

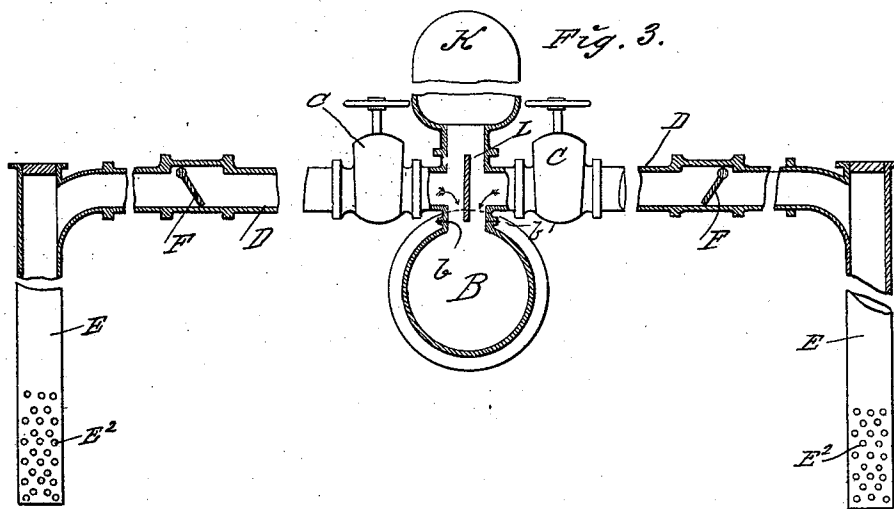
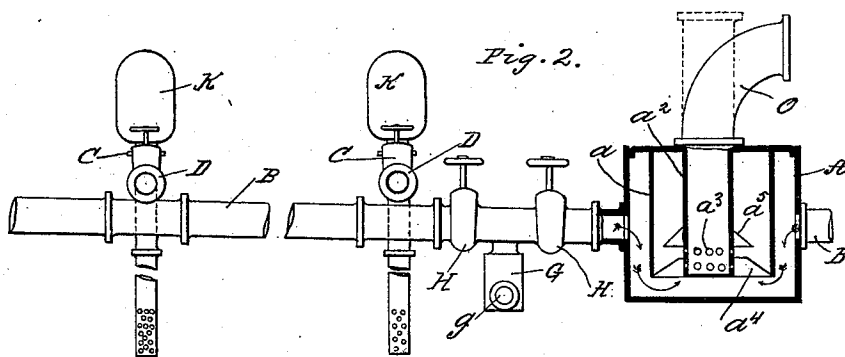
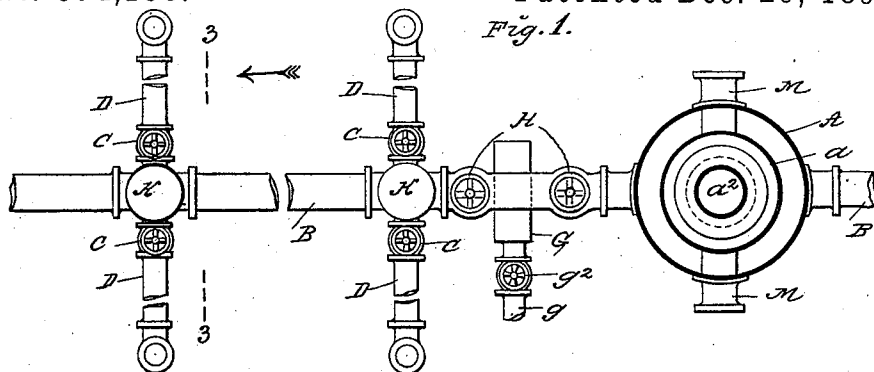
(No Model.)

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SYSTEM FOR COLLECTING WATER FROM WELLS.

No. 574,198.

Patented Dec. 29, 1896.



WITNESSES:

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SYSTEM FOR COLLECTING WATER FROM WELLS.

SPECIFICATION forming part of Letters Patent No. 574,198, dated December 29, 1896.

