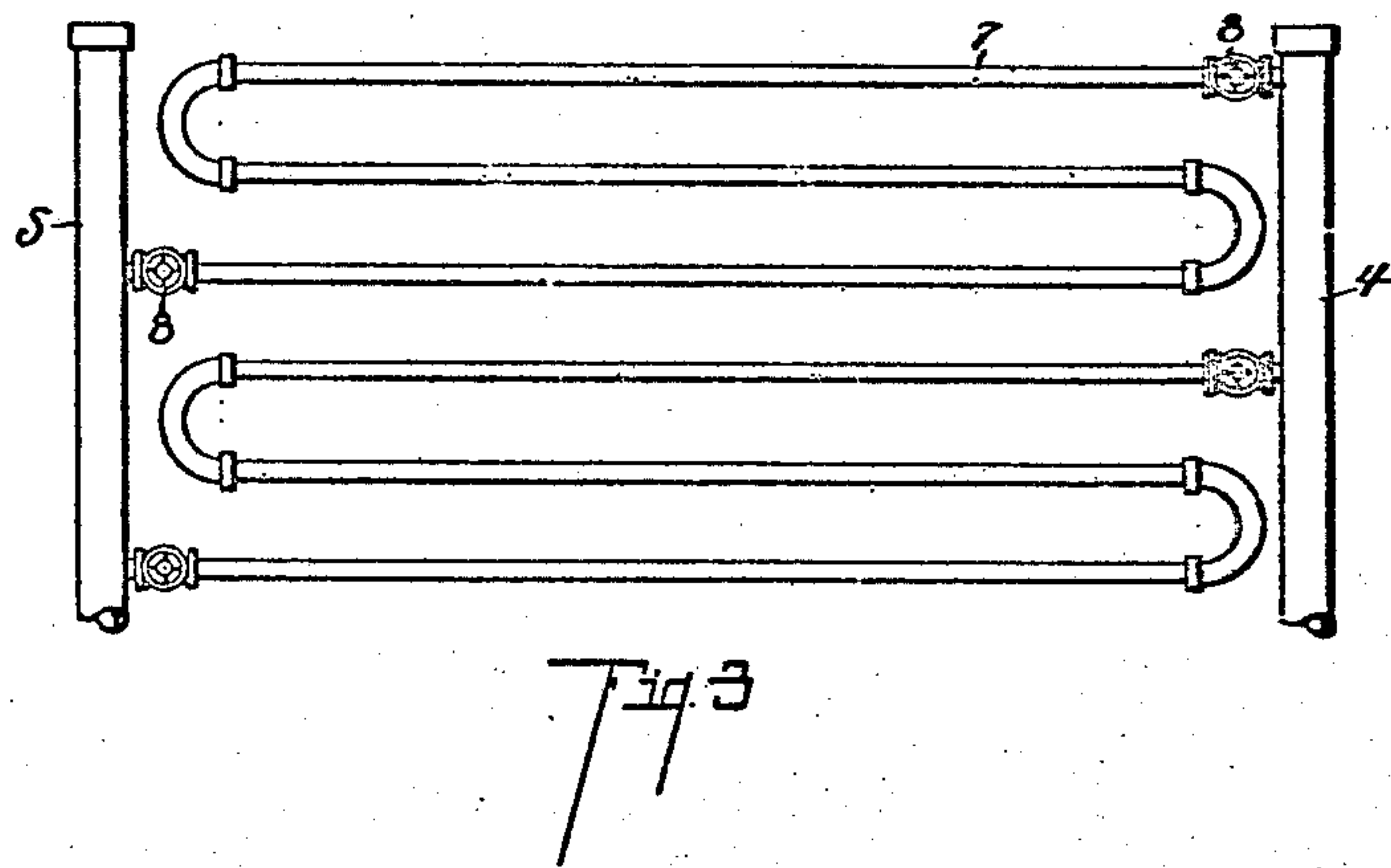
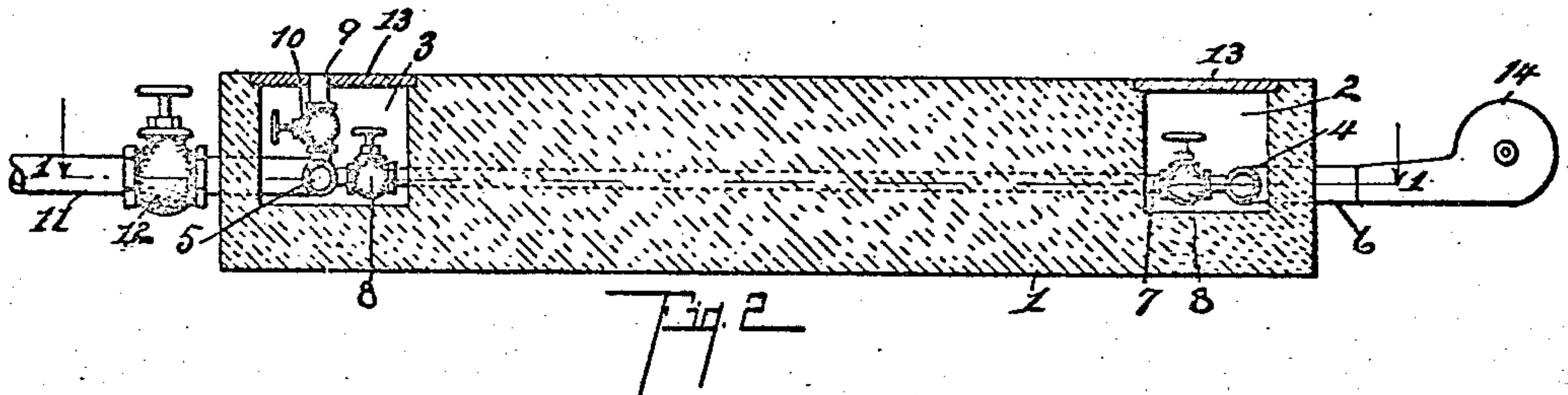
