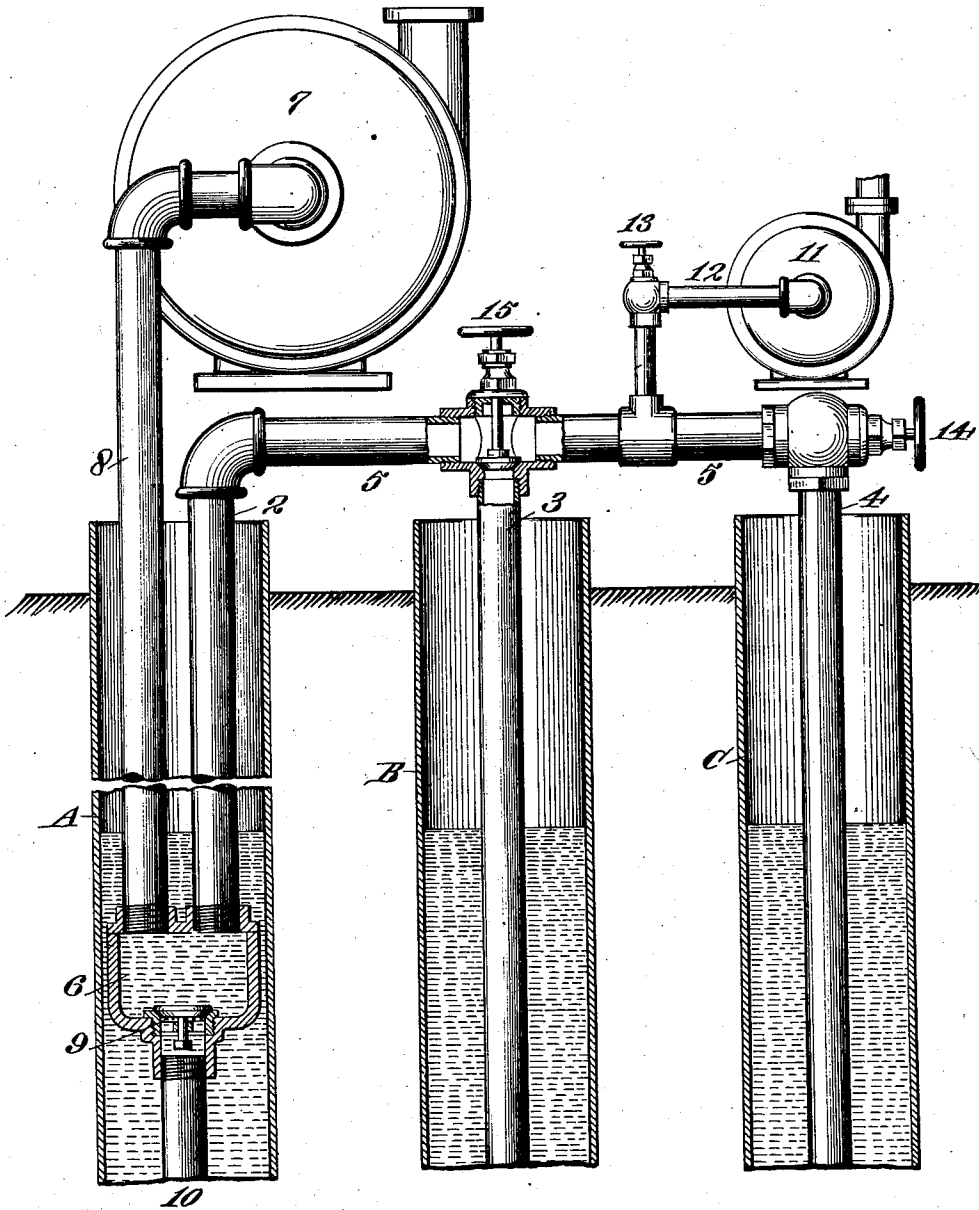


E. H. PERKINS.
PUMPING SYSTEM.
APPLICATION FILED JAN. 23, 1911.

994,335.

Patented June 6, 1911.



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UNITED STATES PATENT OFFICE.

ELIJAH H. PERKINS, OF DINUBA, CALIFORNIA.

PUMPING SYSTEM.

994,335.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed January 23, 1911. Serial No. 604,103.

To all whom it may concern:

Be it known that I, ELIJAH H. PERKINS, citizen of the United States, residing at Dinuba, in the county of Tulare and State of California, have invented new and useful Improvements in Pumping Systems, of which the following is a specification.

This invention relates to a pumping system.

It is the object of this invention to provide a means for removing water or other liquids from two or more wells with a single pump which is simple in construction and operation, and which is economical in installation and upkeep.

