Sept. 15, 1931. G. O'BRIEN 1,823,661

WATER COOLING SYSTEM

Filed Aug. 30, 1930

FIG. 1.

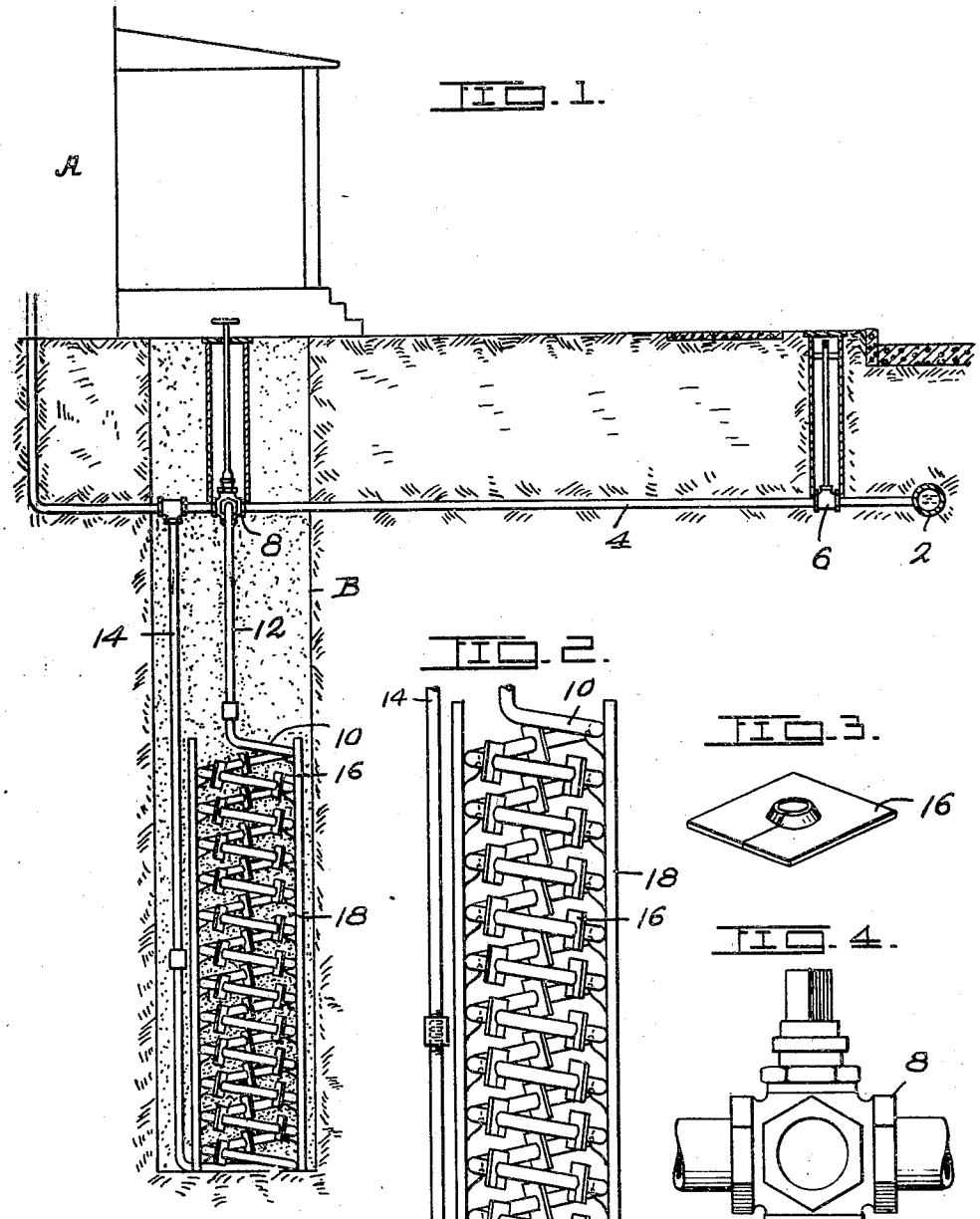


FIG. 2.

FIG. 3.

FIG. 4.

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UNITED STATES PATENT OFFICE

GLEN O'BRIEN, OF TROY, KANSAS

WATER COOLING SYSTEM

Application filed August 30, 1930. Serial No. 478,924.

My invention relates to a system of cooling water drawn from the city mains or other source of supply and an important feature of the invention resides in means whereby the water may be reduced to a temperature which will render it agreeable for drinking purposes without cost other than that of installing the system, as the use of ice or other refrigerants which must be renewed from time to time is not necessary.

The present system may also be used to advantage for supplying cool water to the cooling apparatus disclosed by my copending application filed July 16, 1930, Serial Number 468,222.

In order that the invention may be fully understood, reference will now be had to the accompanying drawings, in which:

Fig. 1 is a sectional view showing the system installed and ready for use.

Fig. 2 is a detail of a coiled pipe and fins forming important features of the invention.

Fig. 3 is a detail perspective view of one of the fins.

Fig. 4 is a side elevation of a three-way valve employed in carrying out the invention.

Referring in detail to the different parts, 2 designates the city main from which the service pipe 4 leads to a building A, the flow of water through the service pipe 4 being initially controlled by a curb cock 6 of any well known construction.

8 designates a three-way valve of any suitable construction which is connected to the service pipe 4, preferably at a point within the property line of the building A.

10 designates a coiled pipe of suitable size coupled at its inlet and outlet ends to pipes 12 and 14, respectively. The pipe 12 is connected at its upper end to the valve 8, while the pipe 14 is connected at its upper end to the service pipe 4 at a point in the rear of the valve 8.

The coil 10 is equipped at intervals with fins 16 and the various convolutions of the coil are supported in spaced relation to each other by means of suitable racks 18.

When installing the system a hole B of sufficient diameter to admit the coil 10 and adjacent parts is sunk twenty or thirty feet in the ground where the temperature usually ranges from fifty to sixty-three degrees F. Should water be found at the above depths the pipe 10 and the fins 16 are submerged in the water to obtain the cooling effects thereof, but if no water appears in the hole B the latter is filled with sand or soil which is caused to pack snugly around the convolutions of the coil 10 and around the fins 16, so that the low temperature of the soil will be imparted to the aforementioned parts and cool the water in the coil.

After the hole B has thus been filled with sand or soil the valve 8 is adjusted to cause the water in the service pipe to flow from the latter through the pipes 12, 10 and 14 and thence into the service pipe for use in the building A. Should it be desirable at any time to have the water flow through the service pipe 4 without traversing the bypass formed by the pipes 12, 10 and 14, the three-way valve 8 is adjusted accordingly.

By making the coil 10 and its associated parts of copper or other rust-resistant material said coil and associated parts will last for a considerable period of time, and since the natural temperature of the earth or water surrounding the coil 10 and the fins 16 is utilized for cooling the water flowing through said coil, an abundance of cooled water is obtained without cost other than that of installing the system.

From the foregoing description it is apparent that I have provided a system whereby water may be economically cooled, and while I have shown one form of the invention it is to be understood that I reserve all rights to such other forms and modifications as prop-

erly fall within the spirit and scope of the invention as claimed.

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

In a system of the character described, the combination with a water main and a service pipe leading therefrom, a three-way valve connected to said service pipe, a by-pass connected at one end to the service pipe and at its opposite end of said valve and including a coiled pipe, and means for holding the convolutions of said coiled pipe in spaced relation to each other.

In testimony whereof I affix my signature.

GLEN O'BRIEN.