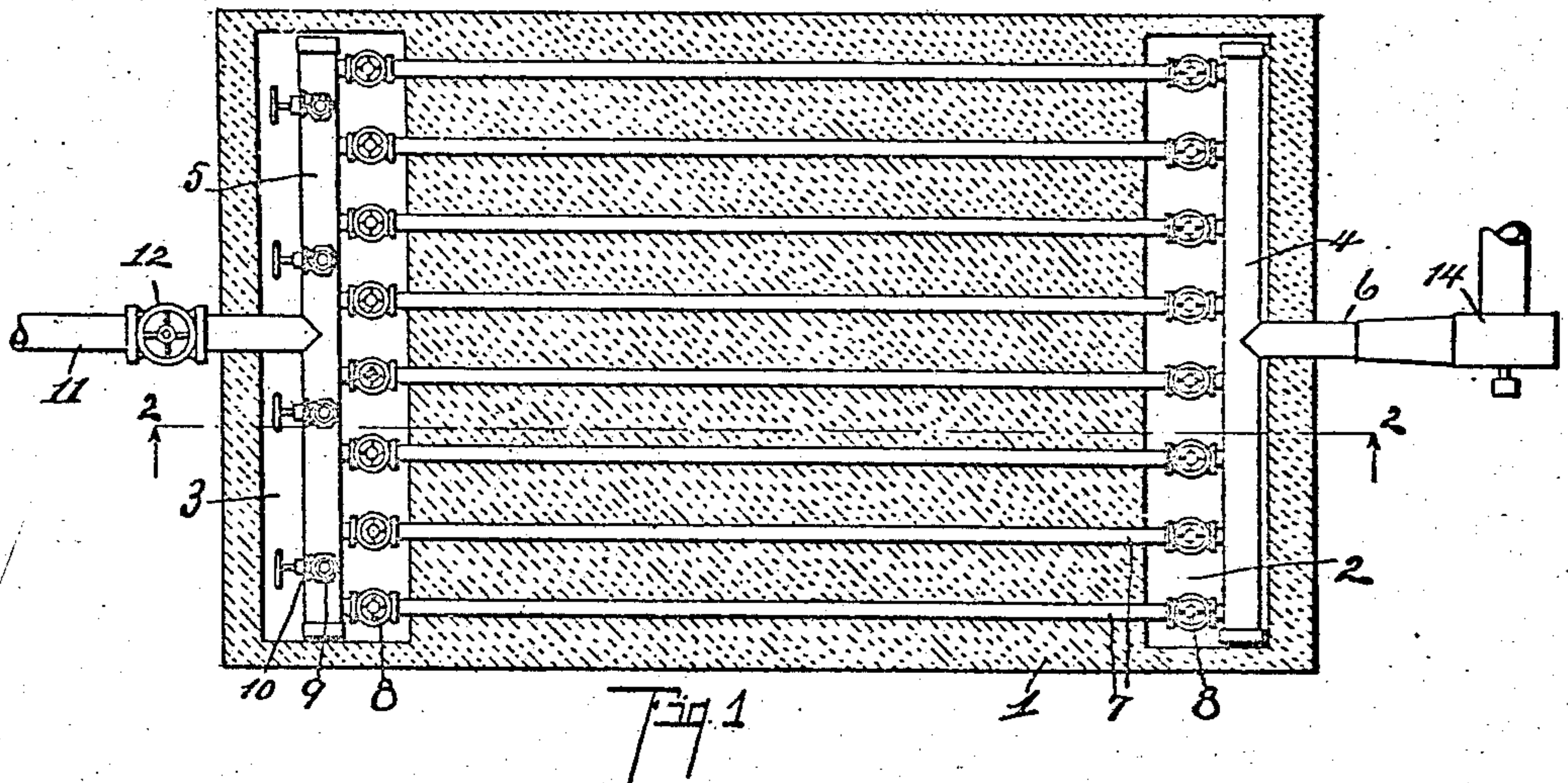


