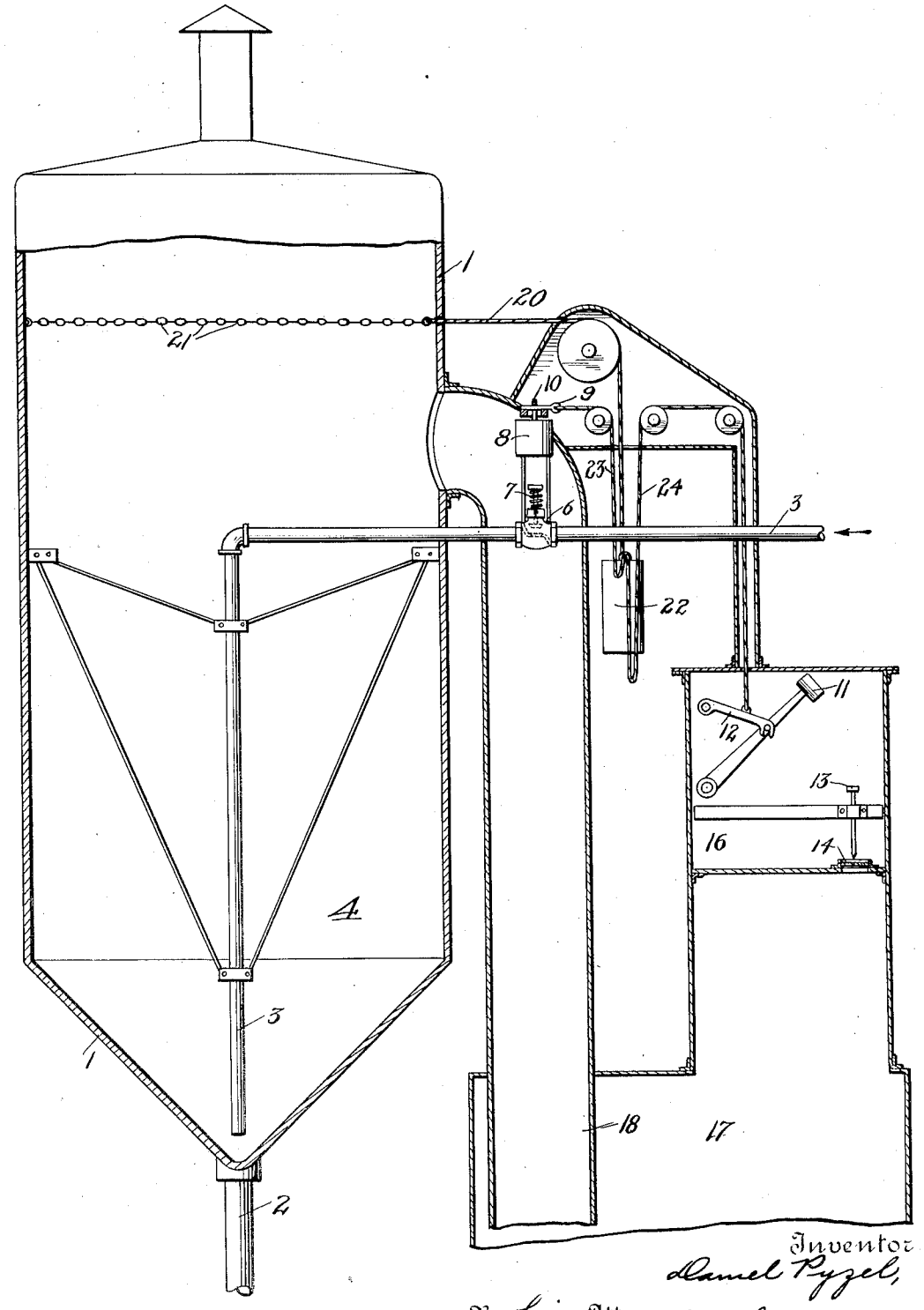
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FIRE EXTINGUISHING APPARATUS.

APPLICATION FILED MAR. 27, 1916.

1,246,657.

Patented Nov. 13, 1917.



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UNITED STATES PATENT OFFICE.

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FIRE-EXTINGUISHING APPARATUS.

1,246,657. Specification of Letters Patent. Patented Nov. 13, 1917.

Application filed March 27, 1916. Serial No. 86,944.

To all whom it may concern:

Be it known that I, DANIEL PYZEL, a subject of the Queen of Holland, residing at The Hague, Netherlands, have invented certain new and useful Improvements in Fire-Extinguishing Apparatus, of which the following is a full, clear, and exact specification.

This invention relates to fire extinguishing apparatus, and has particular reference to the provision of means for automatically extinguishing a fire in an oil or other tank, wherein it is not only desired to admit an incombustible fluid to the tank, but to cut off the supply of air or other agent used in treating the contents of the tank. It has heretofore been proposed to extinguish fires in oil storage tanks by means of temperature released devices which would automatically cause the feeding of an incombustible carbon dioxid containing fluid to the tank, but this invention relates to an improvement thereon more especially intended for tanks used in oil refineries in which the oil is treated with chemicals for the purpose of removing certain of the impurities. Fires are very likely to occur in such tanks from spontaneous ignition, or inattention, etc., and it is not sufficient merely to supply the incombustible liquid, but it is also desired to automatically cut off the supply of air or other agent used in treating the oil. Of course, in speaking of the treatment of oil with air in the specific embodiment of the invention herein disclosed, it is intended to cover other analogous uses where incombustible fluid will be simultaneously fed to the tank while cutting off the supply of some treating, or even heating, agent.

