

FIRE TANK.

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907,504.

Patented Dec. 22, 1908.

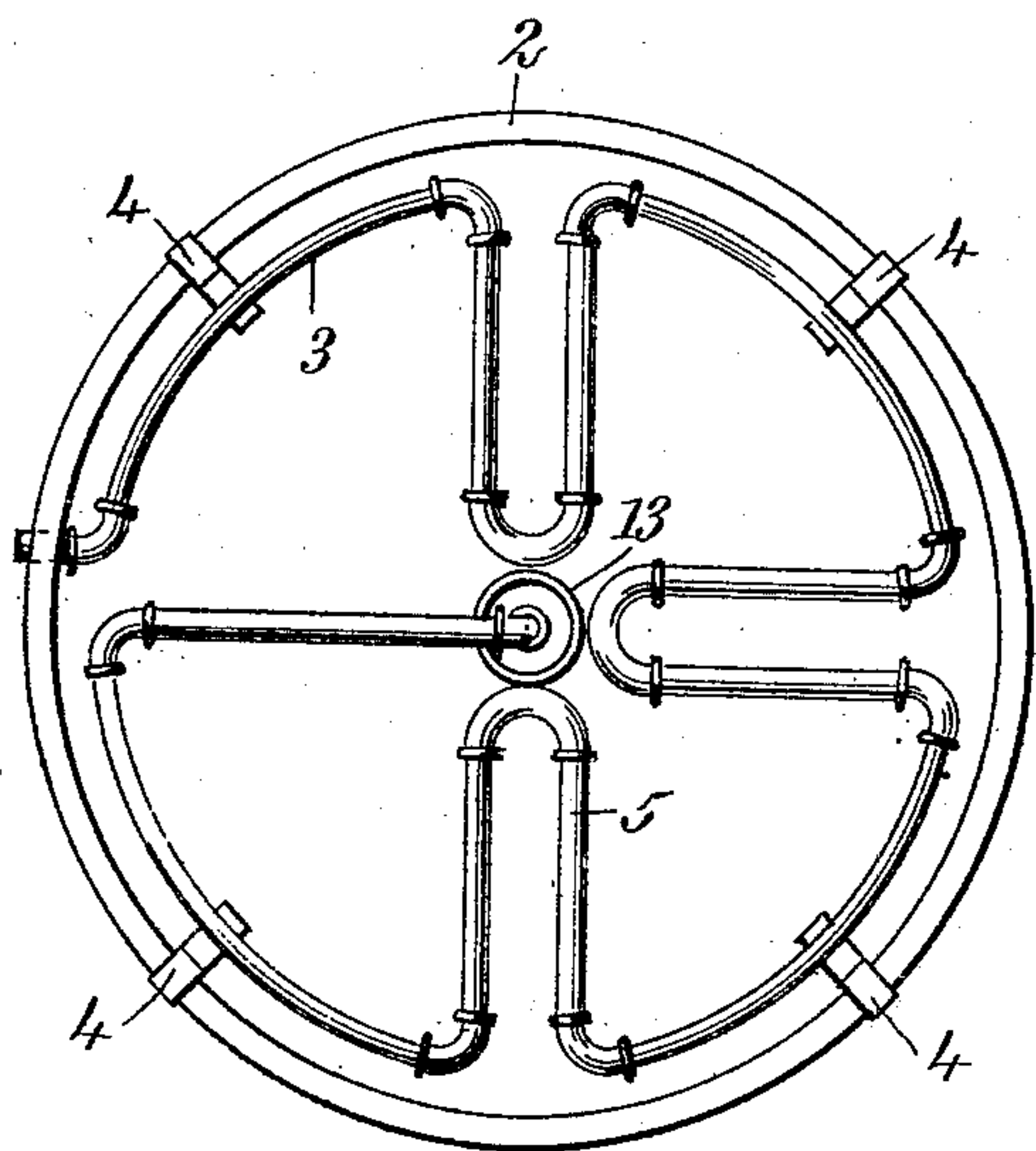
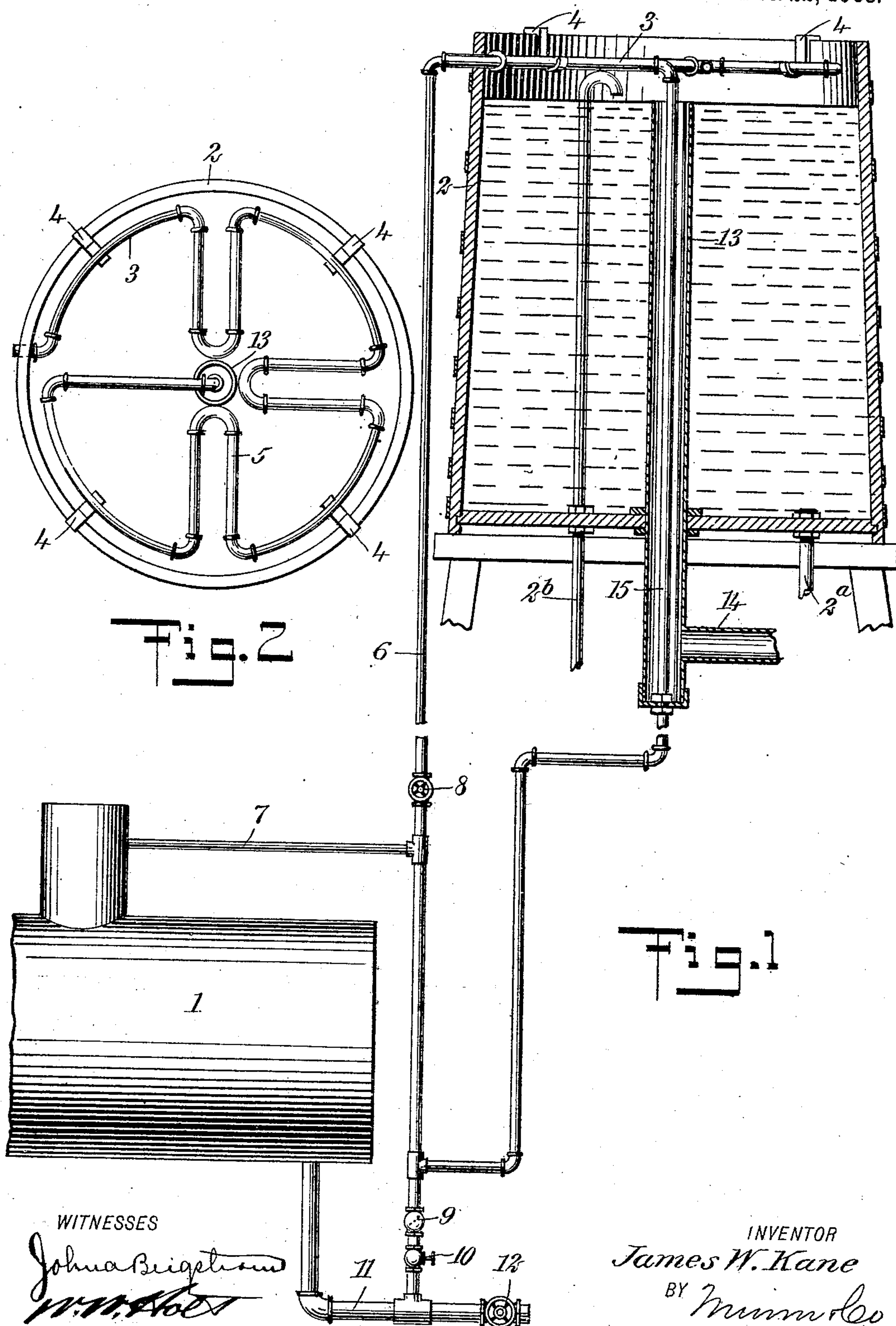


