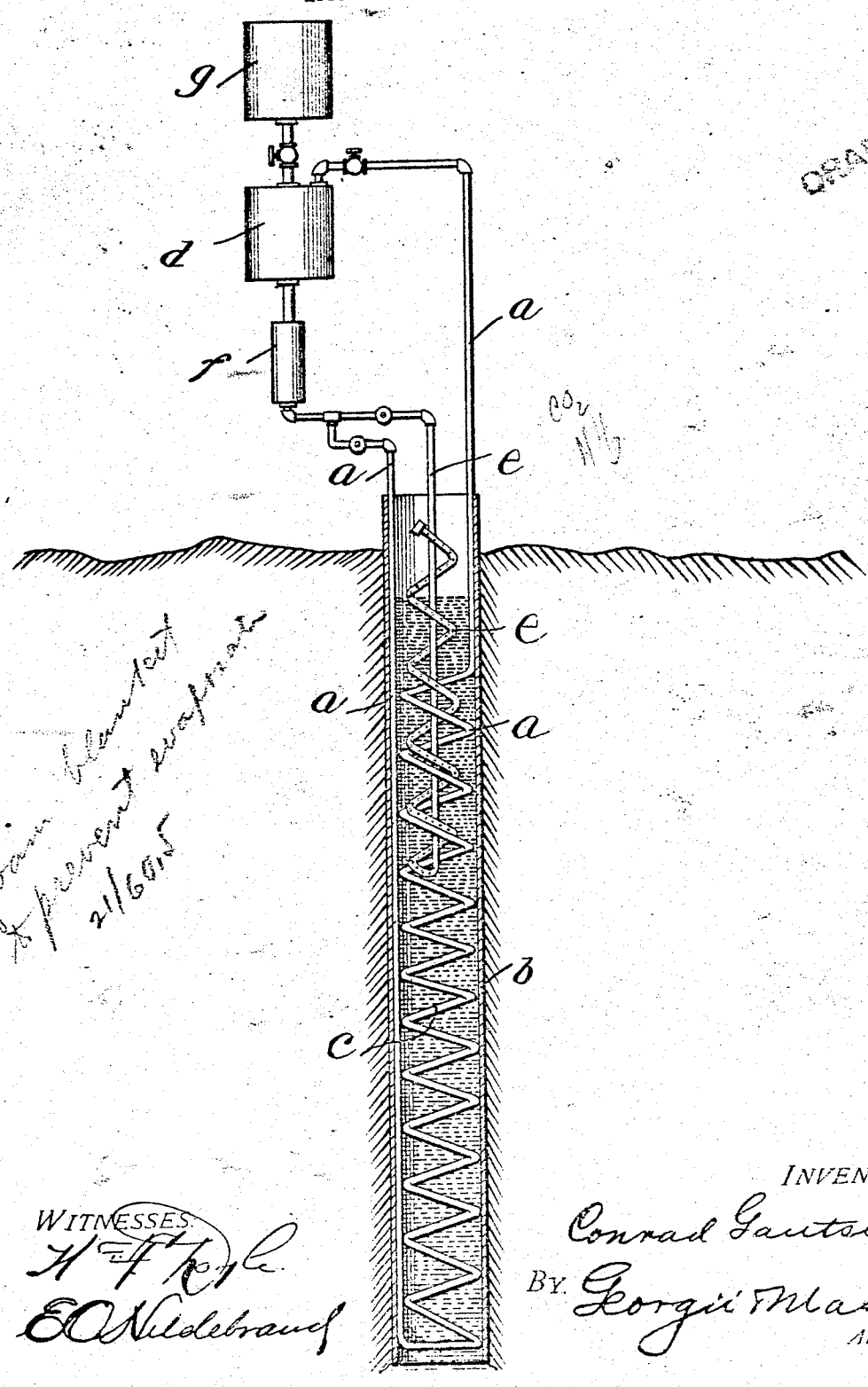
169-46. XR 797,511 SR

No. 797,511. PATENTED AUG. 15, 1905.

C. GAUTSCH.

PROCESS OF PREVENTING AND EXTINGUISHING FIRES IN PETROLEUM, &c., SPRINGS.

APPLICATION FILED MAR. 30, 1905.



WITNESSES:

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CONRAD GAUTSCH, OF STEGLITZ, NEAR BERLIN, GERMANY.

PROCESS OF PREVENTING AND EXTINGUISHING FIRES IN PETROLEUM, &c., SPRINGS.

No. 797,511. Specification of Letters Patent. Patented Aug. 15, 1905.

Application filed March 30, 1905. Serial No. 252,972.

To all whom it may concern:

Be it known that I, CONRAD GAUTSCH, a citizen of Germany, residing at Steglitz, near Berlin, Germany, have invented certain new and useful Improvements in Processes of Preventing and Extinguishing Fires in Petroleum, Naphtha, and Similar Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention consists of a process for preventing and extinguishing fires in petroleum, naphtha, gas, and similar springs or wells, as hereinafter more particularly set forth.

According to the present invention, highly compressed or liquefied gases, such as carbonic acid, sulfurous acid, ammoniac, and the like, are introduced in closed cooling systems into the wells. These gases have a very intense cooling effect when vaporized. In case, however, fire breaks out in spite of the cooling effect means are provided for introducing into the well, when burning, gases adapted to stifle the fire from the beginning and to extinguish the same.

It is not necessary in carrying out the invention that a continuous circulation of the cooling medium should take place in each well; but it will be sufficient if the cooling medium be allowed to pass through the permanent cooling-pipe system immediately when the escaping oil commences to get hot, in which case the circulation of the cooling medium must be kept up until the temperature of the well has gone down and the danger of ignition has been obviated.

In the accompanying drawing I have illustrated in a schematic manner the application of my invention to an oil-well, from which illustration the necessary plant and the manner of its employment will be readily understood.

In carrying the invention into practice a cooling pipe, coil, or the like *a* is sunk simultaneously with the boring-pipe *b* for the well *c*, extending to the deepest point attained by the well-pipe, and this cooling pipe system is connected up, above ground, with a refrigerating plant *d*, which may be arranged at any convenient place and with which automatic temperature alarm devices are in connection. An open-pipe system *e* is also provided to the interior of the well for the fire-extinguishing gas, and immediately when the alarm is given the cooling medium is turned on and flows, under the influence of the pump *f* or the like, through the cooling-coil in the well, and at the same time the fire-extinguishing gas is turned into the open-pipe system to the well. When the danger is over, the supply to both systems may be again turned off. Suitable means may also be provided for turning the supply on and off automatically. Carbonic acid supplied by the generator *g* may be used for the open-pipe system or other similar gas which will not support combustion.

I claim as my invention—

1. The method of preventing and extinguishing fires in oil and gas wells, which consists in introducing a refrigerating medium to the interior of the well without admixture, and mixing with the combustible contents of the well an extinguishing-gas.

2. The method of preventing and extinguishing fires in oil and gas wells, which consists in introducing to the interior of the well without admixture a refrigerating fluid, and mixing with the combustible contents of the well a non-combustible inert gas.

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

CONRAD GAUTSCH.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.