In the form of the invention illustrated herein, an oil treating still or tank is shown wherein fusible links within the tank release weights or other devices outside of the tank which shut off the supply of air and at the same time puncture a sulfuric acid containing vessel and allow the acid to drip into a tank containing a solution of sodium bicarbonate and soap bark, which latter upon contact with the acid liberates the carbon dioxid and forms an effervescent fluid which is immediately discharged by its own pressure into the top of the tank above the oil. The fluid itself is incombustible, and the carbon dioxid carried thereby excludes oxygen and very quickly extinguishes any fire, provided the air used in treating the oil is at the same time cut off.

In the accompanying drawing, 1 represents an oil tank having a draw off 2 of an air pipe 3 through which air is blown into chemicals at the bottom of the tank and bubbles up through the body of oil 4. The gases are carried off through a suitable vent at the top. The air supply pipe 3 contains a valve 6 which is normally held open by a spring 7, and 8 is a weight which is normally held elevated by a latch pin 9 passed through the eye 10, but which when released closes the valve 6. 11 is a second weight which is held elevated by a latch 12 which when released falls on pin 13 to puncture the glass 14 in the bottom of a small acid tank 16 and allowing the acid to fall down into the solution tank 17. The solution tank 17 discharges by a pipe 18 into the top of the tank 1. 20 represents a chain or cord having a fusible link or links 21 in the tank 1 above the normal oil level, and connected at its other end to an actuating weight 22. The weight 22 is connected by one cord 23 to the pin 9 which releases the weight 8 and by a second cord 24 to the latch 12.

When the fusible link 21 melts, the weight 22 drops and immediately pulls pin 9, causing weight 8 to shut the valve 6 and after the weight 22 has fallen far enough to take up the slack in cord 24 it lifts latch 12 and allows the weight or hammer 11 to release the acid into the solution tank 17. By allowing the weight 22 to fall before pulling on the cord 24, sufficient momentum is acquired to insure that the latches 9 and 12 will be disengaged. It will be seen that the actuating weight 22 is directly supported by the cord 20 and the fusible links 21, while the weight 22 is connected to both of the latches 9 and 12.

The invention is equally applicable to other uses than that herein shown, and it will also be seen that instead of treating the oil with air or oxygen, other gases or fluids can equally well be used, the invention being intended to be used wherever it is desired to not only release the fire extinguishing fluid or gas, but also to shut off the flow of some treating fluid or gas. While it is preferable to cause the extinguishing fluid to be forced by the generation of gas therein,

as when the acid is released from the small reservoir 16, the invention is equally applicable to control a supply of extinguishing fluid which will be fed otherwise than as herein illustrated.

The foregoing, as well as various other modifications and changes, may be made without departing from the scope of the appended claims.

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

1. The combination with a tank, of means for leading fluid pressure thereto, a fire extinguishing fluid pressure supply, and temperature controlled means for automatically releasing the fire extinguishing fluid pressure and cutting off the fluid pressure supply.

2. The combination with a tank, of means for supplying fluid pressure thereto for treatment of the contents, controlling means therefor, a source of fire extinguishing fluid pressure, normally closed controlling means, and temperature released means within the tank having connections to said controlling devices for cutting off the treating fluid pressure and supplying the fire extinguishing fluid pressure.

3. The combination with an oil treating tank, of means for blowing air therethrough, a normally open valve in said air supply, a normally closed supply of incombustible fluid connected to the top of said tank, controlling means therefor, means biased to close said air valve and open the controlling means for said incombustible fluid, and means controlled by predetermined tank temperature for releasing said biased means.

4. The combination with an oil treating tank, of means for blowing air therethrough, a normally open valve in said air supply, a normally closed supply of incombustible fluid connected to the top of said tank, controlling means therefor, separate means biased to close said air valve and open the controlling means for said incombustible fluid, and means controlled by predetermined tank temperature for releasing both of said biased means.

5. The combination with an oil treating tank, of means for blowing air therethrough, a normally open valve in the air supply, a tank for containing a carbonate solution discharging to the top of said treating tank, a normally closed acid container discharging into said carbonate solution tank, means biased to open said acid container and close said air valve, latching means for said biased means, and temperature released means connected with the interior of said oil tank for releasing said latching means.

6. The combination with an oil treating tank, of an air supply, a supply of incombustible fluid connected to the top of said oil tank, and temperature released means for cutting off the air supply and putting the incombustible fluid under pressure to cause it to automatically discharge into the oil tank.

7. The combination with a tank adapted to contain a combustible material, and means for supplying fluid pressure thereto for treatment, of an incombustible fluid pressure supply connected to the top of said tank, and temperature controlled means for simultaneously shutting off the supply of treating fluid pressure, and opening said supply of incombustible fluid pressure.

8. The combination of a tank, a supply pipe therefor, a valve controlling said supply, an incombustible fluid supply connected to the top of the tank, restraining means therefor, a fusible chain within said tank and connected to a weight, and secondary weights controlled thereby, one for shutting said supply valve, and the other for releasing said incombustible fluid pressure supply.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL PYZEL.

Witnesses:
EDMUND O'SHEA,
HENRY J. DORGELOH.