Application filed April 1, 1896. Serial No. 585,688. (No model.)

To all whom it may concern:

Be it known that I, LAURENSE C. EISENHUT, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Systems for Collecting Water from Wells, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention involves a system for collecting water from a plurality of Artesian, driven, bored, or otherwise-constructed wells and conducting the same to a central receiver by means of pipes and mains which extend or radiate therefrom, said mains being provided with branches which are in communication with said wells, and said central receiver being provided with means whereby the water is conducted therefrom to any desired point or points, a further object being to provide a water-collecting system of this class in which the water flows by gravity from the outer or distant ends of the mains into said receiver and in which the water may be conveyed from the receiver to the points where it is to be used by the natural or gravity flow thereof, or by means of suitable pumps, or in any desired manner, or by siphonic action.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a plan view of a portion of the apparatus which I employ; Fig. 2, a side view thereof, parts of the apparatus being shown in section; and Fig. 3, a section on the line 3 3 of Fig. 1, with parts of the construction shown in section.

In the practice of my invention I provide a receiver A, which is located at any desired point, and from which radiate collecting-mains B, any desired number of which may be employed, and these collecting-mains are provided with branch pipes D, any desired number of which may be employed, and each of the branch pipes D is provided adjacent to the main with cut-off valves C, and each branch pipe is also designed to communicate with a well and is provided at its end with a tube E, which is adapted to be inserted into the well, said tube being of any desired length

and the lower portion thereof being perforated, as shown at E² in Fig. 3.

Each of the branch pipes D is provided at a predetermined point with a back-pressure valve F, which is designed to open to admit of the flow of the water from the wells into the main pipe B and to close, so as to prevent back pressure, or the water from flowing backwardly from said main pipe B into the wells, and each of the mains B is provided adjacent to the receiver A with a sand-and-dirt trap G, which may be of any desired form and construction, and with which is connected a pipe g, which is provided with a valve g², and at each side of the sand-trap G are ordinary cut-off valves H, by means of which the passage through the main pipe B may be closed at each side of said sand-trap in order to admit of the examination and cleaning thereof.

Directly over the points where the branch pipes D communicate with the main collecting-mains B are placed air-drums K, and arranged transversely of the branch pipes and extending upwardly through the pipes which communicate with the air-drums and downwardly into the mains B are placed partition-plates L, the object of which is to prevent the flow from one of the branch pipes interfering with the flow from the other, the practice being to connect two branch pipes with the collecting-mains at the same point, one on each side thereof, and it will also be observed that the branch pipes communicate with the top of the collecting-main, as shown in Fig. 3, by means of a short annular collar or rim b.

The mains B are all arranged at an inclination or are inclined from their outer ends downwardly to the receiver A.

The supply-wells are arranged within any desired area of a suitable water-shed or water-bearing soil or strata, and, as will be understood, any desired number of said wells may be employed, and the branch pipes which communicate with said wells and with the main collecting-pipes B may also be inclined downwardly toward said main collecting-pipe when desired or whenever practical.

It will also be observed that the back-pressure valves F will be of service in closing the communication with a well which happens to be inoperative or which becomes inoperative, and these valves, as hereinbefore stated, are

designed to prevent the water from flowing out of the main collecting-pipes into an inoperative well, as well as to prevent any interference between the flows of opposite wells when each are in operation.

The inclination of the collecting mains or pipes B in the direction of the receiver is for the purpose of securing and maintaining a constant and uninterrupted flow from the wells and into the receiver, whereby the last or farthest well or wells will be equally taxed and made to contribute their respective amounts to the main pipe and receiver.