In irrigating operations, where the water is provided from sunken wells, especially in arid regions, the volume of water required is greater than can be supplied from a single well owing to slow percolation of the water into the well which makes it necessary to drive a number of wells in order to obtain water in a sufficient quantity. Heretofore, separate pumps have been employed for each well, or a single pump has been directly connected to a pipe line leading to a number of wells, both systems being objectionable in many respects, particularly in the expense of first cost and repairs.

It is the object of this invention to supplant these systems by the use of the principle of the siphon which I have adapted and arranged to meet the requirements of the use to which it is to be put.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawing, in which the figure is a view in elevation partly in section, illustrating the construction and operation of the invention.

In the application of this invention, as shown in the drawing, a number or series of wells A—B—C are driven at suitable distances apart, one of the wells, as A, being employed as a main well and the remainder of the wells B—C being auxiliary thereto. There may be any desired number of auxiliary wells, the two shown in the drawings being sufficient for illustration.

My present invention resides in connecting the auxiliary wells B—C to the main well A by means of a siphon here shown as constructed of vertically disposed pipes, 2—3—4, connected together at their upper ends by means of a horizontal pipe 5. The pipes

3—4 extend into the wells B—C, some distance below the water level therein and the pipe 2 extends into the well A and terminates in a casing 6 disposed therein. The termination of the pipe 2 and the casing 6 is arranged in the well A some distance below the water level therein and below the water level in the wells B—C. The casing 6 is connected to a pump 7 of any suitable description by means of a pipe 8, and is adapted to be opened to the well A through a foot valve 9 mounted in its lower end, a pipe 10 leading downward from the casing 6 beneath the valve 9 to any suitable depth in the well A.

The pipe 5 is connected to a pump 11 through a pipe 12, this pump 11 being provided for the purpose of drawing off the air in the pipes 2—3—4—5, which, by creating a suction, causes the water in the wells to rise and fill the pipes, so that the siphon will operate, as later described. A cut off valve 13 is disposed in the pipe 12 which is closed when the pump 11 has drawn water, so that air will not be admitted to the pipe 5 to break the siphon.

In operation the pump 7 is set in motion so as to draw water from the chamber in the casing 6, this chamber being normally filled by reason of the water in the well A rising in the pipe 10 and entering the casing through the foot valve 9; the water rising in the pipes 8—2 to its level in the well A. As the water is drawn from the casing 6 by the pump 7, a suction is created therein which causes a flow of water from the wells B—C through the siphon, and also draws from the well A through the foot valve 9. From this it will be seen that as the water level in the well A falls below that of the wells B—C that water from the latter will flow through the siphon to the former until a common level is reached. In this manner a supply of water equal the capacity of the number of the auxiliary wells B—C will be delivered to the well A, while the power consumed by the pump 7 will be no more than that required for handling the same volume of water from a single well, the friction of raising water from the wells B—C being overcome by the siphon.

Cut-off valves 14—15 may be disposed in the pipes 3—4 in any suitable manner, so that the siphon may be caused to act on either well B or C, separately and independently of the other.

It is obvious that the greater the distance the lower terminal of the pipe, 2, in the well A is disposed below the water level in the auxiliary wells B—C the greater will be the efficiency of the siphon. Inasmuch as the fall of water in the pipe 2 is caused to a certain extent by the suction created in the casing 6, and the greater the length of the fall of water in the pipe 2 the greater the siphoning action on the pipes 3—4, it follows that the lower the casing 6 is disposed below the water level in the well B—C, the better the results obtained.

Having thus described my invention what I claim and desire to secure by Letters Patent is—

1. A pumping system, comprising a main well, a number of auxiliary wells, means for siphoning water from the auxiliary wells to the main well, said means consisting of vertically disposed pipes in each of said wells, a horizontally disposed pipe connecting the upper ends of said vertical pipes, pumping means for drawing air from the siphon through a pipe connected with said horizontally disposed pipe, a casing disposed in the main well on the lower end of the siphon,

pumping means connected to said casing, and a foot valve in said casing opening to the main well.

2. A pumping system, comprising a main well, a number of auxiliary wells, means for siphoning water from the auxiliary wells to the main well, said means consisting of vertically disposed pipes in each of said wells, a horizontally disposed pipe connecting the upper ends of said vertical pipes, pumping means for drawing air from the siphon through a pipe connected with said horizontally disposed pipe, a casing disposed in the main well on the lower end of the siphon pumping means connected to said casing, a foot valve in said casing opening to the main well, and cut-off valves arranged in the siphon to cut off one or more of the auxiliary wells.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELIJAH H. PERKINS.

Witnesses:

JOHN H. HERRING,
CHAS. EDELMAN.