No. 773,884. PATENTED NOV. 1, 1904.

J. P. McCANN.

APPARATUS FOR EXTINGUISHING FIRE IN OIL TANKS.

APPLICATION FILED MAR. 7, 1904.

NO MODEL.

Fig. 1.

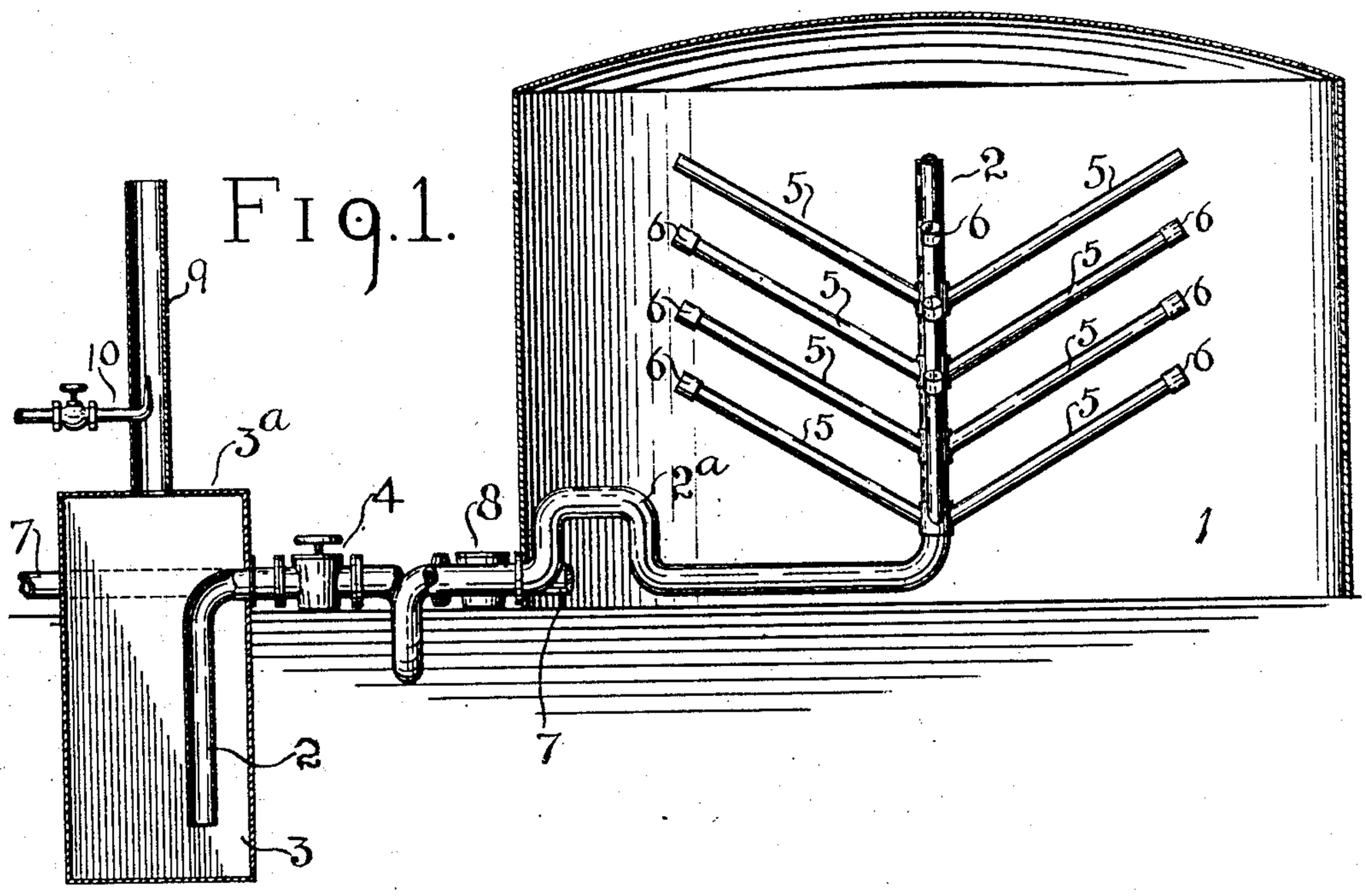
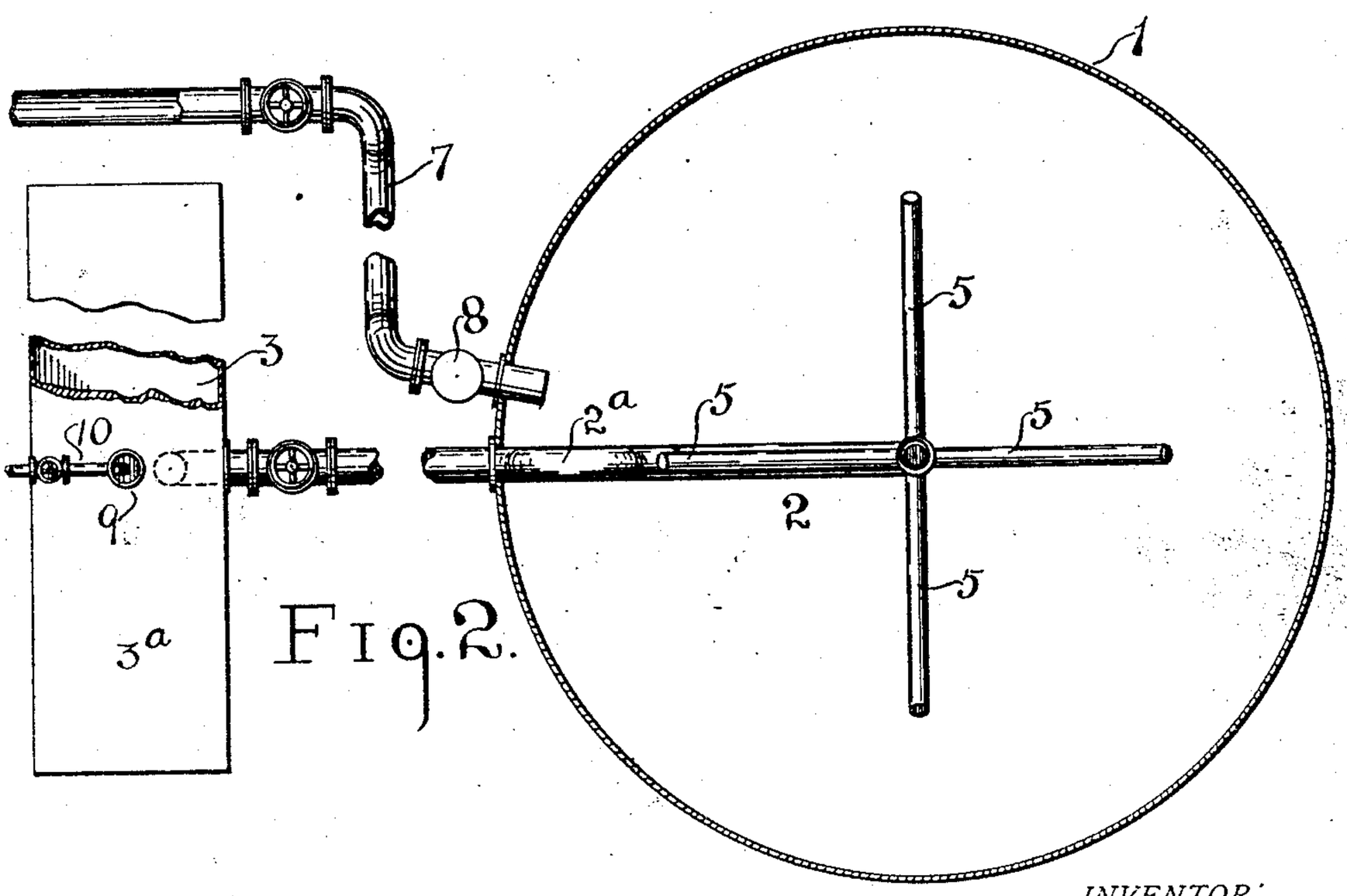


Fig. 2.



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No. 773,884. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

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APPARATUS FOR EXTINGUISHING FIRE IN OIL-TANKS.

SPECIFICATION forming part of Letters Patent No. 773,884, dated November 1, 1904.

Application filed March 7, 1904. Serial No. 196,886. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. McCANN, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Extinguishing Fire in Oil-Tanks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a sectional side elevation; Fig. 2, a plan view, the cover of the oil-tank having been removed.

The object of this invention is to provide an improved means for extinguishing fires in oil-containing tanks; and the leading feature of the invention consists of the combination, with the tank, of an outlet-pipe within said tank and extending through the lower portion of the latter, the open end of the pipe extending above the level of the oil within the tank, and means for forcing water into the bottom portion of the tank, whereby when a fire occurs in the latter the water forced into the tank will cause the oil to flow into said pipe and thence to a suitable receptacle, the flame of the burning oil being extinguished as it (the oil) passes into and through said pipe.

Other features of the invention relate to certain details of construction hereinafter described and particularly pointed out.

In the drawings, 1 is the oil-containing tank of usual form. 2 is a pipe in the central part of the latter that extends vertically from the bottom of the tank to a point above the level of the oil in the tank, and its lower end passes through the side of the latter and in the present instance delivers into an underground receptacle 3. Said pipe may be opened and closed by means of an ordinary valve 4.

Extending obliquely upward from the vertical portion of the pipe 2 are series of branch pipes 5, the several series being at different levels, as shown. The uppermost series are open, while the remaining series have their free ends closed by fusible caps or plugs 6.

7 is the pipe that leads from a source of water-supply into the lower end of tank 1, through which pipe water may be forced into the tank by a pump or other suitable means. Said pipe is normally closed by a check-valve 8 in order to prevent the escape of oil from the tank through the pipe.

I sometimes make the pipe 2 with a bend 2^a to form a trap, whereby when the portion of said trap between said bend and the vertical part of the pipe is filled with oil, air is prevented from passing into the tank by way of said pipe.

Having thus described the construction of my invention, I proceed to describe the mode of operation thereof as follows, premising that the level of the oil in the tank is below the level of the upper end of the pipe 2 and of the free ends of the upper series of said branch pipes 5: In case the oil should take fire, the valve 4 being then open or afterward opened, water is forced through the pipe 7 and past the check-valve 8 into the tank 1. The oil being lighter than water, the latter raising the level of the former, the burning oil will flow out through the upper series of branch pipes 5 or the pipe 2, or both, into the receptacle 3. As the oil passes into said outlet-pipes its flame is extinguished for lack of air to support combustion. By continuing to displace the oil with water all of the oil will finally be driven from out the tank and the fire extinguished. In case the level of the oil at the time of occurrence of the fire be below the level of the free ends of the series of branch pipes or any of them having the fusible caps 6 the heat of the burning oil will melt said caps 6 then above the oil-level, and so open the pipes, and upon forcing a sufficient supply of water into the tank the oil will flow into the pipes whose caps have become fused. The advantage of having the said series of fusible-cap branch pipes at different levels below said upper series is that if the level of the oil at the time of the occurrence of a fire within the tank be comparatively low, less quantity of water, and

consequently less time, would be required to cause the oil to escape into pipe 2 than if the upper end of the latter or the upper series of branch pipes were relied upon for that purpose—*i. e.*, if the said underlying series of branch pipes were dispensed with.

The receptacle 3 would be provided with a cover 3ª, as shown, with a vent-pipe 9 for air and gas or oil vapor, and sometimes I would, as a precautionary measure to prevent danger of explosion within the receptacle in case the escaping vapor should become ignited, inject a jet of steam into said vent-pipe through a pipe 10, whose end extends into the latter and is upwardly bent, as seen in Fig. 1.

It will be obvious that there may be a number of oil-tanks each equipped with a pipe similar to 2 and each having a water-supply pipe communicating with the tank, each of the first-mentioned pipes leading into a receptacle or receptacles, such as 3, or into a common large receptacle, and the water-supply pipes leading from a central pumping-station, whereby a fire occurring in any one or more of the tanks may be extinguished in the manner hereinbefore described.

The receptacle 3 may be dispensed with and the pipe 2 extended to carry the oil to any point desired. The check-valve 8 may also be dispensed with and other means employed to prevent the flow of oil into the water-supply pipe.

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

1. The combination with the oil-containing tank, of the outlet-pipe, extending normally above the level of the oil in said tank and open at said upper end, one or more series of branch pipes extending from said outlet-pipe, and having their free ends below the level of the upper end of said outlet-pipe, the fusible caps closing the said free ends of said branch pipes, together with the pipe leading from a source of water under pressure into the lower portion of said tank, substantially as and for the purpose set forth.

2. The combination with the oil-containing tank, of the outlet-pipe having the upper series of branch pipes open at their free ends, which ends extend normally above the level of the oil, and one or more series of branch pipes below said first series, and having the fusible caps closing their free ends, together with the pipe leading from a source of supply of water under pressure into the lower portion of said tank, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature this 27th day of November, A. D. 1903.

JAMES P. McCANN.

Witnesses:

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WILLIAM E. CHAPMAN.