The receiver A is preferably composed of a circular or cylindrical casing having a closed top and bottom, and connected with the top thereof and extending downwardly therein is a cylindrical casing *a*, which is open at the bottom, said casing being extended downwardly below the point where the mains B empty into the receiver, and within the casing *a* is a vertical pipe *a*², which is closed at the bottom and provided with perforations in the sides of the lower ends thereof, as shown at *a*³, and the bottom of the casing *a* is provided with an inwardly and upwardly directed annular flange *a*⁴, and the tube or pipe *a*² is provided with a depending annular hood *a*⁵, and communicating with the opposite sides of the receiver and extending inwardly through the casing *a* are pipes M, from which the water is conducted from the receiver, and it will be apparent from the construction hereinbefore described that the water after passing into the receiver passes downwardly into the bottom of the annular casing *a*, from which it is conveyed by the pipes M. The water may flow through these pipes M by means of gravity alone or may be siphoned therefrom, or pumps of any desired form of construction may be connected therewith, by which the water may be forced to any desired point.

The tube or pipe *a*² is provided with a continuation or extension O, which is connected therewith and with the top of the receiver, and a pump or pumps of any desired form of construction may also be applied to this extension for raising the water to a higher level or for conveying it to any desired locality, and the pipe or extension O may be used independently of the side pipes M or in connection therewith, or said side pipes M may be used independently of the extensions or pipes O.

In operation the air is first extracted from the receiver A and from the mains B and the branch pipes D, after which the water will flow therethrough in accord with the siphon principle, as will be readily understood, and this may be done by applying vacuum-pumps to the pipes M or to the pipe O, or it may be done by forcing the entire apparatus full of water through either of said pipes and then starting the same, and as the water thus forced into the mains and branch pipes flows therefrom backwardly into and through the receiver a vacuum is formed, and the water is collected from the wells and flows in to fill

this vacuum, as will be readily understood, and this process of siphoning water out of the wells and through the branch pipes into the receiver constitutes one of the chief features of this invention, and under certain conditions and circumstances the water may be conveyed from the receiver to the point or points where it is required for use by the same process, in which event force-pumps would not be necessary, and the entire operation would be automatic and continuous, and a constant flow of water from the wells to the point where it was desired for use will result without any mechanical apparatus for aiding or assisting in said flow.

This apparatus may be employed for collecting oils and other fluids as well as water, and my invention is not limited to the exact form, construction, and arrangement of the various parts of the apparatus herein described, as it is evident that changes therein and modifications thereof may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of the invention.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In an apparatus for collecting water or other fluids, from a suitable area, the combination with a central receiver, of a branch main or mains leading therefrom, said main or mains being arranged at an inclination or inclined downwardly at their extreme ends in the direction of said receiver, and said main or mains being provided with branch pipes which communicate with the tops thereof, said branch pipes being provided with tubes or pipes which extend downwardly into wells, and said branch pipes being also provided with suitable back-pressure valves, and air-drums arranged over the points where said branch pipes communicate with said mains, and partition-plates arranged vertically across the ends of said branch pipes and extending upwardly in the direction of said air-drums and downwardly into said mains, and said mains being provided adjacent to the receiver with sand-traps and with cut-off valves adjacent thereto, and said receiver being provided with an inner casing which extends downwardly to near the bottom thereof, and with water conveying or supply pipes, which extend through said receiver and into said casing, substantially as shown and described.

2. In an apparatus for collecting water or other fluids, from a suitable area, the combination with a central receiver, of a branch main or mains leading therefrom, said main or mains being arranged at an inclination or inclined downwardly at their extreme ends in the direction of said receiver, and said main or mains being provided with branch pipes which communicate with the tops thereof, said branch pipes being provided with tubes

or pipes which extend downwardly into wells, and said branch pipes being also provided with suitable back-pressure valves, and air-drums arranged over the points where said branch
5 pipes communicate with said mains, and partition-plates arranged vertically across the ends of said branch pipes and extending forwardly in the direction of said air-drums and downwardly into said mains, and said mains
10 being provided adjacent to the receiver with sand-traps and with cut-off valves adjacent thereto, and said receiver being provided with an inner casing which extends downwardly to near the bottom thereof, and with water
15 conveying or supply pipes which extend

through said receiver and into said casing, and said receiver being also provided centrally of its upper side with a pipe which extends downwardly into said casing and which
20 is provided with an extension or pipe which communicates with the upper end thereof, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this
25 day of March, 1896.

LAURENSE C. EISENHUT.

Witnesses:

C. GERST,

C. G. MILLIN.