H. SALMON.
HEATING SYSTEM.
APPLICATION FILED FEB. 6, 1907.

899,078.

Patented Sept. 22, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

HERBERT SALMON, OF CASSOPOLIS, MICHIGAN.

HEATING SYSTEM.

No. 899,078.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed February 6, 1907. Serial No. 356,071.

To all whom it may concern:

Be it known that I, HERBERT SALMON, a citizen of the United States, residing at Cassopolis, Michigan, have invented certain new and useful Improvements in Heating Systems, of which the following is a specification.

This invention relates to improvements in heating systems.

My improved heating system is especially designed for heating factory and other large buildings, particularly those having concrete floors or floors having a concrete base, although it is adapted for use in various other relations.

The main object of my invention is to provide an improved heating system for large rooms or buildings, whereby the heat is evenly distributed throughout the same and at the same time the heating apparatus is out of the way, that is, it occupies no space in the room heated.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow:

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a detail horizontal section of a structure embodying my invention taken on a line corresponding to line 1—1 of Fig. 2 the pipes and valves therefor being shown in full lines, the parts being shown without regard to proportion, and in a more or less diagrammatic manner. Fig. 2 is a detail vertical section taken on a line corresponding to line 2—2 of Fig. 1. Fig. 3 is a detail plan showing a modified construction.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of section lines, and similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, 1 represents the concrete floor of a building. At opposite ends or sides of the building I form trough-like chambers 2 and 3 in the floor. In these chambers I arrange the headers 4 and 5, the header 4 in the structure illustrated being the delivery header and the header 5 the discharge header. The heating medium is introduced to

the header 5 through the pipe 6. The headers are connected by a plurality of conduits which are embedded in the concrete flooring. These I preferably embed at a depth of from 3 to 6 inches and space them about 2 feet apart. Their arrangement in the floor, however, may be very greatly varied and desirable results still be secured.

Each pipe or conduit 7 I preferably provide with a valve 8 at each end so that the delivery of the heating medium therethrough may be controlled. When hot air is used as a heating medium, I provide a blower 14, so that it is delivered through the conduits under pressure.

While I have illustrated in the accompanying drawing metal pipes which are adapted for the use of either hot air, steam or hot water as a heating medium, it is to be understood that it is desirable to use larger pipes or conduits in systems designed for hot air than for those designed for the use of steam or hot water.

In hot air systems tile, such as the ordinary drain tile, may be used to form the conduits, or the conduits may be otherwise formed by the use of cores, which are afterwards removed.

The header 5 is provided with a discharge pipe 11, the pipe being provided with a valve 12 whereby the discharge is controlled. The heating medium may be conducted from the discharge through the pipe 11 to be further utilized by conducting it to a floor above or when used in factories, to a dry kiln or the like.

The chambers 2 are preferably provided with covers 13, which are preferably arranged flush with the surface of the floor, so that there is no obstruction whatever in the room. The discharge header is preferably provided with connections 9 for delivering through the cover 13 into the room.

When the system is adapted for the use of steam as a heating medium, the steam may be delivered into the room and the system thus adapted to serve as a fire protection. The discharges 9 are provided with valves, as 10, for controlling the same.

In the modified construction shown in Fig. 3 the conduits 7 are in the pipes with return bends therein, so that the heating medium is caused to pass back and forth, thereby lengthening its passage through the system. This of course would be especially desirable where steam or hot water is used or where the

room to be heated is comparatively small. By thus arranging the parts the heat is delivered to the floor from the radiators into the room. This secures an even temperature throughout the room to be heated and the heating apparatus is entirely out of the way.

By the arrangement of the valves as I have illustrated, the heat can be very nicely regulated by regulating quantity of the heating medium passed through the system.

While I have illustrated my improved heating system in the conventional form and without regard to proportions of the parts thereof, its application will be readily understood by those skilled in the art to which my invention relates.

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

1. In a heating system, the combination with a concrete floor or floor base, of header chambers formed therein; headers arranged in said chambers; connecting pipes or conduits for said headers arranged in the said concrete floor or floor base; valves for said conduits arranged in said header chambers; a supply connection for the delivery header; a delivery connection for the discharge header; a valve for said delivery connection; covers for said header chambers; discharge connections for the discharge header adapted to deliver through the chamber cover; and valves for said discharge connections.

2. In a heating system, the combination with a concrete floor or base, of header cham-

bers formed therein; pipes or conduits embedded in said concrete floor or base and projecting into said header chambers; headers for said pipes or conduits; valves for the ends of said conduits for cutting off their connection to said headers, said valves being arranged in said header chambers; a supply connection for the delivery header and a delivery connection for the discharge header, said delivery connection having a valve therein.

3. In a heating system, the combination with a concrete floor or base, of header chambers formed therein; pipes or conduits embedded in said concrete floor or base and projecting into said header chambers; headers for said pipes or conduits; valves for the ends of each of said conduits for cutting off their connection to said headers, said valves being arranged in said header chambers; and a supply connection for the delivery header.

4. In a heating system, the combination with a concrete floor or base of a plurality of conducting pipes or conduits embedded in said concrete floor or base, supply connections for said pipes; and valves for said pipes or conduits by which they may be controlled independently of each other.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HERBERT SALMON. [L. S.]

Witnesses:

JAMES G. HAYDEN,

STEPHEN S. HARRINGTON.