Fig. 2



7-9-1

WITNESSES

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FIRE-TANK.

No. 907,504.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed March 14, 1907. Serial No. 362,311.

To all whom it may concern:

Be it known that I, JAMES WALTER KANE, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, county and State of New York, have invented a new and Improved Fire-Tank, of which the following is a full, clear, and exact description.

This invention has reference to improvements in fire tanks as are ordinarily located at the top of large buildings for fire extinguishing purposes, the invention being directed to a novel heating arrangement acting to prevent the water in the tank from freezing in extreme cold weather.

The heating apparatus of fire tanks as generally used, comprises a steam jet which is discharged directly into the water of the tank. By this construction considerable ice often forms at the surface of the water, which requires a raise of temperature of the entire volume of liquid before the ice can be melted; also the steam pipe itself often freezes, besides causing the tank to overflow when in action.

The object of this invention is to heat the tank only at the point where the ice forms; that is,—at the surface of the water, which I am enabled to do and prevent freezing, with considerably less steam than is now found necessary.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of one embodiment of my improved apparatus, showing the tank in longitudinal, central section, and Fig. 2 is a plan of the tank showing the heating coil.

Referring to the drawing, 1 indicates a boiler which is usually located in the basement of the building for heating and other purposes, and 2 indicates a fire tank which is ordinarily positioned at the top of the building and supplies the fire-extinguishing apparatus as through a pipe 2^a, the tank being filled through a supply pipe 2^b. At the top of the tank slightly above or at the surface of the water which it contains, is a coil 3, preferably supported from the sides of the tank by hangers 4. This coil, as best shown in Fig. 2, is constructed with a number of reëntrant portions 5 which radially pass to near the longitudinal center of the tank. The coil 3 is supplied from the boiler 1 through a pipe

line 6, the latter being connected with the dry pipe or dome of the boiler through a supply pipe 7, a valve 8 being located just above the juncture of these pipes for cutting off the steam supply from the coil 3 when desired. The pipe line 6 is extended through a check valve 9 and valve 10 to a pipe 11 which leads to the lower portion of the boiler, this last-named pipe being supplied with a blow-off cock 12.

The tank 2 is provided at its center with a vertical overflow pipe 13, which, after passing through the tank's bottom, discharges through a pipe 14 leading from one side thereof to any required point. The pipe 13, in addition to performing the function of an overflow, also serves as a conduit for a return pipe 15, which leads from the coil 3 and taps into the pipe line 6 at some point near the check valve 9, as illustrated in Fig. 1. By this arrangement it is apparent that the heat from the coil 3 when the steam from the boiler is supplied thereto, will prevent ice from forming at the surface of the water without heating the water to a temperature much above the freezing point, the water in the tank being maintained at a uniform level by the overflow pipe 13, the pipe 15 serving to prevent the overflow water from freezing within and choking up the overflow pipe. The steam as it condenses in the coil, will pass back to the boiler through the return pipe and thus provide for the heating of the coil most economically.

I have shown and described the construction of my improved apparatus in detail in order that the operation and advantages might be understood. I, nevertheless, regard the precise embodiment as not material provided the essential characteristics are employed as pointed out in the annexed claims.

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

1. In an apparatus of the character described, a fire tank, an overflow pipe leading from the tank, a steam boiler, a heating coil located adjacent to the inlet of said overflow pipe, a supply pipe leading from the boiler to the coil, and a return pipe leading from the coil to the boiler through said overflow pipe.

2. In an apparatus of the character described, a fire tank, an overflow pipe leading from said tank, a heating coil located in the tank at the inlet of said overflow pipe, a

steam boiler, a supply pipe leading from the steam boiler to the coil, a return pipe leading from the coil to the steam boiler through said overflow pipe, and a check valve between
5 the return pipe and boiler.

3. In an apparatus of the character described, a fire tank for holding water, a heating coil located at the surface of the water, a steam boiler, a pipe leading from the lower
10 portion of the boiler having a blow-off cock, a pipe line connecting said pipe with the coil, a supply pipe leading from the boiler to the pipe line, a return pipe connecting the coil with said pipe line below the supply pipe,
15 and a check valve located in said pipe line below the return pipe.

4. The combination of a fire tank for hold-

ing water, a steam coil approximately wholly disposed adjacent to the surface of the water and substantially uniformly distributed
20 thereover, a steam boiler, a pipe line extending from the lower portion of the boiler to the coil, a supply pipe connecting the upper portion of the boiler to the pipe line, and a
25 return pipe leading from the coil to the pipe line below the connection of the last mentioned pipe.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES WALTER KANE.

Witnesses:

FRANKLIN E. PRATT,
JAMES